

SAR TEST REPORT

Applicant Suzhou MobyData Smart System Co., Ltd.

FCC ID 2A398-M16

Product Barcord Reader

Brand MobyData

Model M93; M93S; M93 5G; OA96; OA98; OA89; OA99;
MB98; MB89; MB99; MB96; SA98; SA89; SA96;
SA99; V53; TP96; ER98; UT78; MS96; PDX50;
PDX50L

Report No. EFTA26040218-IE-03-S1V2

Issue Date July 30, 2026

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **IEEE 1528-2013, ANSI/IEEE C95.1-1992**. The test results show that the equipment tested can demonstrate compliance with the requirements as documented in this report.



Prepared by: Wei Fangying



Approved by: Xu Kai

Eurofins TA Technology (Shanghai) Co., Ltd.

Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	July 17, 2026
Rev.1	Updated data. Updated information.	July 27, 2026
Rev.2	Updated data. Updated information.	July 30, 2026
Note: This revised report (Report No.: EFTA26040218-IE-03-S1V2) supersedes and replaces the previously issued report (Report No.: EFTA26040218-IE-03-S1V1). Please discard or destroy the previously issued report and dispose of it accordingly.		

Table of Contents

1	Test Laboratory	5
1.1	Notes of the Test Report.....	5
1.2	Test Facility.....	5
1.3	Testing Location.....	5
1.4	Laboratory Environment	5
2	Statement of Compliance.....	6
3	Description of Equipment Under Test.....	8
4	Test Specification, Methods and Procedures	11
5	Operational Conditions during Test	12
5.1	Test Positions	12
5.1.1	Body Worn Configuration	12
5.1.2	Phablet SAR Test Considerations	12
5.2	Measurement Variability	14
5.3	Test Configuration	15
5.3.1	GSM Test Configuration.....	15
5.3.2	WCDMA Test Configuration.....	15
5.3.3	LTE Test Configuration	19
5.3.4	Additional Requirements for TDD LTE Specification	20
5.3.5	5G NR Test Configuration.....	23
5.3.6	Wi-Fi Test Configuration	24
5.3.7	Bluetooth Test Configuration.....	25
6	SAR Measurements System Configuration	26
6.1	SAR Measurement Set-up.....	26
6.2	DASY5 E-field Probe System.....	27
6.3	SAR Measurement Procedure.....	28
7	Main Test Equipment	30
8	Tissue Dielectric Parameter Measurements & System Check.....	32
8.1	Tissue Verification	32
8.2	System Check.....	34
8.3	SAR System Validation.....	37
9	Normal and Maximum Output Power.....	38
9.1	GSM Mode.....	40
9.2	WCDMA Mode	41
9.3	LTE Mode	42
9.4	NR Mode.....	72
9.5	WLAN Mode.....	114
9.6	Bluetooth Mode.....	122
9.7	NFC Mode.....	123
10	Measured and Reported (Scaled) SAR Results	124
10.1	EUT Antenna Locations	124
10.2	Measured SAR Results.....	126

10.3	Simultaneous Transmission Analysis	136
11	Measurement Uncertainty	141
ANNEX A: Test Layout.....		142
ANNEX B: System Check Results		144
ANNEX C: Highest Graph Results		158
ANNEX D: Probe Calibration Certificate (SN: 3677)		182
ANNEX E: D750V3 Dipole Calibration Certificate		204
ANNEX F: D835V2 Dipole Calibration Certificate.....		210
ANNEX G: D1750V2 Dipole Calibration Certificate		216
ANNEX H: D1900V2 Dipole Calibration Certificate		222
ANNEX I: D2300V2 Dipole Calibration Certificate		228
ANNEX J: D2450V2 Dipole Calibration Certificate		234
ANNEX K: D2600V2 Dipole Calibration Certificate		240
ANNEX L: D3700V2 Dipole Calibration Certificate		246
ANNEX M: D3900V2 Dipole Calibration Certificate		252
ANNEX N: D5GHzV2 Dipole Calibration Certificate		258
ANNEX Q: DAE4 Calibration Certificate (SN: 1317)		267
ANNEX S: The EUT Appearance.....		270
ANNEX T: Test Setup Photos		271

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3 Testing Location

Company: Eurofins TA Technology (Shanghai) Co., Ltd.
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <https://www.eurofins.com/electrical-and-electronics>
E-mail: Kain.Xu@cpt.eurofinscn.com

1.4 Laboratory Environment

Temperature	Min. = 20°C, Max. = 23°C
Relative humidity	Min. = 40%, Max. = 80%

2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for the EUT are as follows:

Table 1: Highest Reported SAR

Mode	Highest Reported SAR (W/kg)		
	Body Worn SAR-1g (Separation 10mm)	Hotspot SAR-1g (Separation 10mm)	10-g Extremity SAR (Separation 0mm)
GSM 850	0.53	0.53	N/A
GSM 1900	0.87	1.15	N/A
WCDMA Band II	0.69	0.79	N/A
WCDMA Band IV	0.75	1.00	N/A
WCDMA Band V	0.50	0.50	N/A
LTE Band 2/25	0.63	0.70	N/A
LTE Band 5/26	0.51	0.51	N/A
LTE Band 7	0.57	0.57	N/A
LTE Band 12/17	0.26	0.26	N/A
LTE Band 13	0.43	0.43	N/A
LTE Band 41	0.57	0.57	N/A
LTE Band 4/66	0.94	0.97	N/A
NR Band n2/25	0.65	0.66	N/A
NR Band n5/26	0.40	0.40	N/A
NR Band n12	0.19	0.19	N/A
NR Band n13	0.26	0.26	N/A
NR Band n30	0.76	0.76	N/A
NR Band n38/41	0.49	0.50	N/A
NR Band n66	0.79	0.79	N/A
NR Band n77/78	0.90	0.90	N/A
Wi-Fi (2.4GHz)	0.23	0.23	N/A
Wi-Fi (5GHz)	0.28	0.28	0.53
Bluetooth	0.09	0.09	N/A
Date of Testing: April 27, 2026 ~ May 25, 2026			
Date of Sample Received: April 16, 2026			
Note:			

1. The device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6w/kg for 1g body SAR and 4.0 w/kg for 10-g Extremity SAR) according to the FCC rule §2.1093 and ANSI/IEEE C95.1-1992, and has been tested in accordance with the measurement methods and procedures specified in IEEE Std 1528-2013.
2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

- 1) According to TCB workshop October, 2014 RF Exposure Procedures Update (Overlapping LTE Bands):
 - a) WWAN Antenna SAR for LTE Band 17 (Frequency range: 704 ~ 716 MHz) is covered by LTE Band 12 (Frequency range 699 ~ 716 MHz); LTE Band 2 (Frequency range: 1850 ~ 1910 MHz) is covered by LTE Band 25 (Frequency range 1850 ~ 1915 MHz); LTE Band 5/ NR Band n5 (Frequency range: 824 ~ 849 MHz) is covered by LTE Band 26/ NR Band n26 (Frequency range 814 ~ 849 MHz); LTE Band 4 (Frequency range: 1710 ~ 1755 MHz) is covered by LTE Band 66 (Frequency range 1710 ~ 1780 MHz); NR Band n38 (Frequency range: 2570 ~ 2620 MHz) is covered by NR Band n41 (Frequency range 2496 ~ 2690 MHz); NR Band n78 (Frequency range: 3300 ~ 3800 MHz) is covered by NR Band n77 (Frequency range 3300 ~ 4200 MHz) due to similar frequency range, same maximum tune up limit and same channel bandwidth.

Table 2: Highest Simultaneous Transmission SAR

Exposure Configuration	1g SAR Body-worn (Separation 10mm)	1g SAR Hotspot (Separation 10mm)	Product-specific 10g SAR (Separation 0mm)
Highest Simultaneous Transmission SAR (W/kg)	1.58	1.58	0.72
Note: The detail for simultaneous transmission consideration is described in chapter 10.3.			

Model Difference:

The RF specifications of the family models are identical. The difference is the sales area and the naming methods of customer needs, See the differences statement for details.

3 Description of Equipment Under Test

Client Information

Applicant	Suzhou MobyData Smart System Co., Ltd.
Applicant address	3f,building E,Yida Science Park,No.11 Jinpu Road,SIP,Suzhou,Jiangsu Province,China.
Manufacturer	Suzhou MobyData Smart System Co., Ltd.
Manufacturer address	3f,building E,Yida Science Park,No.11 Jinpu Road,SIP,Suzhou,Jiangsu Province,China.

General Information

EUT Type	Portable Device
Model	M93; M93S; M93 5G; OA96; OA98; OA89; OA99; MB98; MB89; MB99; MB96; SA98; SA89; SA96; SA99; V53; TP96; ER98; UT78; MS96; PDX50; PDX50L
IMEI	IMEI1: 865940070207395; IMEI2: 865940070207403
Hardware Version	V01
Software Version	M16.01.01.20260309
Antenna Type	Internal Antenna
Wi-Fi Hotspot	Wi-Fi 2.4GHz Wi-Fi 5GHz U-NII-1&U-NII-3
Power Class	GSM 850: 4 GSM 1900: 1 WCDMA Band II/IV/V: 3 LTE FDD 2/4/5/7/12/13/17/25/26/66: 3 LTE TDD 41: 3 NR FDD 2/5/12/13/25/26/66: 3 NR TDD 30/38/41/77/78: 3
Power Level	GSM 850: level 5 GSM 1900: level 0 WCDMA Band II/IV/V: all up bits LTE FDD 2/4/5/7/12/13/17/25/26/66: max power LTE TDD 41: max power NR FDD 2/5/12/13/25/26/66: max power NR TDD 30/38/41/77/78: max power
EUT Accessory	
Battery	Manufacturer: SHEN ZHEN UTILITY ENERGY CO., LTD. Model: BATM15
Note: The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.	

Wireless Technology and Frequency Range

Wireless Technology		Modulation	Operating mode	Tx (MHz)	Rx (MHz)
GSM	850	GPRS(GMSK) EGPRS(GMSK,8PSK)	☐ Multi-slot Class:8-1UP ☐ Multi-slot Class:10-2UP	824 ~ 849	869 ~ 894
	1900		☒ Multi-slot Class:12-4UP ☐ Multi-slot Class:33-4UP	1850 ~ 1910	1930 ~ 1990
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No				
WCDMA	Band II	QPSK, 16QAM	/	1850 ~ 1910	1930 ~ 1990
	Band IV			1710 ~ 1755	2110 ~ 2155
	Band V			824 ~ 849	869 ~ 894
LTE	FDD 2	QPSK, 16QAM, 64QAM	/	1850 ~ 1910	1930 ~ 1990
	FDD 4			1710 ~ 1755	2110 ~ 2155
	FDD 5			824 ~ 849	869 ~ 894
	FDD 7			2500 ~ 2570	2620 ~ 2690
	FDD 12			699 ~ 716	729 ~ 746
	FDD 13			777 ~ 787	746 ~ 756
	FDD 17			704 ~ 716	734 ~ 746
	FDD 25			1850 ~ 1915	1930 ~ 1995
	FDD 26			814 ~ 849	859 ~ 894
	TDD 41			2496 ~ 2690	2496 ~ 2690
	FDD 66			1710 ~ 1780	2110 ~ 2180
	Does this device support Carrier Aggregation (CA) ☐ Yes ☒ No				
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No				
NR	n2	CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM; DFT-s OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM	/	1850 ~ 1910	1930 ~ 1990
	n5			824 ~ 849	869 ~ 894
	n12			699 ~ 716	729 ~ 746
	n13			777 ~ 787	746 ~ 756
	n25			1850 ~ 1915	1930 ~ 1995
	n26			814 ~ 849	859 ~ 894
	n30			2305 ~ 2315	2350 ~ 2360
	n38			2570 ~ 2620	2570 ~ 2620
	n41			2496 ~ 2690	2496 ~ 2690
	n66			1710 ~ 1780	2110 ~ 2180
	n77			3300 ~ 4200	3300 ~ 4200

	n78			3300 ~ 3800	3300 ~ 3800
EN-DC	DC_2A_n41A; DC_5A_n41A; DC_12A_n41A; DC_25A_n41A; DC_26A_n41A; DC_66A_n41A DC_2A_n77A; DC_5A_n77A; DC_7A_n77A; DC_12A_n77A; DC_13A_n77A; DC_25A_n77A; DC_66A_n77A DC_2A_n78A; DC_5A_n78A; DC_7A_n78A; DC_12A_n78A; DC_13A_n78A; DC_25A_n78A; DC_26A_n78A; DC_66A_N78A				
Bluetooth	2.4GHz	Version 5.1 BR/EDR + LE		2402 ~2480	2402 ~2480
Wi-Fi	2.4GHz	DSSS, OFDM	802.11b/g/n HT20	2412 ~ 2462	2412 ~ 2462
		OFDM	802.11n HT40	2422 ~ 2452	2422 ~ 2452
	5GHz	OFDM	802.11a/n HT20/ HT40/ ac VHT20/ VHT40/ VHT80	5150 ~ 5250	5150 ~ 5250
				5250 ~ 5350	5250 ~ 5350
				5470 ~ 5725	5470 ~ 5725
	Does this device support MIMO ☒ Yes(2TX, 2RX) ☐ No				
NFC	13.56MHz				
Note: Radio equipment in band n77 is only allowed to operate from 3450 MHz to 3550 MHz for Subset 1; 3700 MHz to 3980 MHz for Subset 2 for the transmitter and receiver. Radio equipment in band n78 is only allowed to operate from 3450 MHz to 3550 MHz for Subset 1; 3700 MHz to 3800 MHz for Subset 2 for the transmitter and receiver.					

4 Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE 1528- 2013, ANSI/IEEE C95.1-1992, the following FCC Published RF exposure KDB procedures:

KDB 248227 D01 802.11Wi-Fi SAR v02r02
KDB 447498 D01 General RF Exposure Guidance v06
KDB 648474 D04 Handset SAR v01r03
KDB 690783 D01 SAR Listings on Grants v01r03
KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
KDB 865664 D02 RF Exposure Reporting v01r02
KDB 941225 D01 3G SAR Procedures v03r01
KDB 941225 D05 SAR for LTE Devices v02r05
KDB 941225 D06 Hot Spot SAR v02r01

5 Operational Conditions during Test

5.1 Test Positions

5.1.1 Body Worn Configuration

Body-worn operating configurations should be tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in normal use configurations.

Per FCC KDB Publication 648474 D04, Body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB Publication 447498 D01 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for a body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used. Test position spacing was documented. Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom in head fluid. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessories, including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

5.1.2 Phablet SAR Test Considerations

For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm, that can provide similar mobile web access and multimedia support found in mini-tablets or UMPC mini-tablets and support voice calls next to the ear, unless it is confirmed otherwise through KDB inquiries, the following phablet procedures should be applied to evaluate SAR compliance for each applicable wireless modes and frequency band. Devices marketed as phablets, regardless of form factors and operating characteristics must be tested as a phablet to determine SAR compliance.

- a) The normally required head and body-worn accessory SAR test procedures for handsets, including hotspot mode, must be applied.
- b) The UMPC mini-tablet procedures must also be applied to test the SAR of all surfaces and edges with an antenna located at ≤ 25 mm from that surface or edge, in direct contact with a flat phantom, for 10-g Extremity SAR according to the body-equivalent tissue dielectric parameters in KDB Publication 865664 D01 to address interactive hand use exposure conditions. The 1-g SAR at 5 mm for UMPC mini-tablets is not required. When hotspot mode applies, 10-g Extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; however, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold. The normal tablet procedures in KDB Publication 616217 are required when the overall diagonal dimension of the device is > 20.0 cm. Hotspot mode SAR is not required when normal tablet procedures are applied. 10-g Extremity SAR is also not required for the front (top) surface of larger form factor full size tablets. The more conservative normal tablet SAR results can be used to support phablet mode 10-g Extremity SAR.
- c) The simultaneous transmission operating configurations applicable to voice and data transmissions for both phone and mini-tablet modes must be taken into consideration separately for 1-g and 10-g SAR to determine the simultaneous transmission SAR test exclusion and measurement requirements for the relevant wireless modes and exposure conditions.

5.2 Measurement Variability

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement Variability was assessed using the following procedures for each frequency band:

- 1) When the original highest measured SAR is ≥ 0.80 W/kg, the measurement was repeated once.
- 2) A second repeated measurement was performed only if the ratio of largest to smallest SAR for the original and first repeated measurements was > 1.20 or when the original or repeated measurement was ≥ 1.45 W/kg ($\sim 10\%$ from the 1-g SAR limit).
- 3) A third repeated measurement was performed only if the original, first or second repeated measurement was ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20 .
- 4) Repeated measurements are not required when the original highest measured SAR is < 0.80 W/kg

The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.

5.3 Test Configuration

5.3.1 GSM Test Configuration

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Output power of reductions:

Table 3: The allowed power reduction in the multi-slot configuration

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power (dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested. GSM voice and GPRS data use GMSK, which is a constant amplitude modulation with minimal peak to average power difference within the time-slot burst. For EDGE, GMSK is used for MCS 1 – MCS 4 and 8-PSK is used for MCS 5 – MCS 9; where 8-PSK has an inherently higher peak-to-average power ratio. The GMSK and 8-PSK EDGE configurations are considered separately for SAR compliance. The GMSK EDGE configurations are grouped with GPRS and considered with respect to time-averaged maximum output power to determine compliance. The 3G SAR test reduction procedure is applied to 8-PSK EDGE with GMSK GPRS/EDGE as the primary mode.

5.3.2 WCDMA Test Configuration

5.3.2.1 3G SAR Test Reduction Procedure

The default test configuration is to measure SAR with an established radio link between the EUT and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations modes according to output power, exposure conditions and device operating capabilities. Maximum output power is verified by applying the applicable versions of 3GPP TS 34.121.

5.3.2.2 Body-worn Accessory SAR

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the EUT with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using an applicable RMC configuration with the corresponding

spreading code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the EUT, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC

5.3.2.3 Release 5 HSDPA Test Configuration

The 3G SAR test reduction procedure is applied to HSDPA body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSDPA using the HSDPA body SAR procedures in the “Release 5 HSDPA Data Devices” section of this document, for the highest SAR body-worn accessory exposure configuration in 12.2 kbps RMC. EUT with both HSDPA and HSUPA are tested according to Release 6 HSPA test procedures.

HSDPA should be configured according to the UE category of a test device. The number of HSDSCH/HS-PDSCHs, HARQ processes, minimum inter-TTI interval, transport block sizes and RV coding sequence are defined by the H-set. To maintain a consistent test configuration and stable transmission conditions, QPSK is used in the H-set for SAR testing. HS-DPCCH should be configured with a CQI feedback cycle of 4 ms with a CQI repetition factor of 2 to maintain a constant rate of active CQI slots. DPCCH and DPDCH gain factors (β_c , β_d), and HS-DPCCH power offset parameters (Δ_{ACK} , Δ_{NACK} , Δ_{CQI}) should be set according to values indicated in the Table below. The CQI value is determined by the UE category, transport block size, number of HS-PDSCHs and modulation used in the H-set.

Table 4: Subtests for WCDMA Release 5 HSDPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	β_{hs} (note 1, note 2)	CM(dB) (note 3)	MPR(dB)
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 (note 4)	15/15 (note 4)	64	12/15 (note 4)	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5
Note 1: Δ_{ACK}, Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$ Note 2: CM=1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. Note 3: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TFC1, TF1) to $\beta_c = 11/15$ and $\beta_d = 15/15$.							

5.3.2.4 Release 6 HSUPA Test Configuration

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body-worn accessory configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for HSPA using the HSPA body SAR procedures in the “Release 6 HSPA Data Devices” section of this document, for the highest body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When VOIP is applicable for next to the ear head exposure in HSPA, the 3G SAR test reduction procedure is

applied to HSPA with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body-worn accessory measurements is tested for next to the ear head exposure.

Due to inner loop power control requirements in HSPA, a communication test set is required for output power and SAR tests. The 12.2 kbps RMC, FRC H-set 1 and E-DCH configurations for HSPA are configured according to the β values indicated in Table 2 and other applicable procedures described in the 'WCDMA EUT' and 'Release 5 HSDPA Data Devices' sections of this document

Table 5: Sub-Test 5 Setup for Release 6 HSUPA

Sub-set	β_c	β_d	β_d (SF)	β_c/β_d	$\beta_{hs}^{(1)}$	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (codes)	CM ⁽²⁾ (dB)	MPR (dB)	AG ⁽⁴⁾ Index	E-TFCI
1	11/15 ⁽³⁾	15/15 ⁽³⁾	64	11/15 ⁽³⁾	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 ⁽⁴⁾	15/15 ⁽⁴⁾	64	15/15 ⁽⁴⁾	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK} , Δ_{NACK} and $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $\beta_{hs}/\beta_c = 24/15$. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.

Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 10/15$ and $\beta_d = 15/15$.

Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signaled gain factors for the reference TFC (TF1, TF1) to $\beta_c = 14/15$ and $\beta_d = 15/15$.

Note 5: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Figure 5.1g.

Note 6: β_{ed} cannot be set directly; it is set by Absolute Grant Value.

Table 6: HSUPA UE Category

UE E-DCH Category	Maximum E-DCH Codes Transmitted	Number of HARQ Processes	E-DCHTTI (ms)	Minimum Spreading Factor	Maximum E-DCH Transport Block Bits	Max Rate (Mbps)
1	1	4	10	4	7110	0.7296
2	2	8	2	4	2798	1.4592
	2	4	10	4	14484	
3	2	4	10	4	14484	1.4592
4	2	8	2	2	5772	2.9185
	2	4	10	2	20000	2.00
5	2	4	10	2	20000	2.00
6 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	11484	5.76
	4	4	10		20000	2.00
7 (No DPDCH)	4	8	2	2 SF2 & 2 SF4	22996	?

	4	4	10		20000	?
NOTE: When 4 codes are transmitted in parallel, two codes shall be transmitted with SF2 and two with SF4. UE Categories 1 to 6 supports QPSK only. UE Category 7 supports QPSK and 16QAM. (TS25.306-7.3.0)						

5.3.2.5 HSPA, HSPA+ and DC-HSDPA Test Configuration

SAR test exclusion may apply to 3GPP Rel. 6 HSPA and Rel. 8 DC-HSDPA. When SAR measurement is required for HSPA or DC-HSDPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements. Without prior KDB confirmation to determine the SAR results are acceptable, a PAG is required for equipment approval.

SAR test exclusion for HSPA, HSPA+ and DC-HSDPA is determined according to the following:

1) The HSPA procedures are applied to configure 3GPP Rel. 6 HSPA devices in the required sub-test mode(s) to determine SAR test exclusion.

2) SAR is required for Rel. 7 HSPA+ when SAR is required for Rel. 6 HSPA; otherwise, the 3G SAR test reduction procedure is applied to (uplink) HSPA+ with 12.2 kbps RMC as the primary mode. Power is measured for HSPA+ that supports uplink 16 QAM according to configurations in Table C.11.1.4 of 3GPP TS 34.121-1 to determine SAR test reduction.

3) SAR is required for Rel. 8 DC-HSDPA when SAR is required for Rel. 5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in Table C.8.1.12 of 3GPP TS 34.121-1 to determine SAR test reduction. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.

4) Regardless of whether a PBA is required, the following information must be verified and included in the SAR report for devices supporting HSPA, HSPA+ or DC-HSDPA:

a) The output power measurement results and applicable release version(s) of 3GPP TS 34.121. Power measurement difficulties due to test equipment setup or availability must be resolved between the grantee and its test lab.

b) The power measurement results are in agreement with the individual device implementation and specifications. When Enhanced MPR (E-MPR) applies, the normal MPR targets may be modified according to the Cubic Metric (CM) measured by the device, which must be taken into consideration.

c) The UE category, operating parameters, such as the β and Δ values used to configure the device for testing, power setback procedures described in 3GPP TS 34.121 for the power measurements, and HSPA/HSPA+ channel conditions (active and stable) for the entire duration of the measurement according to the required E-TFCl and AG index values.

5) When SAR measurement is required, the test configurations, procedures and power measurement results must be clearly described to confirm that the required test parameters are used, including E-TFCl and AG index stability and output power conditions.

Table 7: HS-DSCH UE Category

HS-DSCH category	Maximum number of HS-DSCH codes received	Minimum inter-TTI interval	Maximum number of bits of an HS-DSCH transport block received within an HS-DSCH TTI NOTE 1	Total number of soft channel bits	Supported modulations without MIMO operation or dual cell operation	Supported modulations with MIMO operation and without dual cell operation	Supported modulations with dual cell operation
Category 1	5	3	7298	19200	QPSK, 16QAM	Not applicable (MIMO not supported)	Not applicable (dual cell operation not supported)
Category 2	5	3	7298	28800			
Category 3	5	2	7298	28800			
Category 4	5	2	7298	38400			
Category 5	5	1	7298	57600			
Category 6	5	1	7298	67200			
Category 7	10	1	14411	115200			
Category 8	10	1	14411	134400			
Category 9	15	1	20251	172800			
Category 10	15	1	27952	172800			
Category 11	5	2	3630	14400	QPSK		
Category 12	5	1	3630	28800			
Category 13	15	1	35280	259200	QPSK, 16QAM, 64QAM		
Category 14	15	1	42192	259200			
Category 15	15	1	23370	345600	QPSK, 16QAM		
Category 16	15	1	27952	345600			
Category 17 NOTE 2	15	1	35280	259200	QPSK, 16QAM, 64QAM	–	
			23370	345600	–	QPSK, 16QAM	
Category 18 NOTE 3	15	1	42192	259200	QPSK, 16QAM, 64QAM	–	
			27952	345600	–	QPSK, 16QAM	
Category 19	15	1	35280	518400	QPSK, 16QAM, 64QAM		
Category 20	15	1	42192	518400			
Category 21	15	1	23370	345600	-	-	QPSK, 16QAM
Category 22	15	1	27952	345600			QPSK, 16QAM, 64QAM
Category 23	15	1	35280	518400			
Category 24	15	1	42192	518400			

5.3.3 LTE Test Configuration

LTE modes were tested according to FCC KDB 941225 D05 publication. Please see notes after the tabulated SAR data for required test configurations. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluating SAR. The R&S CMW500 was used for LTE output power measurements and SAR testing. Max power control was used so the UE transmits with maximum output power during SAR testing. SAR must be measured with the maximum TTI (transmit time interval) supported by the device in each LTE configuration.

A) Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

B) MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36.101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

C) A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

D) Largest Channel Bandwidth Standalone SAR Test Requirements

1) QPSK with 1 RB allocation

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. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.

2) QPSK with 50% RB allocation

The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

3) QPSK with 100% RB allocation

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 in 1) and 2) 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) Higher order modulations

For each modulation besides QPSK; e.g., 16-QAM, 64-QAM, apply the QPSK procedures in above sections to determine the QAM configurations that may need SAR measurement. For each configuration identified as required for testing, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is $> \frac{1}{2}$ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg.

E) Other Channel Bandwidth Standalone SAR Test Requirements

For the other channel bandwidths used by the device in a frequency band, apply all the procedures required for the largest channel bandwidth in section A) to determine the channels and RB configurations that need SAR testing and only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is $> \frac{1}{2}$ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg.

5.3.4 Additional Requirements for TDD LTE Specification

For Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

TDD LTE Band supports 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table:

Uplink-downlink configurations for uplink-downlink configurations and Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS) for Special subframe configurations.

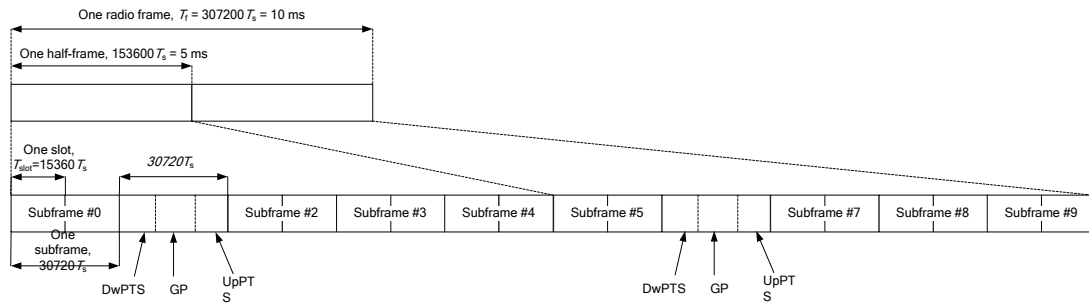


Figure 1: Frame structure type 2

Table 8: 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	$13168 \cdot T_s$			-	-	

Table 9: 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

According to Figure 1, one radio frame is configured by 10 subframes, which consist of Uplink-subframe, Downlink-subframe and Special subframe. For TDD-LTE, the Duty Cycle should be calculated on Uplink-subframes and Special subframes, due to Special subframe containing both Uplink transmissions. So for one radio frame, Duty Cycle can be calculated with formula as below. The count of Uplink subframes are according to Table: Uplink-downlink configurations:

$$\text{Duty cycle} = (30720T_s \cdot \text{Ups} + \text{Uplink Component} \cdot \text{Specials}) / (307200T_s)$$

About the uplink component of Special subframes, we can figure out by Table: Configuration of special subframe (lengths of DwPTS/GP/UpPTS):

$$\text{Uplink Component} = \text{UpPTS}$$

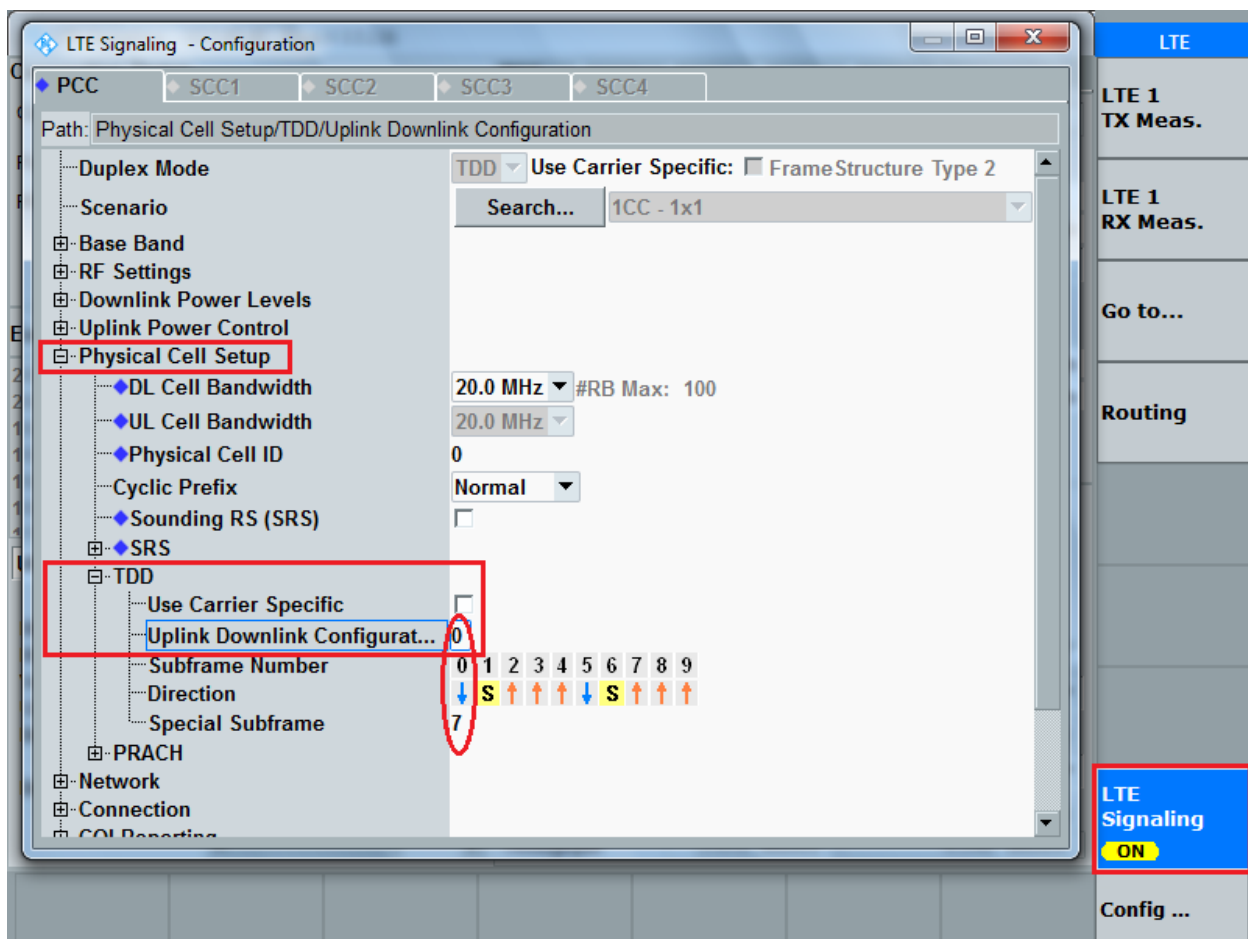
In conclusion, for the TDD LTE Band, Duty Cycle can be calculated with formula as below. All these sets are ok when we test, or we can set as below.

$$\text{Duty cycle} = [(\text{30720Ts} * \text{Ups}) + \text{UpPTS} * \text{Specials}] / (\text{307200Ts})$$

And we can get different Duty cycles under different configurations:

Uplink-downlink configuration	Subframe number			Configuration of special subframe							
				Normal cyclic prefix in downlink				Extended cyclic prefix in downlink			
				Normal cyclic prefix in uplink		Extended cyclic prefix in uplink		Normal cyclic prefix in uplink		Extended cyclic prefix in uplink	
	D	S	U	configuration 0~4	configuration 5~9	configuration 0~4	configuration 5~9	configuration 0~3	configuration 4~7	configuration 0~3	configuration 4~7
0	2	2	6	61.43%	62.85%	61.67%	63.33%	61.43%	62.85%	61.67%	63.33%
1	4	2	4	41.43%	42.85%	41.67%	43.33%	41.43%	42.85%	41.67%	43.33%
2	6	2	2	21.43%	22.85%	21.67%	23.33%	21.43%	22.85%	21.67%	23.33%
3	6	1	3	30.71%	31.43%	30.83%	31.67%	30.71%	31.43%	30.83%	31.67%
4	7	1	2	20.71%	21.43%	20.83%	21.67%	20.71%	21.43%	20.83%	21.67%
5	8	1	1	10.71%	11.43%	10.83%	11.67%	10.71%	11.43%	10.83%	11.67%
6	3	2	5	51.43%	52.85%	51.67%	53.33%	51.43%	52.85%	51.67%	53.33%

SAR test Plan: For TDD LTE, SAR should be tested with the highest transmission duty factor (63.33%) using Uplink-downlink configuration 0 and Special subframe configuration 7 for Frame structure type



5.3.5 5G NR Test Configuration

For 5G NR SAR testing, 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.

The DFT-s-OFDM and CP-OFDM waveforms were investigated, and DFT-s-OFDM was found to be the worst case.

The worst-case scenario for all measurements is based on an engineering evaluation and QPSK was observed as the worst one and set for all conducted and radiated. Output power measurements were measured on QPSK, 16QAM, 64QAM, 256QAM, and BPSK, modulations.

For EN-DC SAR, as the existing SAR test system can not test the multiple different frequency bands simultaneous Transmission SAR at the same time , we suggest that the conservative "max tune-up + max 10dBm tune-up" for hotspot multi-Tx and SAR scaling method can be used to evaluate the inter-band Uplink EN-DC SAR from standalone SAR test results of each LTE and NR EN-DC component band and the conservative "max tune-up + max 10dBm tune-up" for hotspot multi-Tx method to combine the scaled SAR value from each EN-DC component band as the inter-band Uplink EN-DC SAR. All Simultaneous Transmission Scenarios will be evaluated independently in the final SAR report.

5.3.6 Wi-Fi Test Configuration

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; These are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the *initial test position(s)* by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The *initial test position(s)* is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s). When the *reported SAR* for the *initial test position* is:

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the *initial test position* to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the *reported SAR* is ≤ 0.8 W/kg or all required test positions are tested.
 - ✧ For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
 - ✧ When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported SAR* is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported SAR* is ≤ 1.2 W/kg or all required test channels are considered.
 - ✧ The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

A Wi-Fi device must be configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools for SAR measurement.

5.3.7 Bluetooth Test Configuration

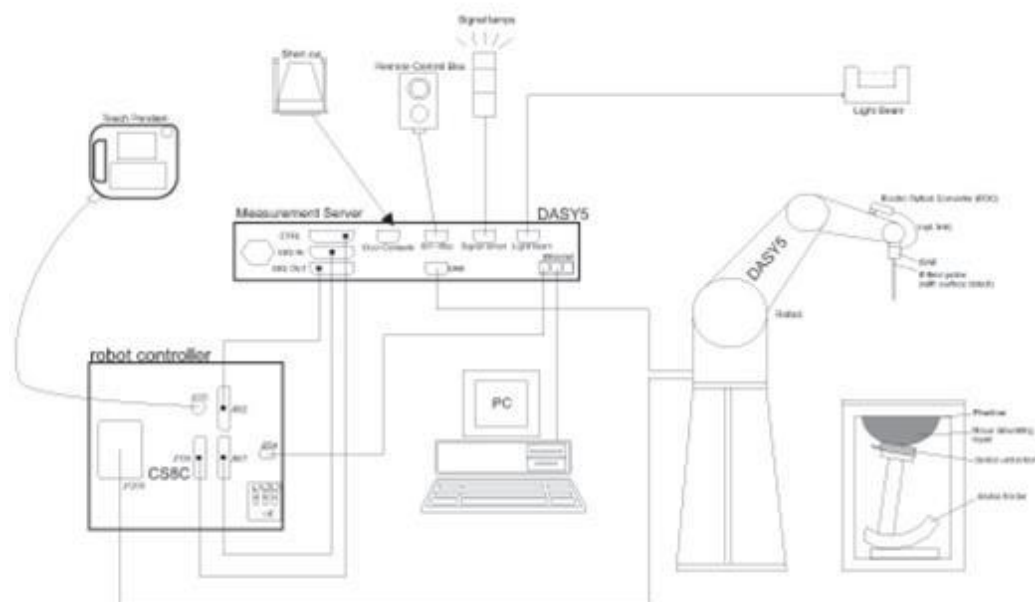
For Bluetooth SAR testing, Bluetooth engineering testing software installed on the EUT can provide continuous transmitting RF signal with maximum output power. And the CBT control the EUT operating with hopping off and data rate set for DH5.

Note: Duty factor= 77%

6 SAR Measurements System Configuration

6.1 SAR Measurement Set-up

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



- 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 WinXP or Win7 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.

6.2 DASY5 E-field Probe System

The SAR measurements were conducted with the dosimetric probe EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

EX3DV4 Probe Specification

Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Calibration	ISO/IEC 17025 calibration service available
Frequency	10 MHz to > 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)
Dynamic Range	10 μ W/g to > 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 μ W/g)
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm
Application	High precision dosimetric measurements in any exposure Scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.



E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than $\pm 10\%$. The spherical isotropy was evaluated and found to be better than ± 0.25 dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$SAR = C \Delta T / \Delta t$$

Where: Δt = Exposure time (30 seconds),
 C = Heat capacity of tissue (brain or muscle),
 ΔT = Temperature increase due to RF exposure.

Or

$$SAR = IEI^2 \sigma / \rho$$

Where: σ = Simulated tissue conductivity,
 ρ = Tissue density (kg/m^3).

6.3 SAR Measurement Procedure

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.

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 dB) 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 D01 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: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 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.	

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 D01 SAR measurement 100 MHz to 6 GHz.

			≤3GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{zoom}} \Delta y_{\text{zoom}}$			≤2GHz: ≤8mm 2 – 3GHz: ≤5mm*	3 – 4GHz: ≤5mm* 4 – 6GHz: ≤4mm*
Maximum zoom scan spatial resolution, normal to phantom surface	Uniform grid: $\Delta z_{\text{zoom}}(n)$		≤5mm	3 – 4GHz: ≤4mm 4 – 5GHz: ≤3mm 5 – 6GHz: ≤2mm
	Graded grid	$\Delta z_{\text{zoom}}(1)$: between 1 st two points closest to phantom surface	≤4mm	3 – 4GHz: ≤3mm 4 – 5GHz: ≤2.5mm 5 – 6GHz: ≤2mm
		$\Delta z_{\text{zoom}}(n > 1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{zoom}}(n-1)$	
Minimum zoom scan volume	X, y, z		≥30mm	3 – 4GHz: ≥28mm 4 – 5GHz: ≥25mm 5 – 6GHz: ≥22mm
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 <u>reported</u> SAR from the <i>area scan based 1-g SAR estimation</i> procedures of KDB 447498 is $\leq 1.4\text{W/kg}$, $\leq 8\text{mm}$, $\leq 7\text{mm}$ and $\leq 5\text{mm}$ zoom scan resolution may be applied, respectively, for 2GHz to 3GHz, 3GHz to 4GHz and 4GHz to 6GHz.				

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.

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.

7 Main Test Equipment

Name of Equipment	Manufacturer	Type/Model	Serial Number	Software Version	Last Cal.	Cal. Due Date
Network Analyzer	Agilent	E5071B	MY42404014	/	2025-11-24	2026-11-23
Dielectric Probe Kit	SPEAG	DAK-3.5	1332	/	2025-06-15	2026-06-14
Power Meter	Agilent	E4417A	GB41291714	/	2026-04-20	2027-04-19
Power Sensor	Agilent	N8481H	MY50350004	/	2026-04-20	2027-04-19
Power Sensor	Agilent	E9327A	US40441622	/	2026-04-20	2027-04-19
Signal Generator	KEYSIGHT	N5182B-X07	MY51350303	/	2025-11-24	2026-11-23
Dual Directional Coupler	UCL	UCL-DDC056G-S	20010600118	/	/	/
Amplifier	R&S	SCU18F	101022	/	2026-04-20	2027-04-19
Wireless Communication Tester	Anritsu	MT8820C	6201342015	/	2026-04-20	2027-04-19
Wireless communication tester	Starpont	SP9500	20440	/	2026-04-20	2027-04-19
Wireless Communication Tester	R&S	CMW 500	146734	/	2026-04-20	2027-04-19
E-field Probe	SPEAG	EX3DV4	3677	/	2025-05-28	2026-05-27
DAE	SPEAG	DAE4	1317	/	2025-11-19	2026-11-18
Validation Kit 750MHz	SPEAG	D750V3	1045	/	2023-09-12	2026-09-11
Validation Kit 835MHz	SPEAG	D835V2	4d020	/	2023-09-15	2026-09-14
Validation Kit 1750MHz	SPEAG	D1750V2	1033	/	2026-03-24	2029-03-23
Validation Kit 1900MHz	SPEAG	D1900V2	5d060	/	2023-09-12	2026-09-11
Validation Kit 2300MHz	SPEAG	D2300V2	1131	/	2025-08-28	2028-08-27
Validation Kit 2450MHz	SPEAG	D2450V2	786	/	2023-09-12	2026-09-11
Validation Kit 2600MHz	SPEAG	D2600V2	1025	/	2024-05-08	2027-05-07
Validation Kit 3700MHz	SPEAG	D3700V2	1048	/	2025-09-09	2028-09-08
Validation Kit 3900MHz	SPEAG	D3900V2	1027	/	2025-09-10	2028-09-09
Validation Kit 5GHz	SPEAG	D5GHzV2	1151	/	2026-03-16	2029-03-15
Tissue test software	SPEAG	/	/	3.0.4.1	/	/
Temperature Probe	Auden	DTM3000	3905	/	2025-11-27	2026-11-26
Twin SAM Phantom	SPEAG	SAM1	1667	/	/	/
Hygrothermograph	Anymetr	HTC - 1	TA2026A002	/	2026-04-24	2027-04-23

Test System	SPEAG	TX90 XLspeag	F11/5H7CA1/ A/01	52.10.4.15 27	/	/
-------------	-------	-----------------	---------------------	------------------	---	---

8 Tissue Dielectric Parameter Measurements & System Check

8.1 Tissue Verification

The temperature of the tissue-equivalent medium used during 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 dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 24 hours of use; or earlier if the dielectric parameters can become out of tolerance.

Target values

Frequency (MHz)	ϵ_r	$\sigma(\text{s/m})$
750	42.0	0.90
835	41.5	0.90
1750	40.1	1.37
1900	40.0	1.40
2300	39.5	1.67
2450	39.2	1.80
2600	39.0	1.96
3700	37.7	3.12
3900	37.5	3.32
5250	35.9	4.71
5600	35.5	5.07
5750	35.4	5.22

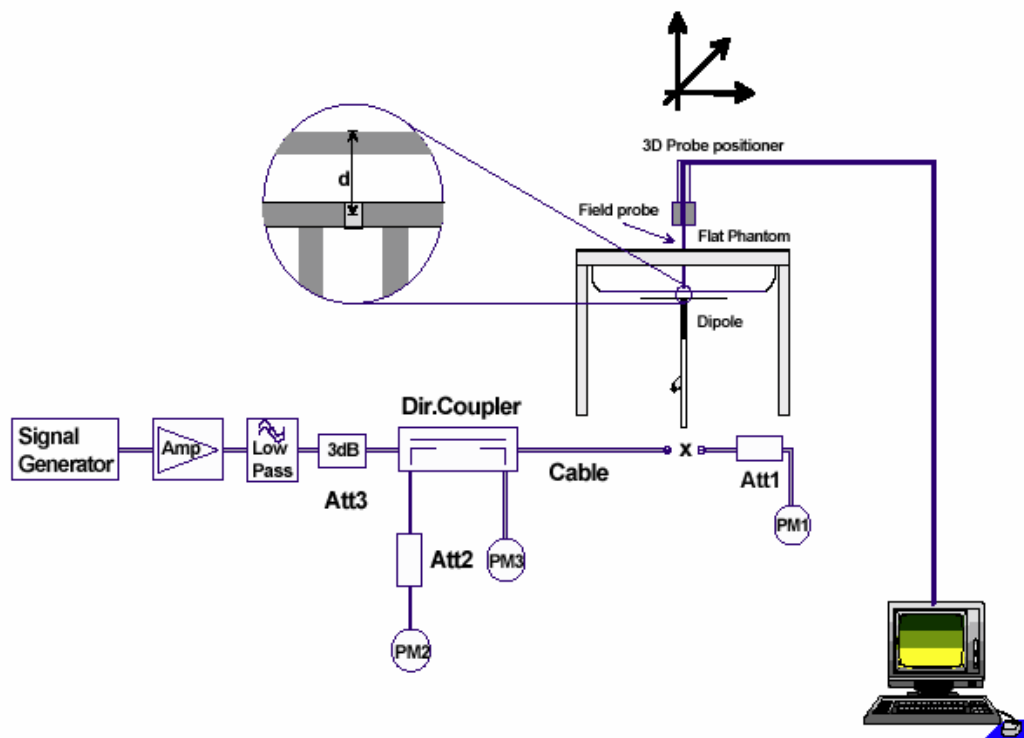
Measurements results

Frequency (MHz)	Test Date	Temp ℃	Measured Dielectric Parameters		Target Dielectric Parameters		Limit (Within $\pm 5\%$)	
			ϵ_r	σ (s/m)	ϵ_r	σ (s/m)	Dev ϵ_r (%)	Dev σ (%)
750	4/29/2026	21.5	42.58	0.91	42.0	0.90	1.38	1.35
835	4/27/2026	21.5	42.11	0.92	41.5	0.91	1.47	0.66
1750	5/8/2026	21.5	38.94	1.38	40.1	1.37	-2.89	0.44
	5/11/2026	21.5	39.12	1.32	40.1	1.37	-2.44	-3.67
1900	5/24/2026	21.5	38.63	1.41	40.0	1.40	-3.43	0.71
	5/25/2026	21.5	38.36	1.38	40.0	1.40	-4.10	-1.27
2300	5/14/2026	21.5	38.34	1.61	39.5	1.67	-2.94	-3.47
2450	5/6/2026	21.5	38.52	1.77	39.2	1.80	-1.73	-1.51
2600	5/17/2026	21.5	38.09	1.91	39.0	1.96	-2.33	-2.40
3700	5/27/2026	21.5	36.66	3.03	37.7	3.12	-2.76	-2.80
3900	5/27/2026	21.5	36.48	3.19	37.5	3.32	-2.72	-3.92
5250	5/4/2026	21.5	35.07	4.73	35.9	4.71	-2.31	0.33
5600	5/4/2026	21.5	34.56	5.11	35.5	5.07	-2.65	0.68
5750	5/4/2026	21.5	34.02	5.24	35.4	5.22	-3.90	0.42
Note: The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm.								

8.2 System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulates were measured using the dielectric probe kit and the network analyzer. A system check measurement for every day was made following the determination of the dielectric parameters of the Tissue simulates, using the dipole validation kit. The dipole antenna was placed under the flat section of the twin SAM phantom.

System check is performed regularly on all frequency bands where tests are performed with the DASY system.



Picture 1 System Check setup



Picture 2 Setup Photo

Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (> 20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

Dipole		Date of Measurement	Return Loss (dB)	Δ %	Impedance (Ω)			
					Real	$\Delta\Omega$	Imaginary	$\Delta\Omega$
Dipole D750V3 SN: 1045	Head Liquid	9/12/2023	30.4	/	51.9	/	-2.47	/
		9/11/2024	30.1	-0.9	52.3	0.4	-2.46	0.01
		9/10/2025	29.8	-1.1	52.1	-0.2	-1.99	0.47
Dipole D835V2 SN: 4d020	Head Liquid	9/15/2023	28.3	/	50.6	/	-3.80	/
		9/14/2024	28.9	2.1	51.4	0.8	-3.66	0.14
		9/13/2025	27.9	-3.6	50.3	-1.1	-3.57	0.09
Dipole D1900V2 SN: 5d060	Head Liquid	9/12/2023	24.0	/	50.5	/	6.32	/
		9/11/2024	24.1	0.4	50.9	0.4	6.83	0.51
		9/10/2025	24.3	0.9	51.5	0.6	6.62	-0.21
Dipole D2450V2 SN:786	Head Liquid	9/12/2023	28.2	/	52.2	/	3.34	/
		9/11/2024	28.6	1.4	52.8	0.6	3.43	0.09
		9/10/2025	28.0	-1.9	51.9	-0.9	3.58	0.15
Dipole D2600V2 SN: 1025	Head Liquid	5/08/2024	24.2	/	49.0	/	-6.02	/
		5/07/2025	24.6	1.7	50.1	1.1	-5.92	0.1
		5/06/2026	24.1	-2.0	48.9	-1.2	-5.86	0.06

System Check Results

Frequency (MHz)	Test Date	Temp °C	250mW Measured SAR _{1g}	1W Normalized SAR _{1g} (W/kg)	1W Target SAR _{1g} (W/kg)	Limit (±10%)	250mW Measured SAR _{10g}	1W Normalized SAR _{10g} (W/kg)	1W Target SAR _{10g} (W/kg)	Limit (±10%)	Plot No.
750	4/29/2026	21.5	2.04	8.16	8.47	-3.66	1.38	5.52	5.51	0.18	1
835	4/27/2026	21.5	2.47	9.88	9.75	1.33	1.64	6.56	6.36	3.14	2
1750	5/8/2026	21.5	9.31	37.24	37.00	0.65	4.88	19.52	19.80	-1.41	3
	5/11/2026	21.5	9.39	37.56	37.00	1.51	4.86	19.44	19.80	-1.82	4
1900	5/24/2026	21.5	10.31	41.24	40.40	2.08	5.28	21.12	20.90	1.05	5
	5/25/2026	21.5	10.08	40.32	40.40	-0.20	5.18	20.72	20.90	-0.86	6
2300	5/14/2026	21.5	12.51	50.04	49.20	1.71	6.05	24.20	23.60	2.54	7
2450	5/6/2026	21.5	13.61	54.44	52.60	3.50	6.36	25.44	24.50	3.84	8
2600	5/17/2026	21.5	14.22	56.88	55.50	2.49	6.15	24.60	25.10	-1.99	9
Frequency (MHz)	Test Date	Temp °C	100mW Measured SAR _{1g}	1W Normalized SAR _{1g} (W/kg)	1W Target SAR _{1g} (W/kg)	Limit (±10%)	100mW Measured SAR _{10g}	1W Normalized SAR _{10g} (W/kg)	1W Target SAR _{10g} (W/kg)	Limit (±10%)	Plot No.
3700	5/27/2026	21.5	6.81	68.10	66.80	1.95	2.58	25.80	24.70	4.45	10
3900	5/27/2026	21.5	6.97	69.70	67.70	2.95	2.32	23.20	23.80	-2.52	11
5250	5/4/2026	21.5	7.97	79.70	77.20	3.24	2.24	22.40	21.90	2.28	12
5600	5/4/2026	21.5	8.22	82.20	82.00	0.24	2.31	23.10	23.30	-0.86	13
5750	5/4/2026	21.5	8.00	80.00	77.90	2.70	2.15	21.50	21.60	-0.46	14
Note: Target Values used derive from the calibration certificate data storage and evaluation.											

8.3 SAR System Validation

Per FCC KDB 865664 D02v01, SAR system verification is required to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles are used with the required tissue-equivalent media for system validation, according to the procedures outlined in FCC KDB 865664 D01 and IEEE 1528-2013. Since SAR probe calibrations are frequency dependent, each probe calibration point must be validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status, measurement frequencies, SAR probes, calibrated signal type(s) and tissue dielectric parameters has been included.

Frequency [MHz]	Date	Probe SN	Probe Type	Probe Cal Point		PERM (Er)	COND (Σ)	CW Validation		
								Sensitivity	Probe Linearity	Probe Isotropy
750	2025/05/28	3677	EX3DV4	750	Head	41.9	0.89	PASS	PASS	PASS
835	2025/05/28	3677	EX3DV4	835	Head	41.5	0.90	PASS	PASS	PASS
1750	2025/05/28	3677	EX3DV4	1750	Head	40.1	1.37	PASS	PASS	PASS
1900	2025/05/28	3677	EX3DV4	1900	Head	40.0	1.40	PASS	PASS	PASS
2300	2025/05/28	3677	EX3DV4	2300	Head	39.5	1.67	PASS	PASS	PASS
2450	2025/05/28	3677	EX3DV4	2450	Head	39.2	1.80	PASS	PASS	PASS
2600	2025/05/28	3677	EX3DV4	2600	Head	39.0	1.96	PASS	PASS	PASS
3700	2025/05/28	3677	EX3DV4	3700	Head	37.7	3.12	PASS	PASS	PASS
3900	2025/05/28	3677	EX3DV4	3900	Head	37.5	3.32	PASS	PASS	PASS
5250	2025/05/28	3677	EX3DV4	5250	Head	35.9	4.71	PASS	PASS	PASS
5600	2025/05/28	3677	EX3DV4	5600	Head	35.5	5.07	PASS	PASS	PASS
5750	2025/05/28	3677	EX3DV4	5750	Head	35.4	5.22	PASS	PASS	PASS

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664D01v01 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5dB), such as OFDM according to KDB 865664.

9 Normal and Maximum Output Power

KDB 447498 D01 at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

Power level table summary:

Mode	Band	Full power (Tune up)	Antenna	Body wron&Hotspot				Extremity SAR			
				Standalone	Simultaneous transmission			Standalone	Simultaneous transmission		
					WWAN+ 2.4G WLAN	WWAN+ 5G WLAN	WWAN+2.4G 5G WLAN		WWAN+ 2.4G WLAN	WWAN+ 5G WLAN	WWAN+2.4G 5G WLAN
GSM (CS)	GSM 850	34.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GSM (CS)	GSM 1900	29.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.2kbps RMC	WCDMA B2	21.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.2kbps RMC	WCDMA B4	24.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.2kbps RMC	WCDMA B5	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LTE Bands	LTE B2	22.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B4	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B5	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B7	20.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B12	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B13	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B17	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B25	22.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B26	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	LTE B41	24.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SA Bands	n 2	20.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 5	24.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 12	24.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 13	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 25	20.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 26	24.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 30	23.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 38	21.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 41	21.5	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 66	23.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 77	22.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 78	22.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SAR Test Report
Report No.: EFTA26040218-IE-03-S1V2

Wi-Fi Bands	Wi-Fi 2.4G	16.0	Ant.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Wi-Fi 2.4G	16.0	Ant.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Wi-Fi 2.4G	19.0	MIMO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Wi-Fi 5G	12.0	Ant.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Wi-Fi 5G	12.0	Ant.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Wi-Fi 5G	14.5	MIMO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B2+N41)	LTE B2	21.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 41	20.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B5+N41)	LTE B5	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 41	20.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B12+N41)	LTE B12	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 41	20.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B25+N41)	LTE B25	21.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 41	20.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B26+N41)	LTE B26	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 41	20.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B66+N41)	LTE B66	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 41	20.0	Ant.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B2+N77)	LTE B2	21.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 77	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B5+N77)	LTE B5	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 77	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B12+N77)	LTE B12	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 77	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B13+N77)	LTE B13	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 77	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B25+N77)	LTE B25	21.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 77	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B66+N77)	LTE B66	22.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 77	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B2+N78)	LTE B2	21.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B5+N78)	LTE B5	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B7+N78)	LTE B7	20.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B12+N78)	LTE B12	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B13+N78)	LTE B13	25.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC (B25+N78)	LTE B25	21.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC	LTE B26	24.5	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(B26+N78)	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EN-DC	LTE B66	22.0	Ant.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(B66+N78)	n 78	19.0	Ant.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

9.1 GSM Mode

GSM 850 Full Power--ANT0		Burst-Averaged Output Power(dBm)				Division Factors	Frame-Averaged Output Power(dBm)			
		Tune-up	Channel/Frequency(MHz)				Tune-up	Channel/Frequency(MHz)		
		MAX	128 /824.2	190 /836.6	251 /848.8		MAX	128 /824.2	190 /836.6	251 /848.8
GPRS/ EGPRS (GMSK)	1 Tx Slot	34.50	33.46	33.32	33.13	9.03	25.47	24.43	24.29	24.10
	2 Tx Slots	31.50	30.56	30.43	30.06	6.02	25.48	24.54	24.41	24.04
	3 Tx Slots	29.50	28.57	28.72	28.41	4.26	25.24	24.31	24.46	24.15
	4 Tx Slots	28.00	26.99	27.21	26.71	3.01	24.99	23.98	24.20	23.70
EGPRS (8PSK)	1 Tx Slot	28.00	26.84	27.35	27.10	9.03	18.97	17.81	18.32	18.07
	2 Tx Slots	28.00	26.94	26.77	26.80	6.02	21.98	20.92	20.75	20.78
	3 Tx Slots	27.00	26.22	25.80	25.91	4.26	22.74	21.96	21.54	21.65
	4 Tx Slots	26.50	25.37	25.31	25.17	3.01	23.49	22.36	22.30	22.16
GSM 1900 Full Power--ANT0		Burst-Averaged Output Power(dBm)				Division Factors	Frame-Averaged Output Power(dBm)			
		Tune-up	Channel/Frequency(MHz)				Tune-up	Channel/Frequency(MHz)		
		MAX	512 /1850.2	661 /1880	810 /1909.8		MAX	512 /1850.2	661 /1880	810 /1909.8
GPRS/ EGPRS (GMSK)	1 Tx Slot	29.00	27.84	27.90	27.80	9.03	19.97	18.81	18.87	18.77
	2 Tx Slots	28.00	27.46	27.54	27.58	6.02	21.98	21.44	21.52	21.56
	3 Tx Slots	27.00	26.72	26.64	26.70	4.26	22.74	22.46	22.38	22.44
	4 Tx Slots	26.00	25.24	25.18	25.30	3.01	22.99	22.23	22.17	22.29
EGPRS (8PSK)	1 Tx Slot	28.00	26.59	26.75	26.81	9.03	18.97	17.56	17.72	17.78
	2 Tx Slots	28.00	26.70	26.66	26.64	6.02	21.98	20.68	20.64	20.62
	3 Tx Slots	27.00	26.35	26.35	26.23	4.26	22.74	22.09	22.09	21.97
	4 Tx Slots	26.00	25.42	25.58	25.72	3.01	22.99	22.41	22.57	22.71
Notes: The worst-case configuration and mode for SAR testing is determined to be as follows: Standalone: GSM 850 GMSK (GPRS) mode with 2 time slots for Max power, GSM 1900 GMSK (GPRS) mode with 4 time slots for Max power, based on the output power measurements above.										

9.2 WCDMA Mode

The following tests were completed according to the test requirements outlined in the 3GPP TS34.121 specification.

WCDMA		Band II(dBm) Full Power--ANT0				Band IV(dBm) Full Power--ANT0				Band V(dBm) Full Power--ANT0			
Tx Channel		9262	9400	9538	Tune-up Limit	1312	1413	1513	Tune-up Limit	4132	4183	4233	Tune-up Limit
Frequency(MHz)		1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.6	846.6	
RMC	12.2kbps	20.67	20.78	20.60	21.50	23.27	22.93	22.85	24.00	23.84	23.71	23.58	24.50
HSDPA / DC- HSDPA	Sub 1	19.61	19.70	19.46	20.50	22.17	21.94	21.90	23.00	22.78	22.74	22.51	23.50
	Sub 2	19.75	19.46	19.62	20.50	21.10	21.62	21.51	23.00	21.00	22.47	22.22	23.50
	Sub 3	18.69	18.58	18.68	19.50	19.75	20.83	20.59	22.00	20.13	21.74	21.21	22.50
	Sub 4	18.79	18.66	18.58	19.50	19.49	20.48	20.24	22.00	20.52	21.34	21.16	22.50
HSUPA	Sub 1	19.81	19.56	19.76	20.50	22.32	21.98	21.88	23.00	22.89	22.73	22.56	23.50
	Sub 2	17.61	17.70	17.50	18.50	20.37	20.02	19.90	21.00	20.93	20.72	20.55	21.50
	Sub 3	18.69	18.56	18.50	19.50	21.21	20.98	20.85	22.00	21.87	21.82	21.52	22.50
	Sub 4	17.77	17.66	17.54	18.50	20.29	19.94	19.88	21.00	20.88	20.72	20.54	21.50
	Sub 5	19.77	19.50	19.52	20.50	22.32	21.91	21.89	23.00	22.84	22.73	22.55	23.50
HSPA+	16QAM	19.19	19.24	19.08	20.00	21.97	21.86	21.83	22.50	22.41	22.38	22.30	23.00

Note: Per KDB 941225 D01, SAR for each exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".

9.3 LTE Mode

The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

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 B2							
Full Power--ANT0				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				18607/1850.7	18900/1880	19193/1909.3	
1.4MHz	QPSK	1	0	20.95	21.13	20.65	22.00
		1	2	20.80	20.82	21.02	22.00
		1	5	20.98	20.78	20.84	22.00
		3	0	21.04	20.86	20.98	22.00
		3	2	20.75	20.77	20.91	22.00
		3	3	20.63	20.89	21.15	22.00
		6	0	19.95	19.99	20.03	21.00
	16QAM	1	0	20.44	20.22	20.26	21.00
		1	2	20.07	20.31	20.17	21.00
		1	5	20.07	20.33	20.19	21.00
		3	0	20.27	19.87	20.15	21.00
		3	2	19.90	19.78	19.84	21.00
		3	3	19.56	19.94	19.64	21.00
		6	0	18.94	19.18	18.92	20.00
	64QAM	1	0	19.41	19.19	19.37	20.00
		1	2	18.98	19.24	18.96	20.00
		1	5	19.41	19.07	18.89	20.00
		3	0	18.89	18.93	19.07	20.00
		3	2	18.81	18.87	18.87	20.00
		3	3	18.80	18.68	19.16	20.00
		6	0	18.38	18.16	18.34	19.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18615/1851.5	18900/1880	19185/1908.5	
3MHz	QPSK	1	0	20.63	20.83	21.11	22.00
		1	7	20.84	21.00	20.68	22.00

SAR Test Report
Report No.: EFTA26040218-IE-03-S1V2

		1	14	20.90	20.94	20.94	22.00
		8	0	19.98	19.94	20.42	21.00
		8	4	19.89	20.03	19.85	21.00
		8	7	19.91	19.85	20.15	21.00
		15	0	19.93	19.81	20.07	21.00
	16QAM	1	0	20.08	20.34	20.48	21.00
		1	7	20.03	19.91	19.79	21.00
		1	14	20.21	19.79	20.31	21.00
		8	0	19.11	19.19	19.37	20.00
		8	4	18.86	18.86	18.70	20.00
		8	7	19.16	18.76	19.14	20.00
		15	0	18.98	18.90	18.92	20.00
	64QAM	1	0	19.11	19.31	18.81	20.00
		1	7	19.38	19.12	19.22	20.00
		1	14	18.81	19.15	19.01	20.00
		8	0	18.03	18.17	18.07	19.00
		8	4	17.97	17.85	18.35	19.00
		8	7	18.02	18.10	18.36	19.00
		15	0	17.86	17.86	18.08	19.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18625/1852.5	18900/1880	19175/1907.5	
5MHz	QPSK	1	0	20.83	20.83	20.85	22.00
		1	13	20.84	20.92	20.88	22.00
		1	24	21.08	20.92	20.82	22.00
		12	0	20.02	20.08	20.20	21.00
		12	6	19.75	19.95	20.03	21.00
		12	13	19.85	19.99	20.15	21.00
		25	0	19.95	20.09	19.99	21.00
	16QAM	1	0	20.26	20.40	20.32	21.00
		1	13	20.01	20.13	19.95	21.00
		1	24	20.07	20.01	20.35	21.00
		12	0	19.39	19.15	19.37	20.00
		12	6	19.08	18.94	19.08	20.00
		12	13	18.98	19.02	18.94	20.00
		25	0	19.12	19.14	18.90	20.00
	64QAM	1	0	19.11	19.33	19.13	20.00
		1	13	19.02	19.02	19.02	20.00
		1	24	19.15	19.21	19.13	20.00
		12	0	17.93	17.97	18.09	19.00
		12	6	18.21	18.13	18.25	19.00
		12	13	18.18	18.10	18.08	19.00
		25	0	18.12	17.98	18.12	19.00
Bandwidth	Modulation	RB	Offset	Channel/Frequency(MHz)			Tune-up

		Allocation		18650/1855	18900/1880	19150/1905	
10MHz	QPSK	1	0	20.87	21.07	20.73	22.00
		1	25	20.94	21.00	20.84	22.00
		1	49	21.14	20.72	20.84	22.00
		25	0	20.04	20.14	19.94	21.00
		25	13	19.91	19.95	19.81	21.00
		25	25	20.07	19.83	20.07	21.00
		50	0	19.97	19.93	20.29	21.00
	16QAM	1	0	20.32	20.22	20.40	21.00
		1	25	20.15	20.11	20.13	21.00
		1	49	19.93	20.17	20.29	21.00
		25	0	19.27	19.17	19.13	20.00
		25	13	18.86	19.18	19.00	20.00
		25	25	18.70	18.80	19.16	20.00
		50	0	19.04	19.00	19.00	20.00
	64QAM	1	0	19.35	19.29	19.11	20.00
		1	25	19.26	19.14	19.22	20.00
		1	49	19.39	19.19	19.17	20.00
		25	0	18.01	18.19	18.09	19.00
		25	13	18.21	17.95	18.15	19.00
		25	25	18.24	18.18	18.12	19.00
		50	0	18.02	18.18	18.26	19.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18675/1857.5	18900/1880	19125/1902.5	
15MHz	QPSK	1	0	20.73	21.05	20.97	22.00
		1	38	20.82	21.00	20.88	22.00
		1	74	20.96	20.90	20.90	22.00
		36	0	20.10	20.00	20.28	21.00
		36	18	19.91	20.07	19.83	21.00
		36	39	19.75	19.87	20.19	21.00
		75	0	19.95	19.87	20.03	21.00
	16QAM	1	0	20.24	20.32	20.36	21.00
		1	38	20.01	20.11	19.93	21.00
		1	74	20.23	20.01	20.23	21.00
		36	0	19.21	19.07	19.23	20.00
		36	18	19.02	18.94	18.92	20.00
		36	39	19.04	18.88	19.14	20.00
		75	0	18.92	19.06	18.92	20.00
	64QAM	1	0	19.33	19.27	19.05	20.00
		1	38	19.24	19.24	19.06	20.00
		1	74	19.05	19.13	18.91	20.00
		36	0	17.95	18.25	18.05	19.00
		36	18	17.97	18.01	18.27	19.00

		36	39	18.08	18.16	18.28	19.00
		75	0	18.06	17.98	18.24	19.00
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				18700/1860	18900/1880	19100/1900	
20MHz	QPSK	1	0	20.85	20.91	20.79	22.00
		1	50	20.82	20.82	20.82	22.00
		1	99	20.92	20.82	20.88	22.00
		50	0	19.96	19.96	20.10	21.00
		50	25	19.85	19.91	19.95	21.00
		50	50	19.87	19.95	20.11	21.00
		100	0	19.93	19.93	20.07	21.00
	16QAM	1	0	20.28	20.24	20.38	21.00
		1	50	20.09	20.11	20.03	21.00
		1	99	20.05	20.11	20.27	21.00
		50	0	19.23	19.07	19.23	20.00
		50	25	18.92	19.02	18.92	20.00
		50	50	18.86	18.98	18.96	20.00
		100	0	19.00	19.02	18.92	20.00
	64QAM	1	0	19.19	19.23	19.13	20.00
		1	50	19.12	19.12	19.12	20.00
		1	99	19.17	19.09	18.99	20.00
		50	0	18.03	18.07	18.07	19.00
		50	25	18.09	18.07	18.11	19.00
		50	50	18.12	18.00	18.12	19.00
		100	0	18.18	18.04	18.18	19.00
LTE B4							
Full Power--ANT0				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				19957/1710.7	20175/1732.5	20393/1754.3	
1.4MHz	QPSK	1	0	23.56	23.39	23.57	24.50
		1	2	23.43	23.25	23.37	24.50
		1	5	23.47	23.48	23.34	24.50
		3	0	23.47	23.34	23.27	24.50
		3	2	23.17	23.55	23.65	24.50
		3	3	23.48	23.18	23.63	24.50
		6	0	22.70	22.35	22.41	23.50
	16QAM	1	0	22.59	23.02	22.78	23.50
		1	2	22.82	22.69	22.83	23.50
		1	5	22.73	22.74	23.01	23.50
		3	0	22.14	22.56	22.64	23.50
		3	2	22.32	22.34	22.44	23.50
		3	3	22.28	22.30	22.38	23.50
		6	0	21.60	21.54	21.56	22.50

	64QAM	1	0	21.78	21.69	21.74	22.50
		1	2	21.50	21.46	21.48	22.50
		1	5	21.36	21.52	21.65	22.50
		3	0	21.50	21.42	21.29	22.50
		3	2	21.29	21.59	21.66	22.50
		3	3	21.37	21.27	21.62	22.50
		6	0	20.64	20.38	20.46	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				19965/1711.5	20175/1732.5	20385/1753.5	
3MHz	QPSK	1	0	23.46	23.57	23.79	24.50
		1	7	23.31	23.31	23.61	24.50
		1	14	23.41	23.34	23.42	24.50
		8	0	22.33	22.36	22.67	23.50
		8	4	22.49	22.49	22.51	23.50
		8	7	22.56	22.44	22.59	23.50
		15	0	22.40	22.43	22.55	23.50
	16QAM	1	0	22.67	22.84	22.96	23.50
		1	7	22.58	22.73	22.75	23.50
		1	14	22.59	22.64	22.77	23.50
		8	0	21.58	21.56	21.72	22.50
		8	4	21.52	21.44	21.66	22.50
		8	7	21.44	21.60	21.66	22.50
		15	0	21.64	21.56	21.62	22.50
	64QAM	1	0	21.74	21.79	21.62	22.50
		1	7	21.60	21.46	21.52	22.50
		1	14	21.52	21.78	21.55	22.50
		8	0	20.38	20.64	20.49	21.50
		8	4	20.63	20.51	20.70	21.50
		8	7	20.61	20.45	20.64	21.50
		15	0	20.54	20.40	20.68	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				19975/1712.5	20175/1732.5	20375/1752.5	
5MHz	QPSK	1	0	23.46	23.45	23.71	24.50
		1	13	23.11	23.45	23.39	24.50
		1	24	23.25	23.24	23.46	24.50
		12	0	22.39	22.46	22.39	23.50
		12	6	22.43	22.51	22.41	23.50
		12	13	22.46	22.50	22.67	23.50
		25	0	22.48	22.35	22.51	23.50
	16QAM	1	0	22.65	22.72	22.90	23.50
		1	13	22.62	22.57	22.63	23.50
		1	24	22.69	22.68	22.73	23.50
		12	0	21.38	21.28	21.60	22.50

		12	6	21.46	21.56	21.42	22.50
		12	13	21.56	21.46	21.46	22.50
		25	0	21.38	21.24	21.58	22.50
	64QAM	1	0	21.72	21.69	21.60	22.50
		1	13	21.70	21.58	21.48	22.50
		1	24	21.36	21.66	21.31	22.50
		12	0	20.50	20.52	20.49	21.50
		12	6	20.33	20.41	20.48	21.50
		12	13	20.51	20.37	20.56	21.50
		25	0	20.30	20.46	20.40	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20000/1715	20175/1732.5	20350/1750	
10MHz	QPSK	1	0	23.34	23.55	23.73	24.50
		1	25	23.25	23.51	23.51	24.50
		1	49	23.35	23.26	23.58	24.50
		25	0	22.63	22.28	22.39	23.50
		25	13	22.43	22.75	22.77	23.50
		25	25	22.28	22.54	22.65	23.50
		50	0	22.36	22.27	22.59	23.50
	16QAM	1	0	22.75	22.90	22.74	23.50
		1	25	22.80	22.81	22.79	23.50
		1	49	22.45	22.50	22.89	23.50
		25	0	21.34	21.60	21.52	22.50
		25	13	21.64	21.34	21.38	22.50
		25	25	21.68	21.48	21.58	22.50
		50	0	21.32	21.64	21.38	22.50
	64QAM	1	0	21.50	21.71	21.64	22.50
		1	25	21.80	21.68	21.64	22.50
		1	49	21.46	21.54	21.29	22.50
		25	0	20.28	20.46	20.69	21.50
		25	13	20.57	20.73	20.52	21.50
		25	25	20.39	20.33	20.76	21.50
		50	0	20.54	20.64	20.56	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20025/1717.5	20175/1732.5	20325/1747.5	
15MHz	QPSK	1	0	23.56	23.37	23.63	24.50
		1	38	23.19	23.47	23.43	24.50
		1	74	23.33	23.28	23.44	24.50
		36	0	22.47	22.44	22.47	23.50
		36	18	22.53	22.51	22.61	23.50
		36	39	22.38	22.34	22.51	23.50
		75	0	22.58	22.41	22.45	23.50
	16QAM	1	0	22.81	22.70	23.08	23.50

SAR Test Report
Report No.: EFTA26040218-IE-03-S1V2

		1	38	22.86	22.85	22.81	23.50
		1	74	22.71	22.80	22.81	23.50
		36	0	21.58	21.54	21.50	22.50
		36	18	21.64	21.40	21.56	22.50
		36	39	21.46	21.54	21.60	22.50
		75	0	21.60	21.58	21.68	22.50
	64QAM	1	0	21.86	21.59	21.54	22.50
		1	38	21.60	21.48	21.46	22.50
		1	74	21.62	21.74	21.35	22.50
		36	0	20.38	20.52	20.57	21.50
		36	18	20.71	20.63	20.56	21.50
		36	39	20.51	20.49	20.68	21.50
		75	0	20.42	20.36	20.52	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20050/1720	20175/1732.5	20300/1745	
20MHz	QPSK	1	0	23.42	23.45	23.65	24.50
		1	50	23.29	23.35	23.51	24.50
		1	99	23.27	23.36	23.44	24.50
		50	0	22.43	22.46	22.57	23.50
		50	25	22.49	22.53	22.57	23.50
		50	50	22.44	22.46	22.59	23.50
		100	0	22.46	22.45	22.57	23.50
	16QAM	1	0	22.71	22.82	22.90	23.50
		1	50	22.68	22.67	22.79	23.50
		1	99	22.59	22.68	22.81	23.50
		50	0	21.42	21.48	21.58	22.50
		50	25	21.52	21.52	21.54	22.50
		50	50	21.46	21.44	21.60	22.50
		100	0	21.48	21.44	21.54	22.50
	64QAM	1	0	21.68	21.63	21.60	22.50
		1	50	21.62	21.52	21.54	22.50
		1	99	21.52	21.62	21.47	22.50
		50	0	20.46	20.52	20.59	21.50
		50	25	20.53	20.57	20.60	21.50
		50	50	20.47	20.51	20.60	21.50
		100	0	20.48	20.48	20.60	21.50
LTE B5							
Full Power-ANT0				Maximum Output Power (dBm)			Tune-up
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			
				20407/824.7	20525/836.5	20643/848.3	
1.4MHz	QPSK	1	0	23.42	23.46	23.30	24.50
		1	2	23.33	23.64	23.67	24.50
		1	5	23.50	23.57	23.46	24.50

SAR Test Report
Report No.: EFTA26040218-IE-03-S1V2

		3	0	23.35	23.48	23.58	24.50
		3	2	23.41	23.58	23.44	24.50
		3	3	23.61	23.73	23.48	24.50
		6	0	22.88	22.49	22.52	23.50
	16QAM	1	0	23.00	22.75	22.97	23.50
		1	2	22.93	23.04	22.84	23.50
		1	5	22.93	23.13	22.96	23.50
		3	0	22.62	22.48	22.30	23.50
		3	2	22.78	22.38	22.53	23.50
		3	3	22.73	22.77	22.66	23.50
		6	0	21.58	21.81	21.58	22.50
	64QAM	1	0	21.66	21.61	21.68	22.50
		1	2	21.90	21.81	21.83	22.50
		1	5	21.71	21.76	21.72	22.50
		3	0	21.65	21.42	21.57	22.50
		3	2	21.75	21.64	21.42	22.50
		3	3	21.58	21.40	21.70	22.50
		6	0	20.63	20.54	20.70	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20415/825.5	20525/836.5	20635/847.5	
3MHz	QPSK	1	0	23.64	23.36	23.52	24.50
		1	7	23.61	23.26	23.39	24.50
		1	14	23.34	23.53	23.34	24.50
		8	0	22.51	22.68	22.48	23.50
		8	4	22.67	22.38	22.66	23.50
		8	7	22.65	22.47	22.56	23.50
		15	0	22.70	22.49	22.40	23.50
	16QAM	1	0	23.16	22.99	22.77	23.50
		1	7	22.87	22.68	22.96	23.50
		1	14	22.93	22.81	22.76	23.50
		8	0	21.74	21.68	21.54	22.50
		8	4	21.58	21.60	21.53	22.50
		8	7	21.89	21.83	21.58	22.50
		15	0	21.50	21.49	21.52	22.50
	64QAM	1	0	21.72	21.63	21.80	22.50
		1	7	21.62	21.75	21.55	22.50
		1	14	21.67	21.86	21.84	22.50
		8	0	20.57	20.62	20.51	21.50
		8	4	20.63	20.46	20.48	21.50
		8	7	20.70	20.74	20.52	21.50
		15	0	20.71	20.48	20.62	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20425/826.5	20525/836.5	20625/846.5	

5MHz	QPSK	1	0	23.60	23.64	23.38	24.50
		1	13	23.47	23.46	23.57	24.50
		1	24	23.44	23.45	23.52	24.50
		12	0	22.61	22.60	22.44	23.50
		12	6	22.77	22.70	22.66	23.50
		12	13	22.73	22.65	22.56	23.50
		25	0	22.72	22.73	22.70	23.50
	16QAM	1	0	22.98	22.91	23.07	23.50
		1	13	23.03	22.98	22.90	23.50
		1	24	22.99	22.85	22.72	23.50
		12	0	21.66	21.76	21.48	22.50
		12	6	21.82	21.52	21.57	22.50
		12	13	21.79	21.83	21.58	22.50
		25	0	21.80	21.53	21.72	22.50
	64QAM	1	0	21.74	21.83	21.66	22.50
		1	13	21.90	21.75	21.69	22.50
		1	24	21.73	21.88	21.62	22.50
		12	0	20.81	20.80	20.51	21.50
		12	6	20.63	20.56	20.58	21.50
		12	13	20.78	20.58	20.80	21.50
		25	0	20.85	20.70	20.60	21.50
Bandwidth	Modulation	RB Allocation	Offset	Channel/Frequency(MHz)			Tune-up
				20450/829	20525/836.5	20600/844	
10MHz	QPSK	1	0	23.58	23.50	23.42	24.50
		1	25	23.47	23.44	23.43	24.50
		1	49	23.44	23.41	23.36	24.50
		25	0	22.65	22.60	22.54	23.50
		25	13	22.69	22.56	22.52	23.50
		25	25	22.69	22.65	22.60	23.50
		50	0	22.68	22.59	22.52	23.50
	16QAM	1	0	23.00	22.91	22.93	23.50
		1	25	22.89	22.80	22.78	23.50
		1	49	22.93	22.93	22.84	23.50
		25	0	21.66	21.60	21.52	22.50
		25	13	21.76	21.64	21.61	22.50
		25	25	21.71	21.69	21.64	22.50
		50	0	21.68	21.63	21.58	22.50
	64QAM	1	0	21.76	21.77	21.78	22.50
		1	25	21.74	21.69	21.63	22.50
		1	49	21.79	21.80	21.72	22.50
		25	0	20.71	20.68	20.63	21.50
		25	13	20.75	20.64	20.62	21.50
		25	25	20.72	20.68	20.64	21.50