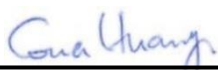


FCC SAR TEST REPORT

FCC ID : HFS-QTAWUA
Equipment : 5G USB Modem
Model Name : QTAWUA
Applicant : Quanta Computer Inc.
NO.188, Wenhua 2nd Rd., Guishan Dist., Taoyuan
City 33377, Taiwan
Manufacturer : Quanta Computer Inc.
NO.188, Wenhua 2nd Rd., Guishan Dist., Taoyuan
City 33377, Taiwan
Standard : FCC 47 CFR Part 2 (2.1093)

The product was received on Jun. 04, 2024 and testing was started from Jun. 09, 2024 and completed on Dec. 05, 2024. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample provide by manufacturer and the test data has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been pass the FCC requirement.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full.



Approved by: Cona Huang / Deputy Manager



Sporton International Inc. Wensan Laboratory

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History of this test report

Report No.	Version	Description	Issued Date
FA451315	01	Initial issue of report	Dec. 23, 2024
FA451315	02	Update section 3.3	Jan. 02, 2025

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) for **Quanta Computer Inc., 5G USB Modem, QTAWUA**, are as follows.

Equipment Class	Frequency Band		Highest SAR Summary	Highest Simultaneous Transmission 1g SAR (W/kg)
			Body (Separation distance 10mm)	
			1g SAR (W/kg)	
Licensed	LTE	LTE Band 2	0.71	1.59
		LTE Band 5	0.67	
		LTE Band 13	0.49	
		LTE Band 48	0.34	
		LTE Band 4 / 66	0.75	
	FR1	FR1 n2	0.80	
		FR1 n5	0.72	
		FR1 n48	0.50	
		FR1 n66	0.71	
		FR1 n77	1.17	
Date of Testing:			2024/06/09 ~ 2024/12/05	

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation and the FCC designation No. TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications

Reviewed by: Jason Wang
Report Producer: Daisy Peng

2. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards, the below KDB standard may not including in the TAF code without accreditation.

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 447498 D02 SAR Procedures for Dongle Xmtr v02r01
- FCC KDB 616217 D04 SAR for laptop and tablets v01r02
- FCC KDB 941225 D05 SAR for LTE Devices v02r05
- FCC KDB 941225 D05A Rel.10 LTE SAR Test Guidance v01r02

3. Equipment Under Test (EUT) Information

3.1 General Information

Product Feature & Specification	
Equipment Name	5G USB Modem
Model Name	QTAWUA
FCC ID	HFS-QTAWUA
Wireless Technology and Frequency Range	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz 5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz
Mode	LTE: QPSK, 16QAM, 64QAM, 256QAM 5G NR: DFT-s-OFDM/CP-OFDM, Pi/2 BPSK/QPSK/16QAM/64QAM/256QAM

3.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r05												
FCC ID			HFS-QTAWUA									
Equipment Name			5G USB Modem									
Operating Frequency Range of each LTE transmission band			LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 48: 3550 MHz ~ 3700 MHz LTE Band 66: 1710 MHz ~ 1780 MHz									
Channel Bandwidth			LTE Band 2:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 4:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz LTE Band 5:1.4MHz, 3MHz, 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 48: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 66:1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz									
uplink modulations used			QPSK / 16QAM / 64QAM / 256QAM									
LTE Voice / Data requirements			Data only									
LTE MPR permanently built-in by design			Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3									
			Modulation		Channel bandwidth / Transmission bandwidth (N _{RB})						MPR (dB)	
					1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz		
			QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1		
			16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1		
			16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2		
			64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2		
			64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3		
256 QAM		≥ 1						≤ 5				
LTE A-MPR			In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)									
Spectrum plots for RB configuration			A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.									
Power reduction applied to satisfy SAR compliance			Yes, Proximity Sensor.									
LTE Carrier Aggregation Combinations			Inter-Band and Intra-Band possible combinations and the detail power measurement please referred to section 10.									
LTE Carrier Aggregation Additional Information			This device supports maximum of 5 carriers in the downlink and 2 carriers in the uplink. Additional following LTE Release features are not supported: Relay, HetNet, Enhanced MIMO, eICI, WiFi Offloading, MDH, eMBMA, Cross-Carrier Scheduling, Enhanced SC-FDMA.									
Transmission (H, M, L) channel numbers and frequencies in each LTE band												
LTE Band 2												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18607	1850.7	18615	1851.5	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880	18900	1880
H	19193	1909.3	19185	1908.5	19175	1907.5	19150	1905	19125	1902.5	19100	1900
LTE Band 4												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19957	1710.7	19965	1711.5	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20393	1754.3	20385	1753.5	20375	1752.5	20350	1750	20325	1747.5	20300	1745
LTE Band 5												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20407	824.7	20415	825.5	20425	826.5	20450	829				



M	20525	836.5	20525	836.5	20525	836.5	20525	836.5				
H	20643	848.3	20635	847.5	20625	846.5	20600	844				
LTE Band 13												
	Bandwidth 5 MHz				Bandwidth 10 MHz							
	Channel #		Freq.(MHz)		Channel #		Freq.(MHz)					
L	23205		779.5		23230		782					
M	23230		782									
H	23255		784.5									
LTE Band 48												
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz					
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)				
L	55265	3552.5	55290	3555	55315	3557.5	55340	3560				
L M	55810	3607	55815	3607.5	55820	3608	55830	3609				
M H	56170	3643	56165	3642.5	56160	3642	56150	3641				
H	56715	3697.5	56690	3695	56665	3692.5	56640	3690				
LTE Band 66												
	Bandwidth 1.4 MHz		Bandwidth 3 MHz		Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	131979	1710.7	131987	1711.5	131997	1712.5	132022	1715	132047	1717.5	132072	1720
M	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745	132322	1745
H	132665	1779.3	132657	1778.5	132647	1777.5	132622	1775	132597	1772.5	132572	1770

3.3 General 5G NR SAR Test and Reporting Considerations

5G NR Information																								
FCC ID	HFS-QTAWUA																							
Equipment Name	5G USB Modem																							
Operating Frequency Range of each 5G NR transmission band	5G NR n2: 1850 MHz ~ 1910 MHz 5G NR n5: 824 MHz ~ 849 MHz 5G NR n48 : 3550 MHz ~ 3700 MHz 5G NR n66: 1710 MHz ~ 1780 MHz 5G NR n77: 3700 MHz ~ 3980 MHz, 3450MHz ~ 3550MHz																							
Channel Bandwidth	5G NR n2: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n5: 5MHz, 10MHz, 15MHz, 20MHz 5G NR n48: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz 5G NR n66: 5MHz, 10MHz, 15MHz, 20MHz, 25 MHz,30MHz, 40MHz 5G NR n77: 10MHz, 15MHz, 20MHz, 25 MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz																							
SCS	FDD: SCS15KHz, TDD: SCS30KHz																							
uplink modulations used	DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM CP-OFDM QPSK / 16QAM / 64QAM / 256QAM																							
A-MPR (Additional MPR) disabled for SAR Testing?	Yes																							
LTE Anchor Bands for n2	LTE B2/4/5/13/66																							
LTE Anchor Bands for n5	LTE B2/4/66																							
LTE Anchor Bands for n66	LTE B2/5/13/66																							
LTE Anchor Bands for n77	LTE B2/5/13/66																							
NR Band 2																								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz																	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)																
L	370500	1852.5	371000	1855	371500	1857.5	372000	1860																
M	376000	1880	376000	1880	376000	1880	376000	1880																
H	381500	1907.5	381000	1905	380500	1902.5	380000	1900																
NR Band 5																								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz																	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)																
L	165300	826.5	165800	829	166300	831.5	166800	834																
M	167300	836.5	167300	836.5	167300	836.5	167300	836.5																
H	169300	846.5	168800	844	168300	841.5	167800	839																
NR Band 48																								
	Bandwidth10MHz		Bandwidth 15MHz		Bandwidth20MHz		Bandwidth30MHz		Bandwidth 40MHz															
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)														
L	637000	3555	637168	3557.52	637334	3560.01	637668	3565.02	638000	3570														
M	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99	641666	3624.99														
H	646332	3694.98	646166	3692.49	646000	3690	645666	3684.99	645332	3679.98														
NR Band 66																								
	Bandwidth 5MHz		Bandwidth 10MHz		Bandwidth 15MHz		Bandwidth 20MHz		Bandwidth 25MHz		Bandwidth 30MHz		Bandwidth 40MHz											
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)										
L	342500	1712.5	343000	1715	343500	1717.5	344000	1720	344500	1722.5	345000	1725	346000	1730										
M	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745	349000	1745										
H	355500	1777.5	355000	1775	354500	1772.5	354000	1770	353500	1767.5	353000	1765	352000	1760										
NR Band 77																								
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	647000	3705	647168	3707.52	647334	3710.01	647500	3712.5	647668	3715.02	648000	3720	648334	3725.01	648668	3730.02	649000	3735	649334	3740.01	649668	3745.02	650000	3750
M	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840	656000	3840
H	665000	3975	664832	3972.48	664666	3969.99	664500	3967.50	664332	3964.98	664000	3960	663666	3954.99	663332	3949.98	663000	3945	662666	3939.99	662332	3934.98	662000	3930
NR Band 77(3450MHz ~ 3550MHz)																								
	Bandwidth10MHz		Bandwidth15MHz		Bandwidth 20MHz		Bandwidth25MHz		Bandwidth30MHz		Bandwidth 40MHz		Bandwidth 50MHz		Bandwidth 60MHz		Bandwidth 70MHz		Bandwidth 80MHz		Bandwidth 90MHz		Bandwidth100MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	630334	3455.01	630500	3457.5	630668	3460.02	630834	3462.51	631000	3465	631334	3470.01	631668	3475.02	632000	3480	632334	3485.01	632668	3490.02	633000	3495	633334	3500.01
M	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98	633332	3499.98
H	636332	3544.98	636166	3542.49	636000	3540	635832	3537.48	635666	3534.99	635332	3529.98	635000	3525	634666	3519.99	634332	3514.98	634000	3510	633666	3504.99	633332	3499.98

4. RF Exposure Limits

4.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

4.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

5. Specific Absorption Rate (SAR)

5.1 Introduction

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

5.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

$$SAR = \frac{d}{dt} \left(\frac{dW}{dm} \right) = \frac{d}{dt} \left(\frac{dW}{\rho dv} \right)$$

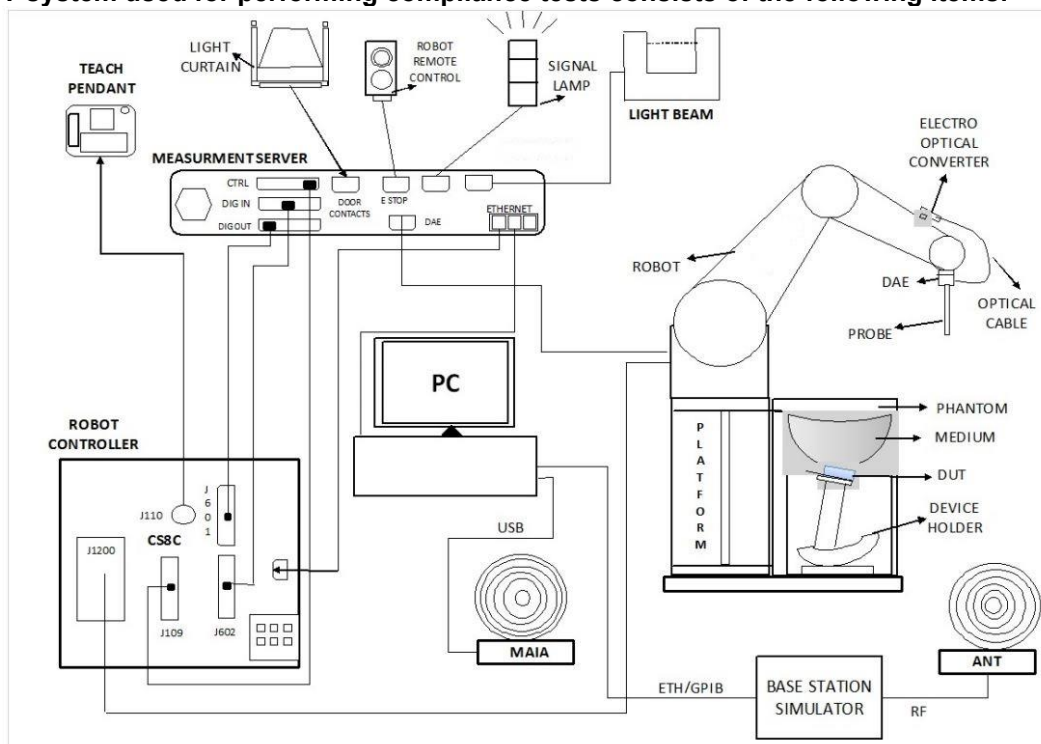
SAR is expressed in units of Watts per kilogram (W/kg)

$$SAR = \frac{\sigma |E|^2}{\rho}$$

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

6. System Description and Setup

The DASY system used for performing compliance tests consists of the following items:



- The DASY system in SAR Configuration is shown above
- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running windows software and the DASY software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

6.1 Test Site Location

The SAR measurement facilities used to collect data are within both Sporton Lab list below test site location are accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190 and 3786) and the FCC designation No. TW1190 and TW3786 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC test.

Laboratory	EMC & Wireless Communications Laboratory		Wensan Laboratory				
Test Site Location	TW1190 No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan		TW3786 No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan				
Test Site No.	SAR01-HY	SAR03-HY	SAR08-HY	SAR09-HY	SAR15-HY	SAR18-HY	SAR21-HY
	SAR04-HY	SAR05-HY	SAR11-HY	SAR12-HY	SAR16-HY	SAR19-HY	SAR22-HY
	SAR06-HY	SAR10-HY	SAR13-HY	SAR14-HY	SAR17-HY	SAR20-HY	

6.2 E-Field Probe

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG). The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

<ES3DV3 Probe>

Construction	Symmetric design with triangular core Interleaved sensors Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	4 MHz – 4 GHz; Linearity: ± 0.2 dB (30 MHz – 4 GHz)	
Directivity	± 0.2 dB in TSL (rotation around probe axis) ± 0.3 dB in TSL (rotation normal to probe axis)	
Dynamic Range	5 μ W/g – >100 mW/g; Linearity: ± 0.2 dB	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 3.9 mm (body: 12 mm) Distance from probe tip to dipole centers: 3.0 mm	

<EX3DV4 Probe>

Construction	Symmetric design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	4 MHz – >6 GHz Linearity: ± 0.2 dB (30 MHz – 6 GHz)	
Directivity	± 0.3 dB in TSL (rotation around probe axis) ± 0.5 dB in TSL (rotation normal to probe axis)	
Dynamic Range	10 μ W/g – >100 mW/g Linearity: ± 0.2 dB (noise: typically <1 μ W/g)	
Dimensions	Overall length: 337 mm (tip: 20 mm) Tip diameter: 2.5 mm (body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	

6.3 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.



Fig 5.1 Photo of DAE

6.4 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm	
Filling Volume	Approx. 25 liters	
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet	
Measurement Areas	Left Hand, Right Hand, Flat Phantom	

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)	
Filling Volume	Approx. 30 liters	
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm	

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

6.5 Device Holder

<Mounting Device for Hand-Held Transmitter>

In combination with the Twin SAM V5.0/V5.0c or ELI phantoms, the Mounting Device for Hand-Held Transmitters enables rotation of the mounted transmitter device to specified spherical coordinates. At the heads, the rotation axis is at the ear opening. Transmitter devices can be easily and accurately positioned according to IEC 62209-1, IEEE 1528, FCC, or other specifications. The device holder can be locked for positioning at different phantom sections (left head, right head, flat). And upgrade kit to Mounting Device to enable easy mounting of wider devices like big smart-phones, e-books, small tablets, etc. It holds devices with width up to 140 mm.



Mounting Device for Hand-Held Transmitters



Mounting Device Adaptor for Wide-Phones

<Mounting Device for Laptops and other Body-Worn Transmitters>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.



Mounting Device for Laptops

7. Measurement Procedures

The measurement procedures are as follows:

- (a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
- (b) Place the EUT in the positions as Appendix D demonstrates.
- (c) Set scan area, grid size and other setting on the DASY software.
- (d) Measure SAR results for the highest power channel on each testing position.
- (e) Find out the largest SAR result on these testing positions of each band
- (f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

7.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

7.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

7.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}	≤ 2 GHz: ≤ 15 mm $2 - 3$ GHz: ≤ 12 mm	$3 - 4$ GHz: ≤ 12 mm $4 - 6$ GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

7.4 Zoom Scan

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 2 GHz: ≤ 8 mm $2 - 3$ GHz: ≤ 5 mm*	$3 - 4$ GHz: ≤ 5 mm* $4 - 6$ GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	$3 - 4$ GHz: ≤ 4 mm $4 - 5$ GHz: ≤ 3 mm $5 - 6$ GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	$3 - 4$ GHz: ≤ 3 mm $4 - 5$ GHz: ≤ 2.5 mm $5 - 6$ GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	$3 - 4$ GHz: ≥ 28 mm $4 - 5$ GHz: ≥ 25 mm $5 - 6$ GHz: ≥ 22 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.				
* When zoom scan is required and the <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.				

7.5 Volume Scan Procedures

The volume scan is used to assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

7.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASy measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

8. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit ⁽²⁾	D750V3	1012	Aug. 18, 2021	Aug. 15, 2024
SPEAG	750MHz System Validation Kit ⁽²⁾	D750V3	1117	Mar. 24, 2022	Mar. 21, 2025
SPEAG	835MHz System Validation Kit ⁽²⁾	D835V2	499	Aug. 18, 2021	Aug. 15, 2024
SPEAG	835MHz System Validation Kit ⁽²⁾	D835V2	4d060	Mar. 24, 2022	Mar. 21, 2025
SPEAG	1750MHz System Validation Kit ⁽²⁾	D1750V2	1068	Nov. 21, 2022	Nov. 18, 2025
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d041	Aug. 19, 2021	Aug. 16, 2024
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d093	Mar. 25, 2022	Mar. 22, 2025
SPEAG	1900MHz System Validation Kit ⁽²⁾	D1900V2	5d185	Jun. 17, 2022	Jun. 14, 2025
SPEAG	3500MHz System Validation Kit ⁽²⁾	D3500V2	1014	Jan. 17, 2022	Jan. 14, 2025
SPEAG	3500MHz System Validation Kit ⁽²⁾	D3500V2	1036	Mar. 23, 2022	Mar. 20, 2025
SPEAG	3700MHz System Validation Kit ⁽²⁾	D3700V2	1006	Jun. 20, 2022	Jun. 17, 2025
SPEAG	3900MHz System Validation Kit ⁽²⁾	D3900V2	1017	Apr. 22, 2022	Apr. 19, 2025
SPEAG	Data Acquisition Electronics	DAE4	376	Sep. 14, 2023	Sep. 13, 2024
SPEAG	Data Acquisition Electronics	DAE4	1424	Dec. 07, 2023	Dec. 06, 2024
SPEAG	Data Acquisition Electronics	DAE4	1696	Sep. 03, 2024	Sep. 02, 2025
SPEAG	Data Acquisition Electronics	DAE4	1805	May. 22, 2024	May. 21, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	3976	Jan. 22, 2024	Jan. 21, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7625	Dec. 14, 2023	Dec. 13, 2024
SPEAG	Dosimetric E-Field Probe	EX3DV4	7695	Jun. 04, 2024	Jun. 03, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7700	Feb. 01, 2024	Jan. 31, 2025
SPEAG	Dosimetric E-Field Probe	EX3DV4	7791	Feb. 21, 2024	Feb. 20, 2025
Testo	Hygro meter	608-H1	45142597	Jan. 03, 2024	Jan. 02, 2025
Anritsu	Radio Communication Test Station	MT8000A	6262208374	Feb. 29, 2024	Feb. 28, 2025
Anritsu	Radio Communication Analyzer	MT8821C	6201341950	Nov. 13, 2023	Nov. 12, 2024
Anritsu	Radio Communication Analyzer	MT8821C	6201074414	Aug. 20, 2024	Aug. 19, 2025
Keysight	5G Wireless Test Platform	E7515B	MY58300712	Apr. 22, 2024	Apr. 21, 2025
SPEAG	Device Holder	N/A	N/A	N/A	N/A
Anritsu	Signal Generator	MG3692C	113508	Jan. 23, 2024	Jan. 22, 2025
Keysight	ENA Network Analyzer	E5071C	MY46104758	Oct. 30, 2023	Oct. 29, 2024
Keysight	ENA Network Analyzer	E5071C	MY46104758	Oct. 20, 2024	Oct. 19, 2025
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 19, 2023	Sep. 18, 2024
SPEAG	Dielectric Probe Kit	DAK-3.5	1126	Sep. 17, 2024	Sep. 16, 2025
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3690	Aug. 09, 2023	Aug. 08, 2024
LINE SEIKI	Digital Thermometer	DTM3000-spezial	3252	Jul. 31, 2024	Jul. 30, 2025
Anritsu	Power Meter	ML2495A	1419002	Aug. 17, 2023	Aug. 16, 2024
Anritsu	Power Meter	ML2495A	1419002	Aug. 13, 2024	Aug. 12, 2025
Anritsu	Power Sensor	MA2411B	1911176	Aug. 18, 2023	Aug. 17, 2024
Anritsu	Power Sensor	MA2411B	1911176	Aug. 13, 2024	Aug. 12, 2025
Anritsu	Spectrum Analyzer	N9010A	MY53470118	Jan. 10, 2024	Jan. 09, 2025
Mini-Circuits	Power Amplifier	ZHL-42W+	715701915	May. 17, 2024	May. 16, 2025
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
Warison	Directional Coupler	WCOU-10-50S-10	WR889BMC4B1	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	

General Note:

- Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
- The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

9. System Verification

9.1 Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18°C to 25°C, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.

The liquid tissue depth was at least 15cm in the phantom for all SAR testing

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ϵ_r)	Conductivity Target (σ)	Permittivity Target (ϵ_r)	Delta (σ) (%)	Delta (ϵ_r) (%)	Limit (%)	Date
750	22.5	0.887	42.195	0.89	41.90	-0.34	0.70	± 5	2024/6/22
750	22.6	0.894	42.809	0.89	41.90	0.45	2.17	± 5	2024/8/26
835	22.4	0.925	41.459	0.90	41.50	2.78	-0.10	± 5	2024/6/12
835	22.6	0.928	41.254	0.90	41.50	3.11	-0.59	± 5	2024/7/15
835	22.3	0.940	41.511	0.90	41.50	4.44	0.03	± 5	2024/7/29
835	22.6	0.924	42.213	0.90	41.50	2.67	1.72	± 5	2024/8/26
1750	22.6	1.375	41.218	1.37	40.10	0.36	2.79	± 5	2024/6/9
1750	22.6	1.373	41.218	1.37	40.10	0.22	2.79	± 5	2024/7/13
1750	22.5	1.372	40.620	1.37	40.10	0.15	1.30	± 5	2024/7/16
1750	22.3	1.372	40.638	1.37	40.10	0.15	1.34	± 5	2024/7/29
1750	22.6	1.357	40.798	1.37	40.10	-0.95	1.74	± 5	2024/8/26
1900	22.7	1.438	39.021	1.40	40.00	2.71	-2.45	± 5	2024/12/5
1900	22.4	1.449	39.030	1.40	40.00	3.50	-2.43	± 5	2024/6/11
1900	22.6	1.451	39.670	1.40	40.00	3.64	-0.82	± 5	2024/7/13
1900	22.5	1.449	39.072	1.40	40.00	3.50	-2.32	± 5	2024/7/16
1900	22.3	1.449	39.090	1.40	40.00	3.50	-2.27	± 5	2024/7/29
1900	22.6	1.422	40.695	1.40	40.00	1.57	1.74	± 5	2024/8/26
3500	22.5	2.858	38.163	2.91	37.90	-1.79	0.69	± 5	2024/6/20
3500	22.7	2.922	38.053	2.91	37.90	0.41	0.40	± 5	2024/6/25
3500	22.7	2.991	37.641	2.91	37.90	2.78	-0.68	± 5	2024/7/12
3500	22.4	2.991	37.663	2.91	37.90	2.78	-0.63	± 5	2024/7/14
3500	22.6	2.921	38.029	2.91	37.90	0.38	0.34	± 5	2024/7/30
3500	22.5	2.964	37.222	2.91	37.90	1.86	-1.79	± 5	2024/7/31
3500	22.6	2.932	38.203	2.91	37.90	0.76	0.80	± 5	2024/8/26
3500	22.7	2.922	37.953	2.91	37.90	0.41	0.14	± 5	2024/12/5
3700	22.7	3.106	37.754	3.12	37.70	-0.45	0.14	± 5	2024/6/25
3700	22.7	3.179	37.342	3.12	37.70	1.89	-0.95	± 5	2024/7/12
3700	22.4	3.179	37.364	3.12	37.70	1.89	-0.89	± 5	2024/7/14
3700	22.6	3.075	37.791	3.12	37.70	-1.44	0.24	± 5	2024/7/30
3700	22.5	3.121	36.984	3.12	37.70	0.03	-1.90	± 5	2024/7/31
3700	22.6	3.142	38.001	3.12	37.70	0.71	0.80	± 5	2024/8/26
3900	22.7	3.384	37.063	3.33	37.51	1.62	-1.19	± 5	2024/7/12
3900	22.4	3.384	37.086	3.33	37.51	1.62	-1.13	± 5	2024/7/14
3900	22.6	3.246	37.546	3.33	37.51	-2.52	0.10	± 5	2024/7/30
3900	22.5	3.294	36.739	3.33	37.51	-1.08	-2.06	± 5	2024/7/31
3900	22.6	3.352	37.813	3.33	37.51	0.66	0.81	± 5	2024/8/26
3900	22.7	3.307	37.376	3.33	37.51	-0.69	-0.36	± 5	2024/12/5

9.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Test Site
2024/6/22	750	50	D750V3-1012	EX3DV4 - SN7791	DAE4 Sn1805	0.401	8.560	8.02	-6.31	SAR-12
2024/8/26	750	50	D750V3-1117	EX3DV4 - SN7695	DAE4 Sn1424	0.388	8.520	7.76	-8.92	SAR-13
2024/6/12	835	50	D835V2-499	EX3DV4 - SN7625	DAE4 Sn376	0.442	9.680	8.84	-8.68	SAR-08
2024/7/15	835	50	D835V2-499	EX3DV4 - SN3976	DAE4 Sn1424	0.447	9.680	8.94	-7.64	SAR-09
2024/7/29	835	50	D835V2-499	EX3DV4 - SN3976	DAE4 Sn1424	0.453	9.680	9.06	-6.40	SAR-09
2024/8/26	835	50	D835V2-4d060	EX3DV4 - SN7695	DAE4 Sn1424	0.482	9.730	9.64	-0.92	SAR-13
2024/6/9	1750	250	D1750V2-1068	EX3DV4 - SN7625	DAE4 Sn376	8.680	36.700	34.72	-5.40	SAR-08
2024/7/13	1750	50	D1750V2-1068	EX3DV4 - SN3976	DAE4 Sn1424	1.710	36.700	34.2	-6.81	SAR-09
2024/7/16	1750	50	D1750V2-1068	EX3DV4 - SN3976	DAE4 Sn1424	1.810	36.700	36.2	-1.36	SAR-09
2024/7/29	1750	50	D1750V2-1068	EX3DV4 - SN3976	DAE4 Sn1424	1.950	36.700	39	6.27	SAR-09
2024/8/26	1750	50	D1750V2-1068	EX3DV4 - SN7695	DAE4 Sn1424	1.730	36.700	34.6	-5.72	SAR-13
2024/12/5	1900	50	D1900V2-5d185	EX3DV4 - SN7700	DAE4 Sn1696	1.830	39.000	36.6	-6.15	SAR-12
2024/6/11	1900	250	D1900V2-5d041	EX3DV4 - SN7625	DAE4 Sn376	9.490	40.600	37.96	-6.50	SAR-08
2024/7/13	1900	50	D1900V2-5d041	EX3DV4 - SN3976	DAE4 Sn1424	1.980	40.600	39.6	-2.46	SAR-09
2024/7/16	1900	50	D1900V2-5d041	EX3DV4 - SN3976	DAE4 Sn1424	2.050	40.600	41	0.99	SAR-09
2024/7/29	1900	50	D1900V2-5d093	EX3DV4 - SN3976	DAE4 Sn1424	1.980	39.900	39.6	-0.75	SAR-09
2024/8/26	1900	50	D1900V2-5d093	EX3DV4 - SN7695	DAE4 Sn1424	1.880	39.900	37.6	-5.76	SAR-13
2024/6/20	3500	100	D3500V2-1014	EX3DV4 - SN7791	DAE4 Sn1805	6.220	67.200	62.2	-7.44	SAR-12
2024/6/25	3500	100	D3500V2-1014	EX3DV4 - SN7791	DAE4 Sn1805	6.360	67.200	63.6	-5.36	SAR-12
2024/7/12	3500	50	D3500V2-1014	EX3DV4 - SN3976	DAE4 Sn1424	3.280	67.200	65.6	-2.38	SAR-09
2024/7/14	3500	50	D3500V2-1014	EX3DV4 - SN3976	DAE4 Sn1424	3.320	67.200	66.4	-1.19	SAR-09
2024/7/30	3500	50	D3500V2-1014	EX3DV4 - SN3976	DAE4 Sn1424	3.310	67.200	66.2	-1.49	SAR-09
2024/7/31	3500	100	D3500V2-1014	EX3DV4 - SN3976	DAE4 Sn1424	6.850	67.200	68.5	1.93	SAR-09
2024/8/26	3500	50	D3500V2-1014	EX3DV4 - SN7695	DAE4 Sn1424	3.620	67.200	72.4	7.74	SAR-13
2024/12/5	3500	50	D3500V2-1036	EX3DV4 - SN7700	DAE4 Sn1696	3.150	67.400	63	-6.53	SAR-12
2024/6/25	3700	50	D3700V2-1006	EX3DV4 - SN7791	DAE4 Sn1805	3.130	65.600	62.6	-4.57	SAR-12
2024/7/12	3700	50	D3700V2-1006	EX3DV4 - SN3976	DAE4 Sn1424	3.380	65.600	67.6	3.05	SAR-09
2024/7/14	3700	50	D3700V2-1006	EX3DV4 - SN3976	DAE4 Sn1424	3.400	65.600	68	3.66	SAR-09
2024/7/30	3700	50	D3700V2-1006	EX3DV4 - SN3976	DAE4 Sn1424	3.270	65.600	65.4	-0.30	SAR-09
2024/7/31	3700	100	D3700V2-1006	EX3DV4 - SN3976	DAE4 Sn1424	7.020	65.600	70.2	7.01	SAR-09
2024/8/26	3700	100	D3700V2-1006	EX3DV4 - SN7695	DAE4 Sn1424	6.170	65.600	61.7	-5.95	SAR-13
2024/7/12	3900	50	D3900V2-1017-3900	EX3DV4 - SN3976	DAE4 Sn1424	3.260	68.700	65.2	-5.09	SAR-09
2024/7/14	3900	100	D3900V2-1017-3900	EX3DV4 - SN3976	DAE4 Sn1424	6.780	68.700	67.8	-1.31	SAR-09
2024/7/30	3900	50	D3900V2-1017-3900	EX3DV4 - SN3976	DAE4 Sn1424	3.130	68.700	62.6	-8.88	SAR-09
2024/7/31	3900	100	D3900V2-1017-3900	EX3DV4 - SN3976	DAE4 Sn1424	6.580	68.700	65.8	-4.22	SAR-09
2024/8/26	3900	100	D3900V2-1017-3900	EX3DV4 - SN7695	DAE4 Sn1424	6.190	68.700	61.9	-9.90	SAR-13
2024/12/5	3900	50	D3900V2-1017-3900	EX3DV4 - SN7700	DAE4 Sn1696	3.260	68.700	65.2	-5.09	SAR-12

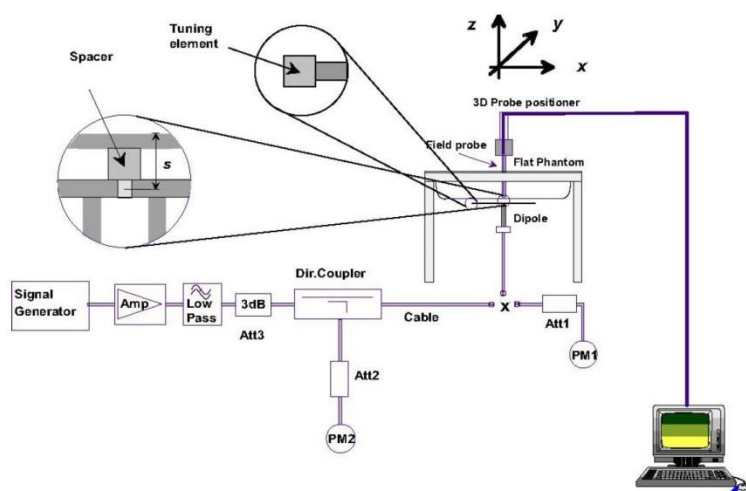


Fig 8.3.1 System Performance Check Setup



Fig 8.3.2 Setup Photo

10. LTE Output Power (Unit: dBm)

<LTE Conducted Power>

General Note:

1. A Base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r05, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
8. For LTE B4/B5 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
9. LTE band 4 SAR test was covered by Band 66; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. the maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion
 - b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band



<LTE Band 2_Ant 3_Sensor OFF>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				18700	18900	19100	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	0	23.39	23.46	23.41	24
20	QPSK	1	49	23.36	23.37	23.38	
20	QPSK	1	99	23.32	23.37	23.32	
20	QPSK	50	0	22.54	22.59	22.57	23
20	QPSK	50	24	22.53	22.48	22.55	
20	QPSK	50	50	22.52	22.40	22.46	
20	QPSK	100	0	22.42	22.43	22.39	
20	16QAM	1	0	22.70	22.71	22.71	23
20	16QAM	1	49	22.69	22.68	22.73	
20	16QAM	1	99	22.62	22.68	22.61	
20	16QAM	50	0	21.47	21.48	21.56	22
20	16QAM	50	24	21.49	21.41	21.51	
20	16QAM	50	50	21.51	21.40	21.40	
20	16QAM	100	0	21.46	21.39	21.46	
20	64QAM	1	0	21.59	21.62	21.61	22
20	64QAM	1	49	21.59	21.60	21.58	
20	64QAM	1	99	21.53	21.58	21.52	
20	64QAM	50	0	20.44	20.46	20.57	21
20	64QAM	50	24	20.46	20.45	20.48	
20	64QAM	50	50	20.50	20.38	20.43	
20	64QAM	100	0	20.44	20.38	20.45	
20	256QAM	1	0	18.20	18.32	18.26	19
20	256QAM	1	49	18.15	18.24	18.11	
20	256QAM	1	99	18.10	18.19	18.07	
20	256QAM	50	0	18.01	18.13	17.98	19
20	256QAM	50	24	18.02	18.11	18.02	
20	256QAM	50	50	17.89	18.06	18.00	
20	256QAM	100	0	17.99	18.09	18.02	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	23.24	23.22	23.29	24
15	QPSK	1	37	23.30	23.27	23.32	
15	QPSK	1	74	23.23	23.23	23.26	
15	QPSK	36	0	22.31	22.36	22.34	23
15	QPSK	36	20	22.37	22.30	22.36	
15	QPSK	36	39	22.38	22.26	22.32	
15	QPSK	75	0	22.38	22.35	22.31	23
15	16QAM	1	0	22.65	22.59	22.63	
15	16QAM	1	37	22.62	22.56	22.58	
15	16QAM	1	74	22.56	22.59	22.56	22
15	16QAM	36	0	21.32	21.35	21.36	
15	16QAM	36	20	21.39	21.33	21.33	
15	16QAM	36	39	21.37	21.26	21.31	
15	16QAM	75	0	21.35	21.31	21.32	22
15	64QAM	1	0	21.52	21.50	21.54	
15	64QAM	1	37	21.52	21.49	21.51	
15	64QAM	1	74	21.57	21.50	21.48	21
15	64QAM	36	0	20.30	20.36	20.41	
15	64QAM	36	20	20.36	20.37	20.33	
15	64QAM	36	39	20.38	20.30	20.28	



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15	64QAM	75	0	20.31	20.30	20.27	
15	256QAM	1	0	18.13	18.21	18.25	
15	256QAM	1	37	18.07	18.12	18.04	19
15	256QAM	1	74	18.04	18.06	18.02	
15	256QAM	36	0	17.99	18.00	17.90	
15	256QAM	36	20	18.01	18.01	17.95	19
15	256QAM	36	39	17.86	17.96	17.95	
15	256QAM	75	0	17.94	18.00	17.95	
Channel				18650	18900	19150	Tune-up limit
Frequency (MHz)				1855	1880	1905	(dBm)
10	QPSK	1	0	23.24	23.29	23.32	
10	QPSK	1	25	23.23	23.26	23.29	24
10	QPSK	1	49	23.25	23.27	23.28	
10	QPSK	25	0	22.30	22.33	22.39	
10	QPSK	25	12	22.35	22.32	22.33	23
10	QPSK	25	25	22.37	22.29	22.28	
10	QPSK	50	0	22.38	22.33	22.36	
10	16QAM	1	0	22.63	22.62	22.64	23
10	16QAM	1	25	22.56	22.58	22.54	
10	16QAM	1	49	22.60	22.60	22.61	
10	16QAM	25	0	21.31	21.38	21.38	
10	16QAM	25	12	21.37	21.32	21.36	22
10	16QAM	25	25	21.34	21.32	21.27	
10	16QAM	50	0	21.38	21.33	21.33	
10	64QAM	1	0	21.55	21.51	21.53	
10	64QAM	1	25	21.44	21.47	21.51	22
10	64QAM	1	49	21.51	21.51	21.48	
10	64QAM	25	0	20.33	20.33	20.40	
10	64QAM	25	12	20.33	20.30	20.34	21
10	64QAM	25	25	20.32	20.30	20.24	
10	64QAM	50	0	20.34	20.32	20.33	
10	256QAM	1	0	18.10	18.30	18.16	
10	256QAM	1	25	18.12	18.15	18.01	19
10	256QAM	1	49	18.03	18.14	17.97	
10	256QAM	25	0	18.00	18.10	17.91	
10	256QAM	25	12	17.93	18.04	17.97	19
10	256QAM	25	25	17.84	17.96	17.97	
10	256QAM	50	0	17.97	18.05	17.92	
Channel				18625	18900	19175	Tune-up limit
Frequency (MHz)				1852.5	1880	1907.5	(dBm)
5	QPSK	1	0	23.27	23.29	23.32	
5	QPSK	1	12	23.28	23.28	23.30	24
5	QPSK	1	24	23.24	23.31	23.29	
5	QPSK	12	0	22.41	22.34	22.34	
5	QPSK	12	7	22.38	22.32	22.36	23
5	QPSK	12	13	22.35	22.34	22.27	
5	QPSK	25	0	22.33	22.35	22.33	
5	16QAM	1	0	22.65	22.62	22.59	
5	16QAM	1	12	22.59	22.61	22.57	23
5	16QAM	1	24	22.59	22.63	22.61	
5	16QAM	12	0	21.35	21.33	21.34	
5	16QAM	12	7	21.35	21.33	21.35	22
5	16QAM	12	13	21.30	21.29	21.25	
5	16QAM	25	0	21.32	21.36	21.32	
5	64QAM	1	0	21.50	21.53	21.54	22
5	64QAM	1	12	21.51	21.50	21.52	



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5	64QAM	1	24	21.49	21.54	21.54	21
5	64QAM	12	0	20.41	20.38	20.35	
5	64QAM	12	7	20.37	20.33	20.38	
5	64QAM	12	13	20.32	20.31	20.27	
5	64QAM	25	0	20.30	20.33	20.30	19
5	256QAM	1	0	18.15	18.30	18.18	
5	256QAM	1	12	18.06	18.22	18.03	
5	256QAM	1	24	18.00	18.10	18.04	
5	256QAM	12	0	17.96	18.10	17.92	19
5	256QAM	12	7	18.01	18.02	17.98	
5	256QAM	12	13	17.85	18.01	17.90	
5	256QAM	25	0	17.96	18.04	17.97	
Channel				18615	18900	19185	Tune-up limit (dBm)
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	23.20	23.23	23.25	24
3	QPSK	1	8	23.18	23.22	23.24	
3	QPSK	1	14	23.22	23.25	23.25	
3	QPSK	8	0	22.33	22.35	22.37	23
3	QPSK	8	4	22.35	22.30	22.34	
3	QPSK	8	7	22.34	22.31	22.33	
3	QPSK	15	0	22.37	22.34	22.37	
3	16QAM	1	0	22.58	22.58	22.58	23
3	16QAM	1	8	22.56	22.61	22.54	
3	16QAM	1	14	22.58	22.59	22.59	
3	16QAM	8	0	21.40	21.41	21.45	22
3	16QAM	8	4	21.42	21.38	21.40	
3	16QAM	8	7	21.44	21.39	21.42	
3	16QAM	15	0	21.39	21.34	21.37	
3	64QAM	1	0	21.50	21.48	21.48	22
3	64QAM	1	8	21.43	21.45	21.46	
3	64QAM	1	14	21.47	21.48	21.47	
3	64QAM	8	0	20.35	20.37	20.38	21
3	64QAM	8	4	20.36	20.32	20.34	
3	64QAM	8	7	20.39	20.35	20.38	
3	64QAM	15	0	20.36	20.31	20.35	
3	256QAM	1	0	18.15	18.22	18.18	19
3	256QAM	1	8	18.10	18.19	18.06	
3	256QAM	1	14	18.08	18.14	18.06	
3	256QAM	8	0	17.92	18.11	17.90	19
3	256QAM	8	4	17.95	18.07	17.94	
3	256QAM	8	7	17.83	18.00	17.93	
3	256QAM	15	0	17.96	18.02	17.95	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	23.23	23.28	23.24	24
1.4	QPSK	1	3	23.22	23.28	23.26	
1.4	QPSK	1	5	23.19	23.26	23.25	
1.4	QPSK	3	0	23.26	23.27	23.25	
1.4	QPSK	3	1	23.25	23.28	23.26	
1.4	QPSK	3	3	23.25	23.25	23.27	
1.4	QPSK	6	0	22.35	22.39	22.34	23
1.4	16QAM	1	0	22.58	22.58	22.54	23
1.4	16QAM	1	3	22.58	22.62	22.54	
1.4	16QAM	1	5	22.58	22.57	22.52	
1.4	16QAM	3	0	22.36	22.40	22.35	
1.4	16QAM	3	1	22.34	22.39	22.35	



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1.4	16QAM	3	3	22.35	22.35	22.34	
1.4	16QAM	6	0	21.40	21.43	21.41	22
1.4	64QAM	1	0	21.52	21.52	21.47	22
1.4	64QAM	1	3	21.48	21.50	21.44	
1.4	64QAM	1	5	21.46	21.50	21.46	
1.4	64QAM	3	0	21.44	21.45	21.41	
1.4	64QAM	3	1	21.44	21.45	21.42	
1.4	64QAM	3	3	21.43	21.43	21.43	
1.4	64QAM	6	0	20.31	20.33	20.27	21
1.4	256QAM	1	0	18.11	18.30	18.23	19
1.4	256QAM	1	3	18.12	18.19	18.01	
1.4	256QAM	1	5	18.01	18.13	17.99	
1.4	256QAM	3	0	17.98	18.11	17.96	
1.4	256QAM	3	1	17.93	18.08	17.98	
1.4	256QAM	3	3	17.83	17.99	17.97	
1.4	256QAM	6	0	17.91	17.99	17.94	19

<LTE Band 2_Ant 3_Sensor ON>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				18700	18900	19100	
Frequency (MHz)				1860	1880	1900	
20	QPSK	1	0	22.53	22.68	22.57	23
20	QPSK	1	49	22.52	22.57	22.63	
20	QPSK	1	99	22.62	22.56	22.60	
20	QPSK	50	0	21.63	21.76	21.71	22
20	QPSK	50	24	21.61	21.67	21.67	
20	QPSK	50	50	21.67	21.50	21.64	
20	QPSK	100	0	21.61	21.60	21.61	
20	16QAM	1	0	21.55	21.64	21.97	22
20	16QAM	1	49	21.47	21.98	21.97	
20	16QAM	1	99	21.67	21.75	21.94	
20	16QAM	50	0	20.55	20.66	20.69	21
20	16QAM	50	24	20.58	20.60	20.72	
20	16QAM	50	50	20.63	20.56	20.63	
20	16QAM	100	0	20.57	20.60	20.60	
20	64QAM	1	0	20.92	20.72	20.97	21
20	64QAM	1	49	20.61	20.59	20.97	
20	64QAM	1	99	20.62	20.79	20.73	
20	64QAM	50	0	19.60	19.66	19.66	20
20	64QAM	50	24	19.56	19.68	19.67	
20	64QAM	50	50	19.49	19.53	19.59	
20	64QAM	100	0	19.59	19.62	19.66	
20	256QAM	1	0	17.85	17.86	17.83	18
20	256QAM	1	49	17.44	17.54	17.47	
20	256QAM	1	99	17.73	17.76	17.67	
20	256QAM	50	0	17.45	17.51	17.42	18
20	256QAM	50	24	17.48	17.48	17.43	
20	256QAM	50	50	17.42	17.42	17.39	
20	256QAM	100	0	17.42	17.47	17.37	
Channel				18675	18900	19125	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	QPSK	1	0	22.50	22.46	22.65	23
15	QPSK	1	37	22.47	22.54	22.46	
15	QPSK	1	74	22.42	22.36	22.58	
15	QPSK	36	0	21.54	21.60	21.74	22



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15	QPSK	36	20	21.48	21.57	21.63	
15	QPSK	36	39	21.66	21.40	21.57	
15	QPSK	75	0	21.60	21.40	21.43	
15	16QAM	1	0	21.43	21.60	21.97	22
15	16QAM	1	37	21.44	21.87	21.95	
15	16QAM	1	74	21.52	21.67	21.97	
15	16QAM	36	0	20.44	20.55	20.68	21
15	16QAM	36	20	20.55	20.40	20.53	
15	16QAM	36	39	20.57	20.38	20.58	
15	16QAM	75	0	20.52	20.56	20.47	21
15	64QAM	1	0	20.87	20.64	20.93	
15	64QAM	1	37	20.50	20.56	20.84	
15	64QAM	1	74	20.44	20.75	20.59	20
15	64QAM	36	0	19.59	19.58	19.52	
15	64QAM	36	20	19.40	19.56	19.62	
15	64QAM	36	39	19.29	19.35	19.55	18
15	64QAM	75	0	19.53	19.61	19.56	
15	256QAM	1	0	17.81	17.70	17.70	
15	256QAM	1	37	17.32	17.40	17.43	18
15	256QAM	1	74	17.66	17.73	17.50	
15	256QAM	36	0	17.36	17.32	17.38	
15	256QAM	36	20	17.35	17.28	17.23	18
15	256QAM	36	39	17.36	17.37	17.32	
15	256QAM	75	0	17.24	17.43	17.25	
Channel				18650	18900	19150	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	QPSK	1	0	22.52	22.54	22.65	23
10	QPSK	1	25	22.51	22.55	22.53	
10	QPSK	1	49	22.45	22.50	22.50	
10	QPSK	25	0	21.43	21.63	21.71	22
10	QPSK	25	12	21.45	21.51	21.57	
10	QPSK	25	25	21.64	21.50	21.55	
10	QPSK	50	0	21.60	21.43	21.46	22
10	16QAM	1	0	21.42	21.47	21.98	
10	16QAM	1	25	21.42	21.85	21.99	
10	16QAM	1	49	21.56	21.74	21.94	21
10	16QAM	25	0	20.37	20.46	20.64	
10	16QAM	25	12	20.45	20.44	20.72	
10	16QAM	25	25	20.62	20.55	20.46	21
10	16QAM	50	0	20.52	20.54	20.51	
10	64QAM	1	0	20.87	20.67	20.85	
10	64QAM	1	25	20.52	20.40	20.78	21
10	64QAM	1	49	20.57	20.60	20.57	
10	64QAM	25	0	19.59	19.46	19.61	
10	64QAM	25	12	19.44	19.65	19.60	20
10	64QAM	25	25	19.30	19.41	19.49	
10	64QAM	50	0	19.52	19.46	19.51	
10	256QAM	1	0	17.68	17.67	17.80	18
10	256QAM	1	25	17.30	17.53	17.29	
10	256QAM	1	49	17.59	17.68	17.61	
10	256QAM	25	0	17.26	17.34	17.33	18
10	256QAM	25	12	17.35	17.44	17.35	
10	256QAM	25	25	17.38	17.38	17.23	
10	256QAM	50	0	17.32	17.46	17.32	Tune-up limit (dBm)
Channel				18625	18900	19175	
Frequency (MHz)				1852.5	1880	1907.5	

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5	QPSK	1	0	22.41	22.52	22.64	23
5	QPSK	1	12	22.50	22.41	22.61	
5	QPSK	1	24	22.60	22.46	22.56	
5	QPSK	12	0	21.52	21.62	21.56	22
5	QPSK	12	7	21.60	21.61	21.55	
5	QPSK	12	13	21.53	21.43	21.49	
5	QPSK	25	0	21.44	21.55	21.56	22
5	16QAM	1	0	21.48	21.61	21.99	
5	16QAM	1	12	21.44	21.97	21.87	
5	16QAM	1	24	21.63	21.75	21.98	21
5	16QAM	12	0	20.54	20.66	20.57	
5	16QAM	12	7	20.54	20.47	20.67	
5	16QAM	12	13	20.57	20.53	20.58	21
5	16QAM	25	0	20.46	20.43	20.57	
5	64QAM	1	0	20.88	20.65	20.79	
5	64QAM	1	12	20.45	20.47	20.88	20
5	64QAM	1	24	20.43	20.68	20.65	
5	64QAM	12	0	19.50	19.50	19.50	
5	64QAM	12	7	19.39	19.61	19.47	18
5	64QAM	12	13	19.35	19.46	19.59	
5	64QAM	25	0	19.55	19.44	19.52	
5	256QAM	1	0	17.79	17.74	17.72	18
5	256QAM	1	12	17.25	17.49	17.27	
5	256QAM	1	24	17.72	17.58	17.54	
5	256QAM	12	0	17.25	17.33	17.40	18
5	256QAM	12	7	17.36	17.40	17.30	
5	256QAM	12	13	17.41	17.41	17.26	
5	256QAM	25	0	17.33	17.44	17.34	Tune-up limit (dBm)
Channel				18615	18900	19185	
Frequency (MHz)				1851.5	1880	1908.5	
3	QPSK	1	0	22.39	22.45	22.67	23
3	QPSK	1	8	22.42	22.56	22.50	
3	QPSK	1	14	22.42	22.44	22.46	
3	QPSK	8	0	21.50	21.54	21.75	22
3	QPSK	8	4	21.48	21.54	21.53	
3	QPSK	8	7	21.58	21.37	21.51	
3	QPSK	15	0	21.46	21.56	21.57	22
3	16QAM	1	0	21.54	21.54	21.98	
3	16QAM	1	8	21.43	21.82	21.99	
3	16QAM	1	14	21.50	21.72	21.97	21
3	16QAM	8	0	20.52	20.56	20.56	
3	16QAM	8	4	20.49	20.46	20.52	
3	16QAM	8	7	20.55	20.43	20.47	21
3	16QAM	15	0	20.46	20.45	20.49	
3	64QAM	1	0	20.79	20.57	20.82	
3	64QAM	1	8	20.58	20.39	20.87	20
3	64QAM	1	14	20.57	20.64	20.62	
3	64QAM	8	0	19.51	19.51	19.54	
3	64QAM	8	4	19.54	19.64	19.59	18
3	64QAM	8	7	19.29	19.33	19.59	
3	64QAM	15	0	19.45	19.52	19.55	
3	256QAM	1	0	17.69	17.68	17.63	18
3	256QAM	1	8	17.43	17.52	17.46	
3	256QAM	1	14	17.73	17.75	17.52	
3	256QAM	8	0	17.44	17.42	17.32	18
3	256QAM	8	4	17.32	17.38	17.23	



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3	256QAM	8	7	17.30	17.30	17.31	
3	256QAM	15	0	17.24	17.30	17.30	
Channel				18607	18900	19193	Tune-up limit (dBm)
Frequency (MHz)				1850.7	1880	1909.3	
1.4	QPSK	1	0	22.27	22.25	22.27	23
1.4	QPSK	1	3	22.24	22.44	22.34	
1.4	QPSK	1	5	22.31	22.21	22.39	
1.4	QPSK	3	0	22.31	22.23	22.33	
1.4	QPSK	3	1	22.25	22.34	22.40	
1.4	QPSK	3	3	22.35	22.31	22.37	
1.4	QPSK	6	0	21.24	21.35	21.36	22
1.4	16QAM	1	0	21.67	21.32	21.76	22
1.4	16QAM	1	3	21.21	21.64	21.43	
1.4	16QAM	1	5	21.52	21.41	21.74	
1.4	16QAM	3	0	21.29	21.37	21.24	
1.4	16QAM	3	1	21.34	21.42	21.35	
1.4	16QAM	3	3	21.33	21.35	21.33	
1.4	16QAM	6	0	20.26	20.36	20.27	21
1.4	64QAM	1	0	20.79	20.59	20.45	21
1.4	64QAM	1	3	20.89	20.52	20.52	
1.4	64QAM	1	5	20.88	20.17	20.38	
1.4	64QAM	3	0	20.93	20.59	20.45	
1.4	64QAM	3	1	20.57	20.08	20.52	
1.4	64QAM	3	3	20.73	20.33	20.11	
1.4	64QAM	6	0	19.91	19.18	19.24	20
1.4	256QAM	1	0	17.51	17.48	17.45	18
1.4	256QAM	1	3	17.33	17.43	17.38	
1.4	256QAM	1	5	17.48	17.54	17.48	
1.4	256QAM	3	0	17.40	17.50	17.50	
1.4	256QAM	3	1	17.45	17.49	17.41	
1.4	256QAM	3	3	17.41	17.51	17.46	
1.4	256QAM	6	0	17.34	17.42	17.38	18

<LTE Band 4_Ant 3_Sensor OFF>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	23.22	23.35	23.33	24
20	QPSK	1	49	23.20	23.27	23.32	
20	QPSK	1	99	23.19	23.22	23.26	
20	QPSK	50	0	22.61	22.62	22.40	23
20	QPSK	50	24	22.41	22.39	22.39	
20	QPSK	50	50	22.39	22.60	22.15	
20	QPSK	100	0	22.50	22.52	22.18	23
20	16QAM	1	0	22.53	22.65	22.61	
20	16QAM	1	49	22.56	22.64	22.65	
20	16QAM	1	99	22.59	22.56	22.64	22
20	16QAM	50	0	21.61	21.25	21.25	
20	16QAM	50	24	21.39	21.39	21.39	
20	16QAM	50	50	21.37	21.63	21.16	22
20	16QAM	100	0	21.49	21.45	21.17	
20	64QAM	1	0	21.43	21.55	21.53	
20	64QAM	1	49	21.42	21.52	21.54	22
20	64QAM	1	99	21.48	21.45	21.53	
20	64QAM	50	0	20.59	20.22	20.21	21



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20	64QAM	50	24	20.36	20.35	20.36	
20	64QAM	50	50	20.39	20.63	20.15	
20	64QAM	100	0	20.47	20.44	20.15	
20	256QAM	1	0	18.05	18.23	18.12	19
20	256QAM	1	49	18.01	18.17	18.15	
20	256QAM	1	99	18.03	18.16	18.10	
20	256QAM	50	0	17.79	17.95	17.84	19
20	256QAM	50	24	17.85	18.01	17.98	
20	256QAM	50	50	18.26	18.42	18.38	
20	256QAM	100	0	17.99	18.21	18.13	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	23.06	23.15	23.25	24
15	QPSK	1	37	23.09	23.17	23.20	
15	QPSK	1	74	23.14	23.16	23.23	
15	QPSK	36	0	22.31	22.19	22.35	23
15	QPSK	36	20	22.17	22.21	22.27	
15	QPSK	36	39	22.18	22.30	22.13	
15	QPSK	75	0	22.24	22.27	22.27	
15	16QAM	1	0	22.45	22.50	22.61	23
15	16QAM	1	37	22.45	22.53	22.56	
15	16QAM	1	74	22.50	22.50	22.58	
15	16QAM	36	0	21.31	21.21	21.33	22
15	16QAM	36	20	21.18	21.20	21.28	
15	16QAM	36	39	21.15	21.34	21.14	
15	16QAM	75	0	21.28	21.23	21.28	
15	64QAM	1	0	21.32	21.41	21.47	22
15	64QAM	1	37	21.32	21.43	21.44	
15	64QAM	1	74	21.39	21.39	21.47	
15	64QAM	36	0	20.32	20.19	20.36	21
15	64QAM	36	20	20.18	20.23	20.28	
15	64QAM	36	39	20.15	20.35	20.15	
15	64QAM	75	0	20.22	20.25	20.24	
15	256QAM	1	0	17.99	18.17	18.09	19
15	256QAM	1	37	18.00	18.13	18.09	
15	256QAM	1	74	17.97	18.13	18.03	
15	256QAM	36	0	17.71	17.86	17.81	19
15	256QAM	36	20	17.75	17.98	17.89	
15	256QAM	36	39	18.24	18.36	18.35	
15	256QAM	75	0	17.95	18.15	18.11	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	23.14	23.29	23.33	24
10	QPSK	1	25	23.13	23.20	23.22	
10	QPSK	1	49	23.16	23.18	23.32	
10	QPSK	25	0	22.31	22.19	22.46	23
10	QPSK	25	12	22.20	22.23	22.34	
10	QPSK	25	25	22.05	22.36	22.18	
10	QPSK	50	0	22.23	22.27	22.37	
10	16QAM	1	0	22.42	22.60	22.61	23
10	16QAM	1	25	22.50	22.55	22.55	
10	16QAM	1	49	22.49	22.48	22.62	
10	16QAM	25	0	21.32	21.20	21.44	22
10	16QAM	25	12	21.22	21.25	21.34	
10	16QAM	25	25	21.05	21.36	21.18	
10	16QAM	50	0	21.24	21.24	21.37	



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10	64QAM	1	0	21.35	21.46	21.47	22
10	64QAM	1	25	21.34	21.42	21.42	
10	64QAM	1	49	21.38	21.33	21.49	
10	64QAM	25	0	20.30	20.17	20.43	21
10	64QAM	25	12	20.20	20.26	20.33	
10	64QAM	25	25	20.04	20.35	20.16	
10	64QAM	50	0	20.22	20.24	20.32	
10	256QAM	1	0	17.99	18.20	18.09	19
10	256QAM	1	25	17.94	18.09	18.09	
10	256QAM	1	49	17.93	18.13	18.02	
10	256QAM	25	0	17.72	17.88	17.77	19
10	256QAM	25	12	17.75	17.91	17.95	
10	256QAM	25	25	18.24	18.32	18.29	
10	256QAM	50	0	17.97	18.15	18.07	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	23.10	23.28	23.30	24
5	QPSK	1	12	23.09	23.23	23.26	
5	QPSK	1	24	23.15	23.20	23.33	
5	QPSK	12	0	22.26	22.25	22.40	23
5	QPSK	12	7	22.15	22.25	22.34	
5	QPSK	12	13	22.10	22.26	22.30	
5	QPSK	25	0	22.17	22.22	22.36	
5	16QAM	1	0	22.43	22.59	22.61	23
5	16QAM	1	12	22.46	22.56	22.61	
5	16QAM	1	24	22.48	22.50	22.67	
5	16QAM	12	0	21.24	21.24	21.40	22
5	16QAM	12	7	21.14	21.23	21.31	
5	16QAM	12	13	21.07	21.23	21.27	
5	16QAM	25	0	21.16	21.23	21.34	
5	64QAM	1	0	21.33	21.50	21.48	22
5	64QAM	1	12	21.34	21.45	21.48	
5	64QAM	1	24	21.35	21.39	21.54	
5	64QAM	12	0	20.26	20.22	20.40	21
5	64QAM	12	7	20.17	20.27	20.35	
5	64QAM	12	13	20.11	20.24	20.28	
5	64QAM	25	0	20.14	20.22	20.34	
5	256QAM	1	0	17.96	18.13	18.11	19
5	256QAM	1	12	17.97	18.13	18.07	
5	256QAM	1	24	17.95	18.14	18.09	
5	256QAM	12	0	17.69	17.85	17.79	19
5	256QAM	12	7	17.79	17.99	17.94	
5	256QAM	12	13	18.19	18.32	18.37	
5	256QAM	25	0	17.96	18.18	18.11	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	23.02	23.19	23.19	24
3	QPSK	1	8	23.01	23.16	23.20	
3	QPSK	1	14	23.10	23.18	23.26	
3	QPSK	8	0	22.15	22.28	22.35	23
3	QPSK	8	4	22.13	22.24	22.34	
3	QPSK	8	7	22.14	22.26	22.35	
3	QPSK	15	0	22.18	22.25	22.34	
3	16QAM	1	0	22.40	22.55	22.58	23
3	16QAM	1	8	22.43	22.52	22.59	
3	16QAM	1	14	22.42	22.51	22.61	



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3	16QAM	8	0	21.23	21.35	21.42	22
3	16QAM	8	4	21.21	21.31	21.42	
3	16QAM	8	7	21.22	21.34	21.44	
3	16QAM	15	0	21.18	21.28	21.36	
3	64QAM	1	0	21.28	21.41	21.42	22
3	64QAM	1	8	21.29	21.37	21.46	
3	64QAM	1	14	21.33	21.41	21.50	
3	64QAM	8	0	20.15	20.30	20.37	21
3	64QAM	8	4	20.14	20.27	20.36	
3	64QAM	8	7	20.17	20.30	20.39	
3	64QAM	15	0	20.15	20.26	20.33	
3	256QAM	1	0	17.99	18.19	18.11	19
3	256QAM	1	8	17.92	18.14	18.08	
3	256QAM	1	14	17.98	18.06	18.02	
3	256QAM	8	0	17.77	17.86	17.80	19
3	256QAM	8	4	17.81	17.98	17.93	
3	256QAM	8	7	18.16	18.41	18.35	
3	256QAM	15	0	17.95	18.11	18.04	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	23.00	23.16	23.21	24
1.4	QPSK	1	3	23.02	23.18	23.27	
1.4	QPSK	1	5	23.04	23.17	23.25	
1.4	QPSK	3	0	23.04	23.21	23.30	
1.4	QPSK	3	1	23.05	23.20	23.29	
1.4	QPSK	3	3	23.03	23.19	23.30	
1.4	QPSK	6	0	22.14	22.31	22.40	23
1.4	16QAM	1	0	22.36	22.51	22.61	23
1.4	16QAM	1	3	22.39	22.54	22.65	
1.4	16QAM	1	5	22.40	22.50	22.62	
1.4	16QAM	3	0	22.15	22.32	22.42	
1.4	16QAM	3	1	22.14	22.31	22.40	
1.4	16QAM	3	3	22.16	22.29	22.39	
1.4	16QAM	6	0	21.20	21.35	21.47	22
1.4	64QAM	1	0	21.30	21.46	21.52	22
1.4	64QAM	1	3	21.28	21.40	21.50	
1.4	64QAM	1	5	21.29	21.40	21.51	
1.4	64QAM	3	0	21.22	21.37	21.48	
1.4	64QAM	3	1	21.22	21.40	21.50	
1.4	64QAM	3	3	21.21	21.37	21.49	
1.4	64QAM	6	0	20.10	20.27	20.34	21
1.4	256QAM	1	0	17.98	18.20	18.05	19
1.4	256QAM	1	3	17.96	18.12	18.13	
1.4	256QAM	1	5	17.95	18.08	18.06	
1.4	256QAM	3	0	17.74	17.93	17.79	
1.4	256QAM	3	1	17.83	17.99	17.95	
1.4	256QAM	3	3	18.17	18.41	18.37	
1.4	256QAM	6	0	17.92	18.17	18.09	19

<LTE Band 4_Ant 3_Sensor ON>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	20.76	20.90	20.85	21.5
20	QPSK	1	49	20.77	20.87	20.89	



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20	QPSK	1	99	20.79	20.80	20.83	
20	QPSK	50	0	20.08	20.10	19.72	20.5
20	QPSK	50	24	19.87	19.89	19.87	
20	QPSK	50	50	19.88	19.76	19.62	
20	QPSK	100	0	19.95	19.95	19.67	
20	16QAM	1	0	20.07	20.19	20.15	20.5
20	16QAM	1	49	20.04	20.13	20.14	
20	16QAM	1	99	20.05	20.06	20.12	
20	16QAM	50	0	19.07	18.71	18.68	19.5
20	16QAM	50	24	18.83	18.84	18.86	
20	16QAM	50	50	18.84	19.10	18.62	
20	16QAM	100	0	18.94	18.91	18.66	
20	64QAM	1	0	19.50	19.02	18.95	19.5
20	64QAM	1	49	19.47	19.02	19.04	
20	64QAM	1	99	18.92	18.92	18.96	
20	64QAM	50	0	18.05	17.68	17.68	18.5
20	64QAM	50	24	17.81	17.82	17.83	
20	64QAM	50	50	17.82	18.11	17.59	
20	64QAM	100	0	17.91	17.91	17.60	
20	256QAM	1	0	15.87	15.94	16.08	16.5
20	256QAM	1	49	15.92	16.07	16.07	
20	256QAM	1	99	16.14	16.15	16.15	
20	256QAM	50	0	15.66	15.77	15.84	16.5
20	256QAM	50	24	15.92	15.93	15.92	
20	256QAM	50	50	15.67	15.67	15.75	
20	256QAM	100	0	15.67	15.70	15.82	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	20.65	20.75	20.75	21.5
15	QPSK	1	37	20.57	20.72	20.74	
15	QPSK	1	74	20.68	20.66	20.67	
15	QPSK	36	0	19.98	19.59	19.58	20.5
15	QPSK	36	20	19.71	19.74	19.67	
15	QPSK	36	39	19.74	20.01	19.46	
15	QPSK	75	0	19.76	19.75	19.54	
15	16QAM	1	0	19.89	20.04	19.96	20.5
15	16QAM	1	37	19.90	19.99	20.00	
15	16QAM	1	74	19.90	19.95	19.95	
15	16QAM	36	0	18.88	18.51	18.54	19.5
15	16QAM	36	20	18.68	18.66	18.75	
15	16QAM	36	39	18.69	18.91	18.44	
15	16QAM	75	0	18.82	18.75	18.47	
15	64QAM	1	0	19.33	18.86	18.80	19.5
15	64QAM	1	37	19.34	18.92	18.86	
15	64QAM	1	74	18.79	18.77	18.79	
15	64QAM	36	0	17.86	17.55	17.55	18.5
15	64QAM	36	20	17.71	17.63	17.69	
15	64QAM	36	39	17.64	17.94	17.48	
15	64QAM	75	0	17.81	17.75	17.43	
15	256QAM	1	0	15.74	15.84	15.91	16.5
15	256QAM	1	37	15.81	15.90	15.90	
15	256QAM	1	74	15.96	16.02	16.03	
15	256QAM	36	0	15.49	15.58	15.72	16.5
15	256QAM	36	20	15.79	15.79	15.75	
15	256QAM	36	39	15.47	15.55	15.64	
15	256QAM	75	0	15.50	15.56	15.71	



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Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	20.64	20.79	20.68	21.5
10	QPSK	1	25	20.62	20.75	20.69	
10	QPSK	1	49	20.68	20.62	20.64	
10	QPSK	25	0	19.90	19.56	19.53	20.5
10	QPSK	25	12	19.68	19.77	19.67	
10	QPSK	25	25	19.69	20.01	19.45	
10	QPSK	50	0	19.79	19.75	19.53	
10	16QAM	1	0	19.91	19.99	19.98	20.5
10	16QAM	1	25	19.85	19.98	20.00	
10	16QAM	1	49	19.87	19.87	19.92	
10	16QAM	25	0	18.96	18.56	18.55	19.5
10	16QAM	25	12	18.66	18.70	18.71	
10	16QAM	25	25	18.69	18.98	18.48	
10	16QAM	50	0	18.80	18.76	18.53	
10	64QAM	1	0	19.34	18.86	18.79	19.5
10	64QAM	1	25	19.33	18.88	18.92	
10	64QAM	1	49	18.76	18.73	18.85	
10	64QAM	25	0	17.88	17.52	17.57	18.5
10	64QAM	25	12	17.63	17.70	17.63	
10	64QAM	25	25	17.65	18.01	17.47	
10	64QAM	50	0	17.71	17.74	17.46	
10	256QAM	1	0	15.67	15.84	15.90	16.5
10	256QAM	1	25	15.79	15.97	15.97	
10	256QAM	1	49	15.95	16.03	16.01	
10	256QAM	25	0	15.53	15.62	15.66	16.5
10	256QAM	25	12	15.72	15.83	15.78	
10	256QAM	25	25	15.51	15.55	15.63	
10	256QAM	50	0	15.51	15.50	15.68	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	20.63	20.70	20.66	21.5
5	QPSK	1	12	20.62	20.72	20.75	
5	QPSK	1	24	20.68	20.67	20.66	
5	QPSK	12	0	19.88	19.56	19.58	20.5
5	QPSK	12	7	19.68	19.72	19.72	
5	QPSK	12	13	19.75	19.98	19.47	
5	QPSK	25	0	19.81	19.76	19.50	
5	16QAM	1	0	19.93	20.06	20.04	20.5
5	16QAM	1	12	19.90	20.02	19.98	
5	16QAM	1	24	19.87	19.90	19.93	
5	16QAM	12	0	18.92	18.54	18.53	19.5
5	16QAM	12	7	18.67	18.69	18.67	
5	16QAM	12	13	18.67	18.95	18.43	
5	16QAM	25	0	18.74	18.74	18.53	
5	64QAM	1	0	19.31	18.83	18.77	19.5
5	64QAM	1	12	19.30	18.85	18.90	
5	64QAM	1	24	18.78	18.74	18.81	
5	64QAM	12	0	17.87	17.55	17.58	18.5
5	64QAM	12	7	17.69	17.69	17.68	
5	64QAM	12	13	17.69	17.97	17.44	
5	64QAM	25	0	17.80	17.71	17.50	
5	256QAM	1	0	15.76	15.81	15.89	16.5
5	256QAM	1	12	15.73	15.93	15.93	
5	256QAM	1	24	15.98	16.02	16.04	



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5	256QAM	12	0	15.55	15.63	15.70	16.5
5	256QAM	12	7	15.76	15.73	15.72	
5	256QAM	12	13	15.51	15.48	15.59	
5	256QAM	25	0	15.51	15.52	15.62	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	20.64	20.80	20.69	21.5
3	QPSK	1	8	20.65	20.77	20.70	
3	QPSK	1	14	20.69	20.66	20.67	
3	QPSK	8	0	19.92	19.66	19.52	20.5
3	QPSK	8	4	19.71	19.74	19.73	
3	QPSK	8	7	19.75	20.05	19.46	
3	QPSK	15	0	19.77	19.79	19.56	
3	16QAM	1	0	19.88	20.06	19.96	20.5
3	16QAM	1	8	19.86	19.95	20.02	
3	16QAM	1	14	19.88	19.94	19.95	
3	16QAM	8	0	18.96	18.55	18.50	19.5
3	16QAM	8	4	18.69	18.70	18.74	
3	16QAM	8	7	18.68	19.00	18.42	
3	16QAM	15	0	18.81	18.79	18.55	
3	64QAM	1	0	19.34	18.85	18.80	19.5
3	64QAM	1	8	19.36	18.90	18.86	
3	64QAM	1	14	18.76	18.72	18.76	
3	64QAM	8	0	17.94	17.57	17.53	18.5
3	64QAM	8	4	17.71	17.72	17.66	
3	64QAM	8	7	17.68	17.99	17.44	
3	64QAM	15	0	17.80	17.71	17.43	
3	256QAM	1	0	15.73	15.77	15.94	16.5
3	256QAM	1	8	15.81	15.96	15.91	
3	256QAM	1	14	15.95	15.96	15.95	
3	256QAM	8	0	15.56	15.67	15.67	16.5
3	256QAM	8	4	15.77	15.83	15.81	
3	256QAM	8	7	15.54	15.50	15.62	
3	256QAM	15	0	15.57	15.55	15.69	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	20.57	20.75	20.67	21.5
1.4	QPSK	1	3	20.58	20.72	20.74	
1.4	QPSK	1	5	20.62	20.70	20.66	
1.4	QPSK	3	0	20.65	20.78	20.75	
1.4	QPSK	3	1	20.67	20.71	20.74	
1.4	QPSK	3	3	20.61	20.70	20.71	
1.4	QPSK	6	0	19.89	19.63	19.58	20.5
1.4	16QAM	1	0	19.71	19.69	19.77	20.5
1.4	16QAM	1	3	19.75	20.01	19.48	
1.4	16QAM	1	5	19.75	19.84	19.51	
1.4	16QAM	3	0	19.90	20.08	20.05	
1.4	16QAM	3	1	19.94	20.00	20.01	
1.4	16QAM	3	3	19.87	19.95	19.93	
1.4	16QAM	6	0	18.88	18.60	18.51	19.5
1.4	64QAM	1	0	18.64	18.67	18.71	19.5
1.4	64QAM	1	3	18.65	18.94	18.45	
1.4	64QAM	1	5	18.78	18.73	18.55	
1.4	64QAM	3	0	19.40	18.92	18.78	
1.4	64QAM	3	1	19.35	18.82	18.86	
1.4	64QAM	3	3	18.78	18.74	18.82	



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1.4	64QAM	6	0	17.86	17.55	17.56	18.5
1.4	256QAM	1	0	15.76	15.81	15.93	16.5
1.4	256QAM	1	3	15.75	15.96	15.91	
1.4	256QAM	1	5	16.03	15.96	15.97	
1.4	256QAM	3	0	15.54	15.57	15.70	
1.4	256QAM	3	1	15.79	15.80	15.76	
1.4	256QAM	3	3	15.52	15.49	15.64	
1.4	256QAM	6	0	15.50	15.52	15.72	16.5

<LTE Band 4_Ant 8_Sensor OFF>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	23.52	23.53	23.48	24
20	QPSK	1	49	23.37	23.47	23.42	
20	QPSK	1	99	23.48	23.52	23.47	
20	QPSK	50	0	22.46	22.52	22.45	23
20	QPSK	50	24	22.36	22.46	22.37	
20	QPSK	50	50	22.45	22.51	22.44	
20	QPSK	100	0	22.43	22.45	22.43	23
20	16QAM	1	0	22.53	22.63	22.58	
20	16QAM	1	49	22.54	22.64	22.56	
20	16QAM	1	99	22.57	22.64	22.62	22
20	16QAM	50	0	21.40	21.43	21.42	
20	16QAM	50	24	21.43	21.51	21.45	
20	16QAM	50	50	21.44	21.47	21.38	22
20	16QAM	100	0	21.32	21.42	21.40	
20	64QAM	1	0	21.54	21.57	21.52	22
20	64QAM	1	49	21.52	21.55	21.54	
20	64QAM	1	99	21.45	21.55	21.47	
20	64QAM	50	0	20.37	20.40	20.31	21
20	64QAM	50	24	20.48	20.49	20.46	
20	64QAM	50	50	20.43	20.47	20.40	
20	64QAM	100	0	20.28	20.35	20.26	19
20	256QAM	1	0	18.28	18.34	18.26	
20	256QAM	1	49	18.33	18.37	18.28	
20	256QAM	1	99	18.36	18.39	18.35	19
20	256QAM	50	0	18.34	18.37	18.30	
20	256QAM	50	24	18.43	18.46	18.41	
20	256QAM	50	50	18.34	18.42	18.41	19
20	256QAM	100	0	18.24	18.31	18.21	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	23.49	23.48	23.38	
15	QPSK	1	37	23.28	23.44	23.41	24
15	QPSK	1	74	23.40	23.43	23.39	
15	QPSK	36	0	22.45	22.48	22.38	23
15	QPSK	36	20	22.29	22.44	22.32	
15	QPSK	36	39	22.44	22.46	22.42	
15	QPSK	75	0	22.41	22.40	22.37	23
15	16QAM	1	0	22.47	22.57	22.52	
15	16QAM	1	37	22.50	22.57	22.51	
15	16QAM	1	74	22.48	22.61	22.57	22
15	16QAM	36	0	21.37	21.33	21.33	
15	16QAM	36	20	21.36	21.50	21.44	



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15	16QAM	36	39	21.39	21.42	21.29	
15	16QAM	75	0	21.28	21.37	21.35	
15	64QAM	1	0	21.50	21.53	21.46	
15	64QAM	1	37	21.49	21.49	21.53	22
15	64QAM	1	74	21.38	21.49	21.43	
15	64QAM	36	0	20.32	20.31	20.22	
15	64QAM	36	20	20.42	20.40	20.41	21
15	64QAM	36	39	20.39	20.45	20.36	
15	64QAM	75	0	20.23	20.25	20.23	
15	256QAM	1	0	18.19	18.29	18.20	19
15	256QAM	1	37	18.23	18.32	18.23	
15	256QAM	1	74	18.29	18.32	18.33	
15	256QAM	36	0	18.29	18.36	18.27	19
15	256QAM	36	20	18.36	18.41	18.37	
15	256QAM	36	39	18.27	18.32	18.33	
15	256QAM	75	0	18.19	18.23	18.13	
Channel				20000	20175	20350	Tune-up limit (dBm)
Frequency (MHz)				1715	1732.5	1750	
10	QPSK	1	0	23.42	23.52	23.42	24
10	QPSK	1	25	23.31	23.37	23.36	
10	QPSK	1	49	23.41	23.46	23.41	
10	QPSK	25	0	22.40	22.49	22.40	23
10	QPSK	25	12	22.32	22.45	22.35	
10	QPSK	25	25	22.40	22.41	22.41	
10	QPSK	50	0	22.39	22.41	22.37	
10	16QAM	1	0	22.50	22.57	22.51	23
10	16QAM	1	25	22.48	22.59	22.48	
10	16QAM	1	49	22.49	22.54	22.60	
10	16QAM	25	0	21.37	21.36	21.34	22
10	16QAM	25	12	21.38	21.42	21.38	
10	16QAM	25	25	21.38	21.38	21.31	
10	16QAM	50	0	21.22	21.35	21.38	
10	64QAM	1	0	21.49	21.48	21.51	22
10	64QAM	1	25	21.47	21.49	21.48	
10	64QAM	1	49	21.36	21.49	21.46	
10	64QAM	25	0	20.31	20.31	20.29	21
10	64QAM	25	12	20.43	20.39	20.38	
10	64QAM	25	25	20.35	20.41	20.34	
10	64QAM	50	0	20.22	20.31	20.22	
10	256QAM	1	0	18.20	18.29	18.18	19
10	256QAM	1	25	18.23	18.32	18.20	
10	256QAM	1	49	18.32	18.34	18.27	
10	256QAM	25	0	18.27	18.36	18.25	19
10	256QAM	25	12	18.40	18.40	18.35	
10	256QAM	25	25	18.33	18.40	18.34	
10	256QAM	50	0	18.14	18.23	18.20	
Channel				19975	20175	20375	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	23.43	23.49	23.44	24
5	QPSK	1	12	23.31	23.45	23.41	
5	QPSK	1	24	23.44	23.49	23.43	
5	QPSK	12	0	22.45	22.49	22.43	23
5	QPSK	12	7	22.26	22.36	22.35	
5	QPSK	12	13	22.37	22.43	22.38	
5	QPSK	25	0	22.39	22.37	22.37	
5	16QAM	1	0	22.47	22.57	22.56	23



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5	16QAM	1	12	22.44	22.58	22.46	
5	16QAM	1	24	22.55	22.56	22.53	
5	16QAM	12	0	21.32	21.42	21.34	
5	16QAM	12	7	21.38	21.47	21.44	22
5	16QAM	12	13	21.40	21.43	21.36	
5	16QAM	25	0	21.22	21.37	21.31	
5	64QAM	1	0	21.44	21.55	21.47	22
5	64QAM	1	12	21.49	21.51	21.47	
5	64QAM	1	24	21.36	21.49	21.45	
5	64QAM	12	0	20.32	20.31	20.22	21
5	64QAM	12	7	20.46	20.48	20.45	
5	64QAM	12	13	20.40	20.39	20.37	
5	64QAM	25	0	20.27	20.28	20.22	19
5	256QAM	1	0	18.24	18.26	18.23	
5	256QAM	1	12	18.30	18.34	18.22	
5	256QAM	1	24	18.31	18.29	18.25	19
5	256QAM	12	0	18.31	18.36	18.25	
5	256QAM	12	7	18.33	18.41	18.40	
5	256QAM	12	13	18.29	18.40	18.39	
5	256QAM	25	0	18.23	18.25	18.16	
Channel				19965	20175	20385	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	23.43	23.51	23.39	24
3	QPSK	1	8	23.27	23.39	23.33	
3	QPSK	1	14	23.44	23.48	23.37	
3	QPSK	8	0	22.44	22.44	22.38	23
3	QPSK	8	4	22.29	22.42	22.36	
3	QPSK	8	7	22.38	22.50	22.36	
3	QPSK	15	0	22.41	22.41	22.36	23
3	16QAM	1	0	22.52	22.62	22.55	
3	16QAM	1	8	22.48	22.59	22.47	
3	16QAM	1	14	22.54	22.56	22.54	22
3	16QAM	8	0	21.33	21.39	21.37	
3	16QAM	8	4	21.34	21.48	21.35	
3	16QAM	8	7	21.37	21.44	21.30	22
3	16QAM	15	0	21.27	21.32	21.34	
3	64QAM	1	0	21.51	21.51	21.44	
3	64QAM	1	8	21.43	21.53	21.50	22
3	64QAM	1	14	21.39	21.54	21.42	
3	64QAM	8	0	20.28	20.35	20.25	
3	64QAM	8	4	20.38	20.46	20.39	21
3	64QAM	8	7	20.41	20.40	20.33	
3	64QAM	15	0	20.23	20.28	20.18	
3	256QAM	1	0	18.23	18.32	18.17	19
3	256QAM	1	8	18.25	18.31	18.27	
3	256QAM	1	14	18.29	18.29	18.33	
3	256QAM	8	0	18.33	18.32	18.21	19
3	256QAM	8	4	18.41	18.38	18.36	
3	256QAM	8	7	18.27	18.32	18.36	
3	256QAM	15	0	18.14	18.30	18.20	
Channel				19957	20175	20393	
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	23.47	23.48	23.46	24
1.4	QPSK	1	3	23.38	23.47	23.37	
1.4	QPSK	1	5	23.38	23.45	23.39	
1.4	QPSK	3	0	23.45	23.47	23.38	



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1.4	QPSK	3	1	23.39	23.48	23.40	23
1.4	QPSK	3	3	23.37	23.42	23.39	
1.4	QPSK	6	0	22.43	22.52	22.46	
1.4	16QAM	1	0	22.50	22.58	22.52	23
1.4	16QAM	1	3	22.63	22.64	22.58	
1.4	16QAM	1	5	22.58	22.62	22.53	
1.4	16QAM	3	0	22.46	22.48	22.39	
1.4	16QAM	3	1	22.41	22.48	22.44	
1.4	16QAM	3	3	22.36	22.42	22.34	22
1.4	16QAM	6	0	21.43	21.52	21.42	
1.4	64QAM	1	0	21.41	21.51	21.47	
1.4	64QAM	1	3	21.48	21.57	21.47	22
1.4	64QAM	1	5	21.45	21.55	21.45	
1.4	64QAM	3	0	21.47	21.48	21.39	
1.4	64QAM	3	1	21.40	21.48	21.41	
1.4	64QAM	3	3	21.39	21.42	21.33	
1.4	64QAM	6	0	20.38	20.47	20.46	21
1.4	256QAM	1	0	18.27	18.33	18.27	19
1.4	256QAM	1	3	18.26	18.31	18.24	
1.4	256QAM	1	5	18.29	18.37	18.34	
1.4	256QAM	3	0	18.40	18.41	18.34	
1.4	256QAM	3	1	18.38	18.42	18.35	
1.4	256QAM	3	3	18.30	18.36	18.28	19
1.4	256QAM	6	0	18.44	18.47	18.41	

<LTE Band 4_Ant 8_Sensor ON>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20050	20175	20300	
Frequency (MHz)				1720	1732.5	1745	
20	QPSK	1	0	20.78	20.62	20.74	21.5
20	QPSK	1	49	20.60	20.44	20.56	
20	QPSK	1	99	20.75	20.59	20.71	
20	QPSK	50	0	20.62	20.46	20.58	21.5
20	QPSK	50	24	20.60	20.44	20.56	
20	QPSK	50	50	20.56	20.40	20.52	
20	QPSK	100	0	20.61	20.45	20.57	21.5
20	16QAM	1	0	20.69	20.53	20.65	
20	16QAM	1	49	20.66	20.50	20.62	
20	16QAM	1	99	20.69	20.53	20.65	21.5
20	16QAM	50	0	20.64	20.48	20.60	
20	16QAM	50	24	20.54	20.38	20.50	
20	16QAM	50	50	20.60	20.44	20.56	21.5
20	16QAM	100	0	20.65	20.49	20.61	
20	64QAM	1	0	20.74	20.58	20.70	
20	64QAM	1	49	20.62	20.46	20.58	21
20	64QAM	1	99	20.77	20.61	20.73	
20	64QAM	50	0	20.17	20.01	20.13	
20	64QAM	50	24	20.09	19.94	20.05	19.5
20	64QAM	50	50	20.12	19.97	20.08	
20	64QAM	100	0	20.11	19.96	20.07	
20	256QAM	1	0	17.95	17.81	17.92	19.5
20	256QAM	1	49	17.93	17.79	17.90	
20	256QAM	1	99	18.11	17.97	18.08	
20	256QAM	50	0	18.03	17.89	18.00	19.5
20	256QAM	50	24	17.96	17.82	17.93	



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20	256QAM	50	50	18.06	17.92	18.03	
20	256QAM	100	0	18.01	17.87	17.98	
Channel				20025	20175	20325	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1732.5	1747.5	
15	QPSK	1	0	20.73	20.56	20.69	21.5
15	QPSK	1	37	20.51	20.36	20.48	
15	QPSK	1	74	20.70	20.50	20.65	
15	QPSK	36	0	20.54	20.37	20.52	21.5
15	QPSK	36	20	20.51	20.35	20.49	
15	QPSK	36	39	20.51	20.31	20.45	
15	QPSK	75	0	20.55	20.40	20.50	21.5
15	16QAM	1	0	20.64	20.47	20.59	
15	16QAM	1	37	20.59	20.43	20.53	
15	16QAM	1	74	20.61	20.47	20.57	21.5
15	16QAM	36	0	20.58	20.39	20.53	
15	16QAM	36	20	20.49	20.30	20.45	
15	16QAM	36	39	20.52	20.39	20.50	21.5
15	16QAM	75	0	20.59	20.41	20.53	
15	64QAM	1	0	20.65	20.52	20.65	
15	64QAM	1	37	20.55	20.39	20.52	21.5
15	64QAM	1	74	20.69	20.53	20.66	
15	64QAM	36	0	20.09	19.94	20.06	
15	64QAM	36	20	20.03	19.88	20.00	21
15	64QAM	36	39	20.04	19.90	20.03	
15	64QAM	75	0	20.04	19.88	19.99	
15	256QAM	1	0	17.88	17.73	17.83	19.5
15	256QAM	1	37	17.86	17.72	17.84	
15	256QAM	1	74	18.03	17.88	18.02	
15	256QAM	36	0	17.94	17.81	17.91	19.5
15	256QAM	36	20	17.87	17.77	17.86	
15	256QAM	36	39	17.97	17.84	17.97	
15	256QAM	75	0	17.96	17.79	17.91	
Channel				20000	20175	20350	
Frequency (MHz)				1715	1732.5	1750	Tune-up limit (dBm)
10	QPSK	1	0	20.70	20.57	20.67	21.5
10	QPSK	1	25	20.55	20.39	20.51	
10	QPSK	1	49	20.69	20.50	20.62	
10	QPSK	25	0	20.57	20.41	20.53	21.5
10	QPSK	25	12	20.52	20.37	20.49	
10	QPSK	25	25	20.49	20.35	20.43	
10	QPSK	50	0	20.56	20.37	20.52	21.5
10	16QAM	1	0	20.62	20.44	20.60	
10	16QAM	1	25	20.57	20.41	20.55	
10	16QAM	1	49	20.64	20.45	20.60	21.5
10	16QAM	25	0	20.59	20.40	20.55	
10	16QAM	25	12	20.47	20.33	20.44	
10	16QAM	25	25	20.55	20.36	20.50	21.5
10	16QAM	50	0	20.59	20.40	20.52	
10	64QAM	1	0	20.65	20.49	20.64	
10	64QAM	1	25	20.53	20.39	20.50	21.5
10	64QAM	1	49	20.68	20.56	20.67	
10	64QAM	25	0	20.12	19.93	20.04	
10	64QAM	25	12	20.03	19.88	19.99	21
10	64QAM	25	25	20.04	19.89	20.02	
10	64QAM	50	0	20.04	19.91	19.99	
10	256QAM	1	0	17.90	17.76	17.83	19.5



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10	256QAM	1	25	17.88	17.73	17.81	19.5
10	256QAM	1	49	18.03	17.91	18.00	
10	256QAM	25	0	17.97	17.83	17.91	
10	256QAM	25	12	17.91	17.76	17.87	
10	256QAM	25	25	17.99	17.86	17.98	
10	256QAM	50	0	17.92	17.79	17.89	19.5
Channel				19975	20175	20375	
Frequency (MHz)				1712.5	1732.5	1752.5	
5	QPSK	1	0	20.73	20.56	20.65	21.5
5	QPSK	1	12	20.54	20.39	20.51	
5	QPSK	1	24	20.68	20.53	20.63	
5	QPSK	12	0	20.55	20.40	20.51	21.5
5	QPSK	12	7	20.54	20.39	20.50	
5	QPSK	12	13	20.51	20.35	20.43	
5	QPSK	25	0	20.56	20.38	20.49	21.5
5	16QAM	1	0	20.62	20.46	20.56	
5	16QAM	1	12	20.59	20.42	20.56	
5	16QAM	1	24	20.63	20.46	20.57	21.5
5	16QAM	12	0	20.57	20.41	20.52	
5	16QAM	12	7	20.47	20.29	20.43	
5	16QAM	12	13	20.51	20.36	20.51	21.5
5	16QAM	25	0	20.59	20.44	20.56	
5	64QAM	1	0	20.69	20.53	20.61	
5	64QAM	1	12	20.56	20.38	20.52	21
5	64QAM	1	24	20.69	20.53	20.65	
5	64QAM	12	0	20.12	19.96	20.08	
5	64QAM	12	7	20.01	19.87	19.97	19.5
5	64QAM	12	13	20.04	19.89	19.99	
5	64QAM	25	0	20.04	19.88	19.99	
5	256QAM	1	0	17.89	17.73	17.83	19.5
5	256QAM	1	12	17.85	17.72	17.84	
5	256QAM	1	24	18.03	17.92	18.00	
5	256QAM	12	0	17.94	17.81	17.93	19.5
5	256QAM	12	7	17.91	17.75	17.87	
5	256QAM	12	13	17.99	17.85	17.98	
5	256QAM	25	0	17.96	17.81	17.91	Tune-up limit (dBm)
Channel				19965	20175	20385	
Frequency (MHz)				1711.5	1732.5	1753.5	
3	QPSK	1	0	20.73	20.54	20.69	21.5
3	QPSK	1	8	20.51	20.38	20.51	
3	QPSK	1	14	20.70	20.53	20.63	
3	QPSK	8	0	20.53	20.37	20.53	21.5
3	QPSK	8	4	20.52	20.36	20.47	
3	QPSK	8	7	20.48	20.33	20.45	
3	QPSK	15	0	20.54	20.37	20.49	21.5
3	16QAM	1	0	20.63	20.48	20.57	
3	16QAM	1	8	20.57	20.42	20.53	
3	16QAM	1	14	20.60	20.46	20.57	21.5
3	16QAM	8	0	20.59	20.41	20.52	
3	16QAM	8	4	20.47	20.30	20.41	
3	16QAM	8	7	20.54	20.39	20.50	21.5
3	16QAM	15	0	20.58	20.40	20.52	
3	64QAM	1	0	20.68	20.51	20.64	
3	64QAM	1	8	20.55	20.37	20.53	21
3	64QAM	1	14	20.70	20.54	20.64	
3	64QAM	8	0	20.11	19.92	20.06	



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3	64QAM	8	4	20.01	19.88	19.96	
3	64QAM	8	7	20.06	19.91	20.00	
3	64QAM	15	0	20.03	19.90	20.02	
3	256QAM	1	0	17.89	17.76	17.86	19.5
3	256QAM	1	8	17.84	17.73	17.82	
3	256QAM	1	14	18.03	17.91	18.03	
3	256QAM	8	0	17.98	17.80	17.94	19.5
3	256QAM	8	4	17.89	17.77	17.84	
3	256QAM	8	7	17.98	17.85	17.95	
3	256QAM	15	0	17.92	17.82	17.90	
Channel				19957	20175	20393	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1732.5	1754.3	
1.4	QPSK	1	0	20.64	20.60	20.62	21.5
1.4	QPSK	1	3	20.67	20.62	20.70	
1.4	QPSK	1	5	20.63	20.56	20.61	
1.4	QPSK	3	0	20.64	20.60	20.67	
1.4	QPSK	3	1	20.62	20.61	20.62	
1.4	QPSK	3	3	20.64	20.55	20.58	
1.4	QPSK	6	0	20.64	20.60	20.60	21.5
1.4	16QAM	1	0	20.69	20.68	20.77	21.5
1.4	16QAM	1	3	20.72	20.70	20.72	
1.4	16QAM	1	5	20.76	20.69	20.72	
1.4	16QAM	3	0	20.58	20.51	20.60	
1.4	16QAM	3	1	20.52	20.52	20.56	
1.4	16QAM	3	3	20.52	20.51	20.51	
1.4	16QAM	6	0	20.70	20.61	20.61	21.5
1.4	64QAM	1	0	20.70	20.63	20.68	21.5
1.4	64QAM	1	3	20.68	20.64	20.67	
1.4	64QAM	1	5	20.62	20.61	20.67	
1.4	64QAM	3	0	20.61	20.56	20.60	
1.4	64QAM	3	1	20.61	20.57	20.59	
1.4	64QAM	3	3	20.61	20.53	20.57	
1.4	64QAM	6	0	20.09	20.06	20.16	21
1.4	256QAM	1	0	18.05	17.96	17.96	19.5
1.4	256QAM	1	3	18.04	17.96	18.02	
1.4	256QAM	1	5	18.00	17.93	18.01	
1.4	256QAM	3	0	18.08	17.98	18.06	
1.4	256QAM	3	1	18.09	18.01	18.11	
1.4	256QAM	3	3	17.97	17.94	17.95	
1.4	256QAM	6	0	18.05	18.05	18.11	19.5



<LTE Band 5_Ant 8_Sensor OFF>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20450	20525	20600	
Frequency (MHz)				829	836.5	844	
10	QPSK	1	0	24.19	24.23	24.11	25
10	QPSK	1	25	24.17	24.15	24.06	
10	QPSK	1	49	24.14	24.11	24.09	
10	QPSK	25	0	23.21	23.22	23.12	24
10	QPSK	25	12	23.19	23.10	23.03	
10	QPSK	25	25	23.09	23.20	23.06	
10	QPSK	50	0	23.16	23.17	23.13	24
10	16QAM	1	0	23.38	23.39	23.28	
10	16QAM	1	25	23.46	23.38	23.25	
10	16QAM	1	49	23.44	23.32	23.28	23
10	16QAM	25	0	22.27	22.14	22.12	
10	16QAM	25	12	22.22	22.10	22.02	
10	16QAM	25	25	22.08	22.22	22.07	23
10	16QAM	50	0	22.20	22.16	22.11	
10	64QAM	1	0	22.25	22.25	22.18	
10	64QAM	1	25	22.31	22.24	22.15	22
10	64QAM	1	49	22.34	22.21	22.15	
10	64QAM	25	0	21.32	21.19	21.06	
10	64QAM	25	12	21.28	21.17	21.07	20
10	64QAM	25	25	21.12	21.17	21.09	
10	64QAM	50	0	21.25	21.23	21.06	
10	256QAM	1	0	19.63	19.64	19.56	20
10	256QAM	1	25	19.58	19.51	19.46	
10	256QAM	1	49	19.45	19.47	19.36	
10	256QAM	25	0	19.43	19.46	19.34	20
10	256QAM	25	12	19.36	19.47	19.30	
10	256QAM	25	25	19.36	19.48	19.26	
10	256QAM	50	0	19.43	19.63	19.34	Tune-up limit (dBm)
Channel				20425	20525	20625	
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	24.17	24.22	24.08	25
5	QPSK	1	12	24.21	24.13	24.09	
5	QPSK	1	24	24.16	24.11	24.10	
5	QPSK	12	0	23.16	23.14	23.09	24
5	QPSK	12	7	23.16	23.10	23.01	
5	QPSK	12	13	23.11	23.08	23.04	
5	QPSK	25	0	23.13	23.11	23.03	24
5	16QAM	1	0	23.36	23.38	23.27	
5	16QAM	1	12	23.37	23.34	23.28	
5	16QAM	1	24	23.43	23.30	23.26	23
5	16QAM	12	0	22.13	22.10	22.07	
5	16QAM	12	7	22.13	22.07	22.00	
5	16QAM	12	13	22.06	22.08	22.03	23
5	16QAM	25	0	22.13	22.10	22.07	
5	64QAM	1	0	22.24	22.29	22.19	
5	64QAM	1	12	22.29	22.26	22.20	22
5	64QAM	1	24	22.33	22.19	22.15	
5	64QAM	12	0	21.23	21.10	21.10	
5	64QAM	12	7	21.23	21.10	21.12	22
5	64QAM	12	13	21.17	21.16	21.06	
5	64QAM	25	0	21.21	21.15	21.15	



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5	256QAM	1	0	19.57	19.62	19.55	20
5	256QAM	1	12	19.50	19.50	19.37	
5	256QAM	1	24	19.38	19.38	19.26	
5	256QAM	12	0	19.33	19.42	19.30	20
5	256QAM	12	7	19.30	19.39	19.24	
5	256QAM	12	13	19.29	19.44	19.18	
5	256QAM	25	0	19.37	19.61	19.33	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				825.5	836.5	847.5	
3	QPSK	1	0	24.12	24.12	24.03	25
3	QPSK	1	8	24.15	24.07	24.04	
3	QPSK	1	14	24.21	24.06	24.05	
3	QPSK	8	0	23.12	23.09	23.03	24
3	QPSK	8	4	23.08	23.07	23.01	
3	QPSK	8	7	23.15	23.08	23.01	
3	QPSK	15	0	23.13	23.10	23.02	
3	16QAM	1	0	23.31	23.32	23.25	24
3	16QAM	1	8	23.33	23.29	23.22	
3	16QAM	1	14	23.37	23.26	23.20	
3	16QAM	8	0	22.19	22.14	22.08	23
3	16QAM	8	4	22.14	22.13	22.06	
3	16QAM	8	7	22.20	22.14	22.08	
3	16QAM	15	0	22.15	22.12	22.06	
3	64QAM	1	0	22.22	22.22	22.13	23
3	64QAM	1	8	22.26	22.20	22.11	
3	64QAM	1	14	22.26	22.17	22.11	
3	64QAM	8	0	21.23	21.17	21.02	22
3	64QAM	8	4	21.18	21.08	21.02	
3	64QAM	8	7	21.28	21.10	21.04	
3	64QAM	15	0	21.20	21.07	21.00	
3	256QAM	1	0	19.58	19.58	19.51	20
3	256QAM	1	8	19.57	19.48	19.37	
3	256QAM	1	14	19.38	19.46	19.28	
3	256QAM	8	0	19.36	19.41	19.33	20
3	256QAM	8	4	19.26	19.44	19.29	
3	256QAM	8	7	19.34	19.38	19.20	
3	256QAM	15	0	19.39	19.53	19.27	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	24.08	24.08	24.02	25
1.4	QPSK	1	3	24.13	24.08	24.04	
1.4	QPSK	1	5	24.11	24.05	24.00	
1.4	QPSK	3	0	24.11	24.09	24.05	
1.4	QPSK	3	1	24.12	24.09	24.05	
1.4	QPSK	3	3	24.16	24.07	24.07	
1.4	QPSK	6	0	23.10	23.09	23.04	24
1.4	16QAM	1	0	23.30	23.34	23.23	24
1.4	16QAM	1	3	23.38	23.32	23.23	
1.4	16QAM	1	5	23.33	23.29	23.18	
1.4	16QAM	3	0	23.14	23.13	23.07	
1.4	16QAM	3	1	23.12	23.13	23.08	
1.4	16QAM	3	3	23.15	23.09	23.06	
1.4	16QAM	6	0	22.14	22.14	22.08	23
1.4	64QAM	1	0	22.20	22.21	22.17	23
1.4	64QAM	1	3	22.22	22.22	22.16	
1.4	64QAM	1	5	22.23	22.20	22.10	



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1.4	64QAM	3	0	22.19	22.18	22.12	
1.4	64QAM	3	1	22.17	22.18	22.12	
1.4	64QAM	3	3	22.21	22.15	22.11	
1.4	64QAM	6	0	21.15	21.04	20.97	22
1.4	256QAM	1	0	19.58	19.58	19.55	20
1.4	256QAM	1	3	19.57	19.45	19.38	
1.4	256QAM	1	5	19.43	19.42	19.34	
1.4	256QAM	3	0	19.35	19.44	19.33	
1.4	256QAM	3	1	19.28	19.37	19.29	
1.4	256QAM	3	3	19.33	19.46	19.25	20
1.4	256QAM	6	0	19.35	19.60	19.28	

<LTE Band 5_Ant 8_Sensor ON>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				20450	20525	20600	
Frequency (MHz)				829	836.5	844	
10	QPSK	1	0	23.31	23.34	23.13	24.5
10	QPSK	1	25	23.33	23.29	23.27	
10	QPSK	1	49	23.28	23.22	23.18	
10	QPSK	25	0	22.26	22.39	22.19	23.5
10	QPSK	25	12	22.28	22.17	22.22	
10	QPSK	25	25	22.16	22.38	22.19	
10	QPSK	50	0	22.27	22.27	22.17	23.5
10	16QAM	1	0	22.32	22.70	22.39	
10	16QAM	1	25	22.70	22.65	22.26	
10	16QAM	1	49	22.55	22.30	22.00	22.5
10	16QAM	25	0	21.33	21.15	21.13	
10	16QAM	25	12	21.20	21.12	21.00	
10	16QAM	25	25	21.08	21.20	21.09	22.5
10	16QAM	50	0	21.18	21.22	21.14	
10	64QAM	1	0	21.60	21.44	21.27	
10	64QAM	1	25	20.94	21.52	21.41	22.5
10	64QAM	1	49	21.38	21.00	21.45	
10	64QAM	25	0	20.44	20.30	20.27	21.5
10	64QAM	25	12	20.37	20.22	20.19	
10	64QAM	25	25	20.17	20.41	20.31	
10	64QAM	50	0	20.40	20.35	20.28	19.5
10	256QAM	1	0	18.40	18.45	18.39	
10	256QAM	1	25	18.41	18.41	18.41	
10	256QAM	1	49	18.45	18.44	18.45	19.5
10	256QAM	25	0	18.37	18.31	18.34	
10	256QAM	25	12	18.32	18.28	18.28	
10	256QAM	25	25	18.48	18.40	18.44	19.5
10	256QAM	50	0	18.45	18.37	18.44	
Channel				20425	20525	20625	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	QPSK	1	0	23.19	23.21	23.04	24.5
5	QPSK	1	12	23.14	23.27	23.18	
5	QPSK	1	24	23.12	23.05	23.17	
5	QPSK	12	0	22.26	22.07	22.03	23.5
5	QPSK	12	7	22.10	22.07	22.02	
5	QPSK	12	13	22.00	22.30	21.99	
5	QPSK	25	0	22.21	22.16	21.97	23.5
5	16QAM	1	0	22.22	22.67	22.28	
5	16QAM	1	12	22.61	22.56	22.17	23.5



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5	16QAM	1	24	22.53	22.12	21.98	22.5
5	16QAM	12	0	21.24	21.08	21.08	
5	16QAM	12	7	21.17	20.98	20.94	
5	16QAM	12	13	21.05	21.14	20.92	
5	16QAM	25	0	21.13	21.05	20.95	
5	64QAM	1	0	21.46	21.27	21.13	22.5
5	64QAM	1	12	20.92	21.37	21.21	
5	64QAM	1	24	21.26	20.92	21.26	
5	64QAM	12	0	20.36	20.26	20.18	21.5
5	64QAM	12	7	20.27	20.06	20.15	
5	64QAM	12	13	20.12	20.24	20.18	
5	64QAM	25	0	20.26	20.18	20.23	
5	256QAM	1	0	18.25	18.38	18.25	
5	256QAM	1	12	18.28	18.22	18.39	19.5
5	256QAM	1	24	18.31	18.35	18.42	
5	256QAM	12	0	18.25	18.11	18.27	19.5
5	256QAM	12	7	18.23	18.22	18.09	
5	256QAM	12	13	18.33	18.33	18.41	
5	256QAM	25	0	18.27	18.34	18.37	
Channel				20415	20525	20635	Tune-up limit (dBm)
Frequency (MHz)				825.5	836.5	847.5	
3	QPSK	1	0	23.19	23.30	23.10	24.5
3	QPSK	1	8	23.18	23.17	23.16	
3	QPSK	1	14	23.25	23.10	23.13	
3	QPSK	8	0	22.11	22.22	22.03	23.5
3	QPSK	8	4	22.23	22.14	22.14	
3	QPSK	8	7	22.14	22.28	22.12	
3	QPSK	15	0	22.18	22.18	22.01	
3	16QAM	1	0	22.25	22.56	22.38	
3	16QAM	1	8	22.62	22.52	22.22	23.5
3	16QAM	1	14	22.45	22.11	21.99	
3	16QAM	8	0	21.19	21.07	20.97	
3	16QAM	8	4	21.10	20.94	20.88	22.5
3	16QAM	8	7	20.90	21.07	21.01	
3	16QAM	15	0	21.18	21.02	21.13	
3	64QAM	1	0	21.43	21.37	21.25	
3	64QAM	1	8	20.74	21.46	21.30	
3	64QAM	1	14	21.38	21.00	21.33	21.5
3	64QAM	8	0	20.27	20.16	20.19	
3	64QAM	8	4	20.33	20.06	20.00	
3	64QAM	8	7	20.04	20.37	20.31	
3	64QAM	15	0	20.37	20.23	20.22	
3	256QAM	1	0	18.20	18.28	18.27	19.5
3	256QAM	1	8	18.36	18.21	18.26	
3	256QAM	1	14	18.26	18.41	18.30	
3	256QAM	8	0	18.18	18.28	18.23	19.5
3	256QAM	8	4	18.30	18.14	18.19	
3	256QAM	8	7	18.41	18.39	18.34	
3	256QAM	15	0	18.33	18.23	18.39	
Channel				20407	20525	20643	Tune-up limit (dBm)
Frequency (MHz)				824.7	836.5	848.3	
1.4	QPSK	1	0	23.10	23.24	22.98	24.5
1.4	QPSK	1	3	23.29	23.02	23.16	
1.4	QPSK	1	5	23.05	23.15	22.99	
1.4	QPSK	3	0	23.11	23.18	23.06	
1.4	QPSK	3	1	23.17	23.05	23.19	



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1.4	QPSK	3	3	23.13	23.08	23.04	
1.4	QPSK	6	0	22.16	22.08	22.21	23.5
1.4	16QAM	1	0	22.09	22.33	22.41	23.5
1.4	16QAM	1	3	22.47	22.56	22.14	
1.4	16QAM	1	5	22.52	22.19	22.52	
1.4	16QAM	3	0	22.15	22.13	22.16	
1.4	16QAM	3	1	22.20	22.18	22.13	
1.4	16QAM	3	3	22.16	22.15	22.10	
1.4	16QAM	6	0	21.21	21.20	20.99	22.5
1.4	64QAM	1	0	21.36	21.20	20.88	22.5
1.4	64QAM	1	3	21.07	20.95	21.05	
1.4	64QAM	1	5	21.17	21.17	20.94	
1.4	64QAM	3	0	21.12	21.12	21.13	
1.4	64QAM	3	1	21.21	21.33	21.29	
1.4	64QAM	3	3	21.14	21.36	21.06	
1.4	64QAM	6	0	20.16	20.10	20.11	21.5
1.4	256QAM	1	0	18.42	18.41	18.35	19.5
1.4	256QAM	1	3	18.45	18.43	18.47	
1.4	256QAM	1	5	18.49	18.45	18.50	
1.4	256QAM	3	0	18.46	18.38	18.41	
1.4	256QAM	3	1	18.44	18.40	18.49	
1.4	256QAM	3	3	18.40	18.39	18.45	
1.4	256QAM	6	0	18.29	18.28	18.32	19.5

<LTE Band 13_Ant 8_Sensor OFF>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				23230			
Frequency (MHz)				782			
10	QPSK	1	0		23.65		25
10	QPSK	1	25		23.58		
10	QPSK	1	49		23.60		
10	QPSK	25	0		22.54		24
10	QPSK	25	12		22.52		
10	QPSK	25	25		22.51		
10	QPSK	50	0		22.51		24
10	16QAM	1	0		22.79		
10	16QAM	1	25		22.79		
10	16QAM	1	49		22.80		23
10	16QAM	25	0		21.53		
10	16QAM	25	12		21.61		
10	16QAM	25	25		21.62		23
10	16QAM	50	0		21.59		
10	64QAM	1	0		21.76		
10	64QAM	1	25		21.76		22
10	64QAM	1	49		21.79		
10	64QAM	25	0		20.51		
10	64QAM	25	12		20.63		20
10	64QAM	25	25		20.60		
10	64QAM	50	0		20.56		
10	256QAM	1	0		18.98		20
10	256QAM	1	25		18.88		
10	256QAM	1	49		18.82		
10	256QAM	25	0		18.87		20
10	256QAM	25	12		18.82		
10	256QAM	25	25		18.83		



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10	256QAM	50	0		19.05		
Channel				23205	23230	23255	Tune-up limit (dBm)
Frequency (MHz)				779.5	782	784.5	
5	QPSK	1	0	23.64	23.57	23.58	25
5	QPSK	1	12	23.59	23.57	23.53	
5	QPSK	1	24	23.61	23.53	23.61	
5	QPSK	12	0	22.43	22.46	22.43	24
5	QPSK	12	7	22.54	22.51	22.49	
5	QPSK	12	13	22.54	22.52	22.47	
5	QPSK	25	0	22.53	22.51	22.46	
5	16QAM	1	0	22.79	22.80	22.78	24
5	16QAM	1	12	22.81	22.79	22.73	
5	16QAM	1	24	22.84	22.75	22.81	
5	16QAM	12	0	21.52	21.55	21.51	23
5	16QAM	12	7	21.63	21.58	21.56	
5	16QAM	12	13	21.58	21.58	21.52	
5	16QAM	25	0	21.63	21.61	21.55	
5	64QAM	1	0	21.81	21.77	21.78	23
5	64QAM	1	12	21.78	21.78	21.72	
5	64QAM	1	24	21.79	21.72	21.78	
5	64QAM	12	0	20.55	20.54	20.50	22
5	64QAM	12	7	20.63	20.64	20.59	
5	64QAM	12	13	20.61	20.62	20.58	
5	64QAM	25	0	20.60	20.61	20.52	
5	256QAM	1	0	18.94	18.89	18.86	20
5	256QAM	1	12	18.82	18.80	18.76	
5	256QAM	1	24	18.72	18.75	18.72	
5	256QAM	12	0	18.80	18.78	18.81	20
5	256QAM	12	7	18.80	18.72	18.75	
5	256QAM	12	13	18.80	18.72	18.69	
5	256QAM	25	0	19.04	18.93	18.92	

<LTE Band 66_Ant 3_Sensor OFF>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				132072	132322	132572	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	0	23.37	23.42	23.41	24
20	QPSK	1	49	23.34	23.35	23.38	
20	QPSK	1	99	23.27	23.31	23.37	
20	QPSK	50	0	22.48	22.52	22.47	23
20	QPSK	50	24	22.22	22.29	22.31	
20	QPSK	50	50	22.26	22.20	22.19	
20	QPSK	100	0	22.31	22.36	22.33	
20	16QAM	1	0	22.40	22.67	22.75	23
20	16QAM	1	49	22.50	22.71	22.73	
20	16QAM	1	99	22.44	22.67	22.67	
20	16QAM	50	0	21.49	21.28	21.29	22
20	16QAM	50	24	21.24	21.43	21.49	
20	16QAM	50	50	21.24	21.20	21.20	
20	16QAM	100	0	21.37	21.22	21.20	
20	64QAM	1	0	21.25	21.52	21.63	22
20	64QAM	1	49	21.38	21.58	21.65	
20	64QAM	1	99	21.28	21.57	21.59	
20	64QAM	50	0	20.47	20.25	20.29	21
20	64QAM	50	24	20.22	20.41	20.50	



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20	64QAM	50	50	20.26	20.18	20.17	
20	64QAM	100	0	20.33	20.23	20.22	
20	256QAM	1	0	18.05	18.13	18.08	
20	256QAM	1	49	18.09	18.22	18.17	19
20	256QAM	1	99	18.26	18.34	18.24	
20	256QAM	50	0	17.84	17.90	17.80	
20	256QAM	50	24	17.97	18.06	17.94	19
20	256QAM	50	50	17.75	17.84	17.75	
20	256QAM	100	0	17.74	17.89	17.76	
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	23.05	23.26	23.27	24
15	QPSK	1	37	23.21	23.26	23.32	
15	QPSK	1	74	23.15	23.16	23.23	
15	QPSK	36	0	22.33	22.30	22.28	23
15	QPSK	36	20	22.23	22.32	22.36	
15	QPSK	36	39	22.20	22.16	22.18	
15	QPSK	75	0	22.32	22.24	22.26	23
15	16QAM	1	0	22.48	22.60	22.64	
15	16QAM	1	37	22.55	22.55	22.63	
15	16QAM	1	74	22.53	22.56	22.57	22
15	16QAM	36	0	21.34	21.31	21.30	
15	16QAM	36	20	21.25	21.34	21.35	
15	16QAM	36	39	21.23	21.21	21.18	22
15	16QAM	75	0	21.34	21.25	21.24	
15	64QAM	1	0	21.35	21.50	21.54	
15	64QAM	1	37	21.46	21.49	21.55	21
15	64QAM	1	74	21.42	21.43	21.49	
15	64QAM	36	0	20.36	20.31	20.31	
15	64QAM	36	20	20.24	20.34	20.35	19
15	64QAM	36	39	20.18	20.16	20.18	
15	64QAM	75	0	20.28	20.21	20.21	
15	256QAM	1	0	18.02	18.12	18.01	19
15	256QAM	1	37	18.04	18.19	18.12	
15	256QAM	1	74	18.18	18.24	18.21	
15	256QAM	36	0	17.82	17.81	17.70	19
15	256QAM	36	20	17.89	17.99	17.85	
15	256QAM	36	39	17.72	17.77	17.69	
15	256QAM	75	0	17.67	17.82	17.66	Tune-up limit (dBm)
Channel				132022	132322	132622	
Frequency (MHz)				1715	1745	1775	24
10	QPSK	1	0	23.12	23.29	23.33	
10	QPSK	1	25	23.15	23.25	23.26	
10	QPSK	1	49	23.21	23.20	23.26	23
10	QPSK	25	0	22.39	22.34	22.57	
10	QPSK	25	12	22.24	22.36	22.41	
10	QPSK	25	25	22.12	22.19	22.18	23
10	QPSK	50	0	22.31	22.29	22.42	
10	16QAM	1	0	22.48	22.60	22.63	
10	16QAM	1	25	22.52	22.56	22.59	22
10	16QAM	1	49	22.57	22.58	22.62	
10	16QAM	25	0	21.39	21.33	21.56	
10	16QAM	25	12	21.25	21.34	21.41	22
10	16QAM	25	25	21.10	21.18	21.18	
10	16QAM	50	0	21.31	21.27	21.43	
10	64QAM	1	0	21.35	21.47	21.53	22



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10	64QAM	1	25	21.38	21.43	21.48	
10	64QAM	1	49	21.45	21.49	21.51	
10	64QAM	25	0	20.36	20.32	20.54	
10	64QAM	25	12	20.21	20.32	20.39	21
10	64QAM	25	25	20.09	20.19	20.17	
10	64QAM	50	0	20.29	20.26	20.40	
10	256QAM	1	0	17.98	18.12	18.04	19
10	256QAM	1	25	18.01	18.17	18.12	
10	256QAM	1	49	18.17	18.32	18.16	
10	256QAM	25	0	17.83	17.86	17.78	19
10	256QAM	25	12	17.95	18.01	17.88	
10	256QAM	25	25	17.71	17.83	17.68	
10	256QAM	50	0	17.67	17.85	17.70	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	23.09	23.28	23.29	24
5	QPSK	1	12	23.14	23.25	23.28	
5	QPSK	1	24	23.16	23.24	23.30	
5	QPSK	12	0	22.29	22.34	22.50	23
5	QPSK	12	7	22.22	22.30	22.38	
5	QPSK	12	13	22.14	22.23	22.32	
5	QPSK	25	0	22.23	22.28	22.40	
5	16QAM	1	0	22.47	22.60	22.63	23
5	16QAM	1	12	22.49	22.56	22.62	
5	16QAM	1	24	22.54	22.59	22.62	
5	16QAM	12	0	21.24	21.34	21.50	22
5	16QAM	12	7	21.20	21.27	21.36	
5	16QAM	12	13	21.11	21.22	21.29	
5	16QAM	25	0	21.22	21.29	21.40	
5	64QAM	1	0	21.35	21.49	21.53	22
5	64QAM	1	12	21.37	21.47	21.50	
5	64QAM	1	24	21.41	21.47	21.54	
5	64QAM	12	0	20.29	20.36	20.53	21
5	64QAM	12	7	20.23	20.31	20.39	
5	64QAM	12	13	20.11	20.22	20.32	
5	64QAM	25	0	20.20	20.26	20.39	
5	256QAM	1	0	18.00	18.08	18.04	19
5	256QAM	1	12	18.00	18.19	18.07	
5	256QAM	1	24	18.24	18.27	18.18	
5	256QAM	12	0	17.79	17.86	17.79	19
5	256QAM	12	7	17.92	17.96	17.84	
5	256QAM	12	13	17.72	17.75	17.70	
5	256QAM	25	0	17.67	17.79	17.73	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	23.07	23.23	23.26	24
3	QPSK	1	8	23.07	23.20	23.26	
3	QPSK	1	14	23.09	23.21	23.26	
3	QPSK	8	0	22.22	22.36	22.39	23
3	QPSK	8	4	22.16	22.28	22.37	
3	QPSK	8	7	22.21	22.28	22.37	
3	QPSK	15	0	22.21	22.31	22.40	
3	16QAM	1	0	22.47	22.57	22.63	23
3	16QAM	1	8	22.47	22.54	22.60	
3	16QAM	1	14	22.48	22.57	22.60	
3	16QAM	8	0	21.28	21.42	21.45	22



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3	16QAM	8	4	21.24	21.36	21.43	
3	16QAM	8	7	21.30	21.37	21.46	
3	16QAM	15	0	21.24	21.33	21.42	
3	64QAM	1	0	21.33	21.46	21.50	22
3	64QAM	1	8	21.35	21.42	21.51	
3	64QAM	1	14	21.36	21.48	21.52	
3	64QAM	8	0	20.23	20.37	20.41	21
3	64QAM	8	4	20.17	20.31	20.39	
3	64QAM	8	7	20.24	20.32	20.40	
3	64QAM	15	0	20.20	20.30	20.39	19
3	256QAM	1	0	17.96	18.08	18.04	
3	256QAM	1	8	18.03	18.16	18.12	
3	256QAM	1	14	18.17	18.26	18.14	19
3	256QAM	8	0	17.76	17.82	17.76	
3	256QAM	8	4	17.88	18.03	17.89	
3	256QAM	8	7	17.65	17.81	17.72	19
3	256QAM	15	0	17.68	17.88	17.69	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	23.08	23.21	23.29	24
1.4	QPSK	1	3	23.08	23.22	23.30	
1.4	QPSK	1	5	23.07	23.21	23.29	
1.4	QPSK	3	0	23.10	23.24	23.34	
1.4	QPSK	3	1	23.10	23.25	23.33	
1.4	QPSK	3	3	23.11	23.22	23.33	
1.4	QPSK	6	0	22.21	22.37	22.41	23
1.4	16QAM	1	0	22.44	22.56	22.64	23
1.4	16QAM	1	3	22.44	22.56	22.62	
1.4	16QAM	1	5	22.42	22.54	22.63	
1.4	16QAM	3	0	22.22	22.36	22.43	
1.4	16QAM	3	1	22.21	22.36	22.44	
1.4	16QAM	3	3	22.21	22.33	22.43	
1.4	16QAM	6	0	21.27	21.41	21.48	22
1.4	64QAM	1	0	21.32	21.49	21.56	22
1.4	64QAM	1	3	21.32	21.46	21.55	
1.4	64QAM	1	5	21.33	21.45	21.51	
1.4	64QAM	3	0	21.30	21.44	21.50	
1.4	64QAM	3	1	21.28	21.45	21.51	
1.4	64QAM	3	3	21.29	21.39	21.50	
1.4	64QAM	6	0	20.14	20.30	20.37	21
1.4	256QAM	1	0	17.95	18.05	17.98	19
1.4	256QAM	1	3	18.06	18.19	18.10	
1.4	256QAM	1	5	18.21	18.30	18.15	
1.4	256QAM	3	0	17.79	17.83	17.72	
1.4	256QAM	3	1	17.88	18.02	17.85	
1.4	256QAM	3	3	17.71	17.78	17.70	
1.4	256QAM	6	0	17.67	17.85	17.67	19

<LTE Band 66_Ant 3_Sensor ON>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				132072	132322	132572	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	0	20.75	20.97	20.84	21.5
20	QPSK	1	49	20.74	20.70	20.96	
20	QPSK	1	99	20.72	20.79	20.71	



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20	QPSK	50	0	19.95	19.96	19.85	20.5
20	QPSK	50	24	19.61	19.83	19.80	
20	QPSK	50	50	19.75	19.52	19.52	
20	QPSK	100	0	19.81	19.62	19.50	
20	16QAM	1	0	19.99	19.79	20.48	20.5
20	16QAM	1	49	20.24	20.25	20.27	
20	16QAM	1	99	19.98	20.37	20.12	
20	16QAM	50	0	18.97	18.68	18.67	19.5
20	16QAM	50	24	18.63	18.69	18.71	
20	16QAM	50	50	18.76	18.49	18.51	
20	16QAM	100	0	18.94	18.62	18.60	
20	64QAM	1	0	19.04	18.84	19.02	19.5
20	64QAM	1	49	18.89	18.87	19.11	
20	64QAM	1	99	19.21	19.14	19.10	
20	64QAM	50	0	17.91	17.63	17.56	18.5
20	64QAM	50	24	17.61	17.77	17.89	
20	64QAM	50	50	17.72	17.57	17.50	
20	64QAM	100	0	17.83	17.61	17.65	
20	256QAM	1	0	15.84	15.90	16.01	16.5
20	256QAM	1	49	15.90	16.00	16.03	
20	256QAM	1	99	16.05	16.08	16.13	
20	256QAM	50	0	15.66	15.69	15.76	16.5
20	256QAM	50	24	15.83	15.87	15.89	
20	256QAM	50	50	15.59	15.65	15.74	
20	256QAM	100	0	15.59	15.67	15.73	
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	20.67	20.82	20.82	21.5
15	QPSK	1	37	20.71	20.54	20.78	
15	QPSK	1	74	20.71	20.75	20.71	
15	QPSK	36	0	19.83	19.59	19.49	20.5
15	QPSK	36	20	19.44	19.69	19.76	
15	QPSK	36	39	19.70	19.46	19.34	
15	QPSK	75	0	19.69	19.60	19.32	
15	16QAM	1	0	19.93	19.75	20.49	20.5
15	16QAM	1	37	20.21	20.20	20.22	
15	16QAM	1	74	19.82	20.22	20.03	
15	16QAM	36	0	18.79	18.58	18.52	19.5
15	16QAM	36	20	18.48	18.67	18.51	
15	16QAM	36	39	18.71	18.39	18.43	
15	16QAM	75	0	18.91	18.57	18.54	
15	64QAM	1	0	18.90	18.72	18.98	19.5
15	64QAM	1	37	18.76	18.78	19.07	
15	64QAM	1	74	19.03	19.10	19.06	
15	64QAM	36	0	17.83	17.58	17.44	18.5
15	64QAM	36	20	17.46	17.69	17.83	
15	64QAM	36	39	17.70	17.48	17.50	
15	64QAM	75	0	17.79	17.61	17.56	
15	256QAM	1	0	15.74	15.86	15.86	16.5
15	256QAM	1	37	15.83	15.96	16.03	
15	256QAM	1	74	16.05	16.08	16.11	
15	256QAM	36	0	15.56	15.62	15.60	16.5
15	256QAM	36	20	15.72	15.76	15.80	
15	256QAM	36	39	15.57	15.63	15.58	
15	256QAM	75	0	15.56	15.62	15.73	
Channel				132022	132322	132622	Tune-up limit



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Frequency (MHz)				1715	1745	1775	(dBm)
10	QPSK	1	0	20.62	20.64	20.83	21.5
10	QPSK	1	25	20.71	20.69	20.84	
10	QPSK	1	49	20.58	20.73	20.59	
10	QPSK	25	0	19.90	19.67	19.48	20.5
10	QPSK	25	12	19.42	19.81	19.71	
10	QPSK	25	25	19.61	19.52	19.42	
10	QPSK	50	0	19.64	19.53	19.35	
10	16QAM	1	0	19.87	19.75	20.49	20.5
10	16QAM	1	25	20.20	20.14	20.10	
10	16QAM	1	49	19.96	20.27	20.06	
10	16QAM	25	0	18.82	18.51	18.48	19.5
10	16QAM	25	12	18.61	18.52	18.64	
10	16QAM	25	25	18.59	18.36	18.48	
10	16QAM	50	0	18.91	18.60	18.43	
10	64QAM	1	0	18.89	18.79	18.88	19.5
10	64QAM	1	25	18.78	18.69	18.96	
10	64QAM	1	49	19.09	18.97	18.98	
10	64QAM	25	0	17.91	17.61	17.47	18.5
10	64QAM	25	12	17.57	17.69	17.77	
10	64QAM	25	25	17.59	17.47	17.40	
10	64QAM	50	0	17.63	17.49	17.62	
10	256QAM	1	0	15.65	15.89	15.81	16.5
10	256QAM	1	25	15.78	15.98	15.94	
10	256QAM	1	49	15.98	16.06	16.12	
10	256QAM	25	0	15.52	15.64	15.60	16.5
10	256QAM	25	12	15.75	15.77	15.76	
10	256QAM	25	25	15.58	15.65	15.60	
10	256QAM	50	0	15.58	15.50	15.53	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	20.58	20.77	20.74	21.5
5	QPSK	1	12	20.71	20.64	20.94	
5	QPSK	1	24	20.53	20.67	20.64	
5	QPSK	12	0	19.81	19.65	19.53	20.5
5	QPSK	12	7	19.60	19.67	19.63	
5	QPSK	12	13	19.64	19.48	19.37	
5	QPSK	25	0	19.81	19.45	19.49	
5	16QAM	1	0	19.80	19.66	20.49	20.5
5	16QAM	1	12	20.04	20.06	20.23	
5	16QAM	1	24	19.91	20.20	20.04	
5	16QAM	12	0	18.84	18.63	18.56	19.5
5	16QAM	12	7	18.44	18.51	18.57	
5	16QAM	12	13	18.72	18.35	18.41	
5	16QAM	25	0	18.84	18.46	18.50	
5	64QAM	1	0	18.93	18.83	18.84	19.5
5	64QAM	1	12	18.70	18.87	18.91	
5	64QAM	1	24	19.07	19.03	19.10	
5	64QAM	12	0	17.73	17.52	17.50	18.5
5	64QAM	12	7	17.43	17.76	17.80	
5	64QAM	12	13	17.53	17.53	17.48	
5	64QAM	25	0	17.66	17.60	17.56	
5	256QAM	1	0	15.83	15.72	15.94	16.5
5	256QAM	1	12	15.77	15.89	16.01	
5	256QAM	1	24	16.03	16.05	16.03	
5	256QAM	12	0	15.48	15.52	15.60	16.5



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5	256QAM	12	7	15.78	15.86	15.79	
5	256QAM	12	13	15.59	15.47	15.67	
5	256QAM	25	0	15.50	15.49	15.65	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	20.61	20.77	20.83	21.5
3	QPSK	1	8	20.60	20.70	20.82	
3	QPSK	1	14	20.54	20.68	20.65	
3	QPSK	8	0	19.93	19.53	19.64	20.5
3	QPSK	8	4	19.48	19.80	19.74	
3	QPSK	8	7	19.69	19.49	19.52	
3	QPSK	15	0	19.70	19.58	19.45	20.5
3	16QAM	1	0	19.87	19.75	20.48	
3	16QAM	1	8	20.08	20.20	20.19	
3	16QAM	1	14	19.88	20.36	20.12	19.5
3	16QAM	8	0	18.90	18.51	18.49	
3	16QAM	8	4	18.52	18.54	18.66	
3	16QAM	8	7	18.74	18.49	18.36	19.5
3	16QAM	15	0	18.77	18.47	18.57	
3	64QAM	1	0	19.03	18.67	18.89	
3	64QAM	1	8	18.79	18.68	18.99	18.5
3	64QAM	1	14	19.09	19.02	18.94	
3	64QAM	8	0	17.80	17.56	17.55	
3	64QAM	8	4	17.54	17.65	17.84	16.5
3	64QAM	8	7	17.60	17.46	17.40	
3	64QAM	15	0	17.69	17.47	17.64	
3	256QAM	1	0	15.80	15.85	15.84	16.5
3	256QAM	1	8	15.78	15.84	16.02	
3	256QAM	1	14	15.99	16.00	16.08	
3	256QAM	8	0	15.60	15.69	15.73	16.5
3	256QAM	8	4	15.66	15.72	15.75	
3	256QAM	8	7	15.44	15.65	15.68	
3	256QAM	15	0	15.52	15.53	15.69	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	20.63	20.86	20.76	21.5
1.4	QPSK	1	3	20.66	20.82	20.84	
1.4	QPSK	1	5	20.61	20.85	20.77	
1.4	QPSK	3	0	20.66	20.85	20.84	20.5
1.4	QPSK	3	1	20.65	20.82	20.85	
1.4	QPSK	3	3	20.61	20.80	20.84	
1.4	QPSK	6	0	19.53	19.84	19.78	20.5
1.4	16QAM	1	0	19.79	20.09	19.75	
1.4	16QAM	1	3	20.26	19.97	20.35	
1.4	16QAM	1	5	19.61	20.08	20.28	19.5
1.4	16QAM	3	0	19.63	19.91	19.87	
1.4	16QAM	3	1	19.62	19.85	19.90	
1.4	16QAM	3	3	19.72	19.88	19.91	19.5
1.4	16QAM	6	0	18.67	18.90	18.84	
1.4	64QAM	1	0	18.97	19.13	18.83	
1.4	64QAM	1	3	18.65	19.09	19.16	18.5
1.4	64QAM	1	5	18.43	19.14	18.61	
1.4	64QAM	3	0	18.78	18.88	18.97	
1.4	64QAM	3	1	18.86	19.09	19.03	18.5
1.4	64QAM	3	3	18.63	18.91	18.83	
1.4	64QAM	6	0	17.62	17.75	17.74	



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1.4	256QAM	1	0	15.99	15.94	16.02	16.5
1.4	256QAM	1	3	16.01	15.98	16.04	
1.4	256QAM	1	5	16.07	15.98	15.99	
1.4	256QAM	3	0	15.96	15.95	15.98	
1.4	256QAM	3	1	16.04	15.95	15.99	
1.4	256QAM	3	3	15.94	15.93	15.95	
1.4	256QAM	6	0	15.89	15.89	15.92	16.5

<LTE Band 66_Ant 8_Sensor OFF>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				132072	132322	132572	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	0	23.59	23.60	23.56	24
20	QPSK	1	49	23.52	23.59	23.50	
20	QPSK	1	99	23.58	23.59	23.54	
20	QPSK	50	0	22.60	22.64	22.61	23
20	QPSK	50	24	22.45	22.51	22.43	
20	QPSK	50	50	22.58	22.61	22.59	
20	QPSK	100	0	22.53	22.60	22.57	23
20	16QAM	1	0	22.56	22.63	22.59	
20	16QAM	1	49	22.60	22.64	22.60	
20	16QAM	1	99	22.66	22.72	22.71	22
20	16QAM	50	0	21.55	21.60	21.58	
20	16QAM	50	24	21.40	21.50	21.47	
20	16QAM	50	50	21.54	21.57	21.50	22
20	16QAM	100	0	21.57	21.58	21.57	
20	64QAM	1	0	21.54	21.56	21.53	22
20	64QAM	1	49	21.56	21.57	21.52	
20	64QAM	1	99	21.53	21.63	21.60	
20	64QAM	50	0	20.52	20.57	20.53	21
20	64QAM	50	24	20.46	20.51	20.42	
20	64QAM	50	50	20.50	20.54	20.48	
20	64QAM	100	0	20.53	20.55	20.48	19
20	256QAM	1	0	18.35	18.39	18.33	
20	256QAM	1	49	18.28	18.38	18.36	
20	256QAM	1	99	18.43	18.46	18.42	19
20	256QAM	50	0	18.50	18.54	18.51	
20	256QAM	50	24	18.43	18.44	18.38	
20	256QAM	50	50	18.44	18.50	18.46	19
20	256QAM	100	0	18.40	18.50	18.41	
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	23.53	23.55	23.48	24
15	QPSK	1	37	23.46	23.49	23.48	
15	QPSK	1	74	23.52	23.52	23.53	
15	QPSK	36	0	22.45	22.63	22.57	23
15	QPSK	36	20	22.41	22.45	22.42	
15	QPSK	36	39	22.56	22.58	22.50	
15	QPSK	75	0	22.49	22.54	22.49	23
15	16QAM	1	0	22.50	22.57	22.49	
15	16QAM	1	37	22.52	22.56	22.53	
15	16QAM	1	74	22.57	22.71	22.63	22
15	16QAM	36	0	21.47	21.53	21.50	
15	16QAM	36	20	21.33	21.41	21.38	
15	16QAM	36	39	21.50	21.56	21.47	22



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15	16QAM	75	0	21.48	21.50	21.47	
15	64QAM	1	0	21.49	21.50	21.43	22
15	64QAM	1	37	21.48	21.51	21.48	
15	64QAM	1	74	21.44	21.58	21.57	
15	64QAM	36	0	20.46	20.47	20.45	21
15	64QAM	36	20	20.45	20.46	20.32	
15	64QAM	36	39	20.41	20.49	20.40	
15	64QAM	75	0	20.51	20.47	20.39	19
15	256QAM	1	0	18.34	18.32	18.24	
15	256QAM	1	37	18.27	18.28	18.32	
15	256QAM	1	74	18.36	18.39	18.36	19
15	256QAM	36	0	18.49	18.44	18.47	
15	256QAM	36	20	18.33	18.39	18.29	
15	256QAM	36	39	18.35	18.46	18.45	19
15	256QAM	75	0	18.39	18.43	18.38	
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	23.52	23.51	23.53	24
10	QPSK	1	25	23.50	23.58	23.47	
10	QPSK	1	49	23.56	23.53	23.45	
10	QPSK	25	0	22.47	22.62	22.51	23
10	QPSK	25	12	22.35	22.46	22.36	
10	QPSK	25	25	22.50	22.53	22.52	
10	QPSK	50	0	22.52	22.59	22.52	23
10	16QAM	1	0	22.49	22.60	22.56	
10	16QAM	1	25	22.59	22.54	22.53	
10	16QAM	1	49	22.58	22.69	22.69	22
10	16QAM	25	0	21.46	21.59	21.56	
10	16QAM	25	12	21.34	21.46	21.42	
10	16QAM	25	25	21.53	21.50	21.41	22
10	16QAM	50	0	21.49	21.55	21.48	
10	64QAM	1	0	21.46	21.52	21.43	
10	64QAM	1	25	21.54	21.53	21.50	22
10	64QAM	1	49	21.47	21.59	21.57	
10	64QAM	25	0	20.43	20.47	20.52	
10	64QAM	25	12	20.42	20.42	20.32	21
10	64QAM	25	25	20.49	20.50	20.39	
10	64QAM	50	0	20.44	20.49	20.41	
10	256QAM	1	0	18.25	18.37	18.31	19
10	256QAM	1	25	18.23	18.31	18.28	
10	256QAM	1	49	18.34	18.42	18.41	
10	256QAM	25	0	18.49	18.53	18.43	19
10	256QAM	25	12	18.42	18.41	18.32	
10	256QAM	25	25	18.39	18.49	18.37	
10	256QAM	50	0	18.36	18.41	18.32	19
Channel				131997	132322	132647	
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	23.58	23.55	23.52	24
5	QPSK	1	12	23.51	23.51	23.49	
5	QPSK	1	24	23.56	23.52	23.50	
5	QPSK	12	0	22.49	22.59	22.57	23
5	QPSK	12	7	22.44	22.48	22.34	
5	QPSK	12	13	22.55	22.54	22.52	
5	QPSK	25	0	22.51	22.53	22.55	23
5	16QAM	1	0	22.49	22.61	22.50	
5	16QAM	1	12	22.50	22.56	22.58	



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5	16QAM	1	24	22.64	22.70	22.63	22
5	16QAM	12	0	21.50	21.54	21.52	
5	16QAM	12	7	21.38	21.46	21.41	
5	16QAM	12	13	21.52	21.51	21.44	
5	16QAM	25	0	21.47	21.57	21.47	22
5	64QAM	1	0	21.48	21.55	21.44	
5	64QAM	1	12	21.53	21.55	21.42	
5	64QAM	1	24	21.47	21.54	21.53	
5	64QAM	12	0	20.49	20.52	20.44	21
5	64QAM	12	7	20.45	20.45	20.34	
5	64QAM	12	13	20.47	20.46	20.47	
5	64QAM	25	0	20.48	20.53	20.41	
5	256QAM	1	0	18.31	18.31	18.27	19
5	256QAM	1	12	18.19	18.34	18.29	
5	256QAM	1	24	18.41	18.42	18.37	
5	256QAM	12	0	18.47	18.53	18.41	
5	256QAM	12	7	18.37	18.39	18.32	19
5	256QAM	12	13	18.41	18.45	18.41	
5	256QAM	25	0	18.32	18.41	18.37	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	23.51	23.51	23.52	24
3	QPSK	1	8	23.48	23.53	23.43	
3	QPSK	1	14	23.54	23.58	23.49	
3	QPSK	8	0	22.48	22.59	22.52	23
3	QPSK	8	4	22.43	22.47	22.33	
3	QPSK	8	7	22.56	22.57	22.53	
3	QPSK	15	0	22.43	22.54	22.49	
3	16QAM	1	0	22.54	22.59	22.55	23
3	16QAM	1	8	22.50	22.54	22.51	
3	16QAM	1	14	22.62	22.62	22.64	
3	16QAM	8	0	21.51	21.50	21.56	22
3	16QAM	8	4	21.30	21.41	21.44	
3	16QAM	8	7	21.49	21.50	21.47	
3	16QAM	15	0	21.47	21.49	21.48	
3	64QAM	1	0	21.47	21.46	21.50	22
3	64QAM	1	8	21.54	21.52	21.48	
3	64QAM	1	14	21.45	21.55	21.56	
3	64QAM	8	0	20.45	20.47	20.44	21
3	64QAM	8	4	20.37	20.46	20.36	
3	64QAM	8	7	20.43	20.51	20.42	
3	64QAM	15	0	20.50	20.50	20.40	
3	256QAM	1	0	18.29	18.30	18.27	19
3	256QAM	1	8	18.19	18.29	18.31	
3	256QAM	1	14	18.39	18.37	18.32	
3	256QAM	8	0	18.44	18.53	18.44	19
3	256QAM	8	4	18.40	18.40	18.31	
3	256QAM	8	7	18.39	18.40	18.43	
3	256QAM	15	0	18.33	18.46	18.36	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	23.51	23.56	23.55	24
1.4	QPSK	1	3	23.44	23.51	23.42	
1.4	QPSK	1	5	23.48	23.52	23.42	
1.4	QPSK	3	0	23.46	23.54	23.52	
1.4	QPSK	3	1	23.50	23.55	23.54	



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1.4	QPSK	3	3	23.50	23.51	23.46	
1.4	QPSK	6	0	22.43	22.51	22.43	23
1.4	16QAM	1	0	22.55	22.59	22.55	23
1.4	16QAM	1	3	22.59	22.60	22.50	
1.4	16QAM	1	5	22.50	22.58	22.56	
1.4	16QAM	3	0	22.40	22.47	22.46	
1.4	16QAM	3	1	22.45	22.47	22.43	
1.4	16QAM	3	3	22.40	22.43	22.35	
1.4	16QAM	6	0	21.49	21.51	21.49	22
1.4	64QAM	1	0	21.53	21.55	21.54	22
1.4	64QAM	1	3	21.49	21.54	21.47	
1.4	64QAM	1	5	21.47	21.52	21.45	
1.4	64QAM	3	0	21.37	21.47	21.43	
1.4	64QAM	3	1	21.37	21.46	21.42	
1.4	64QAM	3	3	21.38	21.43	21.37	
1.4	64QAM	6	0	20.45	20.46	20.43	21
1.4	256QAM	1	0	18.21	18.29	18.23	19
1.4	256QAM	1	3	18.23	18.30	18.27	
1.4	256QAM	1	5	18.26	18.34	18.28	
1.4	256QAM	3	0	18.38	18.39	18.31	
1.4	256QAM	3	1	18.29	18.39	18.33	
1.4	256QAM	3	3	18.28	18.34	18.24	
1.4	256QAM	6	0	18.38	18.45	18.42	19

<LTE Band 66_Ant 8_Sensor ON>							
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				132072	132322	132572	
Frequency (MHz)				1720	1745	1770	
20	QPSK	1	0	21.04	21.14	21.10	21.5
20	QPSK	1	49	20.97	20.97	20.99	
20	QPSK	1	99	21.03	21.00	20.99	
20	QPSK	50	0	21.13	21.16	21.10	21.5
20	QPSK	50	24	20.98	20.97	21.02	
20	QPSK	50	50	21.05	20.99	21.06	
20	QPSK	100	0	21.03	20.98	21.02	21.5
20	16QAM	1	0	21.13	21.05	21.13	
20	16QAM	1	49	21.03	21.02	21.06	
20	16QAM	1	99	21.12	21.10	21.07	21.5
20	16QAM	50	0	21.03	21.02	21.09	
20	16QAM	50	24	20.98	20.93	20.97	
20	16QAM	50	50	21.12	21.02	21.08	21.5
20	16QAM	100	0	21.00	20.97	21.00	
20	64QAM	1	0	21.02	20.98	21.03	21.5
20	64QAM	1	49	21.07	20.98	21.05	
20	64QAM	1	99	21.05	21.00	21.07	
20	64QAM	50	0	20.53	20.50	20.53	21.5
20	64QAM	50	24	20.46	20.44	20.48	
20	64QAM	50	50	20.52	20.49	20.58	
20	64QAM	100	0	20.51	20.48	20.57	19.5
20	256QAM	1	0	18.35	18.31	18.40	
20	256QAM	1	49	18.38	18.31	18.34	
20	256QAM	1	99	18.43	18.35	18.37	19.5
20	256QAM	50	0	18.51	18.44	18.47	
20	256QAM	50	24	18.47	18.37	18.46	
20	256QAM	50	50	18.44	18.44	18.49	



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20	256QAM	100	0	18.47	18.46	18.54	
Channel				132047	132322	132597	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	QPSK	1	0	20.97	20.83	20.83	21.5
15	QPSK	1	37	20.80	20.96	20.98	
15	QPSK	1	74	21.08	20.94	20.95	
15	QPSK	36	0	21.06	21.06	21.04	21.5
15	QPSK	36	20	20.78	20.83	21.02	
15	QPSK	36	39	20.90	20.81	21.03	
15	QPSK	75	0	20.99	20.86	20.86	
15	16QAM	1	0	21.11	21.03	21.05	21.5
15	16QAM	1	37	21.02	20.96	21.04	
15	16QAM	1	74	20.92	20.91	20.94	
15	16QAM	36	0	21.01	20.94	20.89	21.5
15	16QAM	36	20	20.90	20.83	20.95	
15	16QAM	36	39	21.02	20.96	20.96	
15	16QAM	75	0	21.00	20.85	20.88	
15	64QAM	1	0	20.90	20.79	21.03	21.5
15	64QAM	1	37	20.91	20.89	20.91	
15	64QAM	1	74	20.99	20.81	21.03	
15	64QAM	36	0	20.53	20.32	20.47	21.5
15	64QAM	36	20	20.31	20.38	20.28	
15	64QAM	36	39	20.33	20.41	20.47	
15	64QAM	75	0	20.41	20.46	20.44	
15	256QAM	1	0	18.35	18.29	18.23	19.5
15	256QAM	1	37	18.36	18.29	18.24	
15	256QAM	1	74	18.42	18.25	18.20	
15	256QAM	36	0	18.45	18.24	18.42	19.5
15	256QAM	36	20	18.44	18.19	18.26	
15	256QAM	36	39	18.44	18.42	18.39	
15	256QAM	75	0	18.44	18.41	18.45	
Channel				132022	132322	132622	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	QPSK	1	0	21.12	20.93	20.83	21.5
10	QPSK	1	25	20.96	20.82	20.90	
10	QPSK	1	49	20.95	20.94	21.07	
10	QPSK	25	0	20.93	21.00	20.95	21.5
10	QPSK	25	12	20.91	20.79	20.84	
10	QPSK	25	25	21.01	20.87	20.93	
10	QPSK	50	0	20.95	20.80	20.89	
10	16QAM	1	0	20.96	20.86	20.99	21.5
10	16QAM	1	25	20.86	20.99	21.00	
10	16QAM	1	49	21.03	20.97	20.94	
10	16QAM	25	0	21.00	20.87	20.96	21.5
10	16QAM	25	12	20.93	20.91	20.81	
10	16QAM	25	25	21.08	20.89	21.08	
10	16QAM	50	0	20.98	20.94	20.84	
10	64QAM	1	0	20.85	20.78	20.90	21.5
10	64QAM	1	25	20.93	20.83	20.85	
10	64QAM	1	49	20.90	20.97	21.02	
10	64QAM	25	0	20.47	20.33	20.37	21.5
10	64QAM	25	12	20.42	20.34	20.33	
10	64QAM	25	25	20.40	20.39	20.46	
10	64QAM	50	0	20.43	20.42	20.54	
10	256QAM	1	0	18.22	18.21	18.29	19.5
10	256QAM	1	25	18.21	18.11	18.33	



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10	256QAM	1	49	18.23	18.32	18.33	19.5
10	256QAM	25	0	18.42	18.27	18.30	
10	256QAM	25	12	18.34	18.23	18.36	
10	256QAM	25	25	18.30	18.34	18.37	
10	256QAM	50	0	18.47	18.39	18.44	
Channel				131997	132322	132647	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	QPSK	1	0	20.96	20.93	20.99	21.5
5	QPSK	1	12	20.88	20.78	20.84	
5	QPSK	1	24	21.08	20.84	20.99	
5	QPSK	12	0	20.95	21.06	20.90	21.5
5	QPSK	12	7	20.84	20.80	20.96	
5	QPSK	12	13	21.03	20.87	20.94	
5	QPSK	25	0	20.93	20.92	20.85	
5	16QAM	1	0	21.10	21.01	21.07	21.5
5	16QAM	1	12	20.86	20.93	21.02	
5	16QAM	1	24	21.10	21.06	21.02	
5	16QAM	12	0	20.92	20.84	21.04	21.5
5	16QAM	12	7	20.89	20.88	20.87	
5	16QAM	12	13	21.02	20.95	20.99	
5	16QAM	25	0	20.94	20.85	20.92	
5	64QAM	1	0	21.02	20.83	20.84	21.5
5	64QAM	1	12	21.00	20.80	20.92	
5	64QAM	1	24	20.86	20.87	20.87	
5	64QAM	12	0	20.39	20.38	20.40	21.5
5	64QAM	12	7	20.45	20.29	20.32	
5	64QAM	12	13	20.39	20.47	20.50	
5	64QAM	25	0	20.44	20.38	20.51	
5	256QAM	1	0	18.28	18.21	18.23	19.5
5	256QAM	1	12	18.22	18.24	18.16	
5	256QAM	1	24	18.29	18.23	18.33	
5	256QAM	12	0	18.32	18.25	18.40	19.5
5	256QAM	12	7	18.33	18.31	18.42	
5	256QAM	12	13	18.29	18.37	18.36	
5	256QAM	25	0	18.36	18.28	18.52	
Channel				131987	132322	132657	Tune-up limit (dBm)
Frequency (MHz)				1711.5	1745	1778.5	
3	QPSK	1	0	20.98	20.81	20.89	21.5
3	QPSK	1	8	20.89	20.81	20.84	
3	QPSK	1	14	20.98	20.97	20.93	
3	QPSK	8	0	21.13	21.06	21.05	21.5
3	QPSK	8	4	20.87	20.84	21.01	
3	QPSK	8	7	20.97	20.91	20.97	
3	QPSK	15	0	20.91	20.93	21.02	
3	16QAM	1	0	21.00	20.92	21.12	21.5
3	16QAM	1	8	21.00	20.92	20.94	
3	16QAM	1	14	21.00	20.94	21.07	
3	16QAM	8	0	20.84	20.87	21.08	21.5
3	16QAM	8	4	20.92	20.88	20.84	
3	16QAM	8	7	21.04	20.92	20.89	
3	16QAM	15	0	20.91	20.79	20.94	
3	64QAM	1	0	20.97	20.92	20.86	21.5
3	64QAM	1	8	21.05	20.87	20.92	
3	64QAM	1	14	21.03	20.91	20.97	
3	64QAM	8	0	20.42	20.43	20.38	21.5
3	64QAM	8	4	20.43	20.26	20.32	



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3	64QAM	8	7	20.49	20.30	20.41	
3	64QAM	15	0	20.48	20.28	20.38	
3	256QAM	1	0	18.20	18.31	18.38	
3	256QAM	1	8	18.32	18.29	18.33	19.5
3	256QAM	1	14	18.26	18.16	18.34	
3	256QAM	8	0	18.38	18.41	18.32	
3	256QAM	8	4	18.41	18.21	18.29	19.5
3	256QAM	8	7	18.34	18.42	18.41	
3	256QAM	15	0	18.33	18.37	18.37	
Channel				131979	132322	132665	Tune-up limit (dBm)
Frequency (MHz)				1710.7	1745	1779.3	
1.4	QPSK	1	0	20.96	20.92	20.94	21.5
1.4	QPSK	1	3	20.99	20.94	21.02	
1.4	QPSK	1	5	20.95	20.88	20.93	
1.4	QPSK	3	0	20.96	20.92	20.99	
1.4	QPSK	3	1	20.94	20.93	20.94	
1.4	QPSK	3	3	20.96	20.87	20.90	
1.4	QPSK	6	0	20.96	20.92	20.92	21.5
1.4	16QAM	1	0	21.01	21.00	21.09	21.5
1.4	16QAM	1	3	21.04	21.02	21.04	
1.4	16QAM	1	5	21.08	21.01	21.04	
1.4	16QAM	3	0	20.90	20.83	20.92	
1.4	16QAM	3	1	20.84	20.84	20.88	
1.4	16QAM	3	3	20.84	20.83	20.83	
1.4	16QAM	6	0	21.02	20.93	20.93	21.5
1.4	64QAM	1	0	21.02	20.95	21.00	21.5
1.4	64QAM	1	3	21.00	20.96	20.99	
1.4	64QAM	1	5	20.94	20.93	20.99	
1.4	64QAM	3	0	20.93	20.88	20.92	
1.4	64QAM	3	1	20.93	20.89	20.91	
1.4	64QAM	3	3	20.93	20.85	20.89	
1.4	64QAM	6	0	20.41	20.38	20.48	21.5
1.4	256QAM	1	0	18.37	18.28	18.28	19.5
1.4	256QAM	1	3	18.36	18.28	18.34	
1.4	256QAM	1	5	18.32	18.25	18.33	
1.4	256QAM	3	0	18.40	18.30	18.38	
1.4	256QAM	3	1	18.41	18.33	18.43	
1.4	256QAM	3	3	18.29	18.26	18.27	
1.4	256QAM	6	0	18.37	18.37	18.43	19.5

<TDD LTE SAR Measurement>

TDD LTE configuration setup for SAR measurement

SAR was tested with a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by 3GPP.

- 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations
- “special subframe S” contains both uplink and downlink transmissions, it has been taken into consideration to determine the transmission duty factor according to the worst case uplink and downlink cyclic prefix requirements for UpPTS
- Establishing connections with base station simulators ensure a consistent means for testing SAR and recommended for evaluating SAR. The Base station simulator was used for LTE output power measurements and SAR testing.

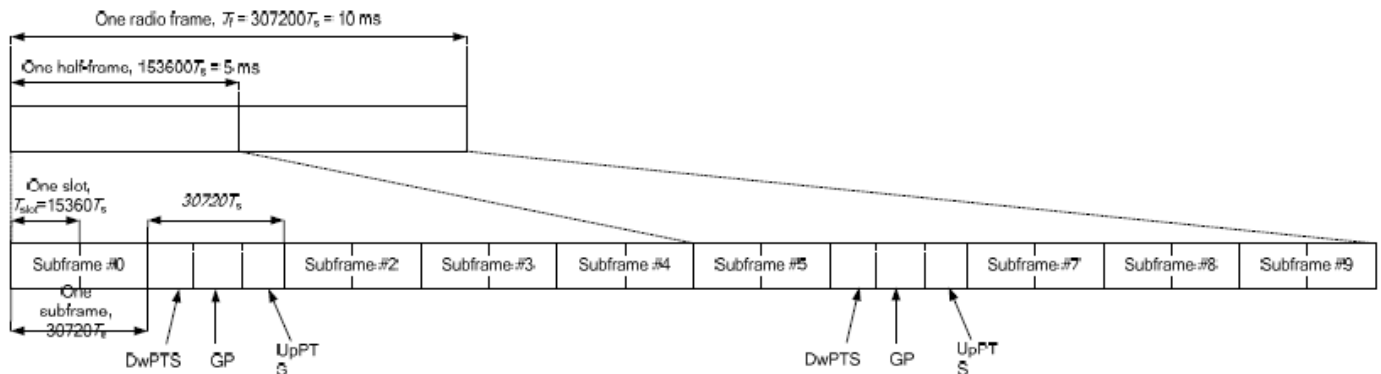


Figure 4.2-1: Frame structure type 2 (for 5 ms switch-point periodicity).

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

Special subframe (30720·T _s): Normal cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~4	7.13%	8.33%
	5~9	14.3%	16.7%

Special subframe(30720·T _s): Extended cyclic prefix in downlink (UpPTS)			
	Special subframe configuration	Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
Uplink duty factor in one special subframe	0~3	7.13%	8.33%
	4~7	14.3%	16.7%

The highest duty factor is resulted from:

- Uplink-downlink configuration: 0. In a half-frame consisted of 5 subframes, uplink operation is in 3 uplink subframes and 1 special subframe.
- special subframe configuration: 5-9 for normal cyclic prefix in downlink, 4-7 for extended cyclic prefix in downlink
- for special subframe with extended cyclic prefix in uplink, the total uplink duty factor in one half-frame is:
 $(3+0.167)/5 = 63.3\%$
- for special subframe with normal cyclic prefix in uplink, the total uplink duty factor in one half-frame is:
 $(3+0.143)/5 = 62.9\%$
- For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The scaled TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.

<LTE Band 48_Ant 1_Sensor OFF>								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				55340	55830	56150	56640	
Frequency (MHz)				3560	3609	3641	3690	
20	QPSK	1	0	20.95	20.85	20.80	20.82	21
20	QPSK	1	49	20.87	20.78	20.74	20.74	
20	QPSK	1	99	20.92	20.75	20.79	20.77	
20	QPSK	50	0	20.89	20.82	20.76	20.78	21
20	QPSK	50	24	20.87	20.80	20.73	20.72	
20	QPSK	50	50	20.88	20.74	20.72	20.75	
20	QPSK	100	0	20.88	20.76	20.74	20.73	21
20	16QAM	1	0	20.90	20.85	20.74	20.76	
20	16QAM	1	49	20.80	20.64	20.72	20.66	
20	16QAM	1	99	20.87	20.61	20.81	20.71	21
20	16QAM	50	0	20.76	20.75	20.69	20.67	
20	16QAM	50	24	20.76	20.53	20.63	20.60	
20	16QAM	50	50	20.77	20.64	20.61	20.61	21
20	16QAM	100	0	20.78	20.56	20.65	20.66	
20	64QAM	1	0	20.87	20.73	20.80	20.74	
20	64QAM	1	49	20.77	20.63	20.53	20.63	21
20	64QAM	1	99	20.83	20.65	20.78	20.69	
20	64QAM	50	0	20.27	20.14	20.19	20.18	20.5
20	64QAM	50	24	20.24	20.21	20.06	20.12	
20	64QAM	50	50	20.30	20.20	20.12	20.10	
20	64QAM	100	0	20.28	20.16	20.11	20.12	18.5
20	256QAM	1	0	18.23	17.99	18.16	18.09	
20	256QAM	1	49	18.10	17.96	18.02	17.95	
20	256QAM	1	99	18.20	17.94	17.98	18.03	18.5
20	256QAM	50	0	18.21	18.13	18.05	18.14	
20	256QAM	50	24	18.22	18.09	18.08	18.07	
20	256QAM	50	50	18.22	18.15	18.02	18.05	18.5
20	256QAM	100	0	18.22	18.16	18.03	18.07	
Channel				55315	55820	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3642	3692.5	
15	QPSK	1	0	20.80	20.72	20.64	20.62	
15	QPSK	1	37	20.72	20.65	20.58	20.57	21
15	QPSK	1	74	20.78	20.62	20.67	20.63	
15	QPSK	36	0	20.79	20.69	20.58	20.59	21
15	QPSK	36	20	20.75	20.70	20.55	20.57	
15	QPSK	36	39	20.69	20.57	20.59	20.65	
15	QPSK	75	0	20.77	20.62	20.60	20.60	21
15	16QAM	1	0	20.70	20.67	20.63	20.58	
15	16QAM	1	37	20.60	20.44	20.56	20.54	
15	16QAM	1	74	20.70	20.43	20.69	20.61	21
15	16QAM	36	0	20.58	20.55	20.50	20.57	
15	16QAM	36	20	20.58	20.43	20.53	20.45	
15	16QAM	36	39	20.67	20.50	20.51	20.42	21
15	16QAM	75	0	20.62	20.36	20.50	20.47	
15	64QAM	1	0	20.76	20.56	20.64	20.59	
15	64QAM	1	37	20.65	20.46	20.33	20.52	21
15	64QAM	1	74	20.64	20.49	20.67	20.54	
15	64QAM	36	0	20.11	19.96	20.04	20.00	
15	64QAM	36	20	20.09	20.05	19.90	19.94	20.5
15	64QAM	36	39	20.19	20.01	20.00	19.93	



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15	64QAM	75	0	20.17	20.06	19.91	20.02	
15	256QAM	1	0	18.07	17.84	18.01	17.95	18.5
15	256QAM	1	37	17.98	17.84	17.90	17.85	
15	256QAM	1	74	18.10	17.76	17.78	17.92	
15	256QAM	36	0	18.10	18.03	17.85	18.01	18.5
15	256QAM	36	20	18.06	17.93	17.95	17.97	
15	256QAM	36	39	18.02	17.99	17.84	17.90	
15	256QAM	75	0	18.08	18.00	17.85	17.91	
Channel				55290	55815	56165	56690	Tune-up limit (dBm)
Frequency (MHz)				3555	3607.5	3642.5	3695	
10	QPSK	1	0	20.85	20.66	20.70	20.65	21
10	QPSK	1	25	20.75	20.68	20.59	20.58	
10	QPSK	1	49	20.77	20.63	20.66	20.61	
10	QPSK	25	0	20.69	20.70	20.56	20.67	21
10	QPSK	25	12	20.71	20.65	20.59	20.60	
10	QPSK	25	25	20.73	20.55	20.60	20.61	
10	QPSK	50	0	20.74	20.66	20.56	20.55	
10	16QAM	1	0	20.76	20.71	20.64	20.63	21
10	16QAM	1	25	20.60	20.46	20.56	20.55	
10	16QAM	1	49	20.72	20.42	20.66	20.53	
10	16QAM	25	0	20.60	20.61	20.49	20.57	21
10	16QAM	25	12	20.57	20.34	20.47	20.50	
10	16QAM	25	25	20.67	20.51	20.47	20.47	
10	16QAM	50	0	20.58	20.40	20.48	20.56	
10	64QAM	1	0	20.69	20.54	20.66	20.61	21
10	64QAM	1	25	20.57	20.43	20.42	20.46	
10	64QAM	1	49	20.70	20.52	20.60	20.57	
10	64QAM	25	0	20.11	19.96	20.02	20.06	20.5
10	64QAM	25	12	20.05	20.05	19.92	19.97	
10	64QAM	25	25	20.14	20.03	20.00	19.92	
10	64QAM	50	0	20.12	20.03	19.92	19.99	
10	256QAM	1	0	18.06	17.81	17.98	17.89	18.5
10	256QAM	1	25	17.90	17.82	17.92	17.80	
10	256QAM	1	49	18.00	17.84	17.80	17.93	
10	256QAM	25	0	18.11	18.01	17.95	18.03	18.5
10	256QAM	25	12	18.09	17.93	17.96	17.93	
10	256QAM	25	25	18.12	17.98	17.89	17.88	
10	256QAM	50	0	18.05	18.03	17.88	17.96	
Channel				55265	55810	56170	56715	Tune-up limit (dBm)
Frequency (MHz)				3552.5	3607	3643	3697.5	
5	QPSK	1	0	20.83	20.70	20.60	20.65	21
5	QPSK	1	12	20.70	20.63	20.59	20.58	
5	QPSK	1	24	20.79	20.59	20.59	20.61	
5	QPSK	12	0	20.70	20.72	20.61	20.61	21
5	QPSK	12	7	20.76	20.66	20.56	20.59	
5	QPSK	12	13	20.74	20.55	20.58	20.65	
5	QPSK	25	0	20.77	20.58	20.54	20.62	
5	16QAM	1	0	20.77	20.74	20.58	20.56	21
5	16QAM	1	12	20.69	20.46	20.58	20.56	
5	16QAM	1	24	20.77	20.44	20.69	20.54	
5	16QAM	12	0	20.63	20.60	20.49	20.52	21
5	16QAM	12	7	20.66	20.41	20.50	20.49	
5	16QAM	12	13	20.61	20.47	20.45	20.45	
5	16QAM	25	0	20.60	20.46	20.47	20.47	
5	64QAM	1	0	20.69	20.63	20.64	20.64	21
5	64QAM	1	12	20.57	20.45	20.42	20.48	

5	64QAM	1	24	20.73	20.49	20.58	20.59	20.5
5	64QAM	12	0	20.11	19.95	20.06	20.07	
5	64QAM	12	7	20.07	20.02	19.91	20.02	
5	64QAM	12	13	20.20	20.05	19.98	19.91	
5	64QAM	25	0	20.15	19.96	19.93	19.94	
5	256QAM	1	0	18.08	17.80	17.96	17.93	18.5
5	256QAM	1	12	17.91	17.85	17.82	17.78	
5	256QAM	1	24	18.09	17.83	17.87	17.91	
5	256QAM	12	0	18.05	17.98	17.94	18.04	18.5
5	256QAM	12	7	18.05	17.92	17.97	17.90	
5	256QAM	12	13	18.10	17.95	17.89	17.89	
5	256QAM	25	0	18.12	18.03	17.90	17.92	

<LTE Band 48_Ant 6_Sensor OFF>								
BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Low Middle Ch. / Freq.	Power High Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				55340	55830	56150	56640	
Frequency (MHz)				3560	3609	3641	3690	
20	QPSK	1	0	20.76	20.72	20.78	20.92	21
20	QPSK	1	49	20.61	20.61	20.71	20.81	
20	QPSK	1	99	20.68	20.63	20.72	20.86	
20	QPSK	50	0	20.75	20.72	20.76	20.86	21
20	QPSK	50	24	20.63	20.64	20.70	20.83	
20	QPSK	50	50	20.66	20.65	20.74	20.85	
20	QPSK	100	0	20.64	20.63	20.70	20.80	
20	16QAM	1	0	20.71	20.67	20.74	20.79	21
20	16QAM	1	49	20.63	20.66	20.66	20.85	
20	16QAM	1	99	20.75	20.68	20.62	20.91	
20	16QAM	50	0	20.68	20.60	20.61	20.76	21
20	16QAM	50	24	20.55	20.63	20.54	20.79	
20	16QAM	50	50	20.59	20.63	20.58	20.81	
20	16QAM	100	0	20.58	20.65	20.66	20.84	
20	64QAM	1	0	20.62	20.64	20.54	20.76	21
20	64QAM	1	49	20.54	20.62	20.52	20.84	
20	64QAM	1	99	20.62	20.64	20.58	20.89	
20	64QAM	50	0	20.09	20.12	20.06	20.27	20.5
20	64QAM	50	24	20.18	20.14	20.11	20.30	
20	64QAM	50	50	20.21	20.13	20.11	20.33	
20	64QAM	100	0	20.24	20.14	20.16	20.28	
20	256QAM	1	0	17.92	17.95	17.97	18.08	18.5
20	256QAM	1	49	17.91	17.93	17.84	18.13	
20	256QAM	1	99	18.00	17.98	17.90	18.24	
20	256QAM	50	0	18.11	18.10	18.06	18.22	18.5
20	256QAM	50	24	17.99	18.09	18.02	18.25	
20	256QAM	50	50	17.98	18.08	18.04	18.28	
20	256QAM	100	0	18.03	18.07	18.15	18.24	
Channel				55315	55820	56160	56665	Tune-up limit (dBm)
Frequency (MHz)				3557.5	3608	3642	3692.5	
15	QPSK	1	0	20.56	20.60	20.64	20.73	21
15	QPSK	1	37	20.51	20.48	20.51	20.63	
15	QPSK	1	74	20.48	20.53	20.61	20.78	
15	QPSK	36	0	20.58	20.57	20.62	20.74	21
15	QPSK	36	20	20.48	20.51	20.56	20.64	
15	QPSK	36	39	20.46	20.53	20.61	20.69	
15	QPSK	75	0	20.44	20.44	20.50	20.70	
15	16QAM	1	0	20.60	20.56	20.55	20.64	21



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15	16QAM	1	37	20.53	20.47	20.46	20.73	
15	16QAM	1	74	20.55	20.54	20.50	20.80	
15	16QAM	36	0	20.49	20.40	20.48	20.63	
15	16QAM	36	20	20.37	20.48	20.34	20.67	21
15	16QAM	36	39	20.48	20.50	20.47	20.70	
15	16QAM	75	0	20.48	20.45	20.48	20.72	
15	64QAM	1	0	20.45	20.54	20.36	20.58	21
15	64QAM	1	37	20.39	20.48	20.37	20.69	
15	64QAM	1	74	20.52	20.49	20.40	20.74	
15	64QAM	36	0	19.92	19.98	19.87	20.15	20.5
15	64QAM	36	20	20.06	19.98	19.94	20.15	
15	64QAM	36	39	20.11	20.00	19.94	20.15	
15	64QAM	75	0	20.06	20.00	20.00	20.12	
15	256QAM	1	0	17.73	17.78	17.85	17.90	18.5
15	256QAM	1	37	17.76	17.83	17.71	18.00	
15	256QAM	1	74	17.80	17.80	17.70	18.08	
15	256QAM	36	0	17.98	17.99	17.87	18.07	18.5
15	256QAM	36	20	17.84	17.93	17.88	18.12	
15	256QAM	36	39	17.86	17.92	17.90	18.10	
15	256QAM	75	0	17.90	17.90	18.00	18.13	
Channel				55290	55815	56165	56690	Tune-up limit (dBm)
Frequency (MHz)				3555	3607.5	3642.5	3695	
10	QPSK	1	0	20.59	20.54	20.66	20.71	21
10	QPSK	1	25	20.51	20.42	20.58	20.68	
10	QPSK	1	49	20.58	20.49	20.54	20.76	
10	QPSK	25	0	20.63	20.54	20.66	20.72	21
10	QPSK	25	12	20.53	20.47	20.53	20.66	
10	QPSK	25	25	20.56	20.53	20.64	20.66	
10	QPSK	50	0	20.48	20.43	20.55	20.67	
10	16QAM	1	0	20.61	20.56	20.58	20.68	21
10	16QAM	1	25	20.50	20.50	20.51	20.75	
10	16QAM	1	49	20.55	20.56	20.42	20.79	
10	16QAM	25	0	20.58	20.44	20.50	20.62	21
10	16QAM	25	12	20.38	20.48	20.35	20.59	
10	16QAM	25	25	20.40	20.43	20.47	20.64	
10	16QAM	50	0	20.48	20.51	20.51	20.70	
10	64QAM	1	0	20.44	20.47	20.43	20.59	21
10	64QAM	1	25	20.35	20.50	20.36	20.66	
10	64QAM	1	49	20.50	20.47	20.38	20.77	
10	64QAM	25	0	19.96	19.95	19.91	20.13	20.5
10	64QAM	25	12	20.05	19.97	19.95	20.17	
10	64QAM	25	25	20.10	20.00	19.99	20.19	
10	64QAM	50	0	20.05	20.04	20.06	20.11	
10	256QAM	1	0	17.77	17.81	17.77	17.90	18.5
10	256QAM	1	25	17.80	17.82	17.72	17.99	
10	256QAM	1	49	17.80	17.82	17.76	18.10	
10	256QAM	25	0	17.91	17.97	17.91	18.10	18.5
10	256QAM	25	12	17.81	17.95	17.86	18.13	
10	256QAM	25	25	17.86	17.93	17.90	18.10	
10	256QAM	50	0	17.89	17.94	18.00	18.07	
Channel				55265	55810	56170	56715	Tune-up limit (dBm)
Frequency (MHz)				3552.5	3607	3643	3697.5	
5	QPSK	1	0	20.66	20.52	20.68	20.68	21
5	QPSK	1	12	20.44	20.50	20.57	20.65	
5	QPSK	1	24	20.50	20.43	20.62	20.79	
5	QPSK	12	0	20.64	20.52	20.57	20.66	21



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5	QPSK	12	7	20.51	20.52	20.55	20.67	
5	QPSK	12	13	20.48	20.46	20.62	20.67	
5	QPSK	25	0	20.53	20.52	20.55	20.61	
5	16QAM	1	0	20.57	20.50	20.60	20.63	21
5	16QAM	1	12	20.49	20.51	20.49	20.66	
5	16QAM	1	24	20.60	20.49	20.50	20.71	
5	16QAM	12	0	20.56	20.47	20.49	20.60	21
5	16QAM	12	7	20.35	20.46	20.34	20.62	
5	16QAM	12	13	20.46	20.53	20.47	20.67	
5	16QAM	25	0	20.45	20.55	20.53	20.70	21
5	64QAM	1	0	20.51	20.52	20.39	20.58	
5	64QAM	1	12	20.35	20.52	20.37	20.68	
5	64QAM	1	24	20.45	20.44	20.38	20.78	20.5
5	64QAM	12	0	19.98	20.01	19.93	20.14	
5	64QAM	12	7	20.03	19.96	19.93	20.15	
5	64QAM	12	13	20.09	20.03	19.98	20.18	18.5
5	64QAM	25	0	20.12	20.03	20.05	20.13	
5	256QAM	1	0	17.77	17.84	17.79	17.91	
5	256QAM	1	12	17.71	17.78	17.66	17.95	18.5
5	256QAM	1	24	17.90	17.86	17.73	18.14	
5	256QAM	12	0	17.97	17.90	17.91	18.10	
5	256QAM	12	7	17.84	17.96	17.83	18.09	18.5
5	256QAM	12	13	17.88	17.93	17.93	18.15	
5	256QAM	25	0	17.93	17.92	18.00	18.04	

**<LTE Carrier Aggregation combinations>****General Note:**

1. This device supports Carrier Aggregation on downlink only for inter and intra band, Uplink CA is not supported. For the device supports combination bands and configurations are according to 3GPP.
2. In applying the existing power measurement procedure of KDB 941225 D05A for DL CA SAR test exclusion, only the subset with the largest number of combinations of the frequency band and CCs in each row need consideration, and that configurations require power measurement should be highlighted in the below table.

2CC Downlink Carrier Aggregation			3CC Downlink Carrier Aggregation			4CC Downlink Carrier Aggregation			5CC Downlink Carrier Aggregation		
Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset	Number	Combination	Covered by Measurement Superset
1	CA_48C	124	26	CA_48D	124	63	CA_48E	124	101	CA_2A-48E	124
2	CA_48C	124	27	CA_66A-66A-66A	124	64	CA_2A-2A-4A-4A	107	102	CA_4A-48E	
3	CA_66B	124	28	CA_2A-2A-4A	107	65	CA_2A-2A-66A-66A	124	103	CA_5A-48E	121
4	CA_66C	124	29	CA_2A-2A-5A	121	66	CA_2A-2A-66B	124	104	CA_13A-48E	124
5	CA_2A-2A	124	30	CA_2A-2A-13A	124	67	CA_2A-2A-66C	124	105	CA_48E-66A	124
6	CA_4A-4A	107	31	CA_2A-2A-66A	124	68	CA_2A-48D	124	106	CA_2A-2A-4A-4A-5A	
7	CA_66A-66A	124	32	CA_2A-4A-4A	107	69	CA_2A-66A-66A-66A	124	107	CA_2A-2A-4A-4A-13A	
8	CA_2A-4A	107	33	CA_2A-48C	124	70	CA_4A-48D	102	108	CA_2A-2A-5A-66A-66A	121
9	CA_2A-5A	121	34	CA_2A-66A-66A	124	71	CA_5A-48D	121	109	CA_2A-2A-5A-66A-66A	121
10	CA_2A-48A	124	35	CA_2A-66B	124	72	CA_13A-48D	124	110	CA_2A-2A-5A-66B	121
11	CA_2A-48A	124	36	CA_2A-66C	124	73	CA_13A-66A-66A-66A	124	111	CA_2A-2A-5A-66C	121
12	CA_2A-66A	124	37	CA_4A-4A-5A	106	74	CA_48C-66A-66A	124	112	CA_2A-2A-13A-66A-66A	124
13	CA_4A-5A	106	38	CA_4A-4A-13A	107	75	CA_48C-66B	124	113	CA_2A-5A-48D	121
14	CA_4A-48A	102	39	CA_4A-48C	102	76	CA_48C-66C	124	114	CA_2A-13A-48D	124
15	CA_5A-48A	121	40	CA_5A-48C	121	77	CA_48D-66A	124	115	CA_2A-48D-66A	124
16	CA_5A-48A	121	41	CA_5A-66A-66A	121	78	CA_2A-2A-4A-5A	106	116	CA_2A-48D-66A	124
17	CA_5A-66A	121	42	CA_5A-66B	121	79	CA_2A-2A-4A-5A	106	117	CA_5A-48D-66A	121
18	CA_13A-2A	124	43	CA_5A-66C	121	80	CA_2A-2A-4A-5A	106	118	CA_13A-48C-66B	124
19	CA_13A-4A	107	44	CA_13A-48C	124	81	CA_2A-2A-4A-13A	107	119	CA_13A-48C-66C	124
20	CA_13A-48A	124	45	CA_13A-66A-66A	124	82	CA_2A-2A-5A-66A	121	120	CA_13A-48D-66A	124
21	CA_13A-48A	124	46	CA_13A-66B	124	83	CA_2A-2A-13A-66A	124	121	CA_2A-5A-48C-66A	
22	CA_13A-66A	124	47	CA_13A-66C	124	84	CA_2A-4A-4A-5A	106	122	CA_2A-13A-48C-66A	124
23	CA_48A-66A	124	48	CA_48A-66A-66A	124	85	CA_2A-4A-4A-13A	107	123	CA_2A-13A-48C-66A	124
24	CA_48A-66A	124	49	CA_48A-66B	124	86	CA_2A-5A-48C	121	124	CA_2A-13A-48C-66A	
25	CA_2A-48A-66A	124	50	CA_48A-66C	124	87	CA_2A-5A-66A-66A	121			
			51	CA_48C-66A	124	88	CA_2A-5A-66B	121			
			52	CA_2A-4A-5A	106	89	CA_2A-5A-66C	121			
			53	CA_2A-4A-5A	106	90	CA_2A-13A-48C	124			
			54	CA_2A-4A-13A	107	91	CA_2A-13A-66A-66A	124			
			55	CA_2A-4A-13A	107	92	CA_2A-13A-66B	124			
			56	CA_2A-4A-13A	107	93	CA_2A-13A-66C	124			
			57	CA_2A-5A-48A	121	94	CA_2A-48C-66A	124			
			58	CA_2A-5A-66A	121	95	CA_5A-48C-66A	121			
			59	CA_2A-13A-48A	124	96	CA_13A-48A-66B	124			
			60	CA_2A-13A-66A	124	97	CA_13A-48A-66C	124			
			61	CA_5A-48A-66A	121	98	CA_13A-48C-66A	124			
			62	CA_13A-48A-66A	124	99	CA_2A-5A-48A-66A	121			
						100	CA_2A-13A-48A-66A	124			

<Power verification when LTE Carrier Aggregation Active>
General Note:

- i. According to KDB941225 D05A v01r02, Uplink maximum output power measurement with downlink carrier aggregation active should be measured, using the highest output channel measured without downlink carrier aggregation, to confirm that uplink maximum output power with downlink carrier aggregation active remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output measured without downlink carrier aggregation active.
- ii. Uplink maximum output power with downlink carrier aggregation active does not show more than ¼ dB higher than the maximum output power without downlink carrier aggregation active, therefore SAR evaluation with downlink carrier aggregation active can be excluded.
- iii. The device supports downlink two carrier aggregation. For power measurement were control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
- iv. Selected highest measured power when downlink carrier aggregation is inactive for conducted power comparison with downlink carrier aggregation is active, to confirm that when downlink carrier aggregation is active uplink maximum output power remains within the specified tune-up tolerance limits and not more than ¼ dB higher than the maximum output power measured when downlink carrier aggregation inactive.
- v. For non-contiguous intra-band CA, the SCC selected to provide maximum separation from the PCC and must remain fully within the downlink transmission band.
- vi. For Intra-band, contiguous CA, the downlink channels selected to perform the uplink power measurement must satisfy 3GPP channel spacing (5.4.1A of 3GPP TS 36.521 or equivalent) and channel bandwidth (5.4.2A) requirements.

$$\text{Nominal channel spacing} = \left\lceil \frac{BW_{\text{Channel}(1)} + BW_{\text{Channel}(2)} - 0.1 |BW_{\text{Channel}(1)} - BW_{\text{Channel}(2)}|}{0.6} \right\rceil 0.3 \text{ [MHz]}$$

<Five Carrier power verification>

Configure	PCC							SCC1				SCC2				SCC3				SCC4				Power	
	LTE Band	BW (MHz)	UL Freq. (MHz)	UL Channel	Mod.	UL# RB	UL RB Offset	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	LTE Band	BW (MHz)	DL Freq. (MHz)	DL Channel	With CA Tx.Power (dBm)	W/O CA Tx.Power (dBm)
Inter-Band	Band 4	20	1732.5	20175	QPSK	1	0	48	20	3609	55830	48	20	3628.8	56028	48	20	3648.6	56226	48	20	3668.4	56424	23.16	23.35
	Band 2	20	1880	18900	QPSK	1	0	2	5	1987.5	1175	4	20	2132.5	2175	4	5	2152.5	2375	5	10	881.5	2175	23.03	23.46
	Band 2	20	1880	18900	QPSK	1	0	2	5	1987.5	1175	4	20	2132.5	2175	4	5	2152.5	2375	13	10	751	2175	23.05	23.46
	Band 2	20	1880	18900	QPSK	1	0	5	10	881.5	2525	48	20	3609	55830	48	20	3628.8	56028	66	20	2145	66786	23.11	23.46
	Band 2	20	1880	18900	QPSK	1	0	13	10	751	5230	48	20	3609	55830	48	20	3628.8	56028	66	20	2145	66786	23.11	23.46

<LTE Uplink carrier aggregation>

2CC Uplink Carrier Aggregation	
Number	Combination
1	48C
2	66B
3	66C

<Intra-band>

General Note:

- i. The device supports intra-band uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre 3GPP requirement.
- ii. The device supports uplink carrier aggregation with a maximum of two 20MHz component carriers. For intra band contiguous carrier aggregation scenarios, 3GPP 36.101 table 6.2.2A-1 specifies that the aggregate maximum allowed output power is equivalent to the single carrier scenario. 3GPP 36.101 6.2.3A allows for several dB of MPR to be applied when not-contiguous RB allocation is implemented. The conducted power and MPR setting in this device are permanently implemented pre the 3GPP requirement.
- iii. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- iv. According TCB workshop, the output power with uplink CA active was measured for the configuration with the highest reported SAR with single carrier for each exposure condition. The power was measured with wideband signal integration over both component carriers.
- v. Additional SAR measurement for LTE UL CA whit other DL CA combinations active were not required since the maximum output power for this configuration was not > 0.25dB higher than the maximum output power for UL CA active.

<Sensor OFF>

CA_66B_Ant 3										
Combination 15MHz+5MHz (75RB+25RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132047	132140	QPSK	1	0	0	0	1	0	23.24	24.00
132322	132229	QPSK	1	0	1	24	2	0	23.34	24.00
132597	132504	QPSK	1	0	1	24	2	0	23.34	24.00

CA_66C_Ant 3										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132072	132270	QPSK	1	0	0	0	1	0	22.87	24.00
132322	132124	QPSK	1	0	1	99	2	0	22.97	24.00
132572	132374	QPSK	1	0	1	99	2	0	23.04	24.00

CA_48C_Ant 1										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
55340	55538	QPSK	1	0	0	0	1	0	20.43	21.00
55830	55632	QPSK	1	0	1	99	2	0	20.43	21.00
56150	55952	QPSK	1	0	1	99	2	0	20.35	21.00
56640	56442	QPSK	1	0	1	99	2	0	20.12	21.00

<Sensor ON>

CA_66B_Ant 3										
Combination 15MHz+5MHz (75RB+25RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132047	132140	QPSK	1	0	0	0	1	0	20.85	21.50
132322	132229	QPSK	1	0	1	24	2	0	20.92	21.50
132597	132504	QPSK	1	0	1	24	2	0	20.89	21.50

CA_66C_Ant 3										
Combination 20MHz+20MHz (100RB+100RB)										
PCC Channel	SCC Channel	Modulation	PCC		SCC		Total RB Size	Target MPR Level (dB)	Measured Power (dBm)	Tune up Power (dBm)
			RB Size	RB offset	RB Size	RB offset				
132072	132270	QPSK	1	0	0	0	1	0	20.44	21.50
132322	132124	QPSK	1	0	1	99	2	0	20.51	21.50
132572	132374	QPSK	1	0	1	99	2	0	20.50	21.50

11. 5G NR Output Power (Unit: dBm)

General Note:

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below
 - a. For DFT-OFDM output power measurement, full measurement was done for Pi/2 BPSK and QPSK and for the largest supported bandwidth, repeat test for 16QAM/64QAM/256QAM under 1RB 1Offset configuration. For smaller bandwidth, measure conducted power for Pi/2 BPSK and 1RB 1Offset configuration.
 - b. According to the tune-up, CP-OFDM output power is not ½ dB higher than DFT-OFDM mode, and the reported SAR of DFT-OFDM mode reported SAR is ≤ 1.45 W/kg, SAR test and thus conducted power for CP-OFDM mode is not required.
 - c. To start SAR test for the largest channel bandwidth for Pi/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. Also do SAR test for 50% RB allocation for Pi/2 BPSK SAR testing using 1RB Pi/2 BPSK allocation procedure
 - d. For Pi/2 BPSK with 100% RB allocation, SAR test is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
 - e. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not ½ dB higher than the same configuration in Pi/2 BPSK, also reported SAR for the Pi/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
 - f. Smaller bandwidth output power for each RB allocation configuration for this device is not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
2. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.

<3GPP 38.101 MPR for EN-DC>

Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	$\leq 3.5^1$	$\leq 1.2^1$	$\leq 0.2^1$
		$\leq 0.5^2$	$\leq 0.5^2$	0 ²
	QPSK	≤ 1		0
	16 QAM	≤ 2		≤ 1
	64 QAM		≤ 2.5	
CP-OFDM	256 QAM		≤ 4.5	
	QPSK	≤ 3		≤ 1.5
	16 QAM	≤ 3		≤ 2
	64 QAM		≤ 3.5	
	256 QAM		≤ 6.5	

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0 dB MPR is 26 dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 with Pi/2 BPSK modulation and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40 % of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

Modulation		MPR (dB)		
		Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM	Pi/2 BPSK	≤ 3.5	≤ 0.5	0
	QPSK	≤ 3.5	≤ 1	0
	16 QAM	≤ 3.5	≤ 2	≤ 1
	64 QAM	≤ 3.5		≤ 2.5
	256 QAM		≤ 4.5	
CP-OFDM	QPSK	≤ 3.5	≤ 3	≤ 1.5
	16 QAM	≤ 3.5	≤ 3	≤ 2
	64 QAM		≤ 3.5	
	256 QAM		≤ 6.5	



<FR1 n2_Ant 3_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376000	380000	Tune-up limit (dBm)
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	23.46	23.59	23.50	24.0
20	PI/2 BPSK	1	53	23.31	23.49	23.39	
20	PI/2 BPSK	1	104	23.45	23.58	23.49	
20	PI/2 BPSK	50	0	22.78	22.97	22.91	23.5
20	PI/2 BPSK	50	28	23.32	23.47	23.43	24.0
20	PI/2 BPSK	50	56	22.83	23.01	22.92	23.5
20	PI/2 BPSK	100	0	22.84	22.97	22.90	
20	QPSK	1	1	23.32	23.46	23.45	24.0
20	QPSK	1	53	23.29	23.44	23.37	
20	QPSK	1	104	23.33	23.53	23.49	
20	QPSK	50	0	22.34	22.56	22.53	23.0
20	QPSK	50	28	23.25	23.42	23.40	24.0
20	QPSK	50	56	22.30	22.51	22.41	23.0
20	QPSK	100	0	22.41	22.56	22.50	
20	16QAM	1	1	22.07	22.28	22.25	23.0
20	64QAM	1	1	20.71	20.85	20.76	21.5
20	256QAM	1	1	19.26	19.41	19.38	19.5
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	23.44	23.41	23.42	24.0
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	23.43	23.35	23.48	24.0
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	23.36	23.37	23.45	24.0



<FR1 n2_Ant 3_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376000	380000	Tune-up limit (dBm)
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	21.53	21.62	21.55	
20	PI/2 BPSK	1	53	21.42	21.51	21.44	22.5
20	PI/2 BPSK	1	104	21.50	21.59	21.52	22.5
20	PI/2 BPSK	50	0	21.52	21.61	21.54	22.5
20	PI/2 BPSK	50	28	21.43	21.52	21.45	22.5
20	PI/2 BPSK	50	56	21.38	21.47	21.40	22.5
20	PI/2 BPSK	100	0	21.49	21.58	21.51	22.5
20	QPSK	1	1	21.48	21.57	21.50	22.5
20	QPSK	1	53	21.40	21.49	21.42	22.5
20	QPSK	1	104	21.51	21.60	21.53	22.5
20	QPSK	50	0	21.52	21.61	21.54	22.5
20	QPSK	50	28	21.44	21.53	21.46	22.5
20	QPSK	50	56	21.40	21.49	21.42	22.5
20	QPSK	100	0	21.50	21.59	21.52	22.5
20	16QAM	1	1	21.26	21.35	21.28	22.5
20	64QAM	1	1	20.80	20.89	20.82	21.5
20	256QAM	1	1	19.40	19.48	19.42	19.5
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	21.42	21.48	21.38	
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	21.40	21.47	21.37	
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	21.43	21.52	21.39	



<FR1 n2_Ant 8_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376000	380000	
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	23.71	23.76	23.72	24.0
20	PI/2 BPSK	1	53	23.58	23.66	23.58	
20	PI/2 BPSK	1	104	23.65	23.75	23.68	
20	PI/2 BPSK	50	0	23.24	23.29	23.23	23.5
20	PI/2 BPSK	50	28	23.66	23.70	23.63	24.0
20	PI/2 BPSK	50	56	23.18	23.21	23.18	23.5
20	PI/2 BPSK	100	0	23.22	23.27	23.18	
20	QPSK	1	1	23.54	23.60	23.51	24.0
20	QPSK	1	53	23.55	23.61	23.58	
20	QPSK	1	104	23.62	23.72	23.69	
20	QPSK	50	0	22.66	22.76	22.69	23.0
20	QPSK	50	28	23.59	23.66	23.56	24.0
20	QPSK	50	56	22.62	22.71	22.65	23.0
20	QPSK	100	0	22.73	22.74	22.66	
20	16QAM	1	1	22.43	22.50	22.40	23.0
20	64QAM	1	1	20.97	21.00	20.97	21.5
20	256QAM	1	1	19.39	19.49	19.47	19.5
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	23.64	23.67	23.62	24.0
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	23.68	23.72	23.68	24.0
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	23.67	23.67	23.70	24.0

<FR1 n2_Ant 8_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				372000	376000	380000	Tune-up limit (dBm)
Frequency (MHz)				1860	1880	1900	
20	PI/2 BPSK	1	1	22.77	22.91	22.85	23.5
20	PI/2 BPSK	1	53	22.68	22.82	22.76	
20	PI/2 BPSK	1	104	22.76	22.90	22.84	
20	PI/2 BPSK	50	0	22.78	22.92	22.86	23.5
20	PI/2 BPSK	50	28	22.70	22.84	22.78	23.5
20	PI/2 BPSK	50	56	22.63	22.77	22.71	23.5
20	PI/2 BPSK	100	0	22.68	22.82	22.76	
20	QPSK	1	1	22.69	22.83	22.77	23.5
20	QPSK	1	53	22.66	22.80	22.74	
20	QPSK	1	104	22.71	22.85	22.79	
20	QPSK	50	0	22.74	22.88	22.82	23.0
20	QPSK	50	28	22.66	22.80	22.74	23.5
20	QPSK	50	56	22.64	22.78	22.72	23.0
20	QPSK	100	0	22.66	22.80	22.74	
20	16QAM	1	1	22.41	22.55	22.49	23.0
20	64QAM	1	1	20.95	21.08	21.02	21.5
20	256QAM	1	1	19.35	19.47	19.42	19.5
Channel				371500	376000	380500	Tune-up limit (dBm)
Frequency (MHz)				1857.5	1880	1902.5	
15	PI/2 BPSK	1	1	22.62	22.74	22.68	23.5
Channel				371000	376000	381000	Tune-up limit (dBm)
Frequency (MHz)				1855	1880	1905	
10	PI/2 BPSK	1	1	22.65	22.80	22.69	23.5
Channel				370500	376000	381500	Tune-up limit (dBm)
Frequency (MHz)				1852.5	1880	1907.5	
5	PI/2 BPSK	1	1	22.67	22.75	22.75	23.5



<FR1 n5_Ant 8_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	Tune-up limit (dBm)
Frequency (MHz)				834	836.5	839	
20	PI/2 BPSK	1	1	24.34	24.40	24.36	25.0
20	PI/2 BPSK	1	53	24.25	24.33	24.23	
20	PI/2 BPSK	1	104	24.32	24.39	24.32	
20	PI/2 BPSK	50	0	23.86	23.95	23.93	24.5
20	PI/2 BPSK	50	28	24.21	24.28	24.25	25.0
20	PI/2 BPSK	50	56	23.57	23.62	23.61	24.5
20	PI/2 BPSK	100	0	23.79	23.84	23.80	
20	QPSK	1	1	24.24	24.29	24.27	25.0
20	QPSK	1	53	24.17	24.24	24.20	
20	QPSK	1	104	24.25	24.30	24.20	
20	QPSK	50	0	23.34	23.43	23.37	24.0
20	QPSK	50	28	24.23	24.24	24.23	25.0
20	QPSK	50	56	23.00	23.10	23.07	24.0
20	QPSK	100	0	23.21	23.31	23.27	
20	16QAM	1	1	22.97	22.99	22.95	24.0
20	64QAM	1	1	21.51	21.52	21.42	22.5
20	256QAM	1	1	20.16	20.19	20.12	20.5
Channel				166300	167300	168300	Tune-up limit (dBm)
Frequency (MHz)				831.5	836.5	841.5	
15	PI/2 BPSK	1	1	24.29	24.33	24.26	25.0
Channel				165800	167300	168800	Tune-up limit (dBm)
Frequency (MHz)				829	836.5	844	
10	PI/2 BPSK	1	1	24.24	24.37	24.31	25.0
Channel				165300	167300	169300	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	PI/2 BPSK	1	1	24.33	24.31	24.32	25.0

<FR1 n5_Ant 8_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				166800	167300	167800	24.5
Frequency (MHz)				834	836.5	839	
20	PI/2 BPSK	1	1	23.43	23.64	23.49	24.5
20	PI/2 BPSK	1	53	23.25	23.46	23.31	
20	PI/2 BPSK	1	104	23.29	23.50	23.35	
20	PI/2 BPSK	50	0	23.42	23.63	23.48	24.5
20	PI/2 BPSK	50	28	23.22	23.43	23.28	24.5
20	PI/2 BPSK	50	56	23.11	23.32	23.17	24.5
20	PI/2 BPSK	100	0	23.33	23.54	23.39	
20	QPSK	1	1	23.23	23.44	23.29	24.5
20	QPSK	1	53	23.19	23.40	23.25	
20	QPSK	1	104	23.22	23.43	23.28	
20	QPSK	50	0	23.39	23.60	23.45	24.0
20	QPSK	50	28	23.20	23.41	23.26	24.5
20	QPSK	50	56	23.07	23.28	23.13	24.0
20	QPSK	100	0	23.30	23.51	23.36	
20	16QAM	1	1	22.98	23.19	23.04	24.0
20	64QAM	1	1	21.51	21.70	21.56	22.5
20	256QAM	1	1	20.18	20.36	20.23	20.5
Channel				166300	167300	168300	Tune-up limit (dBm)
Frequency (MHz)				831.5	836.5	841.5	
15	PI/2 BPSK	1	1	23.23	23.45	23.30	24.5
Channel				165800	167300	168800	Tune-up limit (dBm)
Frequency (MHz)				829	836.5	844	
10	PI/2 BPSK	1	1	23.24	23.46	23.35	24.5
Channel				165300	167300	169300	Tune-up limit (dBm)
Frequency (MHz)				826.5	836.5	846.5	
5	PI/2 BPSK	1	1	23.28	23.45	23.30	24.5



<FR1 n66_Ant 3_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				346000	349000	352000	24.0
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	23.42	23.51	23.45	24.0
40	PI/2 BPSK	1	108	23.27	23.32	23.28	
40	PI/2 BPSK	1	214	23.41	23.50	23.44	
40	PI/2 BPSK	108	0	22.20	22.23	22.18	23.5
40	PI/2 BPSK	108	54	23.27	23.29	23.24	24.0
40	PI/2 BPSK	108	108	22.40	22.50	22.44	23.5
40	PI/2 BPSK	216	0	22.31	22.40	22.35	
40	QPSK	1	1	23.13	23.21	23.16	24.0
40	QPSK	1	108	23.17	23.27	23.18	
40	QPSK	1	214	23.42	23.45	23.38	
40	QPSK	108	0	21.62	21.71	21.67	23.0
40	QPSK	108	54	23.05	23.15	23.13	24.0
40	QPSK	108	108	21.92	21.98	21.90	23.0
40	QPSK	216	0	21.79	21.86	21.85	
40	16QAM	1	1	21.93	22.01	21.95	23.0
40	64QAM	1	1	20.49	20.55	20.52	21.5
40	256QAM	1	1	19.07	19.14	19.05	19.5
Channel				345000	349000	353000	Tune-up limit (dBm)
Frequency (MHz)				1725	1745	1765	
30	PI/2 BPSK	1	1	23.40	23.50	23.39	24.0
Channel				344500	349000	353500	Tune-up limit (dBm)
Frequency (MHz)				1722.5	1745	1767.5	
25	PI/2 BPSK	1	1	23.38	23.49	23.35	24.0
Channel				344000	349000	354000	Tune-up limit (dBm)
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	23.32	23.46	23.41	24.0
Channel				343500	349000	354500	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	23.36	23.48	23.38	24.0
Channel				343000	349000	355000	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	23.36	23.41	23.43	24.0
Channel				342500	349000	355500	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	23.38	23.47	23.43	24.0

**<FR1 n66_Ant 3_Sensor ON>**

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				346000	349000	352000	21.0
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	20.31	20.51	20.33	21.0
40	PI/2 BPSK	1	108	20.17	20.37	20.19	
40	PI/2 BPSK	1	214	20.30	20.50	20.32	
40	PI/2 BPSK	108	0	19.58	19.77	19.60	21.0
40	PI/2 BPSK	108	54	20.11	20.31	20.13	21.0
40	PI/2 BPSK	108	108	19.84	20.04	19.86	21.0
40	PI/2 BPSK	216	0	19.71	19.90	19.73	
40	QPSK	1	1	20.08	20.28	20.10	21.0
40	QPSK	1	108	20.12	20.32	20.14	
40	QPSK	1	214	20.30	20.50	20.32	
40	QPSK	108	0	19.60	19.79	19.62	21.0
40	QPSK	108	54	20.09	20.29	20.11	21.0
40	QPSK	108	108	19.85	20.05	19.87	21.0
40	QPSK	216	0	19.71	19.90	19.73	
40	16QAM	1	1	19.84	20.04	19.86	21.0
40	64QAM	1	1	19.88	20.08	19.90	21.0
40	256QAM	1	1	19.01	19.20	19.03	19.5
Channel				345000	349000	353000	Tune-up limit (dBm)
Frequency (MHz)				1725	1745	1765	
30	PI/2 BPSK	1	1	20.11	20.33	20.15	21.0
Channel				344500	349000	353500	Tune-up limit (dBm)
Frequency (MHz)				1722.5	1745	1767.5	
25	PI/2 BPSK	1	1	20.11	20.35	20.16	21.0
Channel				344000	349000	354000	Tune-up limit (dBm)
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	20.13	20.38	20.13	21.0
Channel				343500	349000	354500	Tune-up limit (dBm)
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	20.20	20.36	20.13	21.0
Channel				343000	349000	355000	Tune-up limit (dBm)
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	20.11	20.34	20.14	21.0
Channel				342500	349000	355500	Tune-up limit (dBm)
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	20.21	20.41	20.23	21.0



<FR1 n66_Ant 8_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				346000	349000	352000	24.0
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	23.76	23.84	23.71	
40	PI/2 BPSK	1	108	23.57	23.70	23.64	23.5
40	PI/2 BPSK	1	214	23.73	23.83	23.70	24.0
40	PI/2 BPSK	108	0	23.07	23.22	23.16	23.5
40	PI/2 BPSK	108	54	23.63	23.69	23.61	24.0
40	PI/2 BPSK	108	108	23.21	23.34	23.29	23.5
40	PI/2 BPSK	216	0	23.20	23.32	23.24	24.0
40	QPSK	1	1	23.56	23.66	23.59	23.0
40	QPSK	1	108	23.53	23.66	23.53	24.0
40	QPSK	1	214	23.59	23.74	23.63	23.0
40	QPSK	108	0	22.58	22.69	22.56	24.0
40	QPSK	108	54	23.58	23.66	23.60	23.0
40	QPSK	108	108	22.66	22.80	22.75	23.0
40	QPSK	216	0	22.73	22.81	22.75	23.0
40	16QAM	1	1	22.24	22.37	22.32	21.5
40	64QAM	1	1	20.82	20.90	20.83	19.5
40	256QAM	1	1	19.40	19.49	19.44	
Channel				345000	349000	353000	24.0
Frequency (MHz)				1725	1745	1765	
30	PI/2 BPSK	1	1	23.67	23.82	23.66	
Channel				344500	349000	353500	24.0
Frequency (MHz)				1722.5	1745	1767.5	
25	PI/2 BPSK	1	1	23.68	23.74	23.67	
Channel				344000	349000	354000	24.0
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	23.68	23.75	23.66	
Channel				343500	349000	354500	24.0
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	23.75	23.75	23.62	
Channel				343000	349000	355000	24.0
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	23.75	23.82	23.62	
Channel				342500	349000	355500	24.0
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	23.66	23.76	23.63	



<FR1 n66_Ant 8_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				346000	349000	352000	21.0
Frequency (MHz)				1730	1745	1760	
40	PI/2 BPSK	1	1	20.70	20.61	20.59	21.0
40	PI/2 BPSK	1	108	20.64	20.55	20.53	
40	PI/2 BPSK	1	214	20.67	20.58	20.56	
40	PI/2 BPSK	108	0	20.62	20.53	20.51	21.0
40	PI/2 BPSK	108	54	20.60	20.51	20.49	21.0
40	PI/2 BPSK	108	108	20.50	20.41	20.39	21.0
40	PI/2 BPSK	216	0	20.50	20.41	20.39	
40	QPSK	1	1	20.65	20.56	20.54	21.0
40	QPSK	1	108	20.62	20.53	20.51	
40	QPSK	1	214	20.65	20.56	20.54	
40	QPSK	108	0	20.43	20.34	20.32	21.0
40	QPSK	108	54	20.64	20.55	20.53	21.0
40	QPSK	108	108	20.50	20.41	20.39	21.0
40	QPSK	216	0	20.49	20.40	20.38	
40	16QAM	1	1	20.45	20.36	20.34	21.0
40	64QAM	1	1	20.47	20.38	20.36	21.0
40	256QAM	1	1	19.50	19.42	19.40	19.5
Channel				345000	349000	353000	21.0
Frequency (MHz)				1725	1745	1765	
30	PI/2 BPSK	1	1	20.55	20.47	20.47	21.0
Channel				344500	349000	353500	21.0
Frequency (MHz)				1722.5	1745	1767.5	
25	PI/2 BPSK	1	1	20.57	20.50	20.45	21.0
Channel				344000	349000	354000	21.0
Frequency (MHz)				1720	1745	1770	
20	PI/2 BPSK	1	1	20.50	20.46	20.43	21.0
Channel				343500	349000	354500	21.0
Frequency (MHz)				1717.5	1745	1772.5	
15	PI/2 BPSK	1	1	20.59	20.43	20.42	21.0
Channel				343000	349000	355000	21.0
Frequency (MHz)				1715	1745	1775	
10	PI/2 BPSK	1	1	20.59	20.48	20.44	21.0
Channel				342500	349000	355500	21.0
Frequency (MHz)				1712.5	1745	1777.5	
5	PI/2 BPSK	1	1	20.59	20.49	20.40	21.0

<FR1 n48_Ant 1_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				638000	641666	645332	21.0
Frequency (MHz)				3570	3624.99	3679.98	
40	PI/2 BPSK	1	1	20.50	20.40	20.43	21.0
40	PI/2 BPSK	1	53	20.22	20.33	20.19	
40	PI/2 BPSK	1	104	20.23	20.39	20.23	
40	PI/2 BPSK	50	0	20.28	20.27	20.13	21.0
40	PI/2 BPSK	50	28	20.34	20.30	20.19	21.0
40	PI/2 BPSK	50	56	20.24	20.23	20.17	21.0
40	PI/2 BPSK	100	0	20.19	20.30	20.17	
40	QPSK	1	1	20.27	20.42	20.23	21.0
40	QPSK	1	53	20.24	20.33	20.20	
40	QPSK	1	104	20.38	20.39	20.28	
40	QPSK	50	0	20.32	20.32	20.12	21.0
40	QPSK	50	28	20.18	20.30	20.18	21.0
40	QPSK	50	56	20.22	20.28	20.17	21.0
40	QPSK	100	0	20.13	20.32	20.20	
40	16QAM	1	1	20.13	20.16	20.01	21.0
40	64QAM	1	1	20.15	20.19	20.03	21.0
40	256QAM	1	1	18.94	18.98	18.95	19.0
Channel				637668	641666	645666	Tune-up limit (dBm)
Frequency (MHz)				3565.02	3624.99	3684.99	
30	PI/2 BPSK	1	1	20.44	20.39	20.07	21.0
Channel				637334	641666	646000	Tune-up limit (dBm)
Frequency (MHz)				3560.01	3624.99	3690	
20	PI/2 BPSK	1	1	20.48	20.40	20.41	21.0
Channel				637168	641666	646166	Tune-up limit (dBm)
Frequency (MHz)				3557.52	3624.99	3692.49	
15	PI/2 BPSK	1	1	20.44	20.39	20.37	21.0
Channel				637000	641666	646332	Tune-up limit (dBm)
Frequency (MHz)				3555	3624.99	3694.98	
10	PI/2 BPSK	1	1	20.46	20.37	20.42	21.0

<FR1 n48_Ant 6_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				638000	641666	645332	21.0
Frequency (MHz)				3570	3624.99	3679.98	
40	PI/2 BPSK	1	1	20.74	20.77	20.72	21.0
40	PI/2 BPSK	1	53	20.62	20.69	20.65	
40	PI/2 BPSK	1	104	20.76	20.74	20.71	
40	PI/2 BPSK	50	0	20.65	20.75	20.68	21.0
40	PI/2 BPSK	50	28	20.61	20.72	20.66	21.0
40	PI/2 BPSK	50	56	20.64	20.75	20.64	21.0
40	PI/2 BPSK	100	0	20.63	20.76	20.59	
40	QPSK	1	1	20.63	20.74	20.70	21.0
40	QPSK	1	53	20.58	20.66	20.65	
40	QPSK	1	104	20.67	20.69	20.75	
40	QPSK	50	0	20.61	20.66	20.53	21.0
40	QPSK	50	28	20.60	20.65	20.65	21.0
40	QPSK	50	56	20.59	20.58	20.52	21.0
40	QPSK	100	0	20.57	20.61	20.64	
40	16QAM	1	1	20.50	20.50	20.40	21.0
40	64QAM	1	1	20.45	20.56	20.47	21.0
40	256QAM	1	1	18.94	18.96	18.95	19.0
Channel				637668	641666	645666	Tune-up limit (dBm)
Frequency (MHz)				3565.02	3624.99	3684.99	
30	PI/2 BPSK	1	1	20.78	20.67	20.65	21.0
Channel				637334	641666	646000	Tune-up limit (dBm)
Frequency (MHz)				3560.01	3624.99	3690	
20	PI/2 BPSK	1	1	20.80	20.63	20.73	21.0
Channel				637168	641666	646166	Tune-up limit (dBm)
Frequency (MHz)				3557.52	3624.99	3692.49	
15	PI/2 BPSK	1	1	20.78	20.67	20.71	21.0
Channel				637000	641666	646332	Tune-up limit (dBm)
Frequency (MHz)				3555	3624.99	3694.98	
10	PI/2 BPSK	1	1	20.80	20.70	20.64	21.0



<FR1 n77_Ant 1_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	24.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	23.29	23.17	22.89	24.0
100	PI/2 BPSK	1	137	23.34	23.22	22.94	
100	PI/2 BPSK	1	271	23.05	22.93	22.65	
100	PI/2 BPSK	135	0	23.40	23.28	23.00	24.0
100	PI/2 BPSK	135	69	23.46	23.34	23.06	24.0
100	PI/2 BPSK	135	138	23.35	23.23	22.95	24.0
100	PI/2 BPSK	270	0	23.36	23.24	22.96	
100	QPSK	1	1	23.34	23.22	22.94	24.0
100	QPSK	1	137	23.30	23.18	22.90	
100	QPSK	1	271	23.02	22.90	22.62	
100	QPSK	135	0	22.97	22.95	22.97	24.0
100	QPSK	135	69	23.44	23.32	23.04	24.0
100	QPSK	135	138	22.91	22.99	22.91	24.0
100	QPSK	270	0	22.92	22.92	22.92	
100	16QAM	1	1	22.98	22.96	22.68	24.0
100	64QAM	1	1	22.92	23.00	22.72	24.0
100	256QAM	1	1	23.17	23.05	22.77	24.0
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	23.30	23.20	22.77	24.0
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	23.11	23.03	22.57	24.0
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	23.14	23.06	22.57	24.0
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	23.18	23.10	22.64	24.0
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	23.16	23.08	22.62	24.0
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	23.20	23.10	22.65	24.0
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	23.20	23.02	22.63	24.0
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	23.11	23.00	22.62	24.0
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	23.16	22.96	22.63	24.0
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	23.11	23.03	22.57	24.0
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	23.08	22.47	22.24	24.0



<FR1 n77_non-HPUE & HPUE_Ant 1_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	21.5
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	20.96	20.67	20.54	21.5
100	PI/2 BPSK	1	137	20.97	20.68	20.55	
100	PI/2 BPSK	1	271	20.81	20.52	20.39	
100	PI/2 BPSK	135	0	21.09	20.80	20.67	21.5
100	PI/2 BPSK	135	69	21.09	20.80	20.67	21.5
100	PI/2 BPSK	135	138	21.05	20.76	20.63	21.5
100	PI/2 BPSK	270	0	21.03	20.74	20.61	
100	QPSK	1	1	20.93	20.64	20.51	21.5
100	QPSK	1	137	20.96	20.67	20.54	
100	QPSK	1	271	20.80	20.51	20.38	
100	QPSK	135	0	21.07	20.78	20.65	21.5
100	QPSK	135	69	21.09	20.80	20.67	21.5
100	QPSK	135	138	21.04	20.75	20.62	21.5
100	QPSK	270	0	21.03	20.74	20.61	
100	16QAM	1	1	20.73	20.44	20.32	21.5
100	64QAM	1	1	20.77	20.48	20.35	21.5
100	256QAM	1	1	20.90	20.61	20.48	21.5
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	20.81	20.52	20.42	21.5
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	20.83	20.55	20.45	21.5
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	20.88	20.53	20.36	21.5
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	20.84	20.57	20.40	21.5
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	20.79	20.51	20.45	21.5
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	20.88	20.56	20.38	21.5
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	20.78	20.51	20.46	21.5
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	20.79	20.57	20.45	21.5
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	20.87	20.50	20.39	21.5
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	20.84	20.59	20.45	21.5
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	20.79	20.53	20.40	21.5



<FR1 n77_Ant 6_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	24.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	23.06	23.23	23.35	24.0
100	PI/2 BPSK	1	137	23.39	23.56	23.68	
100	PI/2 BPSK	1	271	23.28	23.45	23.57	
100	PI/2 BPSK	135	0	23.40	23.57	23.69	24.0
100	PI/2 BPSK	135	69	23.52	23.69	23.81	24.0
100	PI/2 BPSK	135	138	23.41	23.58	23.70	24.0
100	PI/2 BPSK	270	0	23.37	23.54	23.66	
100	QPSK	1	1	23.04	23.21	23.33	24.0
100	QPSK	1	137	23.34	23.51	23.63	
100	QPSK	1	271	23.29	23.46	23.58	
100	QPSK	135	0	23.36	23.53	23.65	24.0
100	QPSK	135	69	23.50	23.67	23.79	24.0
100	QPSK	135	138	23.38	23.55	23.67	24.0
100	QPSK	270	0	23.35	23.52	23.64	
100	16QAM	1	1	22.82	22.99	23.11	24.0
100	64QAM	1	1	22.84	23.01	23.13	24.0
100	256QAM	1	1	23.40	23.57	23.69	24.0
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	23.04	23.27	23.30	24.0
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	22.86	23.08	23.18	24.0
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	22.90	23.17	23.15	24.0
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	22.84	23.08	23.14	24.0
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	22.90	23.07	23.10	24.0
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	22.90	23.12	23.12	24.0
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	22.92	23.13	23.12	24.0
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	22.90	23.07	23.13	24.0
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	22.87	23.11	23.15	24.0
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	22.84	23.11	23.15	24.0
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	22.99	23.06	23.10	24.0



<FR1 n77_non-HPUE & HPUE_Ant 6_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	20.57	20.95	20.71	21.5
100	PI/2 BPSK	1	137	20.52	20.90	20.66	
100	PI/2 BPSK	1	271	20.47	20.85	20.61	
100	PI/2 BPSK	135	0	20.66	21.04	20.80	21.5
100	PI/2 BPSK	135	69	20.65	21.03	20.79	21.5
100	PI/2 BPSK	135	138	20.59	20.97	20.73	21.5
100	PI/2 BPSK	270	0	20.57	20.95	20.71	
100	QPSK	1	1	20.33	20.71	20.47	21.5
100	QPSK	1	137	20.58	20.96	20.72	
100	QPSK	1	271	20.48	20.86	20.62	
100	QPSK	135	0	20.62	21.00	20.76	21.5
100	QPSK	135	69	20.64	21.02	20.78	21.5
100	QPSK	135	138	20.61	20.99	20.75	21.5
100	QPSK	270	0	20.57	20.95	20.71	
100	16QAM	1	1	20.11	20.48	20.25	21.5
100	64QAM	1	1	20.16	20.53	20.29	21.5
100	256QAM	1	1	20.13	20.50	20.27	21.5
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	20.37	20.85	20.52	21.5
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	20.38	20.79	20.52	21.5
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	20.45	20.79	20.60	21.5
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	20.38	20.84	20.58	21.5
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	20.46	20.75	20.59	21.5
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	20.40	20.75	20.57	21.5
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	20.46	20.80	20.61	21.5
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	20.37	20.83	20.55	21.5
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	20.41	20.84	20.56	21.5
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	20.47	20.85	20.61	21.5
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	20.43	20.85	20.55	21.5



<FR1 n77_Ant 3_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	24.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	23.16	22.68	22.41	24.0
100	PI/2 BPSK	1	137	23.10	22.62	22.35	
100	PI/2 BPSK	1	271	22.81	22.34	22.07	
100	PI/2 BPSK	135	0	23.23	22.70	22.40	24.0
100	PI/2 BPSK	135	69	23.25	22.71	22.44	24.0
100	PI/2 BPSK	135	138	23.08	22.60	22.33	24.0
100	PI/2 BPSK	270	0	23.11	22.63	22.36	
100	QPSK	1	1	23.21	22.73	22.46	24.0
100	QPSK	1	137	23.07	22.59	22.32	
100	QPSK	1	271	22.80	22.33	22.06	
100	QPSK	135	0	23.22	22.74	22.47	24.0
100	QPSK	135	69	23.16	22.68	22.41	24.0
100	QPSK	135	138	23.05	22.57	22.30	24.0
100	QPSK	270	0	23.08	22.60	22.33	
100	16QAM	1	1	22.97	22.49	22.22	24.0
100	64QAM	1	1	23.01	22.53	22.26	24.0
100	256QAM	1	1	23.07	23.08	22.81	24.0
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	23.14	22.76	22.56	24.0
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	23.04	22.61	22.41	24.0
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	23.02	22.58	22.42	24.0
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	22.99	22.59	22.37	24.0
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	22.94	22.63	22.40	24.0
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	23.02	22.56	22.39	24.0
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	22.96	22.63	22.36	24.0
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	23.02	22.58	22.38	24.0
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	22.98	22.56	22.38	24.0
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	22.97	22.56	22.46	24.0
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	22.98	22.59	22.40	24.0



<FR1 n77_non-HPUE & HPUE_Ant 3_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	19.54	19.08	18.95	20.5
100	PI/2 BPSK	1	137	19.53	19.01	18.87	
100	PI/2 BPSK	1	271	19.32	18.80	18.64	
100	PI/2 BPSK	135	0	19.62	19.06	18.96	20.5
100	PI/2 BPSK	135	69	19.61	19.01	18.93	20.5
100	PI/2 BPSK	135	138	19.55	19.01	18.89	20.5
100	PI/2 BPSK	270	0	19.53	19.03	18.91	
100	QPSK	1	1	19.52	19.00	18.87	20.5
100	QPSK	1	137	19.49	18.97	18.81	
100	QPSK	1	271	19.31	18.84	18.69	
100	QPSK	135	0	19.57	19.03	18.93	20.5
100	QPSK	135	69	19.60	19.08	18.91	20.5
100	QPSK	135	138	19.55	19.03	18.89	20.5
100	QPSK	270	0	19.51	18.95	18.82	
100	16QAM	1	1	19.30	18.83	18.68	20.5
100	64QAM	1	1	19.34	18.88	18.70	20.5
100	256QAM	1	1	19.50	18.95	18.85	20.5
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	19.37	18.92	18.84	20.5
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	19.43	18.94	18.78	20.5
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	19.41	18.89	18.77	20.5
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	19.41	18.93	18.75	20.5
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	19.36	18.96	18.84	20.5
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	19.42	18.89	18.81	20.5
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	19.44	18.95	18.75	20.5
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	19.41	18.90	18.76	20.5
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	19.36	18.97	18.85	20.5
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	19.39	18.97	18.81	20.5
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	19.38	18.98	18.81	20.5



<FR1 n77_Ant 5_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	24.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	23.13	23.02	23.19	24.0
100	PI/2 BPSK	1	137	23.48	23.37	23.54	
100	PI/2 BPSK	1	271	23.46	23.35	23.52	
100	PI/2 BPSK	135	0	23.39	23.28	23.45	24.0
100	PI/2 BPSK	135	69	23.59	23.48	23.65	24.0
100	PI/2 BPSK	135	138	23.44	23.43	23.46	24.0
100	PI/2 BPSK	270	0	23.45	23.34	23.41	
100	QPSK	1	1	23.09	22.98	23.15	24.0
100	QPSK	1	137	23.43	23.32	23.49	
100	QPSK	1	271	23.43	23.32	23.49	
100	QPSK	135	0	23.36	23.25	23.42	24.0
100	QPSK	135	69	23.54	23.43	23.60	24.0
100	QPSK	135	138	23.51	23.40	23.57	24.0
100	QPSK	270	0	23.41	23.30	23.47	
100	16QAM	1	1	22.86	22.75	22.92	24.0
100	64QAM	1	1	22.89	22.78	22.95	24.0
100	256QAM	1	1	22.07	22.00	22.13	24.0
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	23.12	23.04	23.18	24.0
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	22.97	22.84	22.98	24.0
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	22.93	22.85	23.07	24.0
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	22.95	22.92	23.00	24.0
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	22.93	22.89	23.04	24.0
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	22.94	22.89	23.00	24.0
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	22.96	22.85	23.08	24.0
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	22.94	22.92	22.98	24.0
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	22.96	22.84	23.05	24.0
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	22.96	22.87	22.99	24.0
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	22.94	22.93	23.00	24.0



<FR1 n77_non-HPUE & HPUE_Ant 5_Sensor ON>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	21.60	21.67	21.87	22.5
100	PI/2 BPSK	1	137	21.84	21.91	22.11	
100	PI/2 BPSK	1	271	21.82	21.89	22.09	
100	PI/2 BPSK	135	0	21.78	21.85	22.05	22.5
100	PI/2 BPSK	135	69	21.97	22.04	22.24	22.5
100	PI/2 BPSK	135	138	21.91	21.98	22.18	22.5
100	PI/2 BPSK	270	0	21.83	21.90	22.10	
100	QPSK	1	1	21.53	21.60	21.80	22.5
100	QPSK	1	137	21.82	21.89	22.09	
100	QPSK	1	271	21.87	21.94	22.14	
100	QPSK	135	0	21.72	21.79	21.99	22.5
100	QPSK	135	69	21.93	22.00	22.20	22.5
100	QPSK	135	138	21.90	21.97	22.17	22.5
100	QPSK	270	0	21.81	21.88	22.08	
100	16QAM	1	1	21.91	21.98	22.18	22.5
100	64QAM	1	1	21.89	21.96	22.16	22.5
100	256QAM	1	1	21.91	21.98	22.18	22.5
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	21.70	21.67	21.84	22.5
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	21.51	21.60	21.74	22.5
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	21.50	21.53	21.71	22.5
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	21.53	21.51	21.75	22.5
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	21.53	21.60	21.80	22.5
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	21.57	21.51	21.74	22.5
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	21.59	21.53	21.78	22.5
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	21.50	21.52	21.72	22.5
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	21.51	21.55	21.74	22.5
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	21.52	21.50	21.73	22.5
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	21.55	21.50	21.78	22.5



<FR1 n77_HPUE_Ant 1_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	27.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	26.89	25.67	25.60	27.0
100	PI/2 BPSK	1	137	26.37	25.58	26.34	
100	PI/2 BPSK	1	271	25.50	25.47	26.28	
100	PI/2 BPSK	135	0	26.43	25.54	25.94	26.5
100	PI/2 BPSK	135	69	26.41	25.60	26.30	27.0
100	PI/2 BPSK	135	138	25.95	25.59	26.13	26.5
100	PI/2 BPSK	270	0	26.27	25.58	26.02	
100	QPSK	1	1	26.50	25.35	25.62	27.0
100	QPSK	1	137	26.27	25.55	26.25	
100	QPSK	1	271	25.57	25.56	26.24	
100	QPSK	135	0	25.96	25.47	25.73	26.0
100	QPSK	135	69	26.34	25.61	26.16	27.0
100	QPSK	135	138	25.96	25.61	25.51	26.0
100	QPSK	270	0	25.98	25.59	25.55	
100	16QAM	1	1	25.92	24.91	25.39	26.0
100	64QAM	1	1	24.47	24.27	23.88	24.5
100	256QAM	1	1	22.55	22.58	22.55	24.5
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	26.34	25.45	25.27	27.0
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	26.16	25.34	25.15	27.0
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	26.17	25.29	25.08	27.0
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	26.15	25.33	25.13	27.0
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	26.22	25.25	25.17	27.0
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	26.15	25.25	25.09	27.0
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	26.14	25.25	25.13	27.0
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	26.16	25.32	25.13	27.0
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	26.21	25.25	25.08	27.0
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	26.17	25.35	25.11	27.0
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	26.16	25.32	25.11	27.0



<FR1 n77_HPUE_Ant 6_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	27.0
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	25.53	25.74	25.80	27.0
100	PI/2 BPSK	1	137	25.83	26.04	26.10	
100	PI/2 BPSK	1	271	25.73	25.94	26.00	
100	PI/2 BPSK	135	0	25.85	26.06	26.12	26.5
100	PI/2 BPSK	135	69	25.99	26.20	26.26	27.0
100	PI/2 BPSK	135	138	25.83	26.04	26.10	26.5
100	PI/2 BPSK	270	0	25.80	26.01	26.07	
100	QPSK	1	1	25.47	25.68	25.74	27.0
100	QPSK	1	137	25.76	25.97	26.03	
100	QPSK	1	271	25.68	25.89	25.95	
100	QPSK	135	0	25.79	26.00	25.96	26.0
100	QPSK	135	69	25.92	26.13	26.19	27.0
100	QPSK	135	138	25.77	25.98	25.94	26.0
100	QPSK	270	0	25.74	25.95	25.91	
100	16QAM	1	1	25.22	25.43	25.49	26.0
100	64QAM	1	1	24.43	24.43	24.49	24.5
100	256QAM	1	1	23.44	23.63	23.69	24.5
Channel				649668	656000	662332	27.0
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	25.51	25.70	25.76	27.0
Channel				649334	656000	662666	
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	25.35	25.60	25.61	27.0
Channel				649000	656000	663000	
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	25.39	25.50	25.58	27.0
Channel				648668	656000	663332	
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	25.35	25.56	25.57	27.0
Channel				648334	656000	663666	
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	25.38	25.54	25.57	27.0
Channel				648000	656000	664000	
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	25.38	25.55	25.58	27.0
Channel				647668	656000	664332	
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	25.34	25.52	25.56	27.0
Channel				647500	656000	664500	
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	25.37	25.55	25.58	27.0
Channel				647334	656000	664666	
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	25.40	25.57	25.64	27.0
Channel				647168	656000	664832	
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	25.38	25.58	25.66	27.0
Channel				647000	656000	665000	
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	25.32	25.50	25.57	27.0



<FR1 n77_HPUE_Ant 3_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	Tune-up limit (dBm)
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	25.81	25.28	25.09	27.0
100	PI/2 BPSK	1	137	25.65	25.12	25.02	
100	PI/2 BPSK	1	271	25.37	25.10	25.06	
100	PI/2 BPSK	135	0	25.79	25.20	25.07	26.5
100	PI/2 BPSK	135	69	25.75	25.22	25.03	27.0
100	PI/2 BPSK	135	138	25.63	25.10	25.03	26.5
100	PI/2 BPSK	270	0	25.63	25.10	25.03	
100	QPSK	1	1	25.78	25.25	25.06	27.0
100	QPSK	1	137	25.60	25.07	25.04	
100	QPSK	1	271	25.37	25.06	25.01	
100	QPSK	135	0	25.76	25.23	25.04	26.0
100	QPSK	135	69	25.70	25.17	25.06	27.0
100	QPSK	135	138	25.59	25.06	24.87	26.0
100	QPSK	270	0	25.58	25.05	24.86	
100	16QAM	1	1	25.50	24.98	24.79	26.0
100	64QAM	1	1	24.45	24.47	24.33	24.5
100	256QAM	1	1	23.60	23.12	22.95	24.5
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	25.67	25.24	25.10	27.0
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	25.49	25.12	25.12	27.0
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	25.54	25.14	25.08	27.0
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	25.55	25.05	25.06	27.0
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	25.54	25.10	25.10	27.0
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	25.53	25.09	25.13	27.0
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	25.50	25.06	25.09	27.0
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	25.51	25.11	25.08	27.0
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	25.53	25.12	25.07	27.0
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	25.48	25.06	25.07	27.0
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	25.50	25.13	25.12	27.0



<FR1 n77_HPUE_Ant 5_Sensor OFF>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel				650000	656000	662000	Tune-up limit (dBm)
Frequency (MHz)				3750	3840	3930	
100	PI/2 BPSK	1	1	25.79	25.20	25.11	26.5
100	PI/2 BPSK	1	137	26.21	25.61	25.52	
100	PI/2 BPSK	1	271	25.99	25.40	25.31	
100	PI/2 BPSK	135	0	26.00	25.41	25.32	26.0
100	PI/2 BPSK	135	69	26.30	25.70	25.61	26.5
100	PI/2 BPSK	135	138	25.85	25.45	25.36	26.0
100	PI/2 BPSK	270	0	25.88	25.29	25.20	
100	QPSK	1	1	25.92	25.33	25.24	26.5
100	QPSK	1	137	26.27	25.67	25.58	
100	QPSK	1	271	25.92	25.33	25.24	
100	QPSK	135	0	25.49	25.30	25.21	25.5
100	QPSK	135	69	26.11	25.51	25.42	26.5
100	QPSK	135	138	25.46	25.44	25.35	25.5
100	QPSK	270	0	25.45	25.21	25.12	
100	16QAM	1	1	25.37	24.79	24.70	25.5
100	64QAM	1	1	23.81	23.27	23.19	24.0
100	256QAM	1	1	22.30	22.35	22.26	24.0
Channel				649668	656000	662332	Tune-up limit (dBm)
Frequency (MHz)				3745.02	3840	3934.98	
90	PI/2 BPSK	1	1	25.74	25.02	25.27	26.5
Channel				649334	656000	662666	Tune-up limit (dBm)
Frequency (MHz)				3740.01	3840	3939.99	
80	PI/2 BPSK	1	1	25.55	24.88	25.08	26.5
Channel				649000	656000	663000	Tune-up limit (dBm)
Frequency (MHz)				3735	3840	3945	
70	PI/2 BPSK	1	1	25.62	24.89	25.17	26.5
Channel				648668	656000	663332	Tune-up limit (dBm)
Frequency (MHz)				3730.02	3840	3949.98	
60	PI/2 BPSK	1	1	25.54	24.89	25.11	26.5
Channel				648334	656000	663666	Tune-up limit (dBm)
Frequency (MHz)				3725.01	3840	3954.99	
50	PI/2 BPSK	1	1	25.62	24.83	25.16	26.5
Channel				648000	656000	664000	Tune-up limit (dBm)
Frequency (MHz)				3720	3840	3960	
40	PI/2 BPSK	1	1	25.56	24.90	25.16	26.5
Channel				647668	656000	664332	Tune-up limit (dBm)
Frequency (MHz)				3715.02	3840.00	3964.98	
30	PI/2 BPSK	1	1	25.63	24.92	25.11	26.5
Channel				647500	656000	664500	Tune-up limit (dBm)
Frequency (MHz)				3712.5	3840.00	3967.50	
25	PI/2 BPSK	1	1	25.56	24.85	25.17	26.5
Channel				647334	656000	664666	Tune-up limit (dBm)
Frequency (MHz)				3710.01	3840	3969.99	
20	PI/2 BPSK	1	1	25.61	24.86	25.14	26.5
Channel				647168	656000	664832	Tune-up limit (dBm)
Frequency (MHz)				3707.52	3840	3972.48	
15	PI/2 BPSK	1	1	25.57	24.89	25.11	26.5
Channel				647000	656000	665000	Tune-up limit (dBm)
Frequency (MHz)				3705	3840	3975	
10	PI/2 BPSK	1	1	25.61	24.86	25.14	26.5



<FR1 n77_Ant 1_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		23.69		24.0
100	PI/2 BPSK	1	137		23.94		
100	PI/2 BPSK	1	271		23.97		
100	PI/2 BPSK	135	0		22.90		24.0
100	PI/2 BPSK	135	69		23.90		24.0
100	PI/2 BPSK	135	138		23.48		24.0
100	PI/2 BPSK	270	0		23.46		
100	QPSK	1	1		23.42		24.0
100	QPSK	1	137		23.73		
100	QPSK	1	271		23.76		
100	QPSK	135	0		23.70		24.0
100	QPSK	135	69		23.87		24.0
100	QPSK	135	138		23.85		24.0
100	QPSK	270	0		23.83		
100	16QAM	1	1		23.19		24.0
100	64QAM	1	1		23.22		24.0
100	256QAM	1	1		23.32		24.0
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	23.74	23.75	23.70	24.0
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	23.56	23.59	23.58	24.0
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	23.60	23.55	23.56	24.0
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	23.60	23.65	23.58	24.0
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	23.64	23.65	23.57	24.0
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	23.61	23.55	23.60	24.0
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	23.62	23.57	23.60	24.0
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	23.61	23.65	23.52	24.0
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	23.64	23.65	23.58	24.0
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	23.56	23.57	23.59	24.0
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	23.63	23.62	23.60	24.0



<FR1 n77_non-HPUE & HPUE_Ant 1_Sensor ON>(3450-3550MHZ)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		21.06		21.5
100	PI/2 BPSK	1	137		21.34		
100	PI/2 BPSK	1	271		21.31		
100	PI/2 BPSK	135	0		21.34		21.5
100	PI/2 BPSK	135	69		21.45		21.5
100	PI/2 BPSK	135	138		21.42		21.5
100	PI/2 BPSK	270	0		21.48		
100	QPSK	1	1		21.07		21.5
100	QPSK	1	137		21.34		
100	QPSK	1	271		21.46		
100	QPSK	135	0		21.35		21.5
100	QPSK	135	69		21.45		21.5
100	QPSK	135	138		21.46		21.5
100	QPSK	270	0		21.48		
100	16QAM	1	1		20.86		21.5
100	64QAM	1	1		20.92		21.5
100	256QAM	1	1		21.48		21.5
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	20.79	20.90	20.85	21.5
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	20.84	20.91	20.82	21.5
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	20.85	20.86	20.80	21.5
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	20.85	20.91	20.88	21.5
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	20.83	20.96	20.81	21.5
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	20.71	20.84	20.82	21.5
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	20.88	20.88	20.88	21.5
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	20.83	20.95	20.86	21.5
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	20.80	20.88	20.86	21.5
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	20.88	20.89	20.82	21.5
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	20.88	20.86	20.80	21.5



<FR1 n77_Ant 6_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		24.0
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		22.88		24.0
100	PI/2 BPSK	1	137		23.15		
100	PI/2 BPSK	1	271		23.09		
100	PI/2 BPSK	135	0		23.20		24.0
100	PI/2 BPSK	135	69		23.27		24.0
100	PI/2 BPSK	135	138		23.24		24.0
100	PI/2 BPSK	270	0		23.17		
100	QPSK	1	1		22.82		24.0
100	QPSK	1	137		23.10		
100	QPSK	1	271		23.14		
100	QPSK	135	0		23.20		24.0
100	QPSK	135	69		23.21		24.0
100	QPSK	135	138		23.24		24.0
100	QPSK	270	0		23.17		
100	16QAM	1	1		22.60		24.0
100	64QAM	1	1		22.68		24.0
100	256QAM	1	1		23.22		24.0
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	22.80	22.78	22.84	24.0
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	22.63	22.66	22.70	24.0
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	22.64	22.60	22.72	24.0
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	22.70	22.63	22.68	24.0
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	22.63	22.65	22.70	24.0
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	22.68	22.66	22.67	24.0
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	22.67	22.60	22.71	24.0
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	22.67	22.64	22.72	24.0
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	22.66	22.60	22.73	24.0
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	22.62	22.58	22.64	24.0
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	22.63	22.59	22.68	24.0

<FR1 n77_non-HPUE & HPUE_Ant 6_Sensor ON>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		20.65		21.5
100	PI/2 BPSK	1	137		20.92		
100	PI/2 BPSK	1	271		20.80		
100	PI/2 BPSK	135	0		21.07		21.5
100	PI/2 BPSK	135	69		21.05		21.5
100	PI/2 BPSK	135	138		20.98		21.5
100	PI/2 BPSK	270	0		20.99		
100	QPSK	1	1		20.65		
100	QPSK	1	137		20.92		21.5
100	QPSK	1	271		20.82		
100	QPSK	135	0		21.05		
100	QPSK	135	69		21.06		21.5
100	QPSK	135	138		20.99		21.5
100	QPSK	270	0		21.01		
100	16QAM	1	1		20.44		
100	64QAM	1	1		20.53		21.5
100	256QAM	1	1		20.90		21.5
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	20.46	20.48	20.51	21.5
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	20.42	20.47	20.47	21.5
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	20.48	20.51	20.51	21.5
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	20.43	20.48	20.49	21.5
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	20.40	20.46	20.48	21.5
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	20.45	20.45	20.46	21.5
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	20.49	20.54	20.43	21.5
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	20.50	20.50	20.46	21.5
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	20.47	20.54	20.49	21.5
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	20.46	20.50	20.52	21.5
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	



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10	PI/2 BPSK	1	1	20.41	20.52	20.48	21.5
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<FR1 n77_Ant 3_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		23.01		24.0
100	PI/2 BPSK	1	137		23.36		
100	PI/2 BPSK	1	271		23.35		
100	PI/2 BPSK	135	0		23.32		24.0
100	PI/2 BPSK	135	69		23.51		24.0
100	PI/2 BPSK	135	138		23.49		24.0
100	PI/2 BPSK	270	0		23.45		
100	QPSK	1	1		23.00		24.0
100	QPSK	1	137		23.34		
100	QPSK	1	271		23.46		
100	QPSK	135	0		23.31		24.0
100	QPSK	135	69		23.49		24.0
100	QPSK	135	138		23.48		24.0
100	QPSK	270	0		23.45		
100	16QAM	1	1		22.78		24.0
100	64QAM	1	1		22.82		24.0
100	256QAM	1	1		23.37		24.0
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	23.10	23.09	23.15	24.0
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	22.94	22.96	22.98	24.0
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	22.98	22.93	23.00	24.0
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	22.94	22.90	23.04	24.0
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	22.96	22.98	22.99	24.0
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	22.90	22.97	22.99	24.0
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	22.96	22.97	23.05	24.0
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	22.93	22.92	23.00	24.0
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	22.91	22.93	22.98	24.0
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	23.00	22.95	22.95	24.0
Channel				630334	633332	636332	Tune-up



Frequency (MHz)				3455.01	3499.98	3544.98	limit (dBm)
10	PI/2 BPSK	1	1	22.98	22.92	22.98	24.0

<FR1 n77_non-HPUE & HPUE_Ant 3_Sensor ON>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		20.5
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		19.52		20.5
100	PI/2 BPSK	1	137		19.80		
100	PI/2 BPSK	1	271		19.98		
100	PI/2 BPSK	135	0		19.77		20.5
100	PI/2 BPSK	135	69		19.94		20.5
100	PI/2 BPSK	135	138		20.06		20.5
100	PI/2 BPSK	270	0		19.92		
100	QPSK	1	1		19.50		20.5
100	QPSK	1	137		19.79		
100	QPSK	1	271		19.99		
100	QPSK	135	0		19.77		20.5
100	QPSK	135	69		19.94		20.5
100	QPSK	135	138		20.04		20.5
100	QPSK	270	0		19.93		
100	16QAM	1	1		19.27		20.5
100	64QAM	1	1		19.35		20.5
100	256QAM	1	1		19.93		20.5
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	19.34	19.34	19.22	20.5
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	19.29	19.34	19.28	20.5
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	19.30	19.42	19.20	20.5
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	19.30	19.36	19.22	20.5
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	19.37	19.34	19.24	20.5
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	19.32	19.36	19.22	20.5
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	19.37	19.36	19.20	20.5
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	19.37	19.35	19.25	20.5
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	19.28	19.37	19.28	20.5
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	19.28	19.39	19.20	20.5



Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	19.28	19.39	19.23	20.5

<FR1 n77_Ant 5_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		23.06		24.0
100	PI/2 BPSK	1	137		23.21		
100	PI/2 BPSK	1	271		23.13		
100	PI/2 BPSK	135	0		23.28		24.0
100	PI/2 BPSK	135	69		23.34		24.0
100	PI/2 BPSK	135	138		23.31		24.0
100	PI/2 BPSK	270	0		23.27		
100	QPSK	1	1		22.99		24.0
100	QPSK	1	137		23.17		
100	QPSK	1	271		23.13		
100	QPSK	135	0		22.84		24.0
100	QPSK	135	69		23.31		24.0
100	QPSK	135	138		22.89		24.0
100	QPSK	270	0		22.94		
100	16QAM	1	1		22.77		24.0
100	64QAM	1	1		22.50		24.0
100	256QAM	1	1		22.30		24.0
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	23.04	23.04	23.06	24.0
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	22.87	22.88	22.96	24.0
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	22.87	22.90	22.87	24.0
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	22.93	22.89	22.94	24.0
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	22.93	22.87	22.94	24.0
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	22.93	22.84	22.95	24.0
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	22.94	22.87	22.93	24.0
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	22.86	22.92	22.90	24.0
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	22.86	22.94	22.89	24.0
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	



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15	PI/2 BPSK	1	1	22.87	22.89	22.93	24.0
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	22.88	22.94	22.96	24.0

<FR1 n77_non-HPUE & HPUE_Ant 5_Sensor ON>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		Tune-up limit (dBm)
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		21.68		22.5
100	PI/2 BPSK	1	137		21.86		
100	PI/2 BPSK	1	271		21.77		
100	PI/2 BPSK	135	0		21.87		22.5
100	PI/2 BPSK	135	69		21.98		22.5
100	PI/2 BPSK	135	138		21.95		22.5
100	PI/2 BPSK	270	0		21.91		
100	QPSK	1	1		21.62		22.5
100	QPSK	1	137		21.78		
100	QPSK	1	271		21.80		
100	QPSK	135	0		21.85		22.5
100	QPSK	135	69		21.90		22.5
100	QPSK	135	138		21.94		22.5
100	QPSK	270	0		21.80		
100	16QAM	1	1		21.40		22.5
100	64QAM	1	1		21.44		22.5
100	256QAM	1	1		21.81		22.5
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	21.60	21.58	21.63	22.5
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	21.54	21.53	21.55	22.5
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	21.56	21.58	21.56	22.5
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	21.58	21.57	21.52	22.5
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	21.58	21.56	21.52	22.5
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	21.51	21.54	21.53	22.5
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	21.58	21.59	21.56	22.5
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	21.56	21.55	21.59	22.5
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	21.53	21.52	21.50	22.5
Channel				630500	633332	636166	Tune-up

Frequency (MHz)				3457.5	3499.98	3542.49	limit (dBm)
15	PI/2 BPSK	1	1	21.58	21.55	21.60	22.5
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	21.56	21.60	21.51	22.5

<FR1 n77_HPUE_Ant 1_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		25.41		27.0
100	PI/2 BPSK	1	137		26.15		
100	PI/2 BPSK	1	271		26.24		
100	PI/2 BPSK	135	0		25.40		26.5
100	PI/2 BPSK	135	69		25.95		27.0
100	PI/2 BPSK	135	138		25.90		26.5
100	PI/2 BPSK	270	0		26.04		
100	QPSK	1	1		25.02		27.0
100	QPSK	1	137		26.02		
100	QPSK	1	271		26.02		
100	QPSK	135	0		25.48		26.0
100	QPSK	135	69		26.01		27.0
100	QPSK	135	138		25.96		26.0
100	QPSK	270	0		25.91		
100	16QAM	1	1		24.99		26.0
100	64QAM	1	1		24.45		24.5
100	256QAM	1	1		22.68		24.5
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	25.44	25.73	25.69	27.0
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	25.29	25.63	25.50	27.0
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	25.30	25.56	25.51	27.0
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	25.33	25.60	25.54	27.0
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	25.25	25.54	25.57	27.0
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	25.25	25.61	25.54	27.0
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	25.31	25.58	25.57	27.0
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	25.33	25.58	25.51	27.0
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	25.24	25.54	25.57	27.0



Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	25.28	25.56	25.55	27.0
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	25.30	25.61	25.52	27.0

<FR1 n77_HPUE_Ant 6_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		25.32		27.0
100	PI/2 BPSK	1	137		25.58		
100	PI/2 BPSK	1	271		25.56		
100	PI/2 BPSK	135	0		25.72		26.5
100	PI/2 BPSK	135	69		25.79		27.0
100	PI/2 BPSK	135	138		25.76		26.5
100	PI/2 BPSK	270	0		25.66		
100	QPSK	1	1		25.27		27.0
100	QPSK	1	137		25.61		
100	QPSK	1	271		25.57		
100	QPSK	135	0		25.64		26.0
100	QPSK	135	69		25.74		27.0
100	QPSK	135	138		25.70		26.0
100	QPSK	270	0		25.62		
100	16QAM	1	1		24.98		26.0
100	64QAM	1	1		24.46		24.5
100	256QAM	1	1		23.13		24.5
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	25.23	25.25	25.24	27.0
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	25.03	25.15	25.13	27.0
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	25.12	25.06	25.09	27.0
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	25.03	25.08	25.04	27.0
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	25.13	25.14	25.14	27.0
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	25.04	25.09	25.10	27.0
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	25.03	25.11	25.07	27.0
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	25.05	25.15	25.07	27.0
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	25.09	25.11	25.08	27.0



Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	25.07	25.09	25.07	27.0
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	25.07	25.10	25.10	27.0

<FR1 n77_HPUE_Ant 3_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		25.12		27.0
100	PI/2 BPSK	1	137		25.96		
100	PI/2 BPSK	1	271		25.82		
100	PI/2 BPSK	135	0		25.67		26.5
100	PI/2 BPSK	135	69		26.20		27.0
100	PI/2 BPSK	135	138		26.19		26.5
100	PI/2 BPSK	270	0		26.02		
100	QPSK	1	1		25.40		27.0
100	QPSK	1	137		25.91		
100	QPSK	1	271		25.85		
100	QPSK	135	0		25.86		26.0
100	QPSK	135	69		26.05		27.0
100	QPSK	135	138		25.94		26.0
100	QPSK	270	0		25.98		
100	16QAM	1	1		24.90		26.0
100	64QAM	1	1		24.43		24.5
100	256QAM	1	1		23.45		24.5
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	25.21	25.35	25.28	27.0
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	25.03	25.20	25.16	27.0
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	25.09	25.23	25.16	27.0
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	25.08	25.23	25.15	27.0
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	25.01	25.20	25.13	27.0
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	25.11	25.19	25.18	27.0
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	25.09	25.24	25.08	27.0
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	25.03	25.22	25.09	27.0
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	25.11	25.18	25.16	27.0



FCC SAR TEST REPORT

Report No. : FA451315

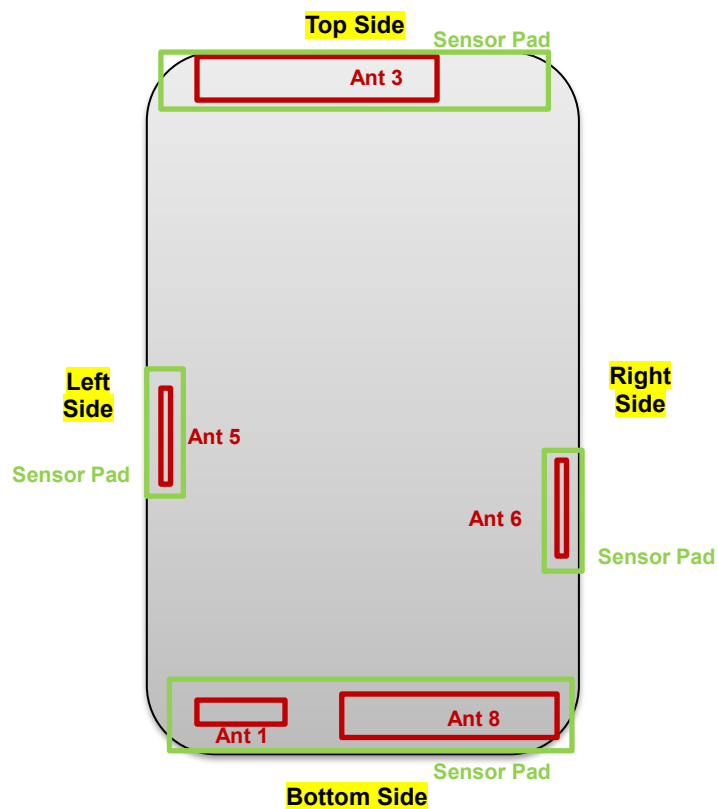
Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	25.01	25.15	25.14	27.0
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	25.06	25.25	25.09	27.0

<FR1 n77_HPUE_Ant 5_Sensor OFF>(3450-3550MHz)

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)
Channel					633332		
Frequency (MHz)					3499.98		
100	PI/2 BPSK	1	1		25.43		26.5
100	PI/2 BPSK	1	137		25.70		
100	PI/2 BPSK	1	271		25.67		
100	PI/2 BPSK	135	0		25.47		26.0
100	PI/2 BPSK	135	69		25.81		26.5
100	PI/2 BPSK	135	138		25.71		26.0
100	PI/2 BPSK	270	0		25.68		
100	QPSK	1	1		25.05		26.5
100	QPSK	1	137		25.62		
100	QPSK	1	271		25.68		
100	QPSK	135	0		25.37		25.5
100	QPSK	135	69		25.80		26.5
100	QPSK	135	138		25.41		25.5
100	QPSK	270	0		25.36		
100	16QAM	1	1		24.85		25.5
100	64QAM	1	1		23.34		24.0
100	256QAM	1	1		22.12		24.0
Channel				633000	633332	633666	Tune-up limit (dBm)
Frequency (MHz)				3495	3499.98	3504.99	
90	PI/2 BPSK	1	1	25.38	25.28	25.18	26.5
Channel				632668	633332	634000	Tune-up limit (dBm)
Frequency (MHz)				3490.02	3499.98	3510	
80	PI/2 BPSK	1	1	25.24	25.08	24.98	26.5
Channel				632334	633332	634332	Tune-up limit (dBm)
Frequency (MHz)				3485.01	3499.98	3514.98	
70	PI/2 BPSK	1	1	25.18	25.08	25.04	26.5
Channel				632000	633332	634666	Tune-up limit (dBm)
Frequency (MHz)				3480	3499.98	3519.99	
60	PI/2 BPSK	1	1	25.25	25.12	25.02	26.5
Channel				631668	633332	635000	Tune-up limit (dBm)
Frequency (MHz)				3475.02	3499.98	3525	
50	PI/2 BPSK	1	1	25.25	25.14	25.02	26.5
Channel				631334	633332	635332	Tune-up limit (dBm)
Frequency (MHz)				3470.01	3499.98	3529.98	
40	PI/2 BPSK	1	1	25.23	25.10	25.06	26.5
Channel				631000	633332	635666	Tune-up limit (dBm)
Frequency (MHz)				3465	3499.98	3534.99	
30	PI/2 BPSK	1	1	25.21	25.08	25.08	26.5
Channel				630834	633332	635832	Tune-up limit (dBm)
Frequency (MHz)				3462.51	3499.98	3537.48	
25	PI/2 BPSK	1	1	25.22	25.10	25.06	26.5
Channel				630668	633332	636000	Tune-up limit (dBm)
Frequency (MHz)				3460.02	3499.98	3540	
20	PI/2 BPSK	1	1	25.18	25.14	25.08	26.5

Channel				630500	633332	636166	Tune-up limit (dBm)
Frequency (MHz)				3457.5	3499.98	3542.49	
15	PI/2 BPSK	1	1	25.26	25.13	25.06	26.5
Channel				630334	633332	636332	Tune-up limit (dBm)
Frequency (MHz)				3455.01	3499.98	3544.98	
10	PI/2 BPSK	1	1	25.21	25.10	24.99	26.5

12. Antenna Location



Front View

13. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
 - a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
 - b. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
 - c. For TDD LTE SAR measurement, the duty cycle 1:1.59 (62.9 %) was used perform testing and considering the theoretical duty cycle of 63.3% for extended cyclic prefix in the uplink, and the theoretical duty cycle of 62.9% for normal cyclic prefix in uplink, a scaling factor of extended cyclic prefix $63.3\%/62.9\% = 1.006$ is applied to scale-up the measured SAR result. The Reported TDD LTE SAR = measured SAR (W/kg)* Tune-up Scaling Factor* scaling factor for extended cyclic prefix.
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
 - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
 - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
 - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/kg.
4. According to KDB 447498 D01v06 section 5.2.3) c). When a peripheral transmitter, such as a USB dongle, must be connected to the host through an external cable or adapter, a test separation distance ≤ 15 mm should be applied to test the required device orientations.
5. The device support four sensor pad, when either one sensor pad is trigger and power reduction is active for SAR compliance.

LTE Note:

1. Per KDB 941225 D05v02r05, start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r05, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r05, For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r05, 16QAM output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r05, Smaller bandwidth output power for each RB allocation configuration is $>$ not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r05, smaller bandwidth SAR testing is not required.
6. For LTE B4/B5 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
7. LTE band 4 SAR test was covered by Band 66; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
 - a. The maximum output power, including tolerance, for the smaller band is $\leq$ the larger band to qualify for the SAR test exclusion.
 - b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

5G NR Note:

1. Referencing the procedure in KDB 941225, the test procedures are outlined as below:
 - a. To start SAR test for the largest channel bandwidth for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel. Also do SAR test for 50% RB allocation for PI/2 BPSK SAR testing using 1RB PI/2 BPSK allocation procedure
 - b. For PI/2 BPSK with 100% RB allocation, SAR test is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
 - c. For higher modulation QPSK/16QAM/64QAM/256QAM, according to tune-up document the power level is not $\frac{1}{2}$ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
 - d. Smaller bandwidth output power for each RB allocation configuration for this device is not $\frac{1}{2}$ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
 - e. For 5G FR1 n5/n77, the maximum channel bandwidth does not support three non-overlapping channels in the frequency band, the middle channel of the group of overlapping channels were selected for testing.
 - f. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% transmission.

**13.1 Body SAR****<LTE SAR>**

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Holder	Sensor ON / OFF	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
01	LTE Band 2_Ant 3	20M	QPSK	1	0	Front	10mm		ON	18900	1880	22.68	23.00	1.076			-0.1	0.657	0.707
	LTE Band 2_Ant 3	20M	QPSK	50	0	Front	10mm		ON	18900	1880	21.76	22.00	1.057			0.02	0.516	0.545
	LTE Band 2_Ant 3	20M	QPSK	1	0	Back	10mm		ON	18900	1880	22.68	23.00	1.076			0.16	0.505	0.544
	LTE Band 2_Ant 3	20M	QPSK	50	0	Back	10mm		ON	18900	1880	21.76	22.00	1.057			-0.03	0.358	0.378
	LTE Band 2_Ant 3	20M	QPSK	1	0	Left Side	10mm		ON	18900	1880	22.68	23.00	1.076			0.07	0.188	0.202
	LTE Band 2_Ant 3	20M	QPSK	50	0	Left Side	10mm		ON	18900	1880	21.76	22.00	1.057			0	0.166	0.175
	LTE Band 2_Ant 3	20M	QPSK	1	0	Top Side	10mm		ON	18900	1880	22.68	23.00	1.076			0.01	0.486	0.523
	LTE Band 2_Ant 3	20M	QPSK	50	0	Top Side	10mm		ON	18900	1880	21.76	22.00	1.057			-0.01	0.290	0.306
	LTE Band 2_Ant 3	20M	QPSK	1	0	Bottom Side	10mm		ON	18900	1880	22.68	23.00	1.076			-0.06	0.024	0.026
	LTE Band 2_Ant 3	20M	QPSK	50	0	Bottom Side	10mm		ON	18900	1880	21.76	22.00	1.057			-0.04	0.026	0.027
	LTE Band 2_Ant 3	20M	QPSK	1	0	Front	35mm		OFF	18900	1880	23.46	24.00	1.132			-0.1	0.124	0.140
	LTE Band 2_Ant 3	20M	QPSK	50	0	Front	35mm		OFF	18900	1880	22.59	23.00	1.099			0.07	0.105	0.115
	LTE Band 2_Ant 3	20M	QPSK	1	0	Back	20mm		OFF	18900	1880	23.46	24.00	1.132			-0.07	0.257	0.291
	LTE Band 2_Ant 3	20M	QPSK	50	0	Back	20mm		OFF	18900	1880	22.59	23.00	1.099			0.18	0.199	0.219
	LTE Band 2_Ant 3	20M	QPSK	1	0	Left Side	30mm		OFF	18900	1880	23.46	24.00	1.132			-0.1	0.071	0.080
	LTE Band 2_Ant 3	20M	QPSK	50	0	Left Side	30mm		OFF	18900	1880	22.59	23.00	1.099			0.01	0.053	0.058
	LTE Band 2_Ant 3	20M	QPSK	1	0	Top Side	15mm		OFF	18900	1880	23.46	24.00	1.132			-0.18	0.298	0.337
	LTE Band 2_Ant 3	20M	QPSK	50	0	Top Side	15mm		OFF	18900	1880	22.59	23.00	1.099			0.1	0.253	0.278
	LTE Band 2_Ant 3	20M	QPSK	1	0	Bottom Side	15mm		OFF	18900	1880	23.46	24.00	1.132			0	0.001	0.001
	LTE Band 2_Ant 3	20M	QPSK	50	0	Bottom Side	15mm		OFF	18900	1880	22.59	23.00	1.099			0	0.001	0.001
	LTE Band 2_Ant 3	20M	QPSK	1	0	Back	0mm	Holder	ON	18900	1880	22.68	23.00	1.076			0.03	0.263	0.283
02	LTE Band 5_Ant 8	10M	QPSK	1	0	Front	10mm		ON	20525	836.5	23.34	24.50	1.306			-0.15	0.509	0.665
	LTE Band 5_Ant 8	10M	QPSK	25	0	Front	10mm		ON	20525	836.5	22.39	23.50	1.291			0.08	0.339	0.438
	LTE Band 5_Ant 8	10M	QPSK	1	0	Back	10mm		ON	20525	836.5	23.34	24.50	1.306			0.01	0.416	0.543
	LTE Band 5_Ant 8	10M	QPSK	25	0	Back	10mm		ON	20525	836.5	22.39	23.50	1.291			0.03	0.337	0.435
	LTE Band 5_Ant 8	10M	QPSK	1	0	Left Side	10mm		ON	20525	836.5	23.34	24.50	1.306			-0.08	0.297	0.388
	LTE Band 5_Ant 8	10M	QPSK	25	0	Left Side	10mm		ON	20525	836.5	22.39	23.50	1.291			-0.08	0.220	0.284
	LTE Band 5_Ant 8	10M	QPSK	1	0	Top Side	10mm		ON	20525	836.5	23.34	24.50	1.306			0.1	0.051	0.067
	LTE Band 5_Ant 8	10M	QPSK	25	0	Top Side	10mm		ON	20525	836.5	22.39	23.50	1.291			-0.18	0.048	0.062
	LTE Band 5_Ant 8	10M	QPSK	1	0	Bottom Side	10mm		ON	20525	836.5	23.34	24.50	1.306			0.1	0.010	0.013
	LTE Band 5_Ant 8	10M	QPSK	25	0	Bottom Side	10mm		ON	20525	836.5	22.39	23.50	1.291			0.12	0.087	0.112
	LTE Band 5_Ant 8	10M	QPSK	1	0	Front	35mm		OFF	20525	836.5	24.23	25.00	1.194			0.13	0.208	0.248
	LTE Band 5_Ant 8	10M	QPSK	25	0	Front	35mm		OFF	20525	836.5	23.22	24.00	1.197			0.12	0.147	0.176
	LTE Band 5_Ant 8	10M	QPSK	1	0	Back	20mm		OFF	20525	836.5	24.23	25.00	1.194			-0.03	0.312	0.373
	LTE Band 5_Ant 8	10M	QPSK	25	0	Back	20mm		OFF	20525	836.5	23.22	24.00	1.197			0.03	0.224	0.268
	LTE Band 5_Ant 8	10M	QPSK	1	0	Left Side	30mm		OFF	20525	836.5	24.23	25.00	1.194			0.18	0.109	0.130
	LTE Band 5_Ant 8	10M	QPSK	25	0	Left Side	30mm		OFF	20525	836.5	23.22	24.00	1.197			0.16	0.072	0.086
	LTE Band 5_Ant 8	10M	QPSK	1	0	Top Side	15mm		OFF	20525	836.5	24.23	25.00	1.194			-0.05	0.074	0.088
	LTE Band 5_Ant 8	10M	QPSK	25	0	Top Side	15mm		OFF	20525	836.5	23.22	24.00	1.197			0.01	0.053	0.063
	LTE Band 5_Ant 8	10M	QPSK	1	0	Bottom Side	15mm		OFF	20525	836.5	24.23	25.00	1.194			0	0.001	0.001
	LTE Band 5_Ant 8	10M	QPSK	25	0	Bottom Side	15mm		OFF	20525	836.5	23.22	24.00	1.197			0	0.001	0.001
	LTE Band 5_Ant 8	10M	QPSK	1	0	Back	0mm	Holder	ON	20525	836.5	23.34	24.50	1.306			0.08	0.167	0.218
	LTE Band 13_Ant 8	10M	QPSK	1	0	Front	10mm		OFF	23230	782	23.65	25.00	1.365			-0.09	0.325	0.443
	LTE Band 13_Ant 8	10M	QPSK	25	0	Front	10mm		OFF	23230	782	22.54	24.00	1.400			-0.08	0.246	0.344
03	LTE Band 13_Ant 8	10M	QPSK	1	0	Back	10mm		OFF	23230	782	23.65	25.00	1.365			0.06	0.359	0.490
	LTE Band 13_Ant 8	10M	QPSK	25	0	Back	10mm		OFF	23230	782	22.54	24.00	1.400			0.12	0.264	0.369
	LTE Band 13_Ant 8	10M	QPSK	1	0	Left Side	10mm		OFF	23230	782	23.65	25.00	1.365			0.03	0.197	0.269
	LTE Band 13_Ant 8	10M	QPSK	25	0	Left Side	10mm		OFF	23230	782	22.54	24.00	1.400			0.18	0.154	0.216
	LTE Band 13_Ant 8	10M	QPSK	1	0	Top Side	10mm		OFF	23230	782	23.65	25.00	1.365			0.16	0.001	0.001
	LTE Band 13_Ant 8	10M	QPSK	25	0	Top Side	10mm		OFF	23230	782	22.54	24.00	1.400			-0.1	0.001	0.001



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	LTE Band 13_Ant 8	10M	QPSK	1	0	Bottom Side	10mm		OFF	23230	782	23.65	25.00	1.365			0.07	0.102	0.139
	LTE Band 13_Ant 8	10M	QPSK	25	0	Bottom Side	10mm		OFF	23230	782	22.54	24.00	1.400			0.18	0.073	0.102
	LTE Band 13_Ant 8	10M	QPSK	1	0	Back	0mm	Holder	OFF	23230	782	23.65	25.00	1.365			-0.06	0.324	0.442
04	LTE Band 48_Ant 1	20M	QPSK	1	0	Front	10mm		OFF	55340	3560	20.95	21.00	1.012	62.9	1.006	0.19	0.337	0.343
	LTE Band 48_Ant 1	20M	QPSK	50	0	Front	10mm		OFF	55340	3560	20.89	21.00	1.026	62.9	1.006	0.11	0.328	0.338
	LTE Band 48_Ant 1	20M	QPSK	1	0	Back	10mm		OFF	55340	3560	20.95	21.00	1.012	62.9	1.006	-0.05	0.307	0.312
	LTE Band 48_Ant 1	20M	QPSK	50	0	Back	10mm		OFF	55340	3560	20.89	21.00	1.026	62.9	1.006	-0.08	0.279	0.288
	LTE Band 48_Ant 1	20M	QPSK	1	0	Left Side	10mm		OFF	55340	3560	20.95	21.00	1.012	62.9	1.006	0.16	0.267	0.272
	LTE Band 48_Ant 1	20M	QPSK	50	0	Left Side	10mm		OFF	55340	3560	20.89	21.00	1.026	62.9	1.006	0.05	0.286	0.295
	LTE Band 48_Ant 1	20M	QPSK	1	0	Top Side	10mm		OFF	55340	3560	20.95	21.00	1.012	62.9	1.006	0.05	0.070	0.071
	LTE Band 48_Ant 1	20M	QPSK	50	0	Top Side	10mm		OFF	55340	3560	20.89	21.00	1.026	62.9	1.006	-0.03	0.068	0.070
	LTE Band 48_Ant 1	20M	QPSK	1	0	Bottom Side	10mm		OFF	55340	3560	20.95	21.00	1.012	62.9	1.006	-0.15	0.188	0.191
	LTE Band 48_Ant 1	20M	QPSK	50	0	Bottom Side	10mm		OFF	55340	3560	20.89	21.00	1.026	62.9	1.006	0.02	0.160	0.165
	LTE Band 48C_Ant 1	20M	QPSK	1	0	Front	10mm		OFF	55340+55538	3560	20.43	21.00	1.140	62.9	1.006	0.07	0.285	0.327
	LTE Band 48_Ant 1	20M	QPSK	1	0	Back	0mm	Holder	OFF	55340	3560	20.95	21.00	1.012			0.12	0.232	0.235
	LTE Band 48_Ant 6	20M	QPSK	1	0	Front	10mm		OFF	56640	3690	20.92	21.00	1.019	62.9	1.006	0.11	0.207	0.212
	LTE Band 48_Ant 6	20M	QPSK	50	0	Front	10mm		OFF	56640	3690	20.86	21.00	1.033	62.9	1.006	0.13	0.203	0.211
	LTE Band 48_Ant 6	20M	QPSK	1	0	Back	10mm		OFF	56640	3690	20.92	21.00	1.019	62.9	1.006	-0.18	0.119	0.122
	LTE Band 48_Ant 6	20M	QPSK	50	0	Back	10mm		OFF	56640	3690	20.86	21.00	1.033	62.9	1.006	0.02	0.115	0.119
	LTE Band 48_Ant 6	20M	QPSK	1	0	Left Side	10mm		OFF	56640	3690	20.92	21.00	1.019	62.9	1.006	0.16	0.001	0.001
	LTE Band 48_Ant 6	20M	QPSK	50	0	Left Side	10mm		OFF	56640	3690	20.86	21.00	1.033	62.9	1.006	-0.03	0.001	0.001
	LTE Band 48_Ant 6	20M	QPSK	1	0	Top Side	10mm		OFF	56640	3690	20.92	21.00	1.019	62.9	1.006	0.07	0.001	0.001
	LTE Band 48_Ant 6	20M	QPSK	50	0	Top Side	10mm		OFF	56640	3690	20.86	21.00	1.033	62.9	1.006	0	0.001	0.001
	LTE Band 48_Ant 6	20M	QPSK	1	0	Bottom Side	10mm		OFF	56640	3690	20.92	21.00	1.019	62.9	1.006	0.01	0.001	0.001
	LTE Band 48_Ant 6	20M	QPSK	50	0	Bottom Side	10mm		OFF	56640	3690	20.86	21.00	1.033	62.9	1.006	-0.01	0.001	0.001
	LTE Band 48_Ant 6	20M	QPSK	1	0	Back	0mm	Holder	OFF	56640	3690	20.92	21.00	1.019			0.09	0.099	0.101
05	LTE Band 66_Ant 3	20M	QPSK	1	0	Front	10mm		ON	132322	1745	20.97	21.50	1.130			-0.03	0.664	0.750
	LTE Band 66_Ant 3	20M	QPSK	50	0	Front	10mm		ON	132322	1745	19.96	20.50	1.132			0.08	0.517	0.585
	LTE Band 66_Ant 3	20M	QPSK	1	0	Back	10mm		ON	132322	1745	20.97	21.50	1.130			-0.17	0.441	0.498
	LTE Band 66_Ant 3	20M	QPSK	50	0	Back	10mm		ON	132322	1745	19.96	20.50	1.132			-0.03	0.400	0.453
	LTE Band 66_Ant 3	20M	QPSK	1	0	Left Side	10mm		ON	132322	1745	20.97	21.50	1.130			0.14	0.243	0.275
	LTE Band 66_Ant 3	20M	QPSK	50	0	Left Side	10mm		ON	132322	1745	19.96	20.50	1.132			0.11	0.206	0.233
	LTE Band 66_Ant 3	20M	QPSK	1	0	Top Side	10mm		ON	132322	1745	20.97	21.50	1.130			-0.05	0.156	0.176
	LTE Band 66_Ant 3	20M	QPSK	50	0	Top Side	10mm		ON	132322	1745	19.96	20.50	1.132			0.18	0.123	0.139
	LTE Band 66_Ant 3	20M	QPSK	1	0	Bottom Side	10mm		ON	132322	1745	20.97	21.50	1.130			0.14	0.046	0.052
	LTE Band 66_Ant 3	20M	QPSK	50	0	Bottom Side	10mm		ON	132322	1745	19.96	20.50	1.132			-0.17	0.040	0.045
	LTE Band 66_Ant 3	20M	QPSK	1	0	Front	35mm		OFF	132322	1745	23.42	24.00	1.143			-0.15	0.152	0.174
	LTE Band 66_Ant 3	20M	QPSK	50	0	Front	35mm		OFF	132322	1745	22.52	23.00	1.117			0.19	0.116	0.130
	LTE Band 66_Ant 3	20M	QPSK	1	0	Back	20mm		OFF	132322	1745	23.42	24.00	1.143			-0.05	0.213	0.243
	LTE Band 66_Ant 3	20M	QPSK	50	0	Back	20mm		OFF	132322	1745	22.52	23.00	1.117			0.07	0.162	0.181
	LTE Band 66_Ant 3	20M	QPSK	1	0	Left Side	30mm		OFF	132322	1745	23.42	24.00	1.143			-0.18	0.068	0.078
	LTE Band 66_Ant 3	20M	QPSK	50	0	Left Side	30mm		OFF	132322	1745	22.52	23.00	1.117			0.03	0.057	0.064
	LTE Band 66_Ant 3	20M	QPSK	1	0	Top Side	15mm		OFF	132322	1745	23.42	24.00	1.143			0.03	0.099	0.113
	LTE Band 66_Ant 3	20M	QPSK	50	0	Top Side	15mm		OFF	132322	1745	22.52	23.00	1.117			-0.15	0.068	0.076
	LTE Band 66_Ant 3	20M	QPSK	1	0	Bottom Side	15mm		OFF	132322	1745	23.42	24.00	1.143			-0.15	0.066	0.075
	LTE Band 66_Ant 3	20M	QPSK	50	0	Bottom Side	15mm		OFF	132322	1745	22.52	23.00	1.117			0.11	0.052	0.058
	LTE Band 66B_Ant 3	15M	QPSK	50	0	Front	10mm		ON	132322+132229	1745	20.92	21.50	1.143			0.08	0.614	0.702
	LTE Band 66C_Ant 3	20M	QPSK	50	0	Front	10mm		ON	132322+132124	1745	20.51	21.50	1.256			-0.02	0.573	0.720
	LTE Band 66_Ant 3	20M	QPSK	1	0	Back	0mm	Holder	ON	132322	1745	20.97	21.50	1.130			-0.04	0.255	0.290
	LTE Band 66_Ant 8	20M	QPSK	1	0	Front	10mm		ON	132322	1745	21.14	21.50	1.086			-0.01	0.667	0.725
	LTE Band 66_Ant 8	20M	QPSK	50	0	Front	10mm		ON	132322	1745	21.16	21.50	1.081			0.17	0.658	0.712
	LTE Band 66_Ant 8	20M	QPSK	1	0	Back	10mm		ON	132322	1745	21.14	21.50	1.086			-0.05	0.406	0.441
	LTE Band 66_Ant 8	20M	QPSK	50	0	Back	10mm		ON	132322	1745	21.16	21.50	1.081			0.01	0.385	0.416
	LTE Band 66_Ant 8	20M	QPSK	1	0	Left Side	10mm		ON	132322	1745	21.14	21.50	1.086			0.1	0.130	0.141
	LTE Band 66_Ant 8	20M	QPSK	50	0	Left Side	10mm		ON	132322	1745	21.16	21.50	1.081			-0.17	0.132	0.143
	LTE Band 66_Ant 8	20M	QPSK	1	0	Top Side	10mm		ON	132322	1745	21.14	21.50	1.086			0.04	0.001	0.001



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	LTE Band 66_Ant 8	20M	QPSK	50	0	Top Side	10mm		ON	132322	1745	21.16	21.50	1.081			-0.01	0.001	0.001
	LTE Band 66_Ant 8	20M	QPSK	1	0	Bottom Side	10mm		ON	132322	1745	21.14	21.50	1.086			-0.08	0.150	0.163
	LTE Band 66_Ant 8	20M	QPSK	50	0	Bottom Side	10mm		ON	132322	1745	21.16	21.50	1.081			0.05	0.133	0.144
	LTE Band 66_Ant 8	20M	QPSK	1	0	Front	35mm		OFF	132322	1745	23.60	24.00	1.096			0.1	0.159	0.174
	LTE Band 66_Ant 8	20M	QPSK	50	0	Front	35mm		OFF	132322	1745	22.64	23.00	1.086			-0.18	0.112	0.122
	LTE Band 66_Ant 8	20M	QPSK	1	0	Back	20mm		OFF	132322	1745	23.60	24.00	1.096			-0.04	0.318	0.349
	LTE Band 66_Ant 8	20M	QPSK	50	0	Back	20mm		OFF	132322	1745	22.64	23.00	1.086			0.1	0.226	0.246
	LTE Band 66_Ant 8	20M	QPSK	1	0	Left Side	30mm		OFF	132322	1745	23.60	24.00	1.096			0.12	0.071	0.078
	LTE Band 66_Ant 8	20M	QPSK	50	0	Left Side	30mm		OFF	132322	1745	22.64	23.00	1.086			0.08	0.051	0.055
	LTE Band 66_Ant 8	20M	QPSK	1	0	Top Side	15mm		OFF	132322	1745	23.60	24.00	1.096			-0.04	0.001	0.001
	LTE Band 66_Ant 8	20M	QPSK	50	0	Top Side	15mm		OFF	132322	1745	22.64	23.00	1.086			-0.08	0.001	0.001
	LTE Band 66_Ant 8	20M	QPSK	1	0	Bottom Side	15mm		OFF	132322	1745	23.60	24.00	1.096			-0.13	0.073	0.080
	LTE Band 66_Ant 8	20M	QPSK	50	0	Bottom Side	15mm		OFF	132322	1745	22.64	23.00	1.086			-0.13	0.061	0.066
	LTE Band 66_Ant 8	20M	QPSK	1	0	Back	0mm	Holder	ON	132322	1745	21.14	21.50	1.086			0.03	0.250	0.272

<5G NR SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Holder	Sensor ON / OFF	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 n2_Ant 3	20M	BPSK	1	1	Front	10mm		ON	376000	1880	21.62	22.50	1.225	0.08	0.536	0.656
	FR1 n2_Ant 3	20M	BPSK	50	0	Front	10mm		ON	376000	1880	21.61	22.50	1.227	-0.07	0.499	0.612
	FR1 n2_Ant 3	20M	BPSK	1	1	Back	10mm		ON	376000	1880	21.62	22.50	1.225	0.05	0.379	0.464
	FR1 n2_Ant 3	20M	BPSK	50	0	Back	10mm		ON	376000	1880	21.61	22.50	1.227	-0.11	0.352	0.432
	FR1 n2_Ant 3	20M	BPSK	1	1	Left Side	10mm		ON	376000	1880	21.62	22.50	1.225	-0.12	0.133	0.163
	FR1 n2_Ant 3	20M	BPSK	50	0	Left Side	10mm		ON	376000	1880	21.61	22.50	1.227	0.03	0.148	0.182
	FR1 n2_Ant 3	20M	BPSK	1	1	Top Side	10mm		ON	376000	1880	21.62	22.50	1.225	-0.16	0.335	0.410
	FR1 n2_Ant 3	20M	BPSK	50	0	Top Side	10mm		ON	376000	1880	21.61	22.50	1.227	-0.02	0.360	0.442
	FR1 n2_Ant 3	20M	BPSK	1	1	Bottom Side	10mm		ON	376000	1880	21.62	22.50	1.225	0.15	0.001	0.001
	FR1 n2_Ant 3	20M	BPSK	50	0	Bottom Side	10mm		ON	376000	1880	21.61	22.50	1.227	-0.09	0.001	0.001
	FR1 n2_Ant 3	20M	BPSK	1	1	Front	35mm		OFF	376000	1880	23.59	24.00	1.099	0.01	0.120	0.132
	FR1 n2_Ant 3	20M	BPSK	50	28	Front	35mm		OFF	376000	1880	23.47	24.00	1.130	0.1	0.117	0.132
	FR1 n2_Ant 3	20M	BPSK	1	1	Back	20mm		OFF	376000	1880	23.59	24.00	1.099	-0.17	0.211	0.232
	FR1 n2_Ant 3	20M	BPSK	50	28	Back	20mm		OFF	376000	1880	23.47	24.00	1.130	-0.13	0.212	0.240
	FR1 n2_Ant 3	20M	BPSK	1	1	Left Side	30mm		OFF	376000	1880	23.59	24.00	1.099	0.04	0.060	0.066
	FR1 n2_Ant 3	20M	BPSK	50	28	Left Side	30mm		OFF	376000	1880	23.47	24.00	1.130	-0.01	0.061	0.069
	FR1 n2_Ant 3	20M	BPSK	1	1	Top Side	15mm		OFF	376000	1880	23.59	24.00	1.099	-0.1	0.286	0.314
	FR1 n2_Ant 3	20M	BPSK	50	28	Top Side	15mm		OFF	376000	1880	23.47	24.00	1.130	0.18	0.340	0.384
	FR1 n2_Ant 3	20M	BPSK	1	1	Bottom Side	15mm		OFF	376000	1880	23.59	24.00	1.099	0	0.001	0.001
	FR1 n2_Ant 3	20M	BPSK	50	28	Bottom Side	15mm		OFF	376000	1880	23.47	24.00	1.130	0	0.001	0.001
	FR1 n2_Ant 3	20M	BPSK	1	1	Back	0mm	Holder	ON	376000	1880	21.62	22.50	1.225	-0.09	0.152	0.186
06	FR1 n2_Ant 8	20M	BPSK	1	1	Front	10mm		ON	376000	1880	22.91	23.50	1.146	0.03	0.696	0.797
	FR1 n2_Ant 8	20M	BPSK	50	0	Front	10mm		ON	376000	1880	22.92	23.50	1.143	0.18	0.672	0.768
	FR1 n2_Ant 8	20M	BPSK	1	1	Back	10mm		ON	376000	1880	22.91	23.50	1.146	-0.04	0.543	0.622
	FR1 n2_Ant 8	20M	BPSK	50	0	Back	10mm		ON	376000	1880	22.92	23.50	1.143	-0.08	0.518	0.592
	FR1 n2_Ant 8	20M	BPSK	1	1	Left Side	10mm		ON	376000	1880	22.91	23.50	1.146	-0.13	0.332	0.380
	FR1 n2_Ant 8	20M	BPSK	50	0	Left Side	10mm		ON	376000	1880	22.92	23.50	1.143	-0.13	0.332	0.379
	FR1 n2_Ant 8	20M	BPSK	1	1	Top Side	10mm		ON	376000	1880	22.91	23.50	1.146	0.06	0.066	0.076
	FR1 n2_Ant 8	20M	BPSK	50	0	Top Side	10mm		ON	376000	1880	22.92	23.50	1.143	-0.03	0.082	0.094
	FR1 n2_Ant 8	20M	BPSK	1	1	Bottom Side	10mm		ON	376000	1880	22.91	23.50	1.146	-0.03	0.206	0.236
	FR1 n2_Ant 8	20M	BPSK	50	0	Bottom Side	10mm		ON	376000	1880	22.92	23.50	1.143	0.08	0.187	0.214
	FR1 n2_Ant 8	20M	BPSK	1	1	Front	35mm		OFF	376000	1880	23.76	24.00	1.057	0.18	0.119	0.126
	FR1 n2_Ant 8	20M	BPSK	50	28	Front	35mm		OFF	376000	1880	23.70	24.00	1.072	0.14	0.120	0.129
	FR1 n2_Ant 8	20M	BPSK	1	1	Back	20mm		OFF	376000	1880	23.76	24.00	1.057	-0.15	0.257	0.272
	FR1 n2_Ant 8	20M	BPSK	50	28	Back	20mm		OFF	376000	1880	23.70	24.00	1.072	-0.17	0.240	0.257
	FR1 n2_Ant 8	20M	BPSK	1	1	Left Side	30mm		OFF	376000	1880	23.76	24.00	1.057	0.17	0.117	0.124
	FR1 n2_Ant 8	20M	BPSK	50	28	Left Side	30mm		OFF	376000	1880	23.70	24.00	1.072	-0.05	0.119	0.128



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	FR1 n2_Ant 8	20M	BPSK	1	1	Top Side	15mm		OFF	376000	1880	23.76	24.00	1.057	0.06	0.036	0.038
	FR1 n2_Ant 8	20M	BPSK	50	28	Top Side	15mm		OFF	376000	1880	23.70	24.00	1.072	0	0.028	0.030
	FR1 n2_Ant 8	20M	BPSK	1	1	Bottom Side	15mm		OFF	376000	1880	23.76	24.00	1.057	-0.04	0.122	0.129
	FR1 n2_Ant 8	20M	BPSK	50	28	Bottom Side	15mm		OFF	376000	1880	23.70	24.00	1.072	-0.15	0.114	0.122
	FR1 n2_Ant 8	20M	BPSK	1	1	Back	0mm	Holder	ON	376000	1880	22.91	23.50	1.146	-0.11	0.356	0.408
07	FR1 n5_Ant 8	20M	BPSK	1	1	Front	10mm		ON	167300	836.5	23.64	24.50	1.219	-0.04	0.592	0.722
	FR1 n5_Ant 8	20M	BPSK	50	0	Front	10mm		ON	167300	836.5	23.63	24.50	1.222	-0.15	0.556	0.679
	FR1 n5_Ant 8	20M	BPSK	1	1	Back	10mm		ON	167300	836.5	23.64	24.50	1.219	-0.15	0.408	0.497
	FR1 n5_Ant 8	20M	BPSK	50	0	Back	10mm		ON	167300	836.5	23.63	24.50	1.222	0.11	0.499	0.610
	FR1 n5_Ant 8	20M	BPSK	1	1	Left Side	10mm		ON	167300	836.5	23.64	24.50	1.219	-0.08	0.352	0.429
	FR1 n5_Ant 8	20M	BPSK	50	0	Left Side	10mm		ON	167300	836.5	23.63	24.50	1.222	-0.17	0.337	0.412
	FR1 n5_Ant 8	20M	BPSK	1	1	Top Side	10mm		ON	167300	836.5	23.64	24.50	1.219	-0.08	0.064	0.078
	FR1 n5_Ant 8	20M	BPSK	50	0	Top Side	10mm		ON	167300	836.5	23.63	24.50	1.222	-0.04	0.089	0.109
	FR1 n5_Ant 8	20M	BPSK	1	1	Bottom Side	10mm		ON	167300	836.5	23.64	24.50	1.219	-0.08	0.141	0.172
	FR1 n5_Ant 8	20M	BPSK	50	0	Bottom Side	10mm		ON	167300	836.5	23.63	24.50	1.222	0.17	0.150	0.183
	FR1 n5_Ant 8	20M	BPSK	1	1	Front	35mm		OFF	167300	836.5	24.40	25.00	1.148	-0.08	0.239	0.274
	FR1 n5_Ant 8	20M	BPSK	50	28	Front	35mm		OFF	167300	836.5	24.28	25.00	1.180	0.05	0.170	0.201
	FR1 n5_Ant 8	20M	BPSK	1	1	Back	20mm		OFF	167300	836.5	24.40	25.00	1.148	-0.18	0.499	0.573
	FR1 n5_Ant 8	20M	BPSK	50	28	Back	20mm		OFF	167300	836.5	24.28	25.00	1.180	0.06	0.384	0.453
	FR1 n5_Ant 8	20M	BPSK	1	1	Left Side	30mm		OFF	167300	836.5	24.40	25.00	1.148	-0.09	0.173	0.199
	FR1 n5_Ant 8	20M	BPSK	50	28	Left Side	30mm		OFF	167300	836.5	24.28	25.00	1.180	-0.08	0.140	0.165
	FR1 n5_Ant 8	20M	BPSK	1	1	Top Side	15mm		OFF	167300	836.5	24.40	25.00	1.148	-0.06	0.038	0.044
	FR1 n5_Ant 8	20M	BPSK	50	28	Top Side	15mm		OFF	167300	836.5	24.28	25.00	1.180	-0.14	0.041	0.048
	FR1 n5_Ant 8	20M	BPSK	1	1	Bottom Side	15mm		OFF	167300	836.5	24.40	25.00	1.148	-0.19	0.066	0.076
	FR1 n5_Ant 8	20M	BPSK	50	28	Bottom Side	15mm		OFF	167300	836.5	24.28	25.00	1.180	0.01	0.058	0.068
	FR1 n5_Ant 8	20M	BPSK	50	0	Back	0mm	Holder	ON	167300	836.5	23.63	24.50	1.222	0.07	0.339	0.414
	FR1 n48_Ant 1	40M	BPSK	1	1	Front	10mm		OFF	638000	3570	20.50	21.00	1.122	0.11	0.410	0.460
	FR1 n48_Ant 1	40M	BPSK	50	28	Front	10mm		OFF	638000	3570	20.34	21.00	1.164	-0.08	0.331	0.385
08	FR1 n48_Ant 1	40M	BPSK	1	1	Back	10mm		OFF	638000	3570	20.50	21.00	1.122	-0.07	0.442	0.496
	FR1 n48_Ant 1	40M	BPSK	50	28	Back	10mm		OFF	638000	3570	20.34	21.00	1.164	-0.01	0.392	0.456
	FR1 n48_Ant 1	40M	BPSK	1	1	Left Side	10mm		OFF	638000	3570	20.50	21.00	1.122	-0.09	0.365	0.410
	FR1 n48_Ant 1	40M	BPSK	50	28	Left Side	10mm		OFF	638000	3570	20.34	21.00	1.164	-0.06	0.312	0.363
	FR1 n48_Ant 1	40M	BPSK	1	1	Top Side	10mm		OFF	638000	3570	20.50	21.00	1.122	-0.17	0.090	0.101
	FR1 n48_Ant 1	40M	BPSK	50	28	Top Side	10mm		OFF	638000	3570	20.34	21.00	1.164	-0.01	0.087	0.101
	FR1 n48_Ant 1	40M	BPSK	1	1	Bottom Side	10mm		OFF	638000	3570	20.50	21.00	1.122	-0.11	0.217	0.243
	FR1 n48_Ant 1	40M	BPSK	50	28	Bottom Side	10mm		OFF	638000	3570	20.34	21.00	1.164	0.14	0.180	0.210
	FR1 n48_Ant 1	40M	BPSK	1	1	Back	0mm	Holder	OFF	638000	3570	20.50	21.00	1.122	-0.06	0.236	0.265
	FR1 n48_Ant 6	40M	BPSK	1	1	Front	10mm		OFF	641666	3624.99	20.77	21.00	1.054	0.1	0.274	0.289
	FR1 n48_Ant 6	40M	BPSK	50	0	Front	10mm		OFF	641666	3624.99	20.75	21.00	1.059	0	0.324	0.343
	FR1 n48_Ant 6	40M	BPSK	1	1	Back	10mm		OFF	641666	3624.99	20.77	21.00	1.054	-0.06	0.182	0.192
	FR1 n48_Ant 6	40M	BPSK	50	0	Back	10mm		OFF	641666	3624.99	20.75	21.00	1.059	0.02	0.188	0.199
	FR1 n48_Ant 6	40M	BPSK	1	1	Left Side	10mm		OFF	641666	3624.99	20.77	21.00	1.054	-0.16	0.001	0.001
	FR1 n48_Ant 6	40M	BPSK	50	0	Left Side	10mm		OFF	641666	3624.99	20.75	21.00	1.059	0.05	0.001	0.001
	FR1 n48_Ant 6	40M	BPSK	1	1	Top Side	10mm		OFF	641666	3624.99	20.77	21.00	1.054	-0.03	0.001	0.001
	FR1 n48_Ant 6	40M	BPSK	50	0	Top Side	10mm		OFF	641666	3624.99	20.75	21.00	1.059	0.17	0.001	0.001
	FR1 n48_Ant 6	40M	BPSK	1	1	Bottom Side	10mm		OFF	641666	3624.99	20.77	21.00	1.054	-0.15	0.032	0.034
	FR1 n48_Ant 6	40M	BPSK	50	0	Bottom Side	10mm		OFF	641666	3624.99	20.75	21.00	1.059	0.16	0.030	0.032
	FR1 n48_Ant 6	40M	BPSK	50	0	Back	0mm	Holder	OFF	641666	3624.99	20.75	21.00	1.059	0.03	0.171	0.181
	FR1 n66_Ant 3	40M	BPSK	1	1	Front	10mm		ON	349000	1745	20.51	21.00	1.119	0.06	0.580	0.649
09	FR1 n66_Ant 3	40M	BPSK	108	54	Front	10mm		ON	349000	1745	20.31	21.00	1.172	-0.06	0.608	0.713
	FR1 n66_Ant 3	40M	BPSK	1	1	Back	10mm		ON	349000	1745	20.51	21.00	1.119	-0.09	0.392	0.439
	FR1 n66_Ant 3	40M	BPSK	108	54	Back	10mm		ON	349000	1745	20.31	21.00	1.172	-0.08	0.443	0.519
	FR1 n66_Ant 3	40M	BPSK	1	1	Left Side	10mm		ON	349000	1745	20.51	21.00	1.119	0.13	0.215	0.241
	FR1 n66_Ant 3	40M	BPSK	108	54	Left Side	10mm		ON	349000	1745	20.31	21.00	1.172	0.12	0.221	0.259
	FR1 n66_Ant 3	40M	BPSK	1	1	Top Side	10mm		ON	349000	1745	20.51	21.00	1.119	0.03	0.095	0.106
	FR1 n66_Ant 3	40M	BPSK	108	54	Top Side	10mm		ON	349000	1745	20.31	21.00	1.172	0.18	0.104	0.122



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	FR1 n66_Ant 3	40M	BPSK	1	1	Bottom Side	10mm		ON	349000	1745	20.51	21.00	1.119	0.16	0.046	0.051
	FR1 n66_Ant 3	40M	BPSK	108	54	Bottom Side	10mm		ON	349000	1745	20.31	21.00	1.172	-0.1	0.057	0.067
	FR1 n66_Ant 3	40M	BPSK	1	1	Front	35mm		OFF	349000	1745	23.51	24.00	1.119	-0.17	0.141	0.158
	FR1 n66_Ant 3	40M	BPSK	108	54	Front	35mm		OFF	349000	1745	23.29	24.00	1.178	-0.03	0.149	0.175
	FR1 n66_Ant 3	40M	BPSK	1	1	Back	20mm		OFF	349000	1745	23.51	24.00	1.119	0.14	0.324	0.363
	FR1 n66_Ant 3	40M	BPSK	108	54	Back	20mm		OFF	349000	1745	23.29	24.00	1.178	-0.02	0.320	0.377
	FR1 n66_Ant 3	40M	BPSK	1	1	Left Side	30mm		OFF	349000	1745	23.51	24.00	1.119	0.11	0.104	0.116
	FR1 n66_Ant 3	40M	BPSK	108	54	Left Side	30mm		OFF	349000	1745	23.29	24.00	1.178	-0.05	0.092	0.108
	FR1 n66_Ant 3	40M	BPSK	1	1	Top Side	15mm		OFF	349000	1745	23.51	24.00	1.119	-0.02	0.123	0.138
	FR1 n66_Ant 3	40M	BPSK	108	54	Top Side	15mm		OFF	349000	1745	23.29	24.00	1.178	-0.05	0.126	0.148
	FR1 n66_Ant 3	40M	BPSK	1	1	Bottom Side	15mm		OFF	349000	1745	23.51	24.00	1.119	0.03	0.001	0.001
	FR1 n66_Ant 3	40M	BPSK	108	54	Bottom Side	15mm		OFF	349000	1745	23.29	24.00	1.178	0.01	0.001	0.001
	FR1 n66_Ant 3	40M	BPSK	108	54	Back	0mm	Holder	ON	349000	1745	20.31	21.00	1.172	0.05	0.111	0.130
	FR1 n66_Ant 8	40M	BPSK	1	1	Front	10mm		ON	349000	1745	20.61	21.00	1.094	-0.01	0.612	0.670
	FR1 n66_Ant 8	40M	BPSK	108	0	Front	10mm		ON	349000	1745	20.53	21.00	1.114	0.07	0.591	0.659
	FR1 n66_Ant 8	40M	BPSK	1	1	Back	10mm		ON	349000	1745	20.61	21.00	1.094	0.18	0.387	0.423
	FR1 n66_Ant 8	40M	BPSK	108	0	Back	10mm		ON	349000	1745	20.53	21.00	1.114	-0.1	0.370	0.412
	FR1 n66_Ant 8	40M	BPSK	1	1	Left Side	10mm		ON	349000	1745	20.61	21.00	1.094	0.01	0.104	0.114
	FR1 n66_Ant 8	40M	BPSK	108	0	Left Side	10mm		ON	349000	1745	20.53	21.00	1.114	-0.15	0.111	0.124
	FR1 n66_Ant 8	40M	BPSK	1	1	Top Side	10mm		ON	349000	1745	20.61	21.00	1.094	0.19	0.036	0.039
	FR1 n66_Ant 8	40M	BPSK	108	0	Top Side	10mm		ON	349000	1745	20.53	21.00	1.114	0.07	0.026	0.029
	FR1 n66_Ant 8	40M	BPSK	1	1	Bottom Side	10mm		ON	349000	1745	20.61	21.00	1.094	-0.18	0.138	0.151
	FR1 n66_Ant 8	40M	BPSK	108	0	Bottom Side	10mm		ON	349000	1745	20.53	21.00	1.114	0.03	0.127	0.142
	FR1 n66_Ant 8	40M	BPSK	1	1	Front	35mm		OFF	349000	1745	23.84	24.00	1.038	-0.08	0.162	0.168
	FR1 n66_Ant 8	40M	BPSK	108	54	Front	35mm		OFF	349000	1745	23.69	24.00	1.074	0.08	0.138	0.148
	FR1 n66_Ant 8	40M	BPSK	1	1	Back	20mm		OFF	349000	1745	23.84	24.00	1.038	-0.14	0.311	0.323
	FR1 n66_Ant 8	40M	BPSK	108	54	Back	20mm		OFF	349000	1745	23.69	24.00	1.074	0.01	0.262	0.281
	FR1 n66_Ant 8	40M	BPSK	1	1	Left Side	30mm		OFF	349000	1745	23.84	24.00	1.038	0.03	0.071	0.074
	FR1 n66_Ant 8	40M	BPSK	108	54	Left Side	30mm		OFF	349000	1745	23.69	24.00	1.074	-0.08	0.068	0.073
	FR1 n66_Ant 8	40M	BPSK	1	1	Top Side	15mm		OFF	349000	1745	23.84	24.00	1.038	-0.01	0.037	0.038
	FR1 n66_Ant 8	40M	BPSK	108	54	Top Side	15mm		OFF	349000	1745	23.69	24.00	1.074	0	0.041	0.044
	FR1 n66_Ant 8	40M	BPSK	1	1	Bottom Side	15mm		OFF	349000	1745	23.84	24.00	1.038	-0.11	0.133	0.138
	FR1 n66_Ant 8	40M	BPSK	108	54	Bottom Side	15mm		OFF	349000	1745	23.69	24.00	1.074	-0.06	0.140	0.150
	FR1 n66_Ant 8	40M	BPSK	1	1	Back	0mm	Holder	OFF	349000	1745	23.84	24.00	1.038	0.01	0.225	0.233
	FR1 n77_Ant 1	100M	BPSK	1	137	Front	10mm		ON	656000	3840	20.68	21.50	1.208	0.11	0.575	0.694
	FR1 n77_Ant 1	100M	BPSK	135	69	Front	10mm		ON	656000	3840	20.80	21.50	1.175	0.06	0.640	0.752
	FR1 n77_Ant 1	100M	BPSK	270	0	Front	10mm		ON	656000	3840	20.74	21.50	1.191	-0.05	0.583	0.694
	FR1 n77_Ant 1	100M	BPSK	1	137	Back	10mm		ON	656000	3840	20.68	21.50	1.208	-0.08	0.623	0.752
	FR1 n77_Ant 1	100M	BPSK	135	69	Back	10mm		ON	656000	3840	20.80	21.50	1.175	0.16	0.548	0.644
	FR1 n77_Ant 1	100M	BPSK	270	0	Back	10mm		ON	656000	3840	20.74	21.50	1.191	0.05	0.578	0.689
	FR1 n77_Ant 1	100M	BPSK	1	137	Left Side	10mm		ON	656000	3840	20.68	21.50	1.208	0.05	0.591	0.714
	FR1 n77_Ant 1	100M	BPSK	135	69	Left Side	10mm		ON	656000	3840	20.80	21.50	1.175	-0.03	0.652	0.766
	FR1 n77_Ant 1	100M	BPSK	270	0	Left Side	10mm		ON	656000	3840	20.74	21.50	1.191	-0.15	0.623	0.742
	FR1 n77_Ant 1	100M	BPSK	1	137	Top Side	10mm		ON	656000	3840	20.68	21.50	1.208	0.02	0.120	0.145
	FR1 n77_Ant 1	100M	BPSK	135	69	Top Side	10mm		ON	656000	3840	20.80	21.50	1.175	0.07	0.088	0.103
	FR1 n77_Ant 1	100M	BPSK	1	137	Bottom Side	10mm		ON	656000	3840	20.68	21.50	1.208	0.16	0.464	0.560
	FR1 n77_Ant 1	100M	BPSK	135	69	Bottom Side	10mm		ON	656000	3840	20.80	21.50	1.175	0.13	0.422	0.496
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	1	Front	35mm		OFF	656000	3840	25.67	27.00	1.358	0.08	0.374	0.508
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Front	35mm		OFF	656000	3840	25.60	27.00	1.380	0.01	0.569	0.785
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	1	Back	20mm		OFF	656000	3840	25.67	27.00	1.358	0.03	0.472	0.641
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Back	20mm		OFF	656000	3840	25.60	27.00	1.380	-0.08	0.693	0.957
	FR1 n77_HPUE_Ant 1	100M	BPSK	270	0	Back	20mm		OFF	656000	3840	25.58	26.50	1.236	0.03	0.677	0.837
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	1	Left Side	30mm		OFF	656000	3840	25.67	27.00	1.358	-0.08	0.334	0.454
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Left Side	30mm		OFF	656000	3840	25.60	27.00	1.380	0.1	0.523	0.722
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	1	Top Side	15mm		OFF	656000	3840	25.67	27.00	1.358	-0.18	0.129	0.175
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Top Side	15mm		OFF	656000	3840	25.60	27.00	1.380	0.1	0.183	0.253



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	FR1 n77_HPUE_Ant 1	100M	BPSK	1	1	Bottom Side	15mm		OFF	656000	3840	25.67	27.00	1.358	0.12	0.692	0.940
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Bottom Side	15mm		OFF	656000	3840	25.60	27.00	1.380	-0.01	0.768	1.060
	FR1 n77_HPUE_Ant 1	100M	BPSK	270	0	Bottom Side	15mm		OFF	656000	3840	25.58	26.50	1.236	0.09	0.721	0.891
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Back	0mm	Holder	OFF	656000	3840	25.60	27.00	1.380	0.05	0.702	0.969
	FR1 n77_Ant 1	100M	BPSK	1	137	Front	10mm		ON	633332	3499.98	21.34	21.50	1.038	0.08	0.591	0.613
	FR1 n77_Ant 1	100M	BPSK	135	69	Front	10mm		ON	633332	3499.98	21.45	21.50	1.012	0.01	0.645	0.652
	FR1 n77_Ant 1	100M	BPSK	1	137	Back	10mm		ON	633332	3499.98	21.34	21.50	1.038	0.03	0.606	0.629
	FR1 n77_Ant 1	100M	BPSK	135	69	Back	10mm		ON	633332	3499.98	21.45	21.50	1.012	-0.1	0.653	0.661
	FR1 n77_Ant 1	100M	BPSK	1	137	Left Side	10mm		ON	633332	3499.98	21.34	21.50	1.038	-0.08	0.541	0.561
	FR1 n77_Ant 1	100M	BPSK	135	69	Left Side	10mm		ON	633332	3499.98	21.45	21.50	1.012	-0.08	0.556	0.562
	FR1 n77_Ant 1	100M	BPSK	1	137	Top Side	10mm		ON	633332	3499.98	21.34	21.50	1.038	0.1	0.129	0.134
	FR1 n77_Ant 1	100M	BPSK	135	69	Top Side	10mm		ON	633332	3499.98	21.45	21.50	1.012	-0.18	0.117	0.118
	FR1 n77_Ant 1	100M	BPSK	1	137	Bottom Side	10mm		ON	633332	3499.98	21.34	21.50	1.038	0.1	0.316	0.328
	FR1 n77_Ant 1	100M	BPSK	135	69	Bottom Side	10mm		ON	633332	3499.98	21.45	21.50	1.012	0.12	0.335	0.339
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	271	Front	35mm		OFF	633332	3499.98	26.24	27.00	1.191	0.07	0.370	0.441
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Front	35mm		OFF	633332	3499.98	25.95	27.00	1.274	0.18	0.403	0.513
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	271	Back	20mm		OFF	633332	3499.98	26.24	27.00	1.191	-0.1	0.647	0.771
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Back	20mm		OFF	633332	3499.98	25.95	27.00	1.274	-0.02	0.658	0.838
	FR1 n77_HPUE_Ant 1	100M	BPSK	270	0	Back	20mm		OFF	633332	3499.98	26.04	26.50	1.112	-0.03	0.647	0.719
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	271	Left Side	30mm		OFF	633332	3499.98	26.24	27.00	1.191	0.01	0.426	0.507
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Left Side	30mm		OFF	633332	3499.98	25.95	27.00	1.274	-0.15	0.474	0.604
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	271	Top Side	15mm		OFF	633332	3499.98	26.24	27.00	1.191	0.19	0.296	0.353
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Top Side	15mm		OFF	633332	3499.98	25.95	27.00	1.274	0.07	0.305	0.388
	FR1 n77_HPUE_Ant 1	100M	BPSK	1	271	Bottom Side	15mm		OFF	633332	3499.98	26.24	27.00	1.191	-0.18	0.497	0.592
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Bottom Side	15mm		OFF	633332	3499.98	25.95	27.00	1.274	0.03	0.528	0.672
	FR1 n77_HPUE_Ant 1	100M	BPSK	135	69	Back	0mm	Holder	OFF	633332	3499.98	25.95	27.00	1.274	0.03	0.593	0.755
	FR1 n77_Ant 3	100M	BPSK	1	1	Front	10mm		ON	656000	3840	19.08	20.50	1.387	-0.17	0.187	0.259
	FR1 n77_Ant 3	100M	BPSK	135	0	Front	10mm		ON	656000	3840	19.06	20.50	1.393	-0.03	0.162	0.226
	FR1 n77_Ant 3	100M	BPSK	1	1	Back	10mm		ON	656000	3840	19.08	20.50	1.387	0.14	0.151	0.209
	FR1 n77_Ant 3	100M	BPSK	135	0	Back	10mm		ON	656000	3840	19.06	20.50	1.393	0.11	0.175	0.244
	FR1 n77_Ant 3	100M	BPSK	1	1	Left Side	10mm		ON	656000	3840	19.08	20.50	1.387	-0.05	0.272	0.377
	FR1 n77_Ant 3	100M	BPSK	135	0	Left Side	10mm		ON	656000	3840	19.06	20.50	1.393	0.06	0.343	0.478
	FR1 n77_Ant 3	100M	BPSK	1	1	Top Side	10mm		ON	656000	3840	19.08	20.50	1.387	0.18	0.195	0.270
	FR1 n77_Ant 3	100M	BPSK	135	0	Top Side	10mm		ON	656000	3840	19.06	20.50	1.393	0.14	0.181	0.252
	FR1 n77_Ant 3	100M	BPSK	1	1	Bottom Side	10mm		ON	656000	3840	19.08	20.50	1.387	-0.17	0.039	0.054
	FR1 n77_Ant 3	100M	BPSK	135	0	Bottom Side	10mm		ON	656000	3840	19.06	20.50	1.393	0.17	0.032	0.045
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	1	Front	35mm		OFF	656000	3840	25.28	27.00	1.486	0.17	0.342	0.508
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Front	35mm		OFF	656000	3840	25.22	27.00	1.507	-0.05	0.314	0.473
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	1	Back	20mm		OFF	656000	3840	25.28	27.00	1.486	0.01	0.496	0.737
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Back	20mm		OFF	656000	3840	25.22	27.00	1.507	0.1	0.562	0.847
	FR1 n77_HPUE_Ant 3	100M	BPSK	270	0	Back	20mm		OFF	656000	3840	25.10	26.50	1.380	0.07	0.532	0.734
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	1	Left Side	30mm		OFF	656000	3840	25.28	27.00	1.486	-0.17	0.697	1.036
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Left Side	30mm		OFF	656000	3840	25.22	27.00	1.507	-0.14	0.728	1.097
	FR1 n77_HPUE_Ant 3	100M	BPSK	270	0	Left Side	30mm		OFF	656000	3840	25.10	26.50	1.380	0.04	0.695	0.959
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	1	Top Side	15mm		OFF	656000	3840	25.28	27.00	1.486	-0.01	0.705	1.048
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Top Side	15mm		OFF	656000	3840	25.22	27.00	1.507	-0.08	0.701	1.056
	FR1 n77_HPUE_Ant 3	100M	BPSK	270	0	Top Side	15mm		OFF	656000	3840	25.10	26.50	1.380	0.03	0.671	0.926
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	1	Bottom Side	15mm		OFF	656000	3840	25.28	27.00	1.486	0.05	0.140	0.208
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Bottom Side	15mm		OFF	656000	3840	25.22	27.00	1.507	0.06	0.257	0.387
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Back	0mm	Holder	OFF	656000	3840	25.22	27.00	1.507	0.01	0.526	0.792
	FR1 n77_Ant 3	100M	BPSK	1	271	Front	10mm		ON	633332	3499.98	19.98	20.50	1.127	0.03	0.319	0.360
	FR1 n77_Ant 3	100M	BPSK	135	138	Front	10mm		ON	633332	3499.98	20.06	20.50	1.107	0.18	0.320	0.354
	FR1 n77_Ant 3	100M	BPSK	1	271	Back	10mm		ON	633332	3499.98	19.98	20.50	1.127	0.16	0.219	0.247
	FR1 n77_Ant 3	100M	BPSK	135	138	Back	10mm		ON	633332	3499.98	20.06	20.50	1.107	-0.1	0.214	0.237
	FR1 n77_Ant 3	100M	BPSK	1	271	Left Side	10mm		ON	633332	3499.98	19.98	20.50	1.127	0.07	0.144	0.162
	FR1 n77_Ant 3	100M	BPSK	135	69	Left Side	10mm		ON	633332	3499.98	19.94	20.50	1.138	0.18	0.136	0.155



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	FR1 n77_Ant 3	100M	BPSK	1	271	Top Side	10mm		ON	633332	3499.98	19.98	20.50	1.127	-0.1	0.522	0.588
	FR1 n77_Ant 3	100M	BPSK	135	138	Top Side	10mm		ON	633332	3499.98	20.06	20.50	1.107	0.01	0.471	0.521
	FR1 n77_Ant 3	100M	BPSK	1	271	Bottom Side	10mm		ON	633332	3499.98	19.98	20.50	1.127	-0.15	0.055	0.062
	FR1 n77_Ant 3	100M	BPSK	135	138	Bottom Side	10mm		ON	633332	3499.98	20.06	20.50	1.107	0.19	0.144	0.159
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Front	35mm		OFF	633332	3499.98	25.96	27.00	1.271	0.08	0.246	0.313
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Front	35mm		OFF	633332	3499.98	26.20	27.00	1.202	0.01	0.226	0.272
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Back	20mm		OFF	633332	3499.98	25.96	27.00	1.271	0.03	0.286	0.363
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Back	20mm		OFF	633332	3499.98	26.20	27.00	1.202	-0.08	0.268	0.322
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Left Side	30mm		OFF	633332	3499.98	25.96	27.00	1.271	-0.08	0.197	0.250
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Left Side	30mm		OFF	633332	3499.98	26.20	27.00	1.202	0.1	0.209	0.251
10	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Top Side	15mm		OFF	633332	3499.98	25.96	27.00	1.271	-0.07	0.922	1.171
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Top Side	15mm		OFF	633332	3499.98	26.20	27.00	1.202	-0.18	0.887	1.066
	FR1 n77_HPUE_Ant 3	100M	BPSK	270	0	Top Side	15mm		OFF	633332	3499.98	26.02	26.50	1.117	0.07	0.863	0.964
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Bottom Side	15mm		OFF	633332	3499.98	25.96	27.00	1.271	0.1	0.056	0.071
	FR1 n77_HPUE_Ant 3	100M	BPSK	135	69	Bottom Side	15mm		OFF	633332	3499.98	26.20	27.00	1.202	0.12	0.001	0.001
	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Back	0mm	Holder	OFF	633332	3499.98	25.96	27.00	1.271	-0.07	0.467	0.593
	FR1 n77_Ant 5	100M	BPSK	1	137	Front	10mm		ON	656000	3840	21.91	22.50	1.146	0.08	0.711	0.814
	FR1 n77_Ant 5	100M	BPSK	135	69	Front	10mm		ON	656000	3840	22.04	22.50	1.112	0.03	0.755	0.839
	FR1 n77_Ant 5	100M	BPSK	270	0	Front	10mm		ON	656000	3840	21.90	22.50	1.148	0.05	0.703	0.807
	FR1 n77_Ant 5	100M	BPSK	1	137	Back	10mm		ON	656000	3840	21.91	22.50	1.146	0.01	0.252	0.289
	FR1 n77_Ant 5	100M	BPSK	135	69	Back	10mm		ON	656000	3840	22.04	22.50	1.112	0.03	0.348	0.387
	FR1 n77_Ant 5	100M	BPSK	1	137	Left Side	10mm		ON	656000	3840	21.91	22.50	1.146	-0.08	0.480	0.550
	FR1 n77_Ant 5	100M	BPSK	135	69	Left Side	10mm		ON	656000	3840	22.04	22.50	1.112	-0.08	0.562	0.625
	FR1 n77_Ant 5	100M	BPSK	1	137	Top Side	10mm		ON	656000	3840	21.91	22.50	1.146	0.1	0.100	0.115
	FR1 n77_Ant 5	100M	BPSK	135	69	Top Side	10mm		ON	656000	3840	22.04	22.50	1.112	-0.18	0.115	0.128
	FR1 n77_Ant 5	100M	BPSK	1	137	Bottom Side	10mm		ON	656000	3840	21.91	22.50	1.146	0.1	0.205	0.235
	FR1 n77_Ant 5	100M	BPSK	135	69	Bottom Side	10mm		ON	656000	3840	22.04	22.50	1.112	0.12	0.207	0.230
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Front	35mm		OFF	656000	3840	25.61	26.50	1.227	0.06	0.177	0.217
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Front	35mm		OFF	656000	3840	25.70	26.50	1.202	-0.09	0.151	0.182
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Back	20mm		OFF	656000	3840	25.61	26.50	1.227	-0.13	0.249	0.306
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Back	20mm		OFF	656000	3840	25.70	26.50	1.202	-0.08	0.253	0.304
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Left Side	30mm		OFF	656000	3840	25.61	26.50	1.227	0.13	0.237	0.291
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Left Side	30mm		OFF	656000	3840	25.70	26.50	1.202	0.12	0.223	0.268
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Top Side	15mm		OFF	656000	3840	25.61	26.50	1.227	0.03	0.123	0.151
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Top Side	15mm		OFF	656000	3840	25.70	26.50	1.202	0.18	0.120	0.144
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Bottom Side	15mm		OFF	656000	3840	25.61	26.50	1.227	0.16	0.218	0.268
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Bottom Side	15mm		OFF	656000	3840	25.70	26.50	1.202	-0.1	0.220	0.264
	FR1 n77_Ant 5	100M	BPSK	135	69	Back	0mm	Holder	ON	656000	3840	22.04	22.50	1.112	-0.08	0.232	0.258
	FR1 n77_Ant 5	100M	BPSK	1	137	Front	10mm		ON	633332	3499.98	21.86	22.50	1.159	-0.09	0.425	0.492
	FR1 n77_Ant 5	100M	BPSK	135	69	Front	10mm		ON	633332	3499.98	21.98	22.50	1.127	0.08	0.427	0.481
	FR1 n77_Ant 5	100M	BPSK	1	137	Back	10mm		ON	633332	3499.98	21.86	22.50	1.159	0.01	0.175	0.203
	FR1 n77_Ant 5	100M	BPSK	135	69	Back	10mm		ON	633332	3499.98	21.98	22.50	1.127	0.03	0.181	0.204
	FR1 n77_Ant 5	100M	BPSK	1	137	Left Side	10mm		ON	633332	3499.98	21.86	22.50	1.159	-0.08	0.404	0.468
	FR1 n77_Ant 5	100M	BPSK	135	69	Left Side	10mm		ON	633332	3499.98	21.98	22.50	1.127	-0.08	0.427	0.481
	FR1 n77_Ant 5	100M	BPSK	1	137	Top Side	10mm		ON	633332	3499.98	21.86	22.50	1.159	0.1	0.109	0.126
	FR1 n77_Ant 5	100M	BPSK	135	69	Top Side	10mm		ON	633332	3499.98	21.98	22.50	1.127	-0.18	0.127	0.143
	FR1 n77_Ant 5	100M	BPSK	1	137	Bottom Side	10mm		ON	633332	3499.98	21.86	22.50	1.159	0.1	0.032	0.037
	FR1 n77_Ant 5	100M	BPSK	135	69	Bottom Side	10mm		ON	633332	3499.98	21.98	22.50	1.127	0.12	0.036	0.041
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Front	35mm		OFF	633332	3499.98	25.70	26.50	1.202	0.17	0.254	0.305
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Front	35mm		OFF	633332	3499.98	25.81	26.50	1.172	-0.05	0.363	0.426
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Back	20mm		OFF	633332	3499.98	25.70	26.50	1.202	0.01	0.173	0.208
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Back	20mm		OFF	633332	3499.98	25.81	26.50	1.172	-0.04	0.367	0.430
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Left Side	30mm		OFF	633332	3499.98	25.70	26.50	1.202	0.1	0.284	0.341
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Left Side	30mm		OFF	633332	3499.98	25.81	26.50	1.172	-0.17	0.278	0.326
	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Top Side	15mm		OFF	633332	3499.98	25.70	26.50	1.202	0.04	0.131	0.157
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Top Side	15mm		OFF	633332	3499.98	25.81	26.50	1.172	-0.01	0.133	0.156



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	FR1 n77_HPUE_Ant 5	100M	BPSK	1	137	Bottom Side	15mm		OFF	633332	3499.98	25.70	26.50	1.202	-0.08	0.104	0.125
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Bottom Side	15mm		OFF	633332	3499.98	25.81	26.50	1.172	0.05	0.101	0.118
	FR1 n77_HPUE_Ant 5	100M	BPSK	135	69	Back	0mm	Holder	OFF	633332	3499.98	25.81	26.50	1.172	0.01	0.345	0.404
	FR1 n77_Ant 6	100M	BPSK	1	1	Front	10mm		ON	656000	3840	20.95	21.50	1.135	-0.09	0.554	0.629
	FR1 n77_Ant 6	100M	BPSK	135	0	Front	10mm		ON	656000	3840	21.04	21.50	1.112	0.17	0.602	0.669
	FR1 n77_Ant 6	100M	BPSK	270	0	Front	10mm		ON	656000	3840	20.95	21.50	1.135	-0.09	0.540	0.613
	FR1 n77_Ant 6	100M	BPSK	1	1	Back	10mm		ON	656000	3840	20.95	21.50	1.135	0.11	0.315	0.358
	FR1 n77_Ant 6	100M	BPSK	135	0	Back	10mm		ON	656000	3840	21.04	21.50	1.112	0.07	0.332	0.369
	FR1 n77_Ant 6	100M	BPSK	1	1	Left Side	10mm		ON	656000	3840	20.95	21.50	1.135	-0.03	0.042	0.048
	FR1 n77_Ant 6	100M	BPSK	135	0	Left Side	10mm		ON	656000	3840	21.04	21.50	1.112	0.09	0.063	0.070
	FR1 n77_Ant 6	100M	BPSK	1	1	Top Side	10mm		ON	656000	3840	20.95	21.50	1.135	-0.08	0.122	0.138
	FR1 n77_Ant 6	100M	BPSK	135	0	Top Side	10mm		ON	656000	3840	21.04	21.50	1.112	-0.05	0.059	0.066
	FR1 n77_Ant 6	100M	BPSK	1	1	Bottom Side	10mm		ON	656000	3840	20.95	21.50	1.135	-0.03	0.076	0.086
	FR1 n77_Ant 6	100M	BPSK	135	0	Bottom Side	10mm		ON	656000	3840	21.04	21.50	1.112	0.17	0.130	0.145
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Front	35mm		OFF	656000	3840	26.04	27.00	1.247	-0.15	0.545	0.680
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Front	35mm		OFF	656000	3840	26.20	27.00	1.202	0.06	0.571	0.686
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Back	20mm		OFF	656000	3840	26.04	27.00	1.247	-0.15	0.399	0.498
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Back	20mm		OFF	656000	3840	26.20	27.00	1.202	0.11	0.411	0.494
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Left Side	30mm		OFF	656000	3840	26.04	27.00	1.247	-0.08	0.056	0.070
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Left Side	30mm		OFF	656000	3840	26.20	27.00	1.202	-0.17	0.060	0.072
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Top Side	15mm		OFF	656000	3840	26.04	27.00	1.247	-0.08	0.040	0.050
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Top Side	15mm		OFF	656000	3840	26.20	27.00	1.202	-0.04	0.050	0.060
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Bottom Side	15mm		OFF	656000	3840	26.04	27.00	1.247	-0.08	0.116	0.145
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Bottom Side	15mm		OFF	656000	3840	26.20	27.00	1.202	0.17	0.117	0.141
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Back	0mm	Holder	OFF	656000	3840	26.04	27.00	1.247	-0.06	0.426	0.531
	FR1 n77_Ant 6	100M	BPSK	1	137	Front	10mm		ON	633332	3499.98	20.92	21.50	1.143	-0.17	0.423	0.483
	FR1 n77_Ant 6	100M	BPSK	135	0	Front	10mm		ON	633332	3499.98	21.07	21.50	1.104	-0.11	0.476	0.526
	FR1 n77_Ant 6	100M	BPSK	1	137	Back	10mm		ON	633332	3499.98	20.92	21.50	1.143	-0.03	0.233	0.266
	FR1 n77_Ant 6	100M	BPSK	135	0	Back	10mm		ON	633332	3499.98	21.07	21.50	1.104	0.14	0.278	0.307
	FR1 n77_Ant 6	100M	BPSK	1	137	Left Side	10mm		ON	633332	3499.98	20.92	21.50	1.143	0.11	0.089	0.102
	FR1 n77_Ant 6	100M	BPSK	135	0	Left Side	10mm		ON	633332	3499.98	21.07	21.50	1.104	-0.05	0.086	0.095
	FR1 n77_Ant 6	100M	BPSK	1	137	Top Side	10mm		ON	633332	3499.98	20.92	21.50	1.143	0.18	0.055	0.063
	FR1 n77_Ant 6	100M	BPSK	135	0	Top Side	10mm		ON	633332	3499.98	21.07	21.50	1.104	0.14	0.057	0.063
	FR1 n77_Ant 6	100M	BPSK	1	137	Bottom Side	10mm		ON	633332	3499.98	20.92	21.50	1.143	-0.17	0.102	0.117
	FR1 n77_Ant 6	100M	BPSK	135	0	Bottom Side	10mm		ON	633332	3499.98	21.07	21.50	1.104	0.17	0.054	0.060
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Front	35mm		OFF	633332	3499.98	25.58	27.00	1.387	0.08	0.200	0.277
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Front	35mm		OFF	633332	3499.98	25.79	27.00	1.321	0.08	0.216	0.285
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Back	20mm		OFF	633332	3499.98	25.58	27.00	1.387	-0.17	0.195	0.270
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Back	20mm		OFF	633332	3499.98	25.79	27.00	1.321	-0.03	0.225	0.297
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Left Side	30mm		OFF	633332	3499.98	25.58	27.00	1.387	0.14	0.028	0.039
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Left Side	30mm		OFF	633332	3499.98	25.79	27.00	1.321	0.11	0.029	0.038
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Top Side	15mm		OFF	633332	3499.98	25.58	27.00	1.387	-0.05	0.039	0.054
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Top Side	15mm		OFF	633332	3499.98	25.79	27.00	1.321	0.18	0.044	0.058
	FR1 n77_HPUE_Ant 6	100M	BPSK	1	137	Bottom Side	15mm		OFF	633332	3499.98	25.58	27.00	1.387	0.14	0.119	0.165
	FR1 n77_HPUE_Ant 6	100M	BPSK	135	69	Bottom Side	15mm		OFF	633332	3499.98	25.79	27.00	1.321	-0.17	0.138	0.182
	FR1 n77_Ant 6	100M	BPSK	135	0	Back	0mm	Holder	ON	633332	3499.98	21.07	21.50	1.104	0.03	0.401	0.443

**13.2 Repeated SAR Measurement**

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Sensor ON / OFF	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Top Side	15mm	OFF	633332	3499.98	25.96	27.00	1.271	-0.07	0.922	-	1.171
2nd	FR1 n77_HPUE_Ant 3	100M	BPSK	1	137	Top Side	15mm	OFF	633332	3499.98	25.96	27.00	1.271	0.03	0.891	1.03	1.132

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥ 0.8 W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR < 1.45 W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

14. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body
1.	Maximum LTE + Maximum FR1	Yes

General Note:

1. The Scaled SAR summation is calculated based on the same configuration and test position.
2. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
 - ii) Scalar SAR summation < 1.6W/kg.
 - iii) $SPLSR = (SAR1 + SAR2)^{1.5} / (\text{min. separation distance, mm})$, and the peak separation distance is determined from the square root of $[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$, where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
 - iv) If $SPLSR \leq 0.04$, simultaneously transmission SAR measurement is not necessary.
 - v) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.

14.1 Body Exposure Conditions

Exposure Position	1	2	1+2 Summed 1g SAR (W/kg)
	Maximum LTE	Maximum FR1	
	1g SAR (W/kg)	1g SAR (W/kg)	
Front at 10mm	0.750	0.839	1.589
Back at 10mm	0.544	0.752	1.296
Left Side at 10mm	0.388	0.766	1.154
Top Side at 10mm	0.523	0.588	1.111
Bottom Side at 10mm	0.191	0.560	0.751
Front at 35mm	0.248	0.785	1.033
Back at 20mm	0.373	0.957	1.330
Left Side at 30mm	0.130	1.097	1.227
Top Side at 15mm	0.337	1.171	1.508
Bottom Side at 15mm	0.080	1.060	1.140

Exposure Position	1	2	1+2 Summed 1g SAR (W/kg)
	Maximum LTE	Maximum FR1	
	1g SAR (W/kg)	1g SAR (W/kg)	
Back at 0mm Holder	0.442	0.969	1.411

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15. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be $\leq 30\%$, for a confidence interval of $k = 2$. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg. Therefore, the measurement uncertainty table is not required in this report.

Declaration of Conformity:

The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

16. References

- [1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"
- [2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992
- [3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013
- [4] SPEAG DASY System Handbook
- [5] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015
- [6] FCC KDB 447498 D02 v02r01, "SAR Measurement Procedures for USB Dongle Transmitters", Oct 2015.
- [7] FCC KDB 941225 D05 v02r05, "SAR Evaluation Considerations for LTE Devices", Dec 2015
- [8] FCC KDB 941225 D05A v01r02, "Rel. 10 LTE SAR Test Guidance and KDB Inquiries", Oct 2015
- [9] FCC KDB 616217 D04 v01r02, "SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers", Oct 2015
- [10] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.
- [11] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.