

TEST REPORT

of

FCC Part 2 Subpart J, Part 22 Subpart C/H,
Part 24 Subpart E and Part 27 Subpart C

FCC ID: XHG-R717V

Equipment Under Test : Mobile Hotspot
Model Name : R717V
Variant Model Name(s) : -
Applicant : Franklin Technology Inc.
Manufacturer : Franklin Technology Inc.
Date of Receipt : 2020.11.25
Date of Test(s) : 2020.11.30 ~ 2021.01.07
Date of Issue : 2021.01.12

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

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- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
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Tested by:



Nancy Park

Technical
Manager:



Jungmin Yang

SGS Korea Co., Ltd. Gunpo Laboratory



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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

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1.2. Details of Applicant

Applicant : Franklin Technology Inc.

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Contact Person : Lee, James

Phone No. : +82 70 8228 6445

1.3. Details of Manufacturer

Company : Same as applicant

Address : Same as applicant

1.4. Description of EUT

Kind of Product	Mobile Hotspot
Model Name	R717V
Power Supply	DC 3.8 V
Rated Power	LTE Band 2: 21.8 dB m LTE Band 4, 66: 21.5 dB m LTE Band 5: 23.0 dB m LTE Band 13: 22.5 dB m
Frequency Range	LTE Band 2: 1 850 MHz ~ 1 910 MHz LTE Band 4: 1 710 MHz ~ 1 755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 66: 1 710 MHz ~ 1 780 MHz
Modulation Technique	QPSK, 16QAM
Antenna Type	FPCB antenna
Antenna Gain	777 MHz ~ 787 MHz: 1.77 dB i 824 MHz ~ 849 MHz: 0.96 dB i 1 710 MHz ~ 1 780 MHz: 2.96 dB i 1 850 MHz ~ 1 910 MHz: 3.12 dB i
H/W Version	P2
S/W Version	R717F21.VZ.2076

1.5. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Signal Generator	R&S	SMR40	100272	Jun. 18, 2020	Annual	Jun. 18, 2021
Signal Generator	R&S	SMBV100A	255834	Jun. 03, 2020	Annual	Jun. 03, 2021
Spectrum Analyzer	R&S	FSV30	100768	Mar. 04, 2020	Annual	Mar. 04, 2021
Spectrum Analyzer	Agilent	N9020A	MY53421758	Sep. 04, 2020	Annual	Sep. 04, 2021
Mobile Test Unit	R&S	CMW500	144035	Feb. 17, 2020	Annual	Feb. 17, 2021
Power Meter	Anritsu	ML2495A	1223004	Jun. 01, 2020	Annual	Jun. 01, 2021
Power Sensor	Anritsu	MA2411B	1207272	Jun. 01, 2020	Annual	Jun. 01, 2021
Temperature Chamber	ESPEC CORP.	PL-1J	15000796	Nov. 06, 2020	Annual	Nov. 06, 2021
Low Pass Filter	Mini-Circuits	NLP-1200+	V9500401023-2	Jun. 01, 2020	Annual	Jun. 01, 2021
High Pass Filter	Wainwright Instrument GmbH	WHKX10-900-1000-18000-40SS	7	Mar. 04, 2020	Annual	Mar. 04, 2021
High Pass Filter	Wainwright Instrument GmbH	WHKX1.5/15G-6SS	4	Jun. 11, 2020	Annual	Jun. 11, 2021
High Pass Filter	Wainwright Instrument GmbH	WHKX2.2/12.75G-10SS	8	Mar. 04, 2020	Annual	Mar. 04, 2021
High Pass Filter	Wainwright Instrument GmbH	WHK3.0/18G-10SS	344	May 18, 2020	Annual	May 18, 2021
High Pass Filter	Wainwright Instrument GmbH	WHK7.5/26.5G-6SS	15	Jun. 05, 2020	Annual	Jun. 05, 2021
Directional Coupler	KRYTAR	152613	122660	Jun. 11, 2020	Annual	Jun. 11, 2021
DC Power Supply	Agilent	U8002A	MY49030063	Feb. 03, 2020	Annual	Feb. 03, 2021
Preamplifier	H.P.	8447F	2944A03909	Aug. 06, 2020	Annual	Aug. 06, 2021
Preamplifier	R&S	SCU 18	10117	Jun. 10, 2020	Annual	Jun. 10, 2021
Preamplifier	MITEQ Inc.	JS44-18004000-35-8P	1546891	May 08, 2020	Annual	May 08, 2021
Test Receiver	R&S	ESU26	100109	Feb. 18, 2020	Annual	Feb. 18, 2021
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Aug. 22, 2019	Biennial	Aug. 22, 2021
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB9163	396	Mar. 21, 2019	Biennial	Mar. 21, 2021
Horn Antenna	R&S	HF906	100326	Feb. 14, 2020	Annual	Feb. 14, 2021
Horn Antenna	Schwarzbeck Mess-Elektronik	BBHA9170	BBHA9170223	Sep. 16, 2020	Annual	Sep. 16, 2021
Antenna Master	Innco systems GmbH	MM4000	N/A	N.C.R.	N/A	N.C.R.
Turn Table	Innco systems GmbH	DS 1200S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/383 30516/L	N.C.R.	N/A	N.C.R.
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.4 m)	N/A	N.C.R.	N/A	N.C.R.
Coaxial Cable	RFONE	MWX221-NMSNMS (4 m)	J1023142	Dec. 01, 2020	Semi-annual	Jun. 01, 2021
Coaxial Cable	RFONE	PL520-NMNM-10M (10 m)	20200324001	Dec. 01, 2020	Semi-annual	Jun. 01, 2021
Coaxial Cable	Rosenberger	LA1-C006-1500	131014 01/20	Aug. 21, 2020	Semi-annual	Feb. 21, 2021
Coaxial Cable	Rosenberger	LA1-C006-1500	131014 05/20	Aug. 21, 2020	Semi-annual	Feb. 21, 2021
Coaxial Cable	Rosenberger	LA1-C006-1500	131014 10/20	Aug. 21, 2020	Semi-annual	Feb. 21, 2021

► Support Equipment

Description	Manufacturer	Model	Serial Number
N/A	-	-	-

1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 2, 22, 24 and 27		
Section	Test Item(s)	Result
§22.913(a)(5) §24.232(c) §27.50(b)(10) §27.50(d)(4)	RF Radiated Output Power	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(h)(1)	Spurious Radiated Emission	Complied
§2.1046	Conducted Output Power	N/A ¹⁾
§2.1049	Occupied Bandwidth	Complied
§22.913(d) §24.232(d) §27.50(d)(5)	Peak-Average Ratio	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(h)(1)	Spurious Emission at Antenna Terminal	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(h)(1)	Band Edge	Complied
§2.1055 §22.355 §24.235 §27.54	Frequency Stability	Complied

Note;

1) Refer to SAR report.

1.7. Sample Calculation for Offset

Where relevant, the following sample calculation is provided:

1.7.1. Conducted Test

Offset value (dB) = Directional Coupler (dB) + Cable loss (dB)

1.7.2. Radiation test

- E.I.R.P. (dB m) = Measured level (dB μ V) + Antenna factor (dB/m) + Cable loss (dB) + 20 Log D - 104.5; where D is the measurement distance in meters.
- E.R.P. (dB m) = E.I.R.P. (dB m) - 2.15 (dB)

1.8. Device Capabilities

This device contains the following capabilities;

LTE Band 4 (1 710 MHz ~ 1 755 MHz) is covered by LTE Band 66 (1 710 MHz ~ 1 780 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth. Therefore test data provided in this report covers LTE Band 4 as well as Band 66.

1.9. Worst Case Configuration and Mode

All testing was performed using QPSK and 16QAM modulations, except radiated spurious emissions, peak-average ratio, conducted spurious emissions and band-edge were tested only QPSK modulation as worst case. The worst-case is based on the conducted output power measurement investigation results.

The radiation test of the EUT was investigated in three orthogonal orientations X, Y, and Z, and the worst case data is reported.

1.10. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty
Radiated Emission, 9 kHz to 30 MHz	± 3.59 dB
Radiated Emission, below 1 GHz	± 5.88 dB
Radiated Emission, above 1 GHz	± 5.94 dB

Uncertainty figures are valid to a confidence level of 95 %.

1.11. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL001489	2020.12.18	Initial
1	F690501-RF-RTL001489-1	2021.01.12	Added the band edge test results of LTE Band 13 and retested Radiated test of 1 GHz above.

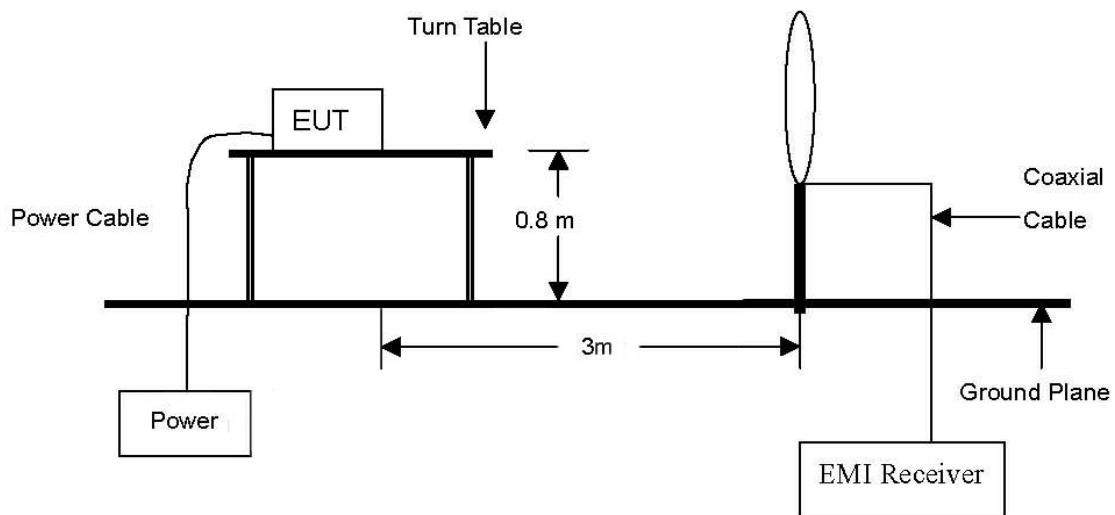
1.12. Emission Designator and Max Power

Mode	Frequency Range (MHz)	Modulation	Emission Designator	E.R.P. / E.I.R.P.	
				Max power (dB m)	Max power (W)
LTE Band 2	1 850.7 ~ 1 909.3	QPSK	1M11G7D	29.24	0.839
		16QAM	1M10D7D	28.54	0.714
	1 851.5 ~ 1 908.5	QPSK	2M69G7D	29.32	0.855
		16QAM	2M69D7D	28.61	0.726
	1 852.5 ~ 1 907.5	QPSK	4M54G7D	29.23	0.838
		16QAM	4M50D7D	27.88	0.614
	1 855 ~ 1 905	QPSK	8M94G7D	29.08	0.809
		16QAM	8M94D7D	28.18	0.658
	1 857.5 ~ 1 902.5	QPSK	13M5G7D	29.21	0.834
		16QAM	13M5D7D	28.09	0.644
LTE Band 5	824.7 ~ 848.3	QPSK	1M10G7D	25.89	0.388
		16QAM	1M10D7D	24.78	0.301
	825.5 ~ 847.5	QPSK	2M69G7D	25.63	0.366
		16QAM	2M68D7D	24.65	0.292
	826.5 ~ 836.5	QPSK	4M53G7D	25.38	0.345
		16QAM	4M52D7D	24.36	0.273
	829 ~ 844	QPSK	8M94G7D	25.38	0.345
		16QAM	8M97D7D	24.61	0.289
LTE Band 13	779.5 ~ 784.5	QPSK	4M53G7D	26.34	0.431
		16QAM	4M52D7D	25.78	0.378
	782	QPSK	8M97G7D	26.41	0.438
		16QAM	8M94D7D	25.34	0.342
LTE Band 66/4	1 710.7 ~ 1 779.3	QPSK	1M10G7D	27.38	0.547
		16QAM	1M10D7D	26.66	0.463
	1 711.5 ~ 1 778.5	QPSK	2M69G7D	27.43	0.553
		16QAM	2M68D7D	26.86	0.485
	1 712.5 ~ 1 777.5	QPSK	4M52G7D	27.36	0.545
		16QAM	4M52D7D	26.75	0.473
	1 715 ~ 1 775	QPSK	8M94G7D	27.78	0.600
		16QAM	8M92D7D	27.05	0.507
	1 717.5 ~ 1 772.5	QPSK	13M5G7D	27.70	0.589
		16QAM	13M5D7D	26.59	0.456
	1 720 ~ 1 770	QPSK	17M9G7D	28.37	0.687
		16QAM	17M8D7D	27.66	0.583

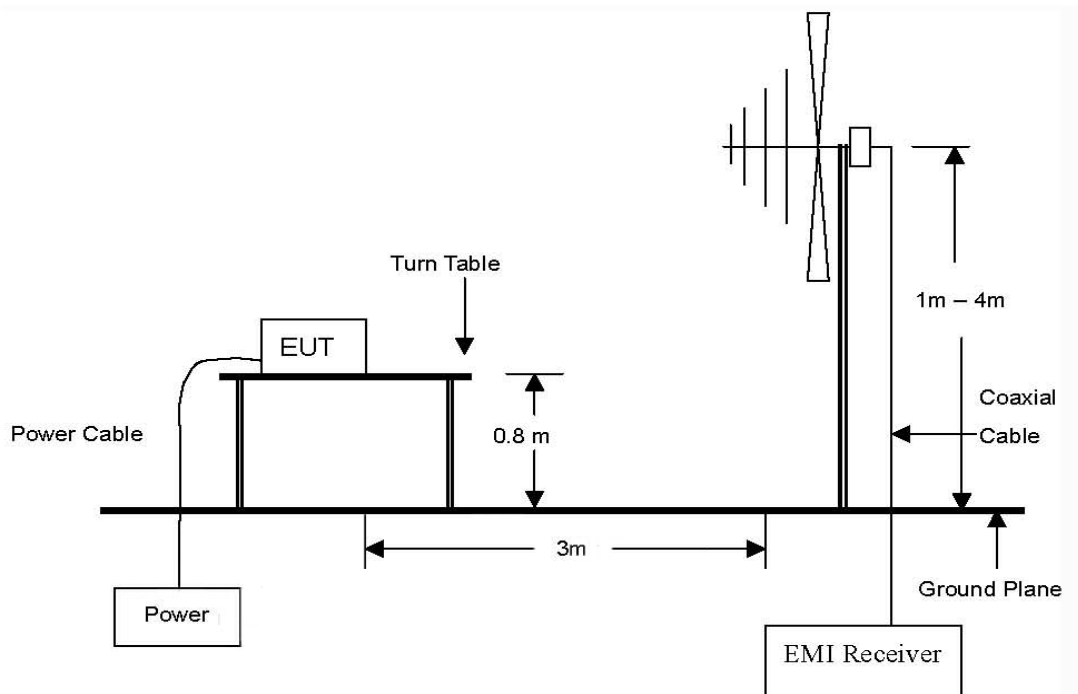
2. RF Radiated Output Power & Spurious Radiated Emission

2.1. Test setup

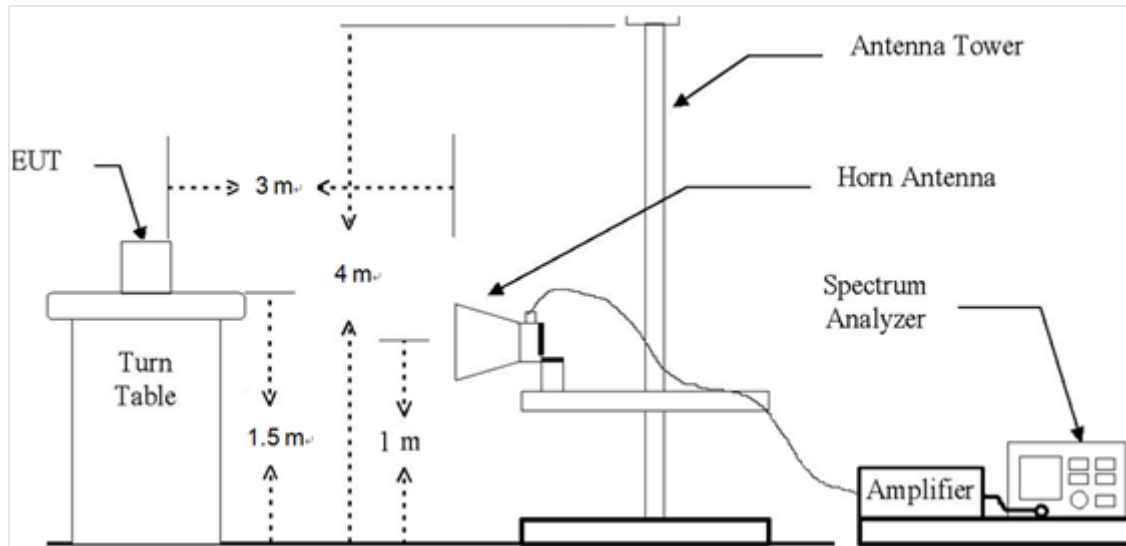
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 20 GHz Emissions.



2.2. Limit

2.2.1. Limit of Radiated Output Power

- §22.913(a)(5), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.
- §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.
- §27.50(b)(10), Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.
- §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1 710-1 755 MHz band and mobile and portable stations operating in the 1 695-1 710 MHz and 1 755-1 780 MHz bands are limited to 1 watt EIRP.

2.2.2. Limit of Spurious Radiated Emission

- §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.
- §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.
- §27.53(c)(2), on any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB.
- §27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.

2.3. Test Procedure: Based on ANSI/TIA 603E: 2016 and ANSI C63.26-2015, KDB 971168 D01 Power Meas License Digital Systems v03r01.

1. On a test site, the EUT shall be placed at 0.8 m or 1.5 m height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions occupied bandwidth, RBW = 1-5 % of the OBW (not to exceed 1 MHz), VBW $\geq 3 \times$ RBW, Detector = power averaging (rms), sweep time = auto, trace average at least 100 traces in power averaging (rms) mode, per the guidelines of KDB 971168 D01 Power Meas License Digital Systems v03r01.
5. Radiated spurious emissions measurement method was set as follows:
RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz, VBW $\geq 3 \times$ RBW, Detector = RMS, trace mode = max hold, per the guidelines of KDB 971168 D01 Power Meas License Digital Systems v03r01.
6. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
7. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
8. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
9. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
10. The maximum signal level detected by the measuring receiver shall be noted.
11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
13. The measurement shall be repeated with the test antenna orientated for horizontal polarization.

2.4. Test result for RF radiated output power

Ambient temperature : (23 ± 1) °C
Relative humidity : 47 % R.H.

LTE band 2 (1.4 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 850.70	QPSK	89.89	H	27.51	5.59	122.99	-95.26	27.73	0.593
1 850.70		89.06	V	27.51	5.59	122.16	-95.26	26.90	0.490
1 880.00		91.19	H	27.74	5.57	124.50	-95.26	29.24	0.839
1 880.00		89.21	V	27.74	5.57	122.52	-95.26	27.26	0.532
1 909.30		87.98	H	27.83	5.41	121.22	-95.26	25.96	0.394
1 909.30		87.59	V	27.83	5.41	120.83	-95.26	25.57	0.361
1 850.70	16QAM	88.85	H	27.51	5.59	121.95	-95.26	26.69	0.467
1 850.70		87.96	V	27.51	5.59	121.06	-95.26	25.80	0.380
1 880.00		90.49	H	27.74	5.57	123.80	-95.26	28.54	0.714
1 880.00		87.68	V	27.74	5.57	120.99	-95.26	25.73	0.374
1 909.30		88.12	H	27.83	5.41	121.36	-95.26	26.10	0.407
1 909.30		86.45	V	27.83	5.41	119.69	-95.26	24.43	0.277

* 1 RB size / 0 Offset

LTE band 2 (3 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 851.50	QPSK	89.72	H	27.51	5.59	122.82	-95.26	27.56	0.570
1 851.50		88.29	V	27.51	5.59	121.39	-95.26	26.13	0.410
1 880.00		91.27	H	27.74	5.57	124.58	-95.26	29.32	0.855
1 880.00		89.08	V	27.74	5.57	122.39	-95.26	27.13	0.516
1 908.50		88.48	H	27.83	5.41	121.72	-95.26	26.46	0.443
1 908.50		87.52	V	27.83	5.41	120.76	-95.26	25.50	0.355
1 851.50	16QAM	88.83	H	27.51	5.59	121.93	-95.26	26.67	0.465
1 851.50		87.79	V	27.51	5.59	120.89	-95.26	25.63	0.366
1 880.00		90.56	H	27.74	5.57	123.87	-95.26	28.61	0.726
1 880.00		88.40	V	27.74	5.57	121.71	-95.26	26.45	0.442
1 908.50		87.61	H	27.83	5.41	120.85	-95.26	25.59	0.362
1 908.50		86.60	V	27.83	5.41	119.84	-95.26	24.58	0.287

* 1 RB size / 0 Offset

LTE band 2 (5 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 852.50	QPSK	89.64	H	27.52	5.59	122.75	-95.26	27.49	0.561
1 852.50		88.62	V	27.52	5.59	121.73	-95.26	26.47	0.444
1 880.00		91.18	H	27.74	5.57	124.49	-95.26	29.23	0.838
1 880.00		88.89	V	27.74	5.57	122.20	-95.26	26.94	0.494
1 907.50		88.40	H	27.84	5.41	121.65	-95.26	26.39	0.436
1 907.50		87.79	V	27.84	5.41	121.04	-95.26	25.78	0.378
1 852.50	16QAM	88.55	H	27.52	5.59	121.66	-95.26	26.40	0.437
1 852.50		87.50	V	27.52	5.59	120.61	-95.26	25.35	0.343
1 880.00		89.83	H	27.74	5.57	123.14	-95.26	27.88	0.614
1 880.00		88.10	V	27.74	5.57	121.41	-95.26	26.15	0.412
1 907.50		87.95	H	27.84	5.41	121.20	-95.26	25.94	0.393
1 907.50		87.10	V	27.84	5.41	120.35	-95.26	25.09	0.323

* 1 RB size / 0 Offset

LTE band 2 (10 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 855.00	QPSK	89.76	H	27.54	5.59	122.89	-95.26	27.63	0.579
1 855.00		88.34	V	27.54	5.59	121.47	-95.26	26.21	0.418
1 880.00		91.03	H	27.74	5.57	124.34	-95.26	29.08	0.809
1 880.00		88.97	V	27.74	5.57	122.28	-95.26	27.02	0.504
1 905.00		89.38	H	27.86	5.40	122.64	-95.26	27.38	0.547
1 905.00		88.43	V	27.86	5.40	121.69	-95.26	26.43	0.440
1 855.00	16QAM	88.89	H	27.54	5.59	122.02	-95.26	26.76	0.474
1 855.00		87.42	V	27.54	5.59	120.55	-95.26	25.29	0.338
1 880.00		90.13	H	27.74	5.57	123.44	-95.26	28.18	0.658
1 880.00		88.02	V	27.74	5.57	121.33	-95.26	26.07	0.405
1 905.00		88.18	H	27.86	5.40	121.44	-95.26	26.18	0.415
1 905.00		87.32	V	27.86	5.40	120.58	-95.26	25.32	0.340

* 1 RB size / 0 Offset

LTE band 2 (15 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 857.50	QPSK	89.65	H	27.56	5.60	122.81	-95.26	27.55	0.569
1 857.50		88.65	V	27.56	5.60	121.81	-95.26	26.55	0.452
1 880.00		91.16	H	27.74	5.57	124.47	-95.26	29.21	0.834
1 880.00		88.65	V	27.74	5.57	121.96	-95.26	26.70	0.468
1 902.50		90.17	H	27.88	5.40	123.45	-95.26	28.19	0.659
1 902.50		89.05	V	27.88	5.40	122.33	-95.26	27.07	0.509
1 857.50	16QAM	88.53	H	27.56	5.60	121.69	-95.26	26.43	0.440
1 857.50		87.31	V	27.56	5.60	120.47	-95.26	25.21	0.332
1 880.00		90.04	H	27.74	5.57	123.35	-95.26	28.09	0.644
1 880.00		87.43	V	27.74	5.57	120.74	-95.26	25.48	0.353
1 902.50		89.27	H	27.88	5.40	122.55	-95.26	27.29	0.536
1 902.50		88.15	V	27.88	5.40	121.43	-95.26	26.17	0.414

* 1 RB size / 0 Offset

LTE band 2 (20 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 860.00	QPSK	89.83	H	27.58	5.60	123.01	-95.26	27.75	0.596
1 860.00		88.51	V	27.58	5.60	121.69	-95.26	26.43	0.440
1 880.00		90.76	H	27.74	5.57	124.07	-95.26	28.81	0.760
1 880.00		88.14	V	27.74	5.57	121.45	-95.26	26.19	0.416
1 900.00		91.24	H	27.90	5.40	124.54	-95.26	29.28	0.847
1 900.00		90.12	V	27.90	5.40	123.42	-95.26	28.16	0.655
1 860.00	16QAM	88.99	H	27.58	5.60	122.17	-95.26	26.91	0.491
1 860.00		87.62	V	27.58	5.60	120.80	-95.26	25.54	0.358
1 880.00		89.83	H	27.74	5.57	123.14	-95.26	27.88	0.614
1 880.00		87.26	V	27.74	5.57	120.57	-95.26	25.31	0.340
1 900.00		90.41	H	27.90	5.40	123.71	-95.26	28.45	0.700
1 900.00		89.24	V	27.90	5.40	122.54	-95.26	27.28	0.535

* 1 RB size / 0 Offset

LTE band 5 (1.4 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.R.P.	
								(dB m)	(W)
824.70	QPSK	91.71	H	26.89	3.59	122.19	-97.41	24.78	0.301
824.70		88.11	V	26.89	3.59	118.59	-97.41	21.18	0.131
836.50		91.47	H	27.30	3.60	122.37	-97.41	24.96	0.313
836.50		86.55	V	27.30	3.60	117.45	-97.41	20.04	0.101
848.30		92.16	H	27.43	3.71	123.30	-97.41	25.89	0.388
848.30		86.74	V	27.43	3.71	117.88	-97.41	20.47	0.111
824.70	16QAM	90.66	H	26.89	3.59	121.14	-97.41	23.73	0.236
824.70		87.82	V	26.89	3.59	118.30	-97.41	20.89	0.123
836.50		90.88	H	27.30	3.60	121.78	-97.41	24.37	0.274
836.50		85.96	V	27.30	3.60	116.86	-97.41	19.45	0.088
848.30		91.05	H	27.43	3.71	122.19	-97.41	24.78	0.301
848.30		85.75	V	27.43	3.71	116.89	-97.41	19.48	0.089

* 1 RB size / 0 Offset

LTE band 5 (3 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.R.P.	
								(dB m)	(W)
825.50	QPSK	91.94	H	26.92	3.59	122.45	-97.41	25.04	0.319
825.50		88.21	V	26.92	3.59	118.72	-97.41	21.31	0.135
836.50		91.40	H	27.30	3.60	122.30	-97.41	24.89	0.308
836.50		86.72	V	27.30	3.60	117.62	-97.41	20.21	0.105
847.50		91.94	H	27.40	3.70	123.04	-97.41	25.63	0.366
847.50		86.54	V	27.40	3.70	117.64	-97.41	20.23	0.105
825.50	16QAM	90.95	H	26.92	3.59	121.46	-97.41	24.05	0.254
825.50		87.90	V	26.92	3.59	118.41	-97.41	21.00	0.126
836.50		90.44	H	27.30	3.60	121.34	-97.41	23.93	0.247
836.50		85.81	V	27.30	3.60	116.71	-97.41	19.30	0.085
847.50		90.96	H	27.40	3.70	122.06	-97.41	24.65	0.292
847.50		85.88	V	27.40	3.70	116.98	-97.41	19.57	0.091

*1 RB size / 0 Offset

LTE band 5 (5 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.R.P.	
								(dB m)	(W)
826.50	QPSK	91.69	H	26.96	3.59	122.24	-97.41	24.83	0.304
826.50		88.06	V	26.96	3.59	118.61	-97.41	21.20	0.132
836.50		91.15	H	27.30	3.60	122.05	-97.41	24.64	0.291
836.50		86.28	V	27.30	3.60	117.18	-97.41	19.77	0.095
846.50		91.74	H	27.36	3.69	122.79	-97.41	25.38	0.345
846.50		86.05	V	27.36	3.69	117.10	-97.41	19.69	0.093
826.50	16QAM	90.90	H	26.96	3.59	121.45	-97.41	24.04	0.254
826.50		87.23	V	26.96	3.59	117.78	-97.41	20.37	0.109
836.50		90.19	H	27.30	3.60	121.09	-97.41	23.68	0.233
836.50		85.29	V	27.30	3.60	116.19	-97.41	18.78	0.076
846.50		90.72	H	27.36	3.69	121.77	-97.41	24.36	0.273
846.50		85.62	V	27.36	3.69	116.67	-97.41	19.26	0.084

* 1 RB size / 0 Offset

LTE band 5 (10 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.R.P.	
								(dB m)	(W)
829.00	QPSK	91.74	H	27.06	3.60	122.40	-97.41	24.99	0.316
829.00		88.26	V	27.06	3.60	118.92	-97.41	21.51	0.142
836.50		91.71	H	27.30	3.60	122.61	-97.41	25.20	0.331
836.50		86.63	V	27.30	3.60	117.53	-97.41	20.12	0.103
844.00		91.84	H	27.30	3.65	122.79	-97.41	25.38	0.345
844.00		86.83	V	27.30	3.65	117.78	-97.41	20.37	0.109
829.00	16QAM	91.09	H	27.06	3.60	121.75	-97.41	24.34	0.272
829.00		87.47	V	27.06	3.60	118.13	-97.41	20.72	0.118
836.50		90.77	H	27.30	3.60	121.67	-97.41	24.26	0.267
836.50		85.82	V	27.30	3.60	116.72	-97.41	19.31	0.085
844.00		91.07	H	27.30	3.65	122.02	-97.41	24.61	0.289
844.00		86.10	V	27.30	3.65	117.05	-97.41	19.64	0.092

* 1 RB size / 0 Offset

LTE band 13 (5 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.R.P.	
								(dB m)	(W)
779.50	QPSK	93.56	H	26.61	3.45	123.62	-97.41	26.21	0.418
779.50		88.92	V	26.61	3.45	118.98	-97.41	21.57	0.144
782.00		93.66	H	26.60	3.45	123.71	-97.41	26.30	0.427
782.00		89.14	V	26.60	3.45	119.19	-97.41	21.78	0.151
784.50		93.69	H	26.60	3.46	123.75	-97.41	26.34	0.431
784.50		88.76	V	26.60	3.46	118.82	-97.41	21.41	0.138
779.50	16QAM	92.25	H	26.61	3.45	122.31	-97.41	24.90	0.309
779.50		87.91	V	26.61	3.45	117.97	-97.41	20.56	0.114
782.00		92.74	H	26.60	3.45	122.79	-97.41	25.38	0.345
782.00		88.31	V	26.60	3.45	118.36	-97.41	20.95	0.124
784.50		93.13	H	26.60	3.46	123.19	-97.41	25.78	0.378
784.50		87.72	V	26.60	3.46	117.78	-97.41	20.37	0.109

* 1 RB size / 0 Offset

LTE band 13 (10 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.R.P.	
								(dB m)	(W)
782.00	QPSK	93.77	H	26.60	3.45	123.82	-97.41	26.41	0.438
782.00		89.35	V	26.60	3.45	119.40	-97.41	21.99	0.158
782.00	16QAM	92.70	H	26.60	3.45	122.75	-97.41	25.34	0.342
782.00		88.51	V	26.60	3.45	118.56	-97.41	21.15	0.130

* 1 RB size / 0 Offset

LTE band 66/4 (1.4 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 710.70	QPSK	88.71	H	26.96	5.27	120.94	-95.26	25.68	0.370
1 710.70		87.71	V	26.96	5.27	119.94	-95.26	24.68	0.294
1 745.00		90.64	H	26.82	5.18	122.64	-95.26	27.38	0.547
1 745.00		90.18	V	26.82	5.18	122.18	-95.26	26.92	0.492
1 779.30		88.30	H	26.80	5.26	120.36	-95.26	25.10	0.324
1 779.30		90.31	V	26.80	5.26	122.37	-95.26	27.11	0.514
1 710.70	16QAM	88.23	H	26.96	5.27	120.46	-95.26	25.20	0.331
1 710.70		86.05	V	26.96	5.27	118.28	-95.26	23.02	0.200
1 745.00		89.92	H	26.82	5.18	121.92	-95.26	26.66	0.463
1 745.00		89.63	V	26.82	5.18	121.63	-95.26	26.37	0.434
1 779.30		87.72	H	26.80	5.26	119.78	-95.26	24.52	0.283
1 779.30		89.28	V	26.80	5.26	121.34	-95.26	26.08	0.406

* 1 RB size / 0 Offset

LTE band 66/4 (3 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 711.50	QPSK	88.85	H	26.95	5.26	121.06	-95.26	25.80	0.380
1 711.50		87.71	V	26.95	5.26	119.92	-95.26	24.66	0.292
1 745.00		90.69	H	26.82	5.18	122.69	-95.26	27.43	0.553
1 745.00		90.10	V	26.82	5.18	122.10	-95.26	26.84	0.483
1 778.50		88.67	H	26.80	5.25	120.72	-95.26	25.46	0.352
1 778.50		90.32	V	26.80	5.25	122.37	-95.26	27.11	0.514
1 711.50	16QAM	87.88	H	26.95	5.26	120.09	-95.26	24.83	0.304
1 711.50		86.83	V	26.95	5.26	119.04	-95.26	23.78	0.239
1 745.00		90.12	H	26.82	5.18	122.12	-95.26	26.86	0.485
1 745.00		89.31	V	26.82	5.18	121.31	-95.26	26.05	0.403
1 778.50		87.50	H	26.80	5.25	119.55	-95.26	24.29	0.269
1 778.50		89.43	V	26.80	5.25	121.48	-95.26	26.22	0.419

* 1 RB size / 0 Offset

LTE band 66/4 (5 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 712.50	QPSK	88.67	H	26.95	5.26	120.88	-95.26	25.62	0.365
1 712.50		87.38	V	26.95	5.26	119.59	-95.26	24.33	0.271
1 745.00		90.01	H	26.82	5.18	122.01	-95.26	26.75	0.473
1 745.00		90.14	V	26.82	5.18	122.14	-95.26	26.88	0.488
1 777.50		88.96	H	26.80	5.25	121.01	-95.26	25.75	0.376
1 777.50		90.57	V	26.80	5.25	122.62	-95.26	27.36	0.545
1 712.50	16QAM	87.38	H	26.95	5.26	119.59	-95.26	24.33	0.271
1 712.50		86.01	V	26.95	5.26	118.22	-95.26	22.96	0.198
1 745.00		89.75	H	26.82	5.18	121.75	-95.26	26.49	0.446
1 745.00		89.26	V	26.82	5.18	121.26	-95.26	26.00	0.398
1 777.50		87.73	H	26.80	5.25	119.78	-95.26	24.52	0.283
1 777.50		89.96	V	26.80	5.25	122.01	-95.26	26.75	0.473

* 1 RB size / 0 Offset

LTE band 66/4 (10 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 715.00	QPSK	88.89	H	26.94	5.24	121.07	-95.26	25.81	0.381
1 715.00		87.52	V	26.94	5.24	119.70	-95.26	24.44	0.278
1 745.00		90.79	H	26.82	5.18	122.79	-95.26	27.53	0.566
1 745.00		90.01	V	26.82	5.18	122.01	-95.26	26.75	0.473
1 775.00		89.01	H	26.80	5.24	121.05	-95.26	25.79	0.379
1 775.00		91.00	V	26.80	5.24	123.04	-95.26	27.78	0.600
1 715.00	16QAM	88.01	H	26.94	5.24	120.19	-95.26	24.93	0.311
1 715.00		86.76	V	26.94	5.24	118.94	-95.26	23.68	0.233
1 745.00		90.11	H	26.82	5.18	122.11	-95.26	26.85	0.484
1 745.00		89.23	V	26.82	5.18	121.23	-95.26	25.97	0.395
1 775.00		88.31	H	26.80	5.24	120.35	-95.26	25.09	0.323
1 775.00		90.27	V	26.80	5.24	122.31	-95.26	27.05	0.507

* 1 RB size / 0 Offset

LTE band 66/4 (15 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 717.50	QPSK	88.99	H	26.93	5.22	121.14	-95.26	25.88	0.387
1 717.50		87.47	V	26.93	5.22	119.62	-95.26	24.36	0.273
1 745.00		90.48	H	26.82	5.18	122.48	-95.26	27.22	0.527
1 745.00		90.33	V	26.82	5.18	122.33	-95.26	27.07	0.509
1 772.50		88.98	H	26.80	5.24	121.02	-95.26	25.76	0.377
1 772.50		90.92	V	26.80	5.24	122.96	-95.26	27.70	0.589
1 717.50	16QAM	88.13	H	26.93	5.22	120.28	-95.26	25.02	0.318
1 717.50		86.86	V	26.93	5.22	119.01	-95.26	23.75	0.237
1 745.00		89.51	H	26.82	5.18	121.51	-95.26	26.25	0.422
1 745.00		89.43	V	26.82	5.18	121.43	-95.26	26.17	0.414
1 772.50		88.02	H	26.80	5.24	120.06	-95.26	24.80	0.302
1 772.50		89.81	V	26.80	5.24	121.85	-95.26	26.59	0.456

* 1 RB size / 0 Offset

LTE band 66/4 (20 MHz)

Frequency (MHz)	Mode	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
								(dB m)	(W)
1 720.00	QPSK	88.73	H	26.92	5.20	120.85	-95.26	25.59	0.362
1 720.00		87.55	V	26.92	5.20	119.67	-95.26	24.41	0.276
1 745.00		90.45	H	26.82	5.18	122.45	-95.26	27.19	0.524
1 745.00		90.05	V	26.82	5.18	122.05	-95.26	26.79	0.478
1 770.00		89.45	H	26.80	5.23	121.48	-95.26	26.22	0.419
1 770.00		91.60	V	26.80	5.23	123.63	-95.26	28.37	0.687
1 720.00	16QAM	87.96	H	26.92	5.20	120.08	-95.26	24.82	0.303
1 720.00		86.64	V	26.92	5.20	118.76	-95.26	23.50	0.224
1 745.00		89.67	H	26.82	5.18	121.67	-95.26	26.41	0.438
1 745.00		89.24	V	26.82	5.18	121.24	-95.26	25.98	0.396
1 770.00		88.61	H	26.80	5.23	120.64	-95.26	25.38	0.345
1 770.00		90.89	V	26.80	5.23	122.92	-95.26	27.66	0.583

* 1 RB size / 0 Offset

Remark;

1. AF = Antenna Factor, CL = Cable Loss, CF = Conversion Factor.
2. E (dBμV/m) = Measured Level (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB).
3. E.I.R.P. (dB m) = E (dBμV/m) + CF (dB).
4. E.R.P. (dB m) = E (dBμV/m) + CF (dB) - 2.15 (dB); where E.R.P. and E.I.R.P. are expressed in consistent units.
5. CF (dB) = 20 log D - 104.8; where D is the measurement distance in meters, According to KDB 971168 D01 v03r01 5.8.4.

2.5. Spurious radiated emission

LTE band 2 (1.4 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 850.7 MHz)									
3 700.39	49.24	H	32.30	-37.08	44.46	-95.26	-50.80	-13	37.80
3 700.20	46.33	V	32.30	-37.08	41.55	-95.26	-53.71	-13	40.71
5 550.79	64.17	H	34.00	-34.60	63.57	-95.26	-31.69	-13	18.69
5 550.86	59.11	V	34.00	-34.60	58.51	-95.26	-36.75	-13	23.75
7 402.83	49.10	H	36.00	-34.11	50.99	-95.26	-44.27	-13	31.27
7 401.04	50.58	V	36.00	-34.10	52.48	-95.26	-42.78	-13	29.78
Middle Channel (1 880.0 MHz)									
3 759.07	50.35	H	32.22	-37.19	45.38	-95.26	-49.88	-13	36.88
3 759.10	47.13	V	32.22	-37.19	42.16	-95.26	-53.10	-13	40.10
5 638.68	64.06	H	34.00	-34.73	63.33	-95.26	-31.93	-13	18.93
5 638.62	58.92	V	34.00	-34.73	58.19	-95.26	-37.07	-13	24.07
7 520.08	52.12	H	36.00	-34.19	53.93	-95.26	-41.33	-13	28.33
7 518.22	57.74	V	36.00	-34.20	59.54	-95.26	-35.72	-13	22.72
High Channel (1 909.3 MHz)									
3 817.87	49.77	H	32.30	-36.95	45.12	-95.26	-50.14	-13	37.14
3 817.54	47.60	V	32.30	-36.95	42.95	-95.26	-52.31	-13	39.31
5 726.54	59.97	H	34.05	-34.56	59.46	-95.26	-35.80	-13	22.80
5 726.57	58.35	V	34.05	-34.56	57.84	-95.26	-37.42	-13	24.42
7 637.19	51.70	H	36.00	-33.85	53.85	-95.26	-41.41	-13	28.41
7 635.51	54.43	V	36.00	-33.84	56.59	-95.26	-38.67	-13	25.67

* 1 RB size / 0 Offset

LTE band 2 (3 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 851.5 MHz)									
3 700.53	49.51	H	32.30	-37.08	44.73	-95.26	-50.53	-13	37.53
3 700.41	46.02	V	32.30	-37.08	41.24	-95.26	-54.02	-13	41.02
5 550.65	63.78	H	34.00	-34.60	63.18	-95.26	-32.08	-13	19.08
5 550.82	59.12	V	34.00	-34.60	58.52	-95.26	-36.74	-13	23.74
7 406.09	48.21	H	36.00	-34.13	50.08	-95.26	-45.18	-13	32.18
7 400.93	50.72	V	36.00	-34.10	52.62	-95.26	-42.64	-13	29.64
Middle Channel (1 880.0 MHz)									
3 757.44	50.24	H	32.21	-37.19	45.26	-95.26	-50.00	-13	37.00
3 757.74	46.11	V	32.22	-37.19	41.14	-95.26	-54.12	-13	41.12
5 636.31	63.85	H	34.00	-34.72	63.13	-95.26	-32.13	-13	19.13
5 636.22	58.62	V	34.00	-34.72	57.90	-95.26	-37.36	-13	24.36
7 519.98	52.23	H	36.00	-34.19	54.04	-95.26	-41.22	-13	28.22
7 514.95	57.71	V	36.00	-34.22	59.49	-95.26	-35.77	-13	22.77
High Channel (1 908.5 MHz)									
3 814.80	49.74	H	32.30	-36.96	45.08	-95.26	-50.18	-13	37.18
3 814.45	47.57	V	32.30	-36.96	42.91	-95.26	-52.35	-13	39.35
5 721.74	61.40	H	34.06	-34.56	60.90	-95.26	-34.36	-13	21.36
5 721.85	57.11	V	34.06	-34.56	56.61	-95.26	-38.65	-13	25.65
7 633.93	50.86	H	36.00	-33.82	53.04	-95.26	-42.22	-13	29.22
7 628.95	54.36	V	36.00	-33.78	56.58	-95.26	-38.68	-13	25.68

* 1 RB size / 0 Offset

LTE band 2 (5 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 852.5 MHz)									
3 700.69	49.84	H	32.30	-37.08	45.06	-95.26	-50.20	-13	37.20
3 702.35	45.14	V	32.30	-37.06	40.38	-95.26	-54.88	-13	41.88
5 551.05	63.66	H	34.00	-34.61	63.05	-95.26	-32.21	-13	19.21
5 551.00	58.92	V	34.00	-34.61	58.31	-95.26	-36.95	-13	23.95
7 409.92	48.86	H	36.00	-34.16	50.70	-95.26	-44.56	-13	31.56
7 401.37	50.75	V	36.00	-34.10	52.65	-95.26	-42.61	-13	29.61
Middle Channel (1 880.0 MHz)									
3 755.60	50.27	H	32.21	-37.18	45.30	-95.26	-49.96	-13	36.96
3 755.74	46.34	V	32.21	-37.18	41.37	-95.26	-53.89	-13	40.89
5 633.62	62.81	H	34.00	-34.71	62.10	-95.26	-33.16	-13	20.16
5 633.44	57.78	V	34.00	-34.71	57.07	-95.26	-38.19	-13	25.19
7 520.12	51.25	H	36.00	-34.19	53.06	-95.26	-42.20	-13	29.20
7 511.27	56.78	V	36.00	-34.24	58.54	-95.26	-36.72	-13	23.72
High Channel (1 907.5 MHz)									
3 810.74	50.35	H	32.30	-36.98	45.67	-95.26	-49.59	-13	36.59
3 810.60	47.24	V	32.30	-36.98	42.56	-95.26	-52.70	-13	39.70
5 716.07	61.51	H	34.07	-34.61	60.97	-95.26	-34.29	-13	21.29
5 716.04	57.36	V	34.07	-34.61	56.82	-95.26	-38.44	-13	25.44
7 630.01	50.63	H	36.00	-33.79	52.84	-95.26	-42.42	-13	29.42
7 621.48	53.53	V	36.00	-33.72	55.81	-95.26	-39.45	-13	26.45

* 1 RB size / 0 Offset

LTE band 2 (10 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 855.0 MHz)									
3 701.19	49.89	H	32.30	-37.07	45.12	-95.26	-50.14	-13	37.14
3 701.13	45.85	V	32.30	-37.07	41.08	-95.26	-54.18	-13	41.18
5 551.70	63.61	H	34.00	-34.62	62.99	-95.26	-32.27	-13	19.27
5 551.82	59.02	V	34.00	-34.62	58.40	-95.26	-36.86	-13	23.86
7 419.95	49.13	H	36.00	-34.23	50.90	-95.26	-44.36	-13	31.36
7 402.35	51.70	V	36.00	-34.11	53.59	-95.26	-41.67	-13	28.67
Middle Channel (1 880.0 MHz)									
3 751.13	50.36	H	32.20	-37.17	45.39	-95.26	-49.87	-13	36.87
3 751.20	46.39	V	32.20	-37.17	41.42	-95.26	-53.84	-13	40.84
5 626.83	62.16	H	34.00	-34.68	61.48	-95.26	-33.78	-13	20.78
5 626.66	58.19	V	34.00	-34.68	57.51	-95.26	-37.75	-13	24.75
7 519.99	52.40	H	36.00	-34.19	54.21	-95.26	-41.05	-13	28.05
7 502.32	57.81	V	36.00	-34.30	59.51	-95.26	-35.75	-13	22.75
High Channel (1 905.0 MHz)									
3 801.29	50.63	H	32.30	-37.01	45.92	-95.26	-49.34	-13	36.34
3 801.26	47.21	V	32.30	-37.01	42.50	-95.26	-52.76	-13	39.76
5 701.83	63.02	H	34.10	-34.71	62.41	-95.26	-32.85	-13	19.85
5 701.76	58.09	V	34.10	-34.71	57.48	-95.26	-37.78	-13	24.78
7 619.89	50.15	H	36.00	-33.70	52.45	-95.26	-42.81	-13	29.81
7 602.24	55.29	V	36.00	-33.54	57.75	-95.26	-37.51	-13	24.51

* 1 RB size / 0 Offset

LTE band 2 (15 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 857.5 MHz)									
3 701.60	49.57	H	32.30	-37.07	44.80	-95.26	-50.46	-13	37.46
3 701.89	45.85	V	32.30	-37.07	41.08	-95.26	-54.18	-13	41.18
5 552.54	63.35	H	34.00	-34.63	62.72	-95.26	-32.54	-13	19.54
5 552.56	58.92	V	34.00	-34.63	58.29	-95.26	-36.97	-13	23.97
7 430.04	49.43	H	36.00	-34.30	51.13	-95.26	-44.13	-13	31.13
7 403.42	52.31	V	36.00	-34.12	54.19	-95.26	-41.07	-13	28.07
Middle Channel (1 880.0 MHz)									
3 746.51	50.39	H	32.21	-37.12	45.48	-95.26	-49.78	-13	36.78
3 746.69	46.86	V	32.21	-37.12	41.95	-95.26	-53.31	-13	40.31
5 620.06	61.20	H	34.00	-34.71	60.49	-95.26	-34.77	-13	21.77
5 620.05	58.72	V	34.00	-34.71	58.01	-95.26	-37.25	-13	24.25
7 519.92	52.28	H	36.00	-34.19	54.09	-95.26	-41.17	-13	28.17
7 493.33	57.73	V	36.00	-34.33	59.40	-95.26	-35.86	-13	22.86
High Channel (1 902.5 MHz)									
3 791.63	50.42	H	32.28	-37.10	45.60	-95.26	-49.66	-13	36.66
3 791.83	46.24	V	32.28	-37.09	41.43	-95.26	-53.83	-13	40.83
5 687.62	63.05	H	34.08	-34.63	62.50	-95.26	-32.76	-13	19.76
5 687.63	58.17	V	34.08	-34.63	57.62	-95.26	-37.64	-13	24.64
7 609.96	50.91	H	36.00	-33.61	53.30	-95.26	-41.96	-13	28.96
7 583.47	56.25	V	36.00	-33.67	58.58	-95.26	-36.68	-13	23.68

* 1 RB size / 0 Offset

LTE band 2 (20 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 860.0 MHz)									
3 702.15	50.03	H	32.30	-37.07	45.26	-95.26	-50.00	-13	37.00
3 702.25	45.89	V	32.30	-37.07	41.12	-95.26	-54.14	-13	41.14
5 553.28	63.21	H	34.00	-34.64	62.57	-95.26	-32.69	-13	19.69
5 553.40	58.71	V	34.00	-34.64	58.07	-95.26	-37.19	-13	24.19
7 440.06	50.56	H	36.00	-34.36	52.20	-95.26	-43.06	-13	30.06
7 404.32	53.13	V	36.00	-34.13	55.00	-95.26	-40.26	-13	27.26
Middle Channel (1 880.0 MHz)									
3 742.33	50.20	H	32.22	-37.07	45.35	-95.26	-49.91	-13	36.91
3 742.11	47.28	V	32.22	-37.07	42.43	-95.26	-52.83	-13	39.83
5 613.27	59.51	H	34.00	-34.77	58.74	-95.26	-36.52	-13	23.52
5 613.37	58.64	V	34.00	-34.77	57.87	-95.26	-37.39	-13	24.39
7 520.03	52.22	H	36.00	-34.19	54.03	-95.26	-41.23	-13	28.23
7 484.32	57.79	V	36.00	-34.34	59.45	-95.26	-35.81	-13	22.81
High Channel (1 900.0 MHz)									
3 782.29	49.75	H	32.26	-37.17	44.84	-95.26	-50.42	-13	37.42
3 782.35	46.95	V	32.26	-37.17	42.04	-95.26	-53.22	-13	40.22
5 673.33	61.42	H	34.05	-34.56	60.91	-95.26	-34.35	-13	21.35
5 673.29	59.37	V	34.05	-34.56	58.86	-95.26	-36.40	-13	23.40
7 599.96	52.37	H	36.00	-33.52	54.85	-95.26	-40.41	-13	27.41
7 564.29	56.48	V	36.00	-33.86	58.62	-95.26	-36.64	-13	23.64

* 1 RB size / 0 Offset

LTE band 5 (1.4 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (824.7 MHz)									
2 472.80	63.05	H	28.41	-38.65	52.81	-97.41	-44.60	-13	31.60
2 472.83	63.33	V	28.41	-38.65	53.09	-97.41	-44.32	-13	31.32
Middle Channel (836.5 MHz)									
2 507.97	64.82	H	28.30	-38.50	54.62	-97.41	-42.79	-13	29.79
2 508.21	65.40	V	28.30	-38.50	55.20	-97.41	-42.21	-13	29.21
High Channel (848.3 MHz)									
2 543.62	62.04	H	28.30	-38.39	51.95	-97.41	-45.46	-13	32.46
2 543.57	64.39	V	28.30	-38.39	54.30	-97.41	-43.11	-13	30.11

* 1 RB size / 0 Offset

LTE band 5 (3 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (825.5 MHz)									
2 472.70	63.13	H	28.41	-38.65	52.89	-97.41	-44.52	-13	31.52
2 472.77	63.40	V	28.41	-38.65	53.16	-97.41	-44.25	-13	31.25
Middle Channel (836.5 MHz)									
2 505.78	65.18	H	28.30	-38.52	54.96	-97.41	-42.45	-13	29.45
2 505.65	64.70	V	28.30	-38.52	54.48	-97.41	-42.93	-13	29.93
High Channel (847.5 MHz)									
2 538.79	62.12	H	28.30	-38.38	52.04	-97.41	-45.37	-13	32.37
2 538.80	64.19	V	28.30	-38.38	54.11	-97.41	-43.30	-13	30.30

* 1 RB size / 0 Offset

LTE band 5 (5 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (826.5 MHz)									
2 473.05	62.86	H	28.41	-38.65	52.62	-97.41	-44.79	-13	31.79
2 473.08	62.56	V	28.41	-38.65	52.32	-97.41	-45.09	-13	32.09
Middle Channel (836.5 MHz)									
2 503.08	65.44	H	28.30	-38.54	55.20	-97.41	-42.21	-13	29.21
2 502.89	64.50	V	28.30	-38.54	54.26	-97.41	-43.15	-13	30.15
High Channel (846.5 MHz)									
2 532.99	62.93	H	28.30	-38.38	52.85	-97.41	-44.56	-13	31.56
2 533.13	64.56	V	28.30	-38.38	54.48	-97.41	-42.93	-13	29.93

* 1 RB size / 0 Offset

LTE band 5 (10 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (829.0 MHz)									
2 473.81	63.39	H	28.40	-38.65	53.14	-97.41	-44.27	-13	31.27
2 473.77	62.71	V	28.40	-38.65	52.46	-97.41	-44.95	-13	31.95
Middle Channel (836.5 MHz)									
2 496.26	67.50	H	28.31	-38.57	57.24	-97.41	-40.17	-13	27.17
2 496.29	65.05	V	28.31	-38.57	54.79	-97.41	-42.62	-13	29.62
High Channel (844.0 MHz)									
2 518.91	63.30	H	28.30	-38.42	53.18	-97.41	-44.23	-13	31.23
2 518.79	63.89	V	28.30	-38.42	53.77	-97.41	-43.64	-13	30.64

* 1 RB size / 0 Offset

LTE band 13 (5 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (779.5 MHz)									
1 554.72	72.61	H	25.09	-40.07	57.63	-97.41	-39.78	-13	26.78
1 554.66	72.64	V	25.09	-40.07	57.66	-97.41	-39.75	-13	26.75
2 332.01	82.79	H	27.87	-38.82	71.84	-97.41	-25.57	-13	12.57
2 331.97	79.13	V	27.87	-38.82	68.18	-97.41	-29.23	-13	16.23
3 886.73	54.64	H	32.45	-37.01	50.08	-97.41	-47.33	-13	34.33
3 886.90	57.62	V	32.45	-37.01	53.06	-97.41	-44.35	-13	31.35
Middle Channel (782.0 MHz)									
1 559.65	69.62	H	25.08	-40.08	54.62	-97.41	-42.79	-13	29.79
1 559.78	68.56	V	25.08	-40.08	53.56	-97.41	-43.85	-13	30.85
2 339.55	81.85	H	27.84	-38.79	70.90	-97.41	-26.51	-13	13.51
2 339.52	79.76	V	27.84	-38.79	68.81	-97.41	-28.60	-13	15.60
3 899.32	54.53	H	32.50	-36.95	50.08	-97.41	-47.33	-13	34.33
3 899.32	58.22	V	32.50	-36.95	53.77	-97.41	-43.64	-13	30.64
High Channel (784.5 MHz)									
1 564.61	69.92	H	25.07	-40.08	54.91	-97.41	-42.50	-13	29.50
1 564.63	68.78	V	25.07	-40.08	53.77	-97.41	-43.64	-13	30.64
2 347.05	81.57	H	27.81	-38.75	70.63	-97.41	-26.78	-13	13.78
2 347.06	79.97	V	27.81	-38.75	69.03	-97.41	-28.38	-13	15.38
3 911.63	55.12	H	32.45	-36.84	50.73	-97.41	-46.68	-13	33.68
3 911.72	58.20	V	32.45	-36.84	53.81	-97.41	-43.60	-13	30.60

* 1 RB size / 0 Offset

LTE band 13 (10 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.R.P. (dB m)	Limit (dB m)	Margin (dB)
Middle Channel (782.0 MHz)									
1 555.29	72.39	H	25.09	-40.07	57.41	-97.41	-40.00	-13	27.00
1 555.22	71.80	V	25.09	-40.07	56.82	-97.41	-40.59	-13	27.59
2 332.79	82.98	H	27.87	-38.82	72.03	-97.41	-25.38	-13	12.38
2 332.81	79.53	V	27.87	-38.82	68.58	-97.41	-28.83	-13	15.83
3 887.79	55.09	H	32.45	-37.01	50.53	-97.41	-46.88	-13	33.88
3 888.07	57.77	V	32.45	-37.01	53.21	-97.41	-44.20	-13	31.20

* 1 RB size / 0 Offset

LTE band 66/4 (1.4 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 710.7 MHz)									
3 420.40	55.26	H	31.02	-37.67	48.61	-95.26	-46.65	-13	33.65
3 420.56	52.09	V	31.02	-37.67	45.44	-95.26	-49.82	-13	36.82
5 130.79	48.93	H	33.46	-35.59	46.80	-95.26	-48.46	-13	35.46
5 130.74	54.58	V	33.46	-35.59	52.45	-95.26	-42.81	-13	29.81
6 842.95	48.28	H	35.39	-33.79	49.88	-95.26	-45.38	-13	32.38
6 842.78	49.44	V	35.39	-33.79	51.04	-95.26	-44.22	-13	31.22
Middle Channel (1 745.0 MHz)									
3 489.09	53.01	H	31.20	-37.45	46.76	-95.26	-48.50	-13	35.50
3 489.13	52.04	V	31.20	-37.45	45.79	-95.26	-49.47	-13	36.47
5 233.61	52.64	H	33.67	-35.06	51.25	-95.26	-44.01	-13	31.01
5 233.68	56.59	V	33.67	-35.06	55.20	-95.26	-40.06	-13	27.06
6 980.06	49.12	H	35.50	-33.51	51.11	-95.26	-44.15	-13	31.15
6 980.01	49.78	V	35.50	-33.51	51.77	-95.26	-43.49	-13	30.49
High Channel (1 779.3 MHz)									
3 557.59	51.53	H	31.13	-36.98	45.68	-95.26	-49.58	-13	36.58
3 557.80	51.88	V	31.13	-36.98	46.03	-95.26	-49.23	-13	36.23
5 336.47	56.53	H	33.87	-35.24	55.16	-95.26	-40.10	-13	27.10
5 336.66	51.85	V	33.87	-35.23	50.49	-95.26	-44.77	-13	31.77
7 117.26	49.43	H	35.63	-33.73	51.33	-95.26	-43.93	-13	30.93
7 117.28	48.11	V	35.63	-33.73	50.01	-95.26	-45.25	-13	32.25

* 1 RB size / 0 Offset

LTE band 66/4 (3 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 711.5 MHz)									
3 420.46	55.45	H	31.02	-37.67	48.80	-95.26	-46.46	-13	33.46
3 420.51	52.39	V	31.02	-37.67	45.74	-95.26	-49.52	-13	36.52
5 130.61	49.07	H	33.46	-35.59	46.94	-95.26	-48.32	-13	35.32
5 130.83	54.63	V	33.46	-35.59	52.50	-95.26	-42.76	-13	29.76
6 845.86	48.93	H	35.39	-33.78	50.54	-95.26	-44.72	-13	31.72
6 846.06	49.31	V	35.39	-33.78	50.92	-95.26	-44.34	-13	31.34
Middle Channel (1 745.0 MHz)									
3 487.36	52.90	H	31.20	-37.45	46.65	-95.26	-48.61	-13	35.61
3 487.51	51.66	V	31.20	-37.45	45.41	-95.26	-49.85	-13	36.85
5 231.31	51.68	H	33.66	-35.09	50.25	-95.26	-45.01	-13	32.01
5 231.36	56.20	V	33.66	-35.09	54.77	-95.26	-40.49	-13	27.49
6 979.97	48.98	H	35.50	-33.51	50.97	-95.26	-44.29	-13	31.29
6 980.03	49.24	V	35.50	-33.51	51.23	-95.26	-44.03	-13	31.03
High Channel (1 778.5 MHz)									
3 554.49	51.36	H	31.12	-36.96	45.52	-95.26	-49.74	-13	36.74
3 554.39	51.48	V	31.12	-36.96	45.64	-95.26	-49.62	-13	36.62
5 331.68	55.79	H	33.86	-35.28	54.37	-95.26	-40.89	-13	27.89
5 331.90	50.95	V	33.86	-35.28	49.53	-95.26	-45.73	-13	32.73
7 113.88	48.73	H	35.63	-33.74	50.62	-95.26	-44.64	-13	31.64
7 113.95	48.31	V	35.63	-33.74	50.20	-95.26	-45.06	-13	32.06

* 1 RB size / 0 Offset

LTE band 66/4 (5 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 712.5 MHz)									
3 420.68	55.67	H	31.02	-37.67	49.02	-95.26	-46.24	-13	33.24
3 420.75	52.32	V	31.02	-37.67	45.67	-95.26	-49.59	-13	36.59
5 130.99	49.15	H	33.46	-35.59	47.02	-95.26	-48.24	-13	35.24
5 131.03	54.47	V	33.46	-35.59	52.34	-95.26	-42.92	-13	29.92
6 850.01	49.58	H	35.40	-33.77	51.21	-95.26	-44.05	-13	31.05
6 849.94	49.14	V	35.40	-33.77	50.77	-95.26	-44.49	-13	31.49
Middle Channel (1 745.0 MHz)									
3 485.70	52.74	H	31.20	-37.46	46.48	-95.26	-48.78	-13	35.78
3 485.51	51.90	V	31.20	-37.46	45.64	-95.26	-49.62	-13	36.62
5 228.49	51.57	H	33.66	-35.12	50.11	-95.26	-45.15	-13	32.15
5 228.71	55.65	V	33.66	-35.12	54.19	-95.26	-41.07	-13	28.07
6 979.92	49.05	H	35.50	-33.51	51.04	-95.26	-44.22	-13	31.22
6 980.00	49.21	V	35.50	-33.51	51.20	-95.26	-44.06	-13	31.06
High Channel (1 777.5 MHz)									
3 550.66	51.86	H	31.10	-36.93	46.03	-95.26	-49.23	-13	36.23
3 550.63	51.46	V	31.10	-36.93	45.63	-95.26	-49.63	-13	36.63
5 326.13	55.08	H	33.85	-35.33	53.60	-95.26	-41.66	-13	28.66
5 326.14	50.40	V	33.85	-35.33	48.92	-95.26	-46.34	-13	33.34
7 109.95	49.35	H	35.62	-33.76	51.21	-95.26	-44.05	-13	31.05
7 110.02	48.47	V	35.62	-33.76	50.33	-95.26	-44.93	-13	31.93

* 1 RB size / 0 Offset

LTE band 66/4 (10 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 715.0 MHz)									
3 421.22	55.41	H	31.03	-37.68	48.76	-95.26	-46.50	-13	33.50
3 421.30	52.76	V	31.03	-37.68	46.11	-95.26	-49.15	-13	36.15
5 131.81	48.74	H	33.46	-35.58	46.62	-95.26	-48.64	-13	35.64
5 131.84	54.71	V	33.46	-35.58	52.59	-95.26	-42.67	-13	29.67
6 860.09	50.34	H	35.42	-33.80	51.96	-95.26	-43.30	-13	30.30
6 859.97	49.89	V	35.42	-33.80	51.51	-95.26	-43.75	-13	30.75
Middle Channel (1 745.0 MHz)									
3 481.19	53.53	H	31.20	-37.49	47.24	-95.26	-48.02	-13	35.02
3 481.19	52.35	V	31.20	-37.49	46.06	-95.26	-49.20	-13	36.20
5 221.81	51.84	H	33.64	-35.22	50.26	-95.26	-45.00	-13	32.00
5 221.91	55.55	V	33.64	-35.22	53.97	-95.26	-41.29	-13	28.29
6 980.03	49.46	H	35.50	-33.51	51.45	-95.26	-43.81	-13	30.81
6 980.14	49.37	V	35.50	-33.51	51.36	-95.26	-43.90	-13	30.90
High Channel (1 775.0 MHz)									
3 541.24	51.65	H	31.12	-36.98	45.79	-95.26	-49.47	-13	36.47
3 541.37	51.24	V	31.12	-36.98	45.38	-95.26	-49.88	-13	36.88
5 311.80	54.90	H	33.82	-35.21	53.51	-95.26	-41.75	-13	28.75
5 311.77	48.95	V	33.82	-35.21	47.56	-95.26	-47.70	-13	34.70
7 100.07	49.57	H	35.60	-33.79	51.38	-95.26	-43.88	-13	30.88
7 099.98	48.90	V	35.60	-33.79	50.71	-95.26	-44.55	-13	31.55

* 1 RB size / 0 Offset

LTE band 66/4 (15 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 717.5 MHz)									
3 421.69	57.33	H	31.03	-37.68	50.68	-95.26	-44.58	-13	31.58
3 421.55	52.49	V	31.03	-37.68	45.84	-95.26	-49.42	-13	36.42
5 132.57	48.80	H	33.47	-35.58	46.69	-95.26	-48.57	-13	35.57
5 132.59	54.38	V	33.47	-35.58	52.27	-95.26	-42.99	-13	29.99
6 869.99	51.40	H	35.44	-33.85	52.99	-95.26	-42.27	-13	29.27
6 870.03	49.56	V	35.44	-33.85	51.15	-95.26	-44.11	-13	31.11
Middle Channel (1 745.0 MHz)									
3 476.57	57.64	H	31.20	-37.51	51.33	-95.26	-43.93	-13	30.93
3 476.68	51.88	V	31.20	-37.51	45.57	-95.26	-49.69	-13	36.69
5 215.02	52.17	H	33.63	-35.31	50.49	-95.26	-44.77	-13	31.77
5 215.19	56.34	V	33.63	-35.31	54.66	-95.26	-40.60	-13	27.60
6 980.08	50.39	H	35.50	-33.51	52.38	-95.26	-42.88	-13	29.88
6 979.97	49.41	V	35.50	-33.51	51.40	-95.26	-43.86	-13	30.86
High Channel (1 772.5 MHz)									
3 531.75	55.11	H	31.14	-37.04	49.21	-95.26	-46.05	-13	33.05
3 531.69	51.24	V	31.14	-37.04	45.34	-95.26	-49.92	-13	36.92
5 297.40	56.73	H	33.79	-35.00	55.52	-95.26	-39.74	-13	26.74
5 297.41	51.34	V	33.79	-35.00	50.13	-95.26	-45.13	-13	32.13
7 090.03	49.54	H	35.58	-33.76	51.36	-95.26	-43.90	-13	30.90
7 089.98	48.74	V	35.58	-33.76	50.56	-95.26	-44.70	-13	31.70

* 1 RB size / 0 Offset

LTE band 66/4 (20 MHz - QPSK)

Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (1 720.0 MHz)									
3 422.12	57.61	H	31.03	-37.68	50.96	-95.26	-44.30	-13	31.30
3 422.20	52.78	V	31.03	-37.68	46.13	-95.26	-49.13	-13	36.13
5 133.04	49.95	H	33.47	-35.58	47.84	-95.26	-47.42	-13	34.42
5 133.33	54.21	V	33.47	-35.58	52.10	-95.26	-43.16	-13	30.16
6 880.12	50.93	H	35.46	-33.88	52.51	-95.26	-42.75	-13	29.75
6 879.91	49.76	V	35.46	-33.88	51.34	-95.26	-43.92	-13	30.92
Middle Channel (1 745.0 MHz)									
3 472.06	58.72	H	31.20	-37.54	52.38	-95.26	-42.88	-13	29.88
3 472.29	52.51	V	31.20	-37.54	46.17	-95.26	-49.09	-13	36.09
5 208.22	52.59	H	33.62	-35.41	50.80	-95.26	-44.46	-13	31.46
5 208.41	57.34	V	33.62	-35.40	55.56	-95.26	-39.70	-13	26.70
6 979.94	50.88	H	35.50	-33.51	52.87	-95.26	-42.39	-13	29.39
6 980.03	49.91	V	35.50	-33.51	51.90	-95.26	-43.36	-13	30.36
High Channel (1 770.0 MHz)									
3 522.11	54.34	H	31.16	-37.12	48.38	-95.26	-46.88	-13	33.88
3 522.16	50.40	V	31.16	-37.12	44.44	-95.26	-50.82	-13	37.82
5 283.15	58.35	H	33.77	-34.59	57.53	-95.26	-37.73	-13	24.73
5 283.25	56.78	V	33.77	-34.59	55.96	-95.26	-39.30	-13	26.30
7 080.02	50.03	H	35.56	-33.73	51.86	-95.26	-43.40	-13	30.40
7 080.07	49.46	V	35.56	-33.73	51.29	-95.26	-43.97	-13	30.97

* 1 RB size / 0 Offset

Remark;

1. AF = Antenna Factor, AMP= Amplifier Gain, CL = Cable Loss, CF = Conversion Factor.
2. E (dBμV/m) = Measured Level (dBμV) + Antenna Factor (dB/m) + AMP (dB) + Cable Loss (dB).
3. E.I.R.P. (dB m) = E (dBμV/m) + CF (dB).
4. E.R.P. (dB m) = E (dBμV/m) + CF (dB) - 2.15 (dB); where E.R.P. and E.I.R.P. are expressed in consistent units.
5. CF (dB) = 20 log D - 104.8; where D is the measurement distance in meters, According to KDB 971168 D01 v03r01 5.8.4.

3. Occupied Bandwidth

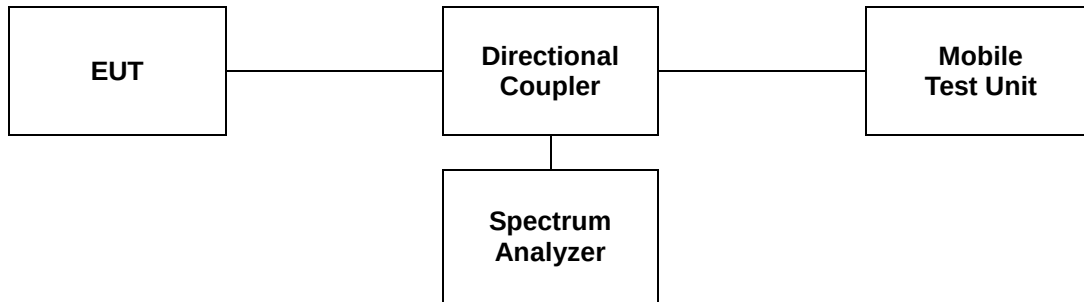
3.1. Limit

CFR 47, Section FCC §2.1049.

3.2. Test Procedure

The test follows section 5.4.4 of ANSI C63.26-2015.

- The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation. products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient).
- The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1 % to 5 % of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
- Set the detection mode to peak, and the trace mode to max-hold.
- If the instrument does not have a 99 % OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5 % of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5 % of the total is reached and record that frequency as the upper OBW frequency. The 99 % power OBW can be determined by computing the difference these two frequencies.
- The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).



3.3 Test Results

Ambient temperature : (23 ± 1) °C

Relative humidity : 47 % R.H.

Band	Bandwidth (MHz)	Frequency (MHz)	Occupied Bandwidth (MHz)	
			QPSK	16QAM
2	1.4	1 880.0	1.107	1.103
	3		2.692	2.692
	5		4.544	4.501
	10		8.944	8.944
	15		13.502	13.459
	20		17.887	17.945

Band	Bandwidth (MHz)	Frequency (MHz)	Occupied Bandwidth (MHz)	
			QPSK	16QAM
5	1.4	836.5	1.103	1.103
	3		2.692	2.683
	5		4.530	4.515
	10		8.944	8.973

Band	Bandwidth (MHz)	Frequency (MHz)	Occupied Bandwidth (MHz)	
			QPSK	16QAM
13	5	782.0	4.530	4.515
	10		8.973	8.944

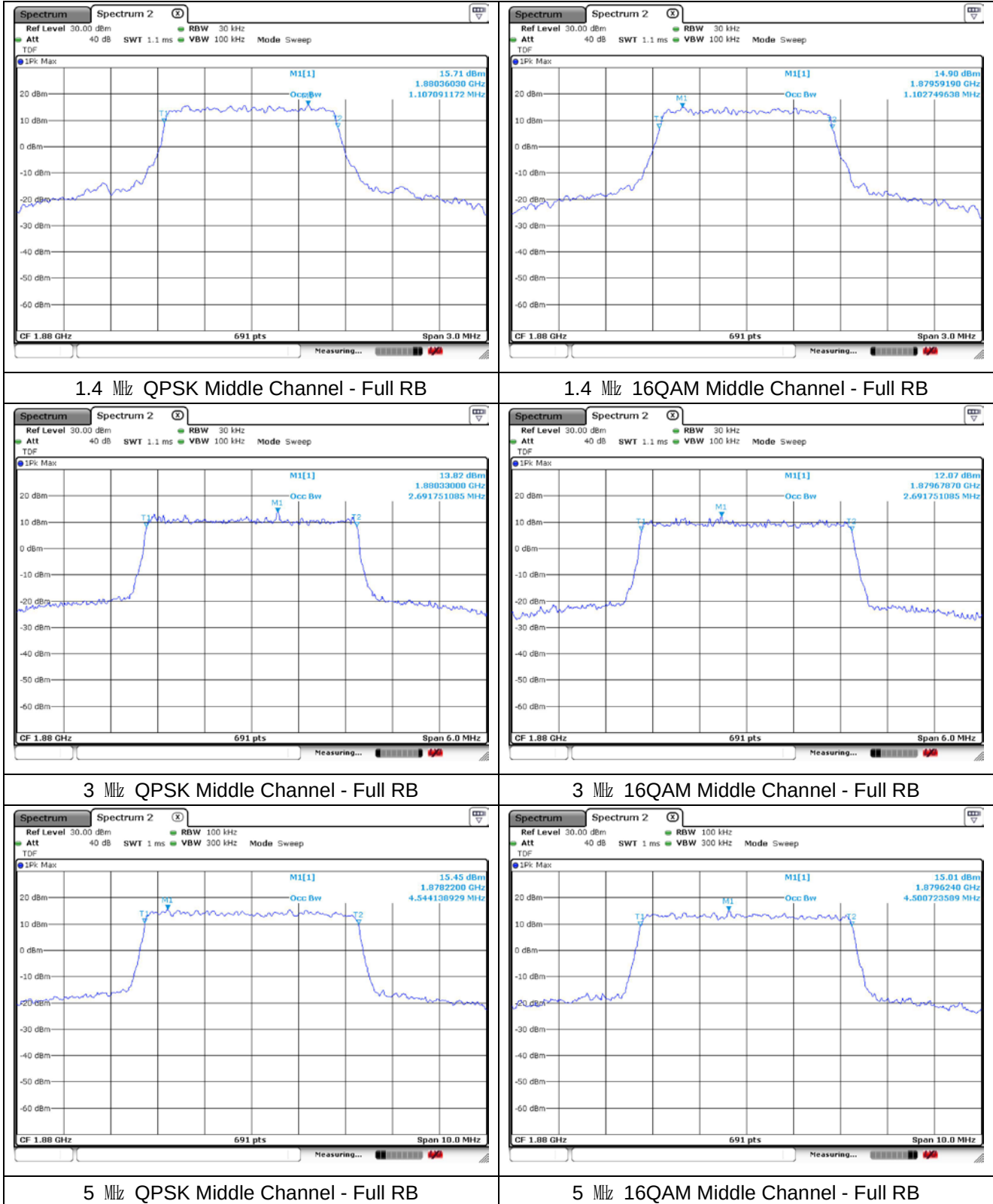
Band	Bandwidth (MHz)	Frequency (MHz)	Occupied Bandwidth (MHz)	
			QPSK	16QAM
66/4	1.4	1 745.0	1.098	1.098
	3		2.692	2.683
	5		4.515	4.515
	10		8.944	8.915
	15		13.459	13.459
	20		17.887	17.829

Note;

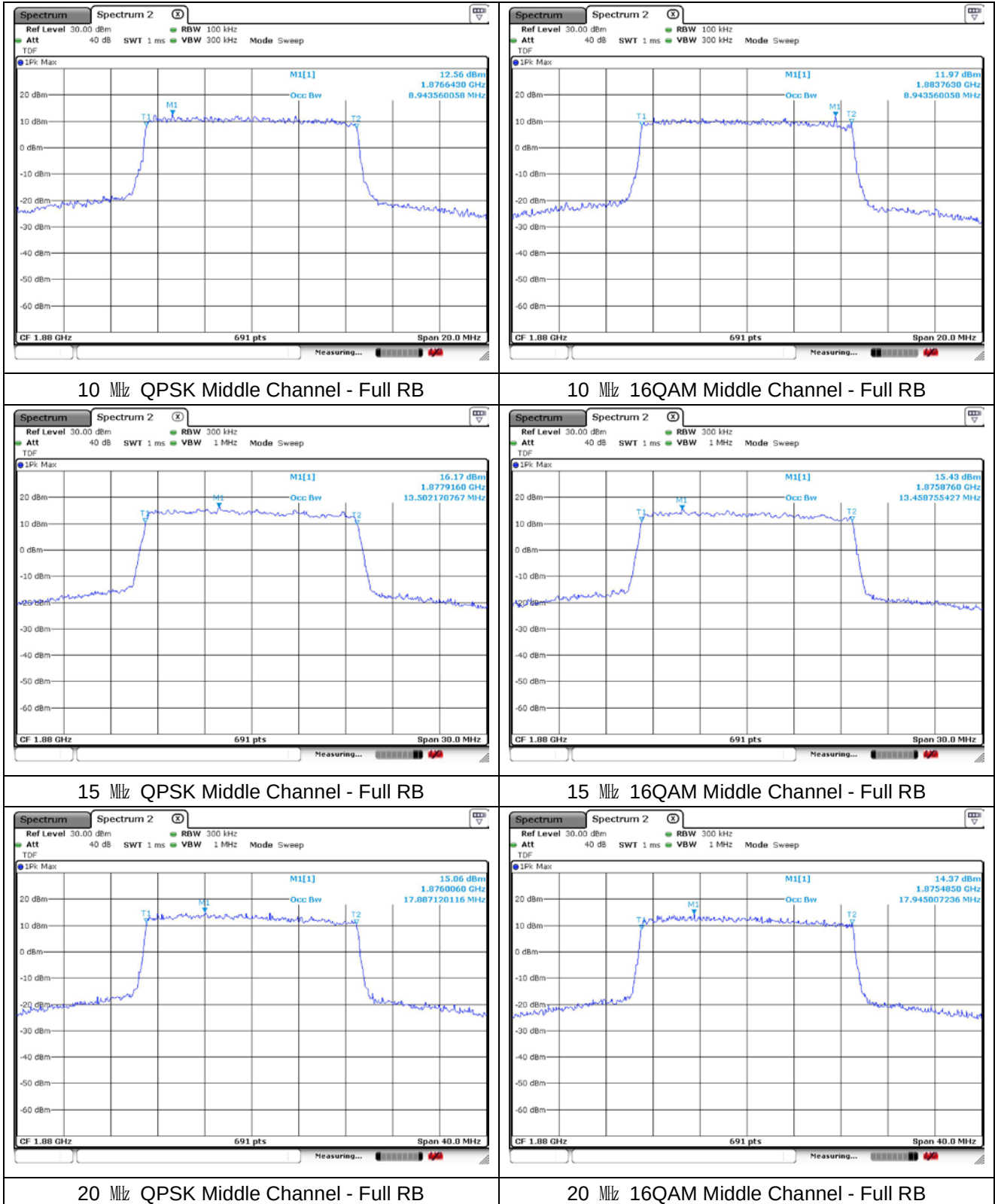
There is no limit required and power is the same for low, middle and high channel; therefore, all channels were tested but only middle channel was reported.

- Test plots

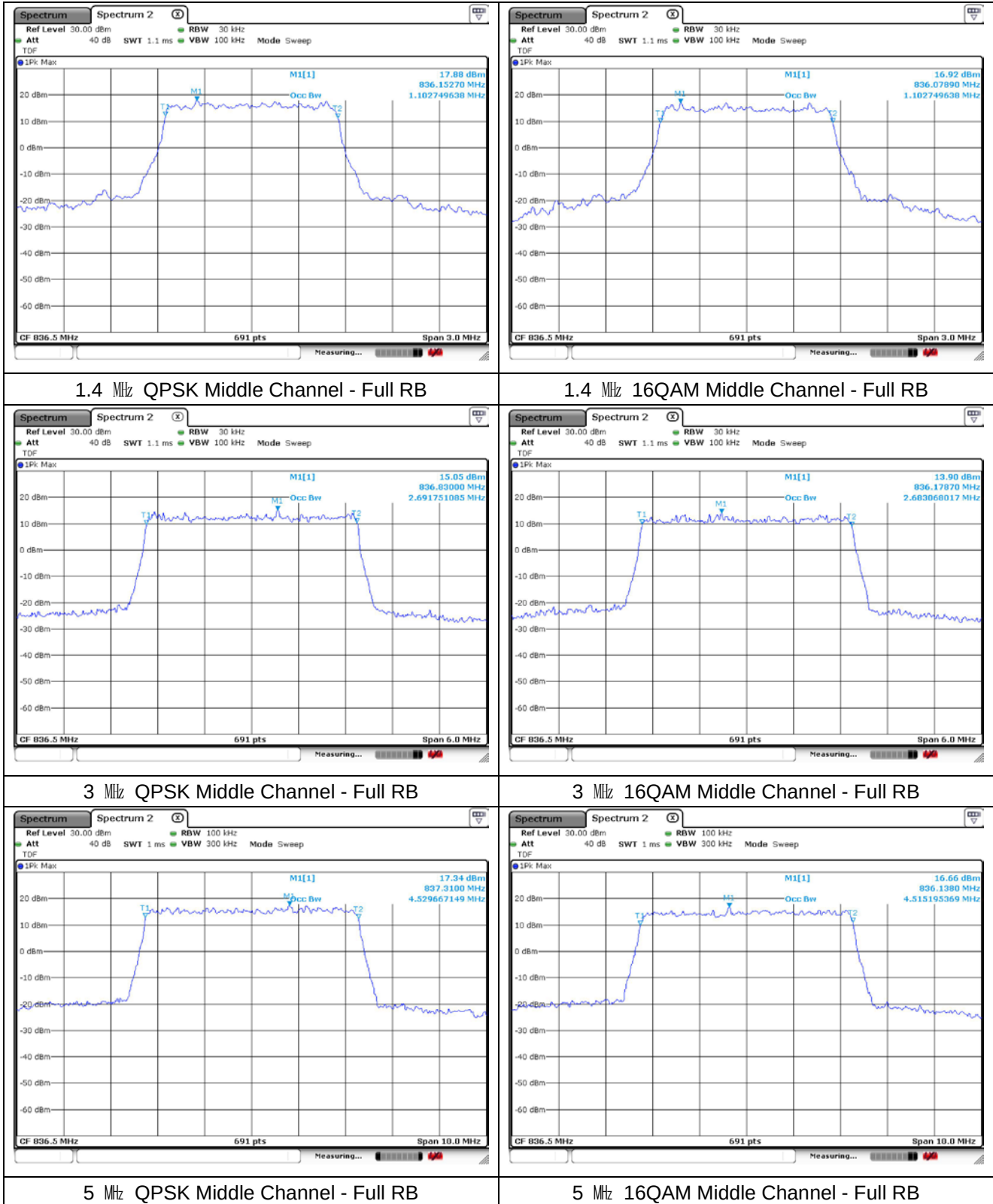
LTE band 2



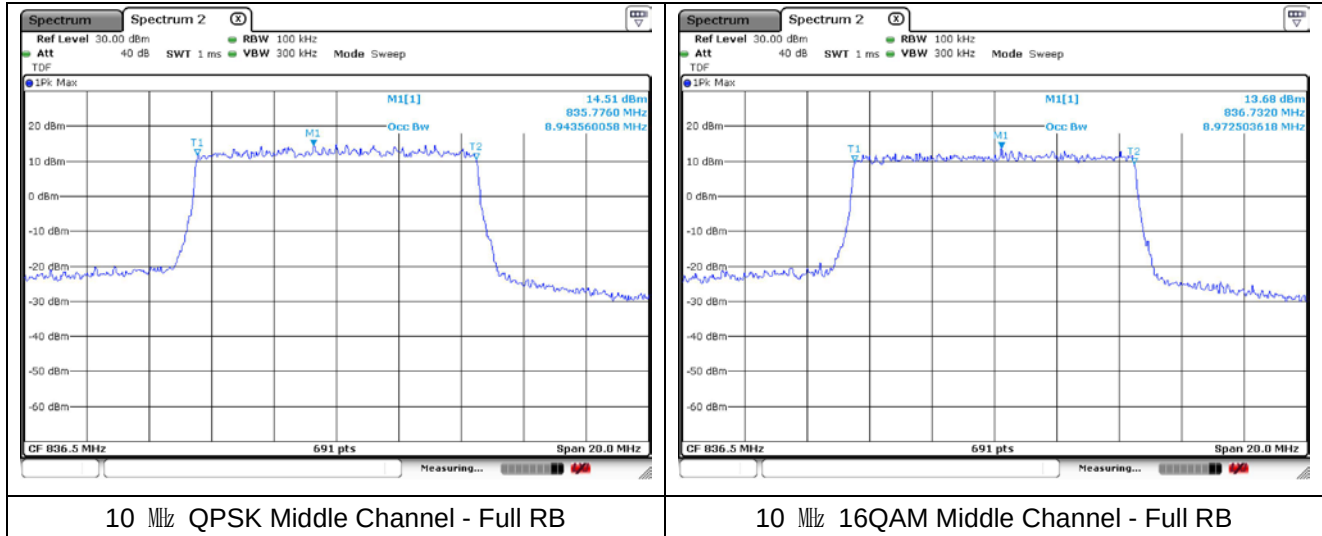
LTE band 2



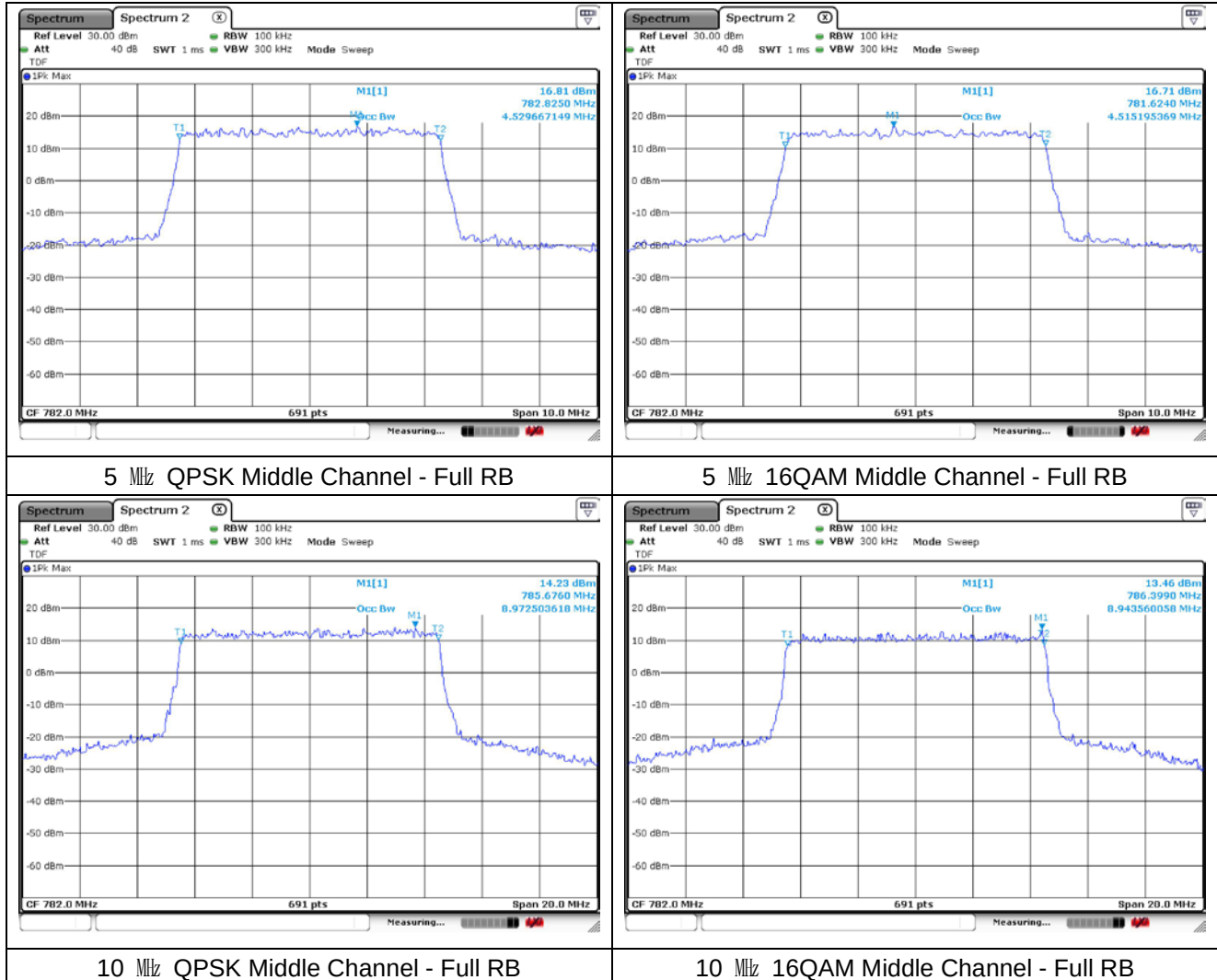
LTE band 5



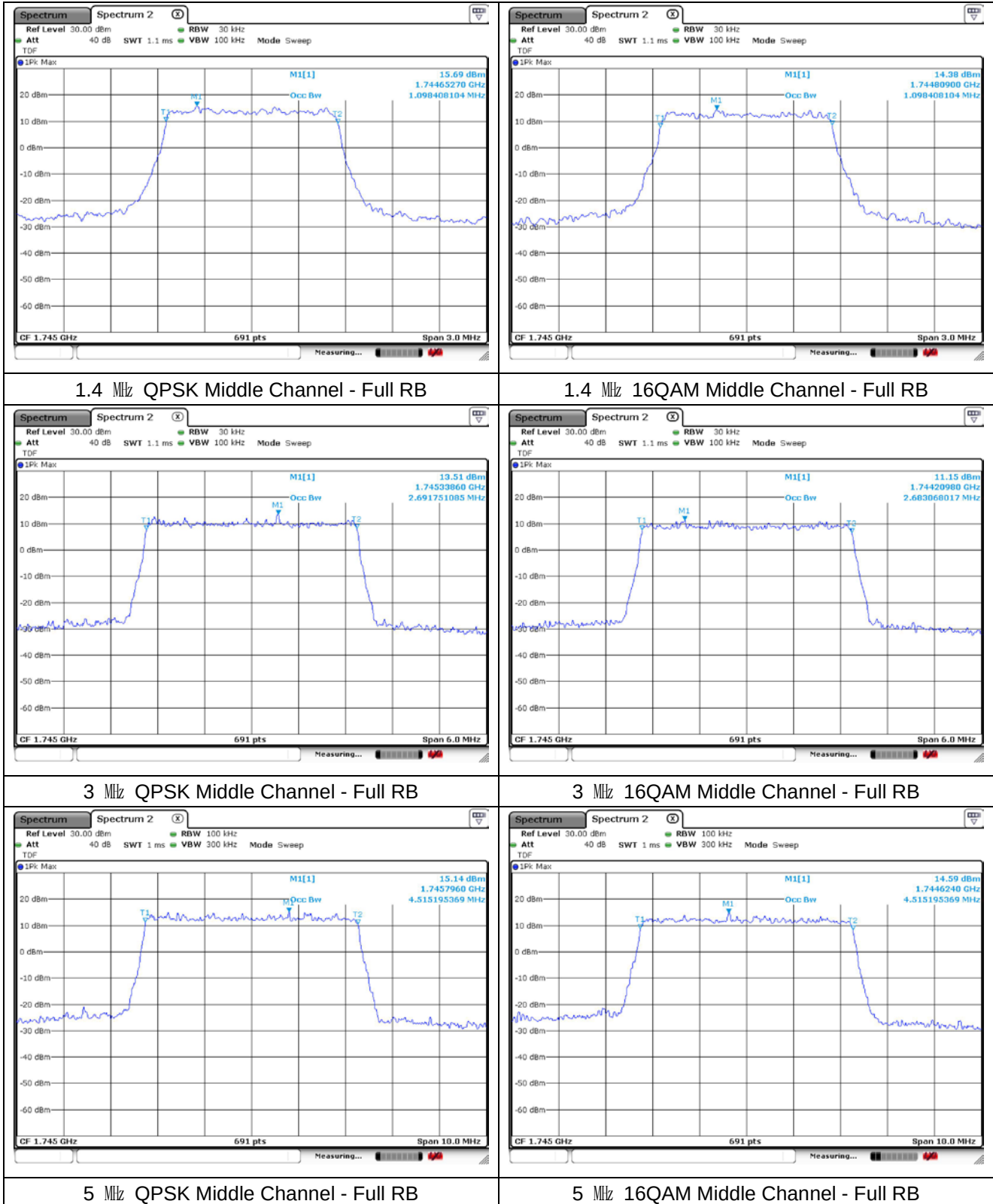
LTE band 5

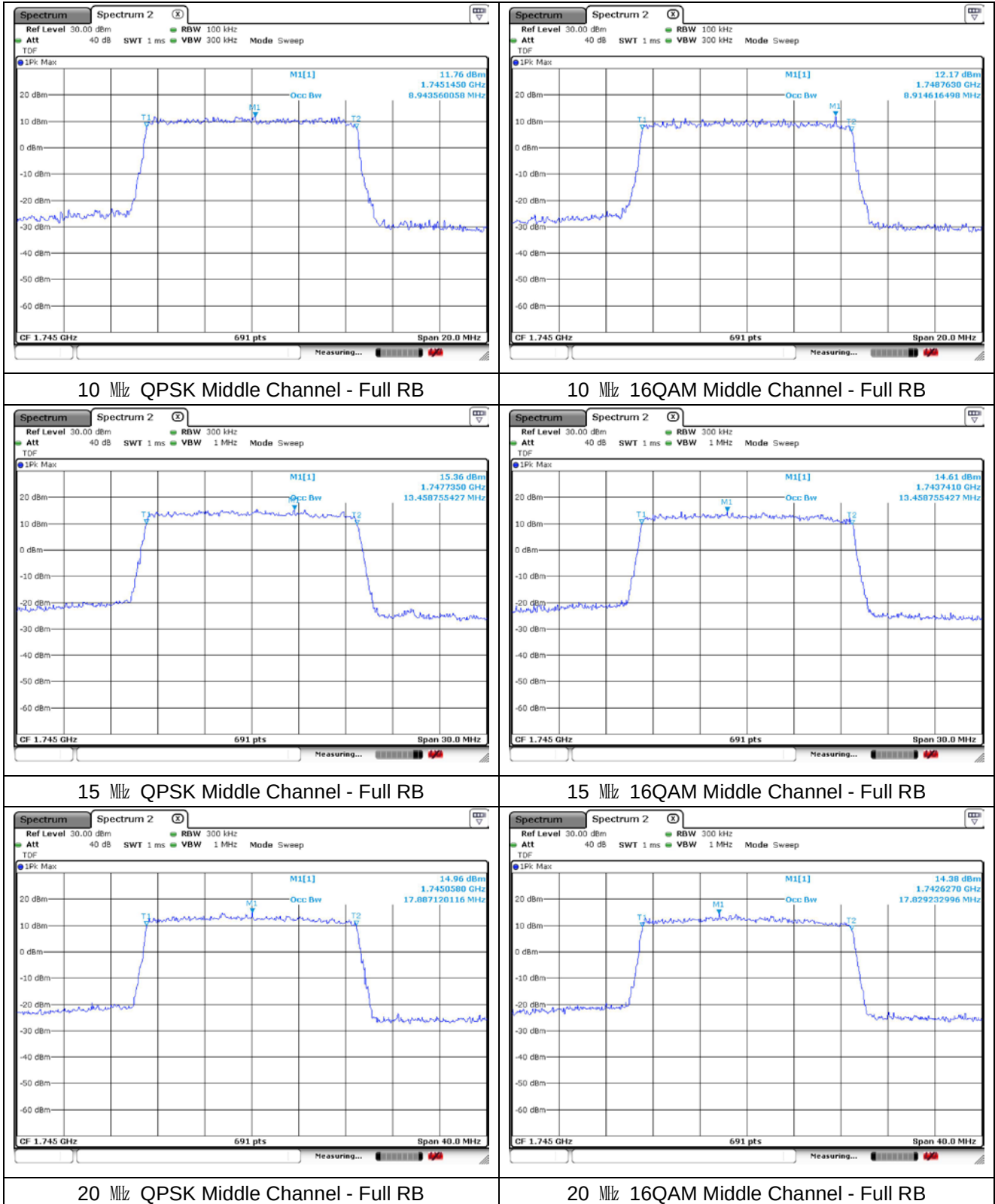


LTE band 13



LTE band 66/4



LTE band 66/4


4. Peak-Average Ratio

4.1. Limit

- §22.913(d), Measurement of the ERP of Cellular base transmitters and repeaters must be made using an average power measurement technique. The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB.

- §24.232(d), Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

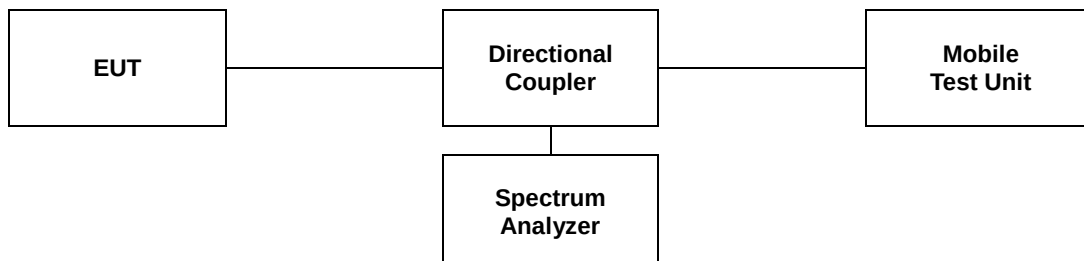
- §27.50(d)(5), Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

4.2. Test Procedure

The test follows section 5.2.3.4 of ANSI C63.26-2015.

See instrumentation-specific application literature for further guidance regarding use of the CCDF capability. The following guidelines are offered for performing a CCDF measurement.

- a. Set resolution/measurement bandwidth $\geq$ OBW or specified reference bandwidth.
- b. Set the number of counts to a value that stabilizes the measured CCDF curve.
- c. Set the measurement interval as follows:
 - 1) For continuous transmissions, set to greater of $[10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ or 1 ms.
 - 2) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize. Set the measurement interval to a time that is less than or equal to the burst duration.
 - 3) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.
- d. Record the maximum PAPR level associated with a probability of 0.1 %.
- e. The peak power level is calculated from the sum of the PAPR value from step d) to the measured average power.



4.3 Test Results

Ambient temperature : (23 ± 1) °C
Relative humidity : 47 % R.H.

Band	Bandwidth (MHz)	Mode	Frequency (MHz)	PAR (dB)
2	1.4	QPSK	1 850.7	3.94
			1 880.0	4.12
			1 909.3	4.49
	3	QPSK	1 851.5	3.97
			1 880.0	4.14
			1 908.5	4.29
	5	QPSK	1 852.5	4.14
			1 880.0	4.09
			1 907.5	4.26
	10	QPSK	1 855.0	4.29
			1 880.0	4.09
			1 905.0	4.17
	15	QPSK	1 857.5	4.67
			1 880.0	4.41
			1 902.5	4.41
	20	QPSK	1 860.0	4.46
			1 880.0	4.23
			1 900.0	4.26

Band	Bandwidth (MHz)	Mode	Frequency (MHz)	PAR (dB)
5	1.4	QPSK	824.7	4.26
			836.5	4.90
			848.3	4.43
	3	QPSK	825.5	4.17
			836.5	4.75
			847.5	4.29
	5	QPSK	826.5	4.20
			836.5	4.72
			846.5	4.26
	10	QPSK	829.0	4.35
			836.5	4.72
			844.0	4.29

Band	Bandwidth (MHz)	Mode	Frequency (MHz)	PAR (dB)
13	5	QPSK	779.5	4.61
			782.0	4.70
			784.5	4.67
	10	QPSK	782.0	4.81

Band	Bandwidth (MHz)	Mode	Frequency (MHz)	PAR (dB)
66/4	1.4	QPSK	1 710.7	4.72
			1 745.0	4.81
			1 779.3	4.55
	3	QPSK	1 711.5	4.64
			1 745.0	4.67
			1 778.5	4.49
	5	QPSK	1 712.5	4.67
			1 745.0	4.70
			1 777.5	4.52
	10	QPSK	1 715.0	4.64
			1 745.0	4.64
			1 775.0	4.35
	15	QPSK	1 717.5	4.96
			1 745.0	4.84
			1 772.5	4.64
	20	QPSK	1 720.0	4.70
			1 745.0	4.61
			1 770.0	4.52

- Test plots

LTE band 2

