FCC Part 27
FCC PART 22H, PART 24E, PART 90

For

Shanghai Sunmi Technology Co.,Ltd.

Room 505, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai, China

FCC ID: 2AH25T5940

Report Type:	**Product Name:**
CIIPC Report	Wireless data POS System

Report Number:	RKSA240109002-00D
Report Date:	2024-09-25
Reviewed By:	Bard Liu
Approved By:	Kyle Xu
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DOCUMENT HISTORY

Revision	Release Date	Report Number	Description of Revision
R1V1	2021-06-04	RKSA210422002-00D	Original report
R1V2	2024-09-25	RKSA240109002-00D	CIIPC Report

FILING DESCRIPTION

Report Number	Information about Changes
RKSA210422002-00D	First Release
RKSA240109002-00D	Adapter, LCD, Stepping Motor, Scan Engine, Modify part of the circuit

Note:

This is a CIIPC report application based on RKSA210422002-00D, grant date: 7/20/2021, the details as below:
For version B-B：
1. Delete an adapter: UC13US.
2. Add an LCD, its model is HS55ET16T6F, the supplier is Huashi Opto-Electronic Co., Ltd. and the specification is 5.45inch.
3. Add a stepping motor, its model is 15BY25-098, the supplier is SHENZHEN YOFON ELECTRONIC CO.， LTD and the specification is 5Vdc.
4. Add a scan engine, its model is NG004, the supplier is shanghai Sunmi Technology Co.,Ltd. and the specification is 3.3Vdc.
5. Modify part of the circuit which not affect RF performance

For above differences, we test RF Output Power, SPURIOUS RADIATED EMISSIONS(below 1GHz), updated relate photos, other data and photos refer to the original report RKSA210422002-00D that issued on 2021-06-04 by BACL (Kunshan).

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Shanghai Sunmi Technology Co.,Ltd.
Tested Model:	Wireless data POS System
Product Name:	T5940
Power Supply:	DC 7.7V from battery and DC 5.0V from adapter
RF Function:	GPRS/EGPRS, WCDMA, LTE
Operating Band/Frequency:	GPRS/EGPRS 850: 824-849 MHz(TX), 869-894 MHz(RX) GPRS/EGPRS 1900: 1850-1910MHz(TX), 1930-1990MHz(RX) WCDMA Band II: 1850-1910 MHz MHz(TX), 1930-1990 MHz(RX) WCDMA Band IV: 1710-1755 MHz(TX), 2110-2155MHz(RX) WCDMA Band V: 824-849 MHz(TX), 869-894 MHz(RX) LTE Band 2: 1850-1910 MHz(TX), 1930-1990MHz(RX) LTE Band 4: 1710-1755 MHz(TX), 2110-2155MHz(RX) LTE Band 5: 824-849 MHz(TX), 869-894 MHz(RX) LTE Band 7: 2500-2570 MHz(TX), 2620-2690 MHz(RX) LTE Band 12: 699-716 MHz(TX), 729-746 MHz(RX) LTE Band 17: 704-716 MHz(TX), 734-746 MHz(RX) LTE Band 25: 1850-1915 MHz(TX), 1930-1995 MHz(RX) LTE Band 26: 814-849 MHz(TX), 859-894 MHz(RX) LTE Band 40 Lower: 2305-2315 MHz(TX), 2305-2315 MHz(RX) LTE Band 40 Upper: 2350-2360 MHz(TX), 2350-2360 MHz(RX) LTE Band 41: 2555-2655 MHz(TX), 2555-2655 MHz(RX) LTE Band 66: 1710-1780 MHz(TX), 2110-2200 MHz(RX)
Modulation Type:	GPRS/EGPRS: GMSK,8PSK; WCDMA: BPSK, QPSK,16QAM LTE: QPSK,16QAM
Antenna Type:	FPC Antenna
★Maximum Antenna Gain:	GPRS/EGPRS 850: 0.07 dBi GPRS/EGPRS 1900: 2.0 dBi WCDMA Band II: 2.0 dBi WCDMA Band IV: 1.15 dBi WCDMA Band V: 0.07 dBi LTE Band 2: 2.0 dBi LTE Band 4: 1.15 dBi LTE Band 5: 0.07 dBi LTE Band 7: 0.42 dBi LTE Band 12: 2.0 dBi LTE Band 17: 2.0 dBi LTE Band 25: 2.0 dBi LTE Band 26: 2.0 dBi LTE Band 40: 2.0 dBi LTE Band 41: 2.0 dBi LTE Band 66: 1.15 dBi

Adapter Information:

Model: TPA-23A050200UU01

Input: AC100-240V 50/60Hz 0.3A

Output: 5.0V, 2000mA

Note: The maximum antenna gain was declared by the manufacturer.

All measurement and tested data in this report was gathered from production sample serial number: RKSA240109002-1 (Assigned by BACL (Kunshan). The EUT supplied by the applicant was received on 2024-01-09.)

Objective

This type approval report is prepared for *Shanghai Sunmi Technology Co.,Ltd.* in accordance with Part 2, Part 22-Subpart H and Part 24-Subpart E , Part 27 and Part 90 of the Federal Communication Commission's rules.

The objective is to determine the compliance of EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability, and band edge.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-Part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services
Part 27 – Miscellaneous wireless communications services
Part 90 – Private Land Mobile Radio Service

Applicable Standards: ANSI C63.26-2015.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19 dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	9 kHz~150 kHz	3.8dB
	150 kHz~30 MHz	3.4dB
	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
	18GHz~40GHz	5.65dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) is accredited in accordance with ISO/IEC 17025:2017 by NVLAP (Lab code: 600338-0), and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN5055.

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to ANSI C63.26-2015.

The final qualification test was performed with the EUT operating at normal mode.

Channel List

Mode		Channel		Frequency (MHz)
GPRS/EGPRS 850		Low	128	824.2
		Middle	190	836.6
		High	251	848.8
GPRS/EGPRS 1900		Low	512	1850.2
		Middle	661	1880.0
		High	810	1909.8
WCDMA Band II		Low	9262	1852.4
		Middle	9400	1880.0
		High	9538	1907.6
WCDMA Band IV		Low	1312	1712.4
		Middle	1413	1732.6
		High	1513	1752.6
WCDMA Band V		Low	4132	826.4
		Middle	4183	836.6
		High	4233	846.6
LTE Band 2	1.4M	Low	18607	1850.7
		Middle	18900	1880.0
		High	19193	1909.3
	3M	Low	18615	1851.5
		Middle	18900	1880.0
		High	19185	1908.5
	5M	Low	18625	1852.5
		Middle	18900	1880.0
		High	19175	1907.5
	10M	Low	18650	1855.0
		Middle	18900	1880.0
		High	19150	1905.0
	15M	Low	18675	1857.5
		Middle	18900	1880.0
		High	19125	1902.5
	20M	Low	18700	1860.0
		Middle	18900	1880.0
		High	19100	1900.0

Mode		Channel		Frequency (MHz)
LTE Band 4	1.4M	Low	19957	1710.7
		Middle	20175	1732.5
		High	20393	1754.3
	3M	Low	19965	1711.5
		Middle	20175	1732.5
		High	20385	1753.5
	5M	Low	19975	1712.5
		Middle	20175	1732.5
		High	20375	1752.5
	10M	Low	20000	1715.0
		Middle	20175	1732.5
		High	20350	1750.0
	15M	Low	20025	1717.5
		Middle	20175	1732.5
		High	20325	1747.5
	20M	Low	20050	1720.0
		Middle	20175	1732.5
		High	20300	1745.0
LTE Band 5	1.4M	Low	20407	824.7
		Middle	20525	836.5
		High	20643	848.3
	3M	Low	20415	825.5
		Middle	20525	836.5
		High	20635	847.5
	5M	Low	20425	826.5
		Middle	20525	836.5
		High	20625	846.5
	10M	Low	20450	829.0
		Middle	20525	836.5
		High	20600	844.0
LTE Band 7	5M	Low	20775	2502.5
		Middle	21100	2535.0
		High	21425	2567.5
	10M	Low	20800	2505.0
		Middle	21100	2535.0
		High	21400	2565.0
	15M	Low	20825	2507.5
		Middle	21100	2535.0
		High	21375	2562.5
	20M	Low	20850	2510.0
		Middle	21100	2535.0
		High	21350	2560.0

Mode		Channel		Frequency (MHz)
LTE Band 12	1.4M	Low	23017	699.7
		Middle	23095	707.5
		High	23173	715.3
	3M	Low	23025	700.5
		Middle	23095	707.5
		High	23165	714.5
	5M	Low	23035	701.5
		Middle	23095	707.5
		High	23155	713.5
	10M	Low	23060	704.0
		Middle	23095	707.5
		High	23130	711.0
LTE Band 17	5M	Low	23755	706.5
		Middle	23790	710.0
		High	23825	713.5
	10M	Low	23780	709.0
		Middle	23790	710.0
		High	23800	711.0
LTE Band 25	1.4M	Low	26047	1850.7
		Middle	26365	1882.5
		High	26683	1914.3
	3M	Low	26055	1851.5
		Middle	26683	1882.5
		High	26675	1913.5
	5M	Low	26065	1852.5
		Middle	26683	1882.5
		High	26665	1912.5
	10M	Low	26090	1855.0
		Middle	26683	1882.5
		High	26640	1910.0
	15M	Low	26115	1857.5
		Middle	26683	1882.5
		High	26615	1907.5
	20M	Low	26140	1860.0
		Middle	26683	1882.5
		High	26590	1905.0

Mode		Channel		Frequency (MHz)
LTE Band 26	1.4M	Low	26697	814.7
		Middle	26915	831.5
		High	27033	848.3
	3M	Low	26705	815.5
		Middle	26915	831.5
		High	27025	847.5
	5M	Low	26715	816.5
		Middle	26915	831.5
		High	27015	846.5
	10M	Low	26740	819.0
		Middle	26915	831.5
		High	26990	844.0
	15M	Low	26765	821.5
		Middle	26915	831.5
		High	26965	841.5
LTE Band 40 Lower 2305-2315MHz	5M	Low	38725	2307.5
		Middle	38750	2310.0
		High	38775	2312.5
	10M	/	38750	2310.0
LTE Band 40 Upper 2350-2360MHz	5M	Low	39175	2352.5
		Middle	39200	2355.0
		High	39225	2357.5
	10M	/	39200	2355.0

Mode		Channel		Frequency (MHz)
LTE Band 41	5M	Low	40265	2557.5
		Middle	40740	2605.0
		High	41215	2652.5
	10M	Low	40290	2560.0
		Middle	40740	2605.0
		High	41190	2650.0
	15M	Low	40315	2562.5
		Middle	40740	2605.0
		High	41165	2647.5
	20M	Low	40340	2565.0
		Middle	40740	2605.0
		High	41140	2645.0
LTE Band 66	1.4M	Low	131979	1710.7
		Middle	132322	1745.0
		High	132665	1779.3
	3M	Low	131987	1711.5
		Middle	132322	1745.0
		High	132657	1778.5
	5M	Low	131997	1712.5
		Middle	132333	1745.0
		High	132647	1777.5
	10M	Low	132022	1715.0
		Middle	132322	1745.0
		High	132622	1775.0
	15M	Low	132047	1717.5
		Middle	132300	1745.0
		High	132579	1772.5
	20M	Low	132072	1720.0
		Middle	132322	1745.0
		High	132572	1770.0

Equipment Modifications

No modifications were made to the EUT.

Support Equipment List and Details

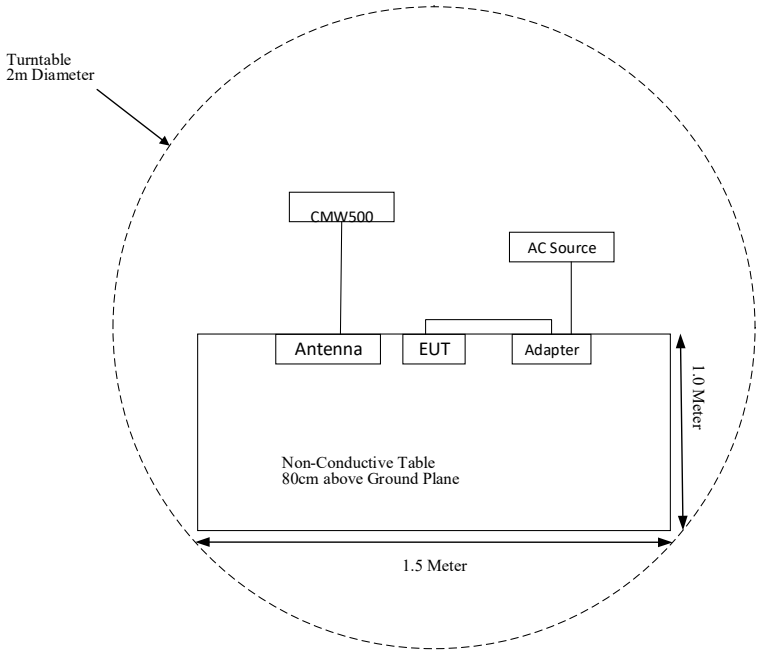
Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	104478

External I/O Cable

Cable Description	Length (m)	From Port	To
USB Cable	1.0	EUT	Adapter
Power Cable	1.0	Adapter	AC Source

Block Diagram of Test Setup

For Radiated Emissions (Below 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307(b)(1) & §2.1093	RF Exposure Information	Compliant
§2.1046; § 22.913 (a); §24.232 (c); §27.50 (a)(3) (c)(d) (h)(2); §90.635 (b)	RF Output Power	Reporting
§2.1047	Modulation Characteristics	Not Applicable
§2.1049; §22.905; §22.917; §24.238; §27.53; §90.209	Occupied Bandwidth	Compliant*
§2.1051; §22.917 (a); §24.238 (a); §27.53(a) (g) (h) (m); §90.691	Spurious Emissions at Antenna Terminal	Compliant*
§2.1053; §22.917 (a) §24.238 (a); §27.53 (a) (g) (h) (m); §90.691	Spurious Radiated Emissions below 1GHz	Compliant
§2.1053; §22.917 (a) §24.238 (a); §27.53 (a) (g) (h) (m); §90.691	Spurious Radiated Emissions above 1GHz	Compliant*
§22.917 (a); §24.238 (a); §27.53(a) (g) (h) (m); §90.691	Band Edge	Compliant*
§2.1055; §22.355; §24.235; §27.54; §90.213	Frequency stability	Compliant*

Compliant*：The changes will not affect test data，the data refer to the original report RKSA210422002-00D that issued on 2021-06-04 by BACL (Kunshan).

FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

FCC§1.1307, §2.1093.

Test Result

Compliance, please refer to the SAR report: RKSA240109002-20B.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test (Chamber #1)					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2023-05-23	2024-05-22
Keysight	Signal Generator	N5183A	MY47420304	2023-05-23	2024-05-22
Sunol Sciences	Hybrid Antenna	JB3	A090314-1	2023-11-11	2024-11-10
Sunol Sciences	Hybrid Antenna	JB3	A090314-2	2023-01-12	2026-01-11
Sonoma Instrument	Amplifier	310N	171205	2023-05-23	2024-05-22
Rohde & Schwarz	Auto Test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-7	007	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-8	008	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-9	009	2023-05-23	2024-05-22
MICRO-COAX	Coaxial Cable	Cable-10	010	2023-05-23	2024-05-22
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	104478	2023-05-22	2024-05-21
RF Conducted Test					
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	104478	2024-04-23	2025-04-22
Narda	Attenuator	10dB	010	2024-04-23	2025-04-22

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §2.1046; § 22.913 (a); §24.232 (c); §27.50 (a)(3) (c) (d) (h)(2); §90.635 (b) - RF OUTPUT POWER

Applicable Standards

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts (38.45dBm).

According to FCC §2.1046 and §24.232 (c), mobile and portable stations are limited to 2 watts (33dBm) EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(a) (3), Mobile and portable stations.(i) For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

According to §27.50(c), Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP

According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1780MHz.

According to §27.50(h) (2), Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

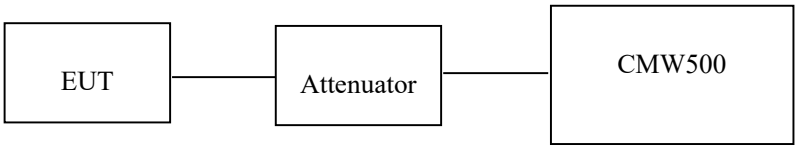
According to FCC §2.1046 and §90.635 (b), The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw)

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

Test Procedure

Conducted method:

The RF output of the transmitter was connected to the CMW500 through sufficient attenuation.



Test Data

Environmental Conditions

Temperature:	21.8 ℃
Relative Humidity:	51 %
ATM Pressure:	101.8kPa

The testing was performed by Bard Liu on 2024-09-25

Spot Check With Conducted Power:

GPRS/EGPRS 850 Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	33.37	31.28	30.76	29.50	38.45
	190	836.6	33.66	31.56	30.82	29.45	38.45
	251	848.8	33.15	31.19	30.54	29.32	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	27.09	26.81	25.85	24.65	38.45
	190	836.6	27.82	26.13	25.13	24.58	38.45
	251	848.8	27.04	26.19	25.59	25.00	38.45

WCDMA Band V

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band V)	Normal	Rel 99	1	22.07	21.95	22.13
		HSDPA	1	21.98	22.06	**22.26**
			2	21.99	22.08	22.04
			3	22.05	22.13	22.23
			4	22.14	22.11	22.10
		HSUPA	1	22.13	22.11	22.20
			2	22.17	21.98	22.06
			3	21.93	21.91	22.08
			4	22.07	21.95	22.13
			5	21.98	22.05	22.17
		HSPA+	1	22.08	22.15	22.21

PCS 1900 Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.66	28.09	27.45	26.13	33
	661	1880	29.30	28.84	27.32	26.19	33
	810	1909.8	29.33	28.14	27.46	26.16	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	25.23	24.85	23.33	22.90	33
	661	1880	25.01	24.07	23.16	22.31	33
	810	1909.8	25.33	24.43	23.51	22.79	33

WCDMA Band II

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band II)	Normal	Rel 99	1	22.20	22.03	22.24
		HSDPA	1	22.26	22.09	22.27
			2	22.24	22.01	22.13
			3	22.12	22.06	22.27
			4	22.24	22.13	22.18
		HSUPA	1	22.28	21.98	22.05
			2	22.22	21.97	22.16
			3	22.23	21.99	22.17
			4	22.22	21.99	22.20
			5	22.24	21.98	22.20
		HSPA+	1	**22.34**	21.99	22.08

WCDMA Band IV

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band IV)	Normal	Rel 99	1	22.34	22.07	22.18
		HSDPA	1	22.15	22.02	22.12
			2	22.22	21.95	22.25
			3	22.17	22.02	22.22
			4	22.20	21.98	22.19
		HSUPA	1	22.25	22.00	22.02
			2	22.17	22.14	22.09
			3	22.20	21.97	22.27
			4	**22.37**	22.13	22.24
			5	22.33	22.11	22.16
		HSPA+	1	22.30	22.10	22.10

Maximum Output Power:

LTE Band 2

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	21.45	21.93	21.56
		1#3	21.42	22.07	21.45
		1#5	21.70	22.00	21.04
		3#0	21.43	21.19	21.74
		3#1	22.24	21.29	21.49
		3#3	21.49	21.68	21.92
		6#0	21.74	21.72	21.03
	16-QAM	1#0	21.85	21.38	21.26
		1#3	21.68	21.86	21.85
		1#5	21.42	22.07	21.49
		3#0	22.15	21.94	22.01
		3#1	21.55	21.13	21.87
		3#3	22.05	21.62	21.41
		6#0	21.45	21.76	21.79
3M	QPSK	1#0	22.20	21.70	21.82
		1#7	21.93	21.68	21.54
		1#14	22.14	21.34	21.98
		8#0	22.06	21.99	21.27
		8#4	22.24	21.54	21.05
		8#7	21.35	21.48	21.81
		15#0	21.61	21.99	21.12
	16-QAM	1#0	21.37	21.93	21.93
		1#7	22.15	21.28	21.69
		1#14	22.03	21.22	21.31
		8#0	21.48	21.17	21.91
		8#4	21.61	21.40	21.83
		8#7	21.74	22.04	21.18
		15#0	22.13	21.95	21.66

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	22.22	21.94	21.74
		1#12	21.72	21.42	21.33
		1#24	21.76	21.36	21.83
		12#0	21.53	22.06	21.31
		12#6	22.08	21.75	21.14
		12#11	21.97	21.36	21.16
		25#0	21.76	21.27	21.72
	16-QAM	1#0	21.85	22.06	21.69
		1#12	22.21	21.47	21.26
		1#24	22.10	21.90	21.48
		12#0	22.21	21.72	21.65
		12#6	22.11	21.35	21.28
		12#11	21.89	21.26	21.72
		25#0	21.69	22.02	21.51
10M	QPSK	1#0	21.51	21.15	21.65
		1#24	21.88	22.03	21.92
		1#49	21.28	21.35	21.67
		25#0	21.78	21.58	21.40
		25#12	21.29	21.38	21.28
		25#24	21.30	21.30	21.39
		50#0	21.66	22.06	21.53
	16-QAM	1#0	22.23	21.90	21.04
		1#24	21.29	21.65	21.53
		1#49	21.38	21.96	21.75
		25#0	21.27	21.29	21.81
		25#12	21.87	22.05	21.48
		25#24	22.05	21.31	21.84
		50#0	21.31	21.54	21.88

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.98	22.11	21.30
		1#37	21.64	22.02	21.40
		1#74	21.75	21.51	21.57
		36#0	22.09	21.40	21.51
		36#17	21.34	21.56	21.45
		36#35	21.88	21.42	21.30
		75#0	21.43	22.04	21.88
	16-QAM	1#0	22.20	21.61	21.68
		1#37	21.65	21.24	21.17
		1#74	22.04	21.53	21.77
		36#0	21.46	21.68	21.57
		36#17	21.52	21.15	21.59
		36#35	21.91	21.14	21.86
		75#0	22.17	21.32	21.78
20M	QPSK	1#0	22.21	21.71	21.31
		1#49	21.39	21.46	21.66
		1#99	21.46	21.78	21.13
		50#0	21.41	21.62	21.27
		50#24	**22.26**	21.37	21.19
		50#49	21.78	21.82	21.28
		100#0	21.63	21.75	21.29
	16-QAM	1#0	22.07	21.21	21.12
		1#49	21.26	22.09	21.15
		1#99	22.10	21.51	21.53
		50#0	22.14	21.39	21.50
		50#24	21.45	21.22	21.10
		50#49	21.65	21.35	21.42
		100#0	21.44	21.88	21.11

LTE Band 4

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	**22.25**	21.63	21.35
		1#3	21.95	21.41	21.89
		1#5	21.76	21.86	21.37
		3#0	22.07	21.70	21.78
		3#1	22.01	21.17	21.23
		3#3	21.89	21.34	21.18
		6#0	22.12	22.00	21.38
	16-QAM	1#0	21.65	21.64	21.16
		1#3	21.35	21.24	21.34
		1#5	21.87	21.95	21.80
		3#0	21.99	21.53	21.87
		3#1	22.05	21.65	21.74
		3#3	21.64	21.79	21.16
		6#0	21.57	21.37	21.46
3M	QPSK	1#0	22.23	21.66	21.48
		1#7	22.01	21.26	21.60
		1#14	21.85	21.50	22.01
		8#0	21.71	21.57	21.22
		8#4	21.41	21.48	21.26
		8#7	21.36	21.54	21.49
		15#0	21.54	21.28	21.07
	16-QAM	1#0	22.05	21.33	21.59
		1#7	21.68	21.27	21.39
		1#14	21.49	21.63	21.44
		8#0	21.88	21.35	21.93
		8#4	21.48	21.24	21.19
		8#7	22.12	21.61	21.17
		15#0	22.16	22.05	21.46

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.91	21.37	21.07
		1#12	21.87	21.31	21.91
		1#24	21.84	21.62	21.34
		12#0	21.35	21.14	21.18
		12#6	21.71	21.67	21.99
		12#11	21.63	21.46	21.97
		25#0	21.59	22.07	21.06
	16-QAM	1#0	21.34	22.01	21.03
		1#12	21.84	22.08	21.47
		1#24	21.26	21.70	21.45
		12#0	21.83	21.35	21.22
		12#6	21.49	21.16	21.83
		12#11	21.30	21.37	21.85
		25#0	21.88	21.48	21.68
10M	QPSK	1#0	22.18	21.84	21.64
		1#24	21.62	21.13	21.05
		1#49	21.26	21.25	21.34
		25#0	21.51	21.81	21.69
		25#12	21.50	21.65	21.81
		25#24	21.45	21.31	21.10
		50#0	21.37	21.12	21.07
	16-QAM	1#0	21.63	22.10	21.44
		1#24	21.50	21.90	21.31
		1#49	21.65	21.94	21.99
		25#0	21.69	21.22	21.34
		25#12	21.93	22.08	21.31
		25#24	21.76	21.40	21.44
		50#0	22.14	21.70	21.61

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.66	21.40	21.38
		1#37	22.21	21.62	21.57
		1#74	21.47	21.92	21.20
		36#0	22.16	21.20	21.68
		36#17	22.25	21.74	21.61
		36#35	22.20	21.58	21.17
		75#0	21.92	21.48	21.47
	16-QAM	1#0	21.26	21.83	21.34
		1#37	21.98	21.81	21.52
		1#74	21.76	21.35	21.55
		36#0	22.20	21.21	21.25
		36#17	21.44	21.85	21.94
		36#35	22.03	21.89	21.43
		75#0	21.85	21.97	21.20
20M	QPSK	1#0	21.35	21.75	21.41
		1#49	21.45	22.07	21.91
		1#99	21.97	21.90	21.11
		50#0	21.90	21.26	21.23
		50#24	21.87	21.92	21.10
		50#49	21.97	21.40	21.42
		100#0	21.76	21.87	21.72
	16-QAM	1#0	22.00	21.17	21.23
		1#49	21.75	22.04	21.11
		1#99	21.45	22.06	21.81
		50#0	21.33	21.35	21.90
		50#24	21.77	21.98	21.11
		50#49	21.94	21.42	21.76
		100#0	22.01	21.30	21.40

LTE Band 5

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	21.35	21.42	21.17
		1#3	22.15	22.06	21.66
		1#5	22.06	21.88	22.00
		3#0	21.95	22.05	21.47
		3#1	21.65	21.73	21.97
		3#3	22.14	21.91	21.91
		6#0	21.95	21.33	21.60
	16-QAM	1#0	21.44	21.52	21.97
		1#3	21.83	21.76	21.67
		1#5	21.35	21.20	21.17
		3#0	**22.24**	21.77	21.71
		3#1	22.12	21.13	21.88
		3#3	21.62	21.49	21.07
		6#0	21.85	21.89	21.92
3M	QPSK	1#0	21.43	22.08	21.60
		1#7	21.44	21.91	21.72
		1#14	21.67	21.89	21.73
		8#0	21.96	21.61	21.74
		8#4	22.12	21.89	21.72
		8#7	21.53	22.05	21.56
		15#0	22.15	21.41	21.88
	16-QAM	1#0	21.71	22.11	21.22
		1#7	21.64	21.63	21.89
		1#14	22.04	21.87	21.08
		8#0	21.78	21.66	21.95
		8#4	21.33	21.57	21.39
		8#7	21.60	21.45	21.26
		15#0	21.50	21.51	21.45

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.98	22.09	21.61
		1#12	22.20	22.08	21.17
		1#24	21.99	21.95	21.55
		12#0	21.27	21.54	21.08
		12#6	21.75	21.49	21.67
		12#11	22.00	21.88	21.84
		25#0	21.60	21.69	21.63
	16-QAM	1#0	21.73	21.87	21.66
		1#12	21.63	22.07	21.23
		1#24	21.47	21.21	21.12
		12#0	21.42	21.14	21.22
		12#6	21.38	21.40	21.66
		12#11	21.73	21.23	21.27
		25#0	21.99	21.23	21.34
10M	QPSK	1#0	21.58	21.21	21.42
		1#24	21.79	21.68	21.50
		1#49	21.31	21.65	21.80
		25#0	21.72	21.97	21.83
		25#12	21.99	21.79	21.61
		25#24	21.68	21.84	21.39
		50#0	21.76	21.81	21.90
	16-QAM	1#0	21.31	21.76	21.61
		1#24	21.51	22.08	21.16
		1#49	21.49	21.96	21.58
		25#0	21.41	22.08	21.73
		25#12	22.02	22.07	21.48
		25#24	21.67	22.03	21.53
		50#0	21.28	21.91	21.07

LTE Band 7

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.94	21.43	21.21
		1#12	21.66	21.66	21.12
		1#24	22.09	21.26	21.83
		12#0	22.21	21.48	21.62
		12#6	21.93	21.27	22.01
		12#11	21.62	21.74	21.93
		25#0	21.34	21.35	21.89
	16-QAM	1#0	21.92	21.80	21.66
		1#12	21.34	**22.26**	21.54
		1#24	21.94	21.71	21.30
		12#0	21.62	22.14	21.42
		12#6	21.33	21.84	21.06
		12#11	21.64	22.09	21.23
		25#0	22.24	22.11	21.69
10M	QPSK	1#0	21.95	21.56	21.74
		1#24	21.79	22.22	21.47
		1#49	21.48	21.67	21.85
		25#0	21.37	21.45	21.58
		25#12	21.54	21.23	21.49
		25#24	22.10	21.55	21.47
		50#0	21.33	21.84	21.21
	16-QAM	1#0	22.02	21.36	21.51
		1#24	21.67	22.00	21.83
		1#49	22.13	21.48	21.83
		25#0	21.98	21.28	21.40
		25#12	21.41	21.27	21.41
		25#24	21.45	21.32	21.85
		50#0	22.10	22.04	21.91

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.57	21.90	21.26
		1#37	21.60	21.27	21.50
		1#74	22.24	21.98	21.02
		36#0	21.81	21.87	21.32
		36#17	21.50	22.07	21.90
		36#35	21.26	22.05	21.86
		75#0	21.91	21.78	21.73
	16-QAM	1#0	21.38	21.14	21.95
		1#37	21.63	21.14	21.62
		1#74	21.62	21.63	21.61
		36#0	21.96	21.15	21.13
		36#17	22.23	21.64	21.40
		36#35	21.66	21.68	22.02
		75#0	22.20	22.05	21.71
20M	QPSK	1#0	21.43	22.06	21.20
		1#49	21.59	21.31	21.36
		1#99	21.99	21.52	21.52
		50#0	22.10	21.36	21.20
		50#24	22.18	21.95	21.08
		50#49	21.92	21.18	21.47
		100#0	21.71	22.06	21.19
	16-QAM	1#0	21.52	21.69	21.23
		1#49	22.04	21.65	21.53
		1#99	21.83	21.69	21.44
		50#0	21.77	21.75	21.57
		50#24	21.46	21.56	21.62
		50#49	22.16	21.18	21.14
		100#0	22.18	21.74	21.19

LTE Band 12

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	22.03	21.80	21.73
		1#3	21.94	21.20	21.34
		1#5	21.99	21.89	22.02
		3#0	22.18	22.00	21.32
		3#1	22.22	21.79	21.06
		3#3	21.45	21.28	21.03
		6#0	21.71	21.53	21.76
	16-QAM	1#0	22.18	21.62	21.37
		1#3	21.30	21.32	21.77
		1#5	21.58	22.04	21.56
		3#0	22.18	21.83	21.13
		3#1	22.13	21.32	21.32
		3#3	22.04	22.05	21.38
		6#0	**22.24**	22.05	21.50
3M	QPSK	1#0	21.32	21.68	21.30
		1#7	22.17	21.92	21.10
		1#14	21.82	21.74	21.71
		8#0	21.97	22.07	21.54
		8#4	22.01	21.99	21.65
		8#7	21.31	22.10	21.43
		15#0	21.61	22.11	21.50
	16-QAM	1#0	21.72	21.92	21.65
		1#7	21.76	21.91	21.05
		1#14	21.38	21.14	21.17
		8#0	21.72	21.42	21.90
		8#4	22.19	21.99	21.58
		8#7	21.27	21.33	21.53
		15#0	21.80	3.00	21.84

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	22.20	21.34	21.25
		1#12	21.57	21.80	21.78
		1#24	21.74	21.70	21.19
		12#0	21.49	22.00	21.19
		12#6	21.65	21.31	21.11
		12#11	21.60	21.34	21.87
		25#0	21.30	21.19	21.50
	16-QAM	1#0	21.92	21.38	21.93
		1#12	21.73	21.78	21.58
		1#24	21.52	21.78	21.14
		12#0	21.59	21.30	21.73
		12#6	21.52	21.12	21.03
		12#11	21.71	21.13	21.85
		25#0	21.66	21.13	21.03
10M	QPSK	1#0	21.80	21.40	21.73
		1#24	21.53	21.30	21.56
		1#49	21.41	21.90	21.62
		25#0	21.32	21.19	21.41
		25#12	21.45	21.23	21.36
		25#24	21.32	21.55	21.04
		50#0	21.46	21.28	21.29
	16-QAM	1#0	21.80	21.92	21.31
		1#24	22.10	21.90	21.50
		1#49	21.37	21.13	21.80
		25#0	21.53	22.05	21.46
		25#12	21.96	21.60	21.77
		25#24	21.39	21.35	21.48
		50#0	21.31	21.22	21.59

LTE Band 17

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.33	21.97	21.84
		1#12	21.95	22.09	21.72
		1#24	21.51	22.04	21.27
		12#0	21.50	21.52	21.48
		12#6	21.63	21.92	21.32
		12#11	21.47	21.49	21.71
		25#0	21.77	21.84	21.08
	16-QAM	1#0	22.06	21.82	21.44
		1#12	21.70	21.43	21.69
		1#24	21.92	21.90	21.85
		12#0	21.48	21.28	21.56
		12#6	21.70	21.11	21.79
		12#11	21.89	21.93	21.10
		25#0	21.41	21.79	21.16
10M	QPSK	1#0	21.81	21.47	21.86
		1#24	21.35	21.75	21.40
		1#49	**22.23**	21.89	21.96
		25#0	21.77	21.34	21.80
		25#12	21.47	21.45	21.44
		25#24	22.03	21.47	21.94
		50#0	22.09	21.94	21.57
	16-QAM	1#0	22.02	21.83	21.76
		1#24	22.02	21.98	21.89
		1#49	22.18	21.12	22.01
		25#0	21.50	21.50	21.93
		25#12	21.61	21.81	21.59
		25#24	22.07	21.31	21.30
		50#0	21.43	21.19	21.69

LTE Band 25

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	22.04	21.12	21.23
		1#3	21.53	21.41	21.94
		1#5	21.40	21.13	21.33
		3#0	21.29	21.15	21.29
		3#1	21.50	21.61	21.18
		3#3	21.45	21.68	21.17
		6#0	21.69	21.71	21.40
	16-QAM	1#0	22.06	21.56	21.20
		1#3	22.05	21.41	21.84
		1#5	21.50	21.71	21.35
		3#0	21.59	21.12	21.21
		3#1	22.14	21.63	21.42
		3#3	21.57	22.00	21.23
		6#0	21.94	21.12	21.16
3M	QPSK	1#0	21.53	21.86	21.80
		1#7	21.83	21.17	21.69
		1#14	21.47	21.23	21.44
		8#0	22.16	21.87	21.36
		8#4	21.37	21.34	21.80
		8#7	21.77	21.23	21.62
		15#0	21.55	21.70	21.61
	16-QAM	1#0	21.30	21.27	21.59
		1#7	21.76	21.60	21.02
		1#14	22.17	21.44	21.89
		8#0	21.67	21.99	21.30
		8#4	21.37	21.63	21.28
		8#7	21.41	21.18	21.59
		15#0	21.33	21.91	21.70

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.39	22.03	21.45
		1#12	21.62	21.99	21.75
		1#24	21.66	21.76	21.10
		12#0	21.43	21.99	21.24
		12#6	21.76	21.89	21.08
		12#11	21.61	21.69	21.54
		25#0	21.99	21.96	21.54
	16-QAM	1#0	**22.25**	21.30	21.51
		1#12	21.37	21.47	21.58
		1#24	21.35	21.55	21.79
		12#0	22.02	21.97	21.39
		12#6	22.18	21.58	21.34
		12#11	21.46	22.08	21.56
		25#0	21.67	21.34	21.51
10M	QPSK	1#0	21.85	22.00	21.15
		1#24	21.40	21.79	21.94
		1#49	21.71	21.77	21.80
		25#0	21.32	21.52	21.48
		25#12	21.87	21.42	21.97
		25#24	22.11	21.13	21.78
		50#0	21.38	21.53	21.68
	16-QAM	1#0	21.50	21.11	21.51
		1#24	21.97	21.39	21.23
		1#49	21.49	21.86	21.61
		25#0	22.12	21.50	21.58
		25#12	21.76	21.74	21.08
		25#24	21.61	21.76	21.59
		50#0	21.43	21.37	21.33

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.88	21.14	21.84
		1#37	22.19	21.21	21.56
		1#74	21.43	21.49	21.79
		36#0	22.11	21.74	21.19
		36#17	21.83	21.74	21.94
		36#35	21.82	22.04	21.80
		75#0	21.41	21.96	21.96
	16-QAM	1#0	21.26	21.40	21.11
		1#37	21.45	21.82	21.72
		1#74	21.88	22.07	21.88
		36#0	22.07	21.70	21.81
		36#17	21.32	21.29	21.86
		36#35	21.47	21.61	21.12
		75#0	21.43	21.27	21.60
20M	QPSK	1#0	21.93	22.01	21.25
		1#49	21.38	21.51	21.64
		1#99	22.11	22.09	21.45
		50#0	21.35	21.17	21.74
		50#24	21.47	21.79	21.27
		50#49	21.32	22.04	21.55
		100#0	21.71	22.06	21.72
	16-QAM	1#0	21.96	21.21	21.48
		1#49	21.77	21.56	21.08
		1#99	21.35	21.61	21.31
		50#0	21.62	21.44	21.80
		50#24	21.62	21.71	21.49
		50#49	21.90	21.58	21.93
		100#0	21.61	21.97	21.60

LTE Band 26

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	21.61	21.72	21.74
		1#3	22.12	22.06	21.31
		1#5	21.85	21.56	22.01
		3#0	21.52	21.41	21.24
		3#1	**22.23**	21.87	21.03
		3#3	21.97	21.31	21.63
		6#0	21.32	21.20	21.20
	16-QAM	1#0	21.53	21.69	21.74
		1#3	22.23	21.84	21.58
		1#5	22.22	21.26	21.54
		3#0	21.97	21.22	21.57
		3#1	21.53	21.28	21.02
		3#3	21.43	22.05	21.80
		6#0	21.38	21.86	21.92
3M	QPSK	1#0	21.89	21.23	21.54
		1#7	21.88	21.56	21.90
		1#14	21.59	21.77	21.77
		8#0	21.85	21.99	21.73
		8#4	22.00	22.03	21.47
		8#7	21.78	21.20	21.94
		15#0	21.74	21.50	21.23
	16-QAM	1#0	21.82	22.04	21.66
		1#7	21.63	21.38	21.76
		1#14	21.52	22.05	21.36
		8#0	22.19	21.78	21.60
		8#4	21.33	21.37	21.74
		8#7	21.70	21.58	21.44
		15#0	21.54	21.74	21.61

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.57	21.84	21.11
		1#12	21.48	21.17	21.33
		1#24	21.73	21.45	21.94
		12#0	21.56	21.51	21.32
		12#6	22.18	21.30	21.17
		12#11	21.36	21.93	21.50
		25#0	22.06	22.10	21.18
	16-QAM	1#0	21.49	21.89	21.33
		1#12	22.21	21.20	21.46
		1#24	22.04	21.40	21.28
		12#0	21.36	21.70	21.14
		12#6	22.07	21.35	21.07
		12#11	21.81	22.06	21.76
		25#0	21.70	21.96	21.36
10M	QPSK	1#0	21.59	21.51	21.59
		1#24	21.92	21.34	21.44
		1#49	22.15	21.22	21.10
		25#0	21.49	21.84	21.75
		25#12	21.52	21.51	21.12
		25#24	21.63	22.04	21.11
		50#0	21.94	21.49	21.80
	16-QAM	1#0	21.67	21.26	21.15
		1#24	21.56	21.52	21.38
		1#49	22.07	21.46	21.52
		25#0	21.27	21.59	21.32
		25#12	21.33	21.79	21.85
		25#24	21.51	21.95	21.99
		50#0	22.11	21.39	21.11

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.99	21.59	21.87
		1#37	21.90	21.96	21.96
		1#74	21.51	21.18	21.06
		36#0	22.01	21.13	21.31
		36#17	21.34	21.34	21.29
		36#35	21.45	21.39	21.69
		75#0	22.02	22.07	21.28
	16-QAM	1#0	21.63	21.54	21.07
		1#37	22.05	21.18	21.86
		1#74	21.42	21.80	21.70
		36#0	22.20	22.02	21.55
		36#17	21.63	22.03	21.14
		36#35	21.71	21.68	21.21
		75#0	21.56	21.53	21.93

LTE Band 40 Lower

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	**22.26**	21.42	21.27
		1#12	21.55	21.50	21.28
		1#24	21.80	21.78	21.83
		12#0	21.30	22.07	21.17
		12#6	22.11	21.38	21.51
		12#11	22.00	21.92	21.86
		25#0	22.09	21.96	21.55
	16-QAM	1#0	21.71	21.98	21.36
		1#12	21.31	21.33	21.31
		1#24	21.30	21.43	21.58
		12#0	21.82	21.66	21.53
		12#6	22.15	21.89	21.85
		12#11	21.69	21.98	21.73
		25#0	21.60	21.43	21.81
10M	QPSK	1#0	\	21.38	\
		1#24	\	21.96	\
		1#49	\	21.62	\
		25#0	\	21.62	\
		25#12	\	21.60	\
		25#24	\	21.47	\
		50#0	\	22.00	\
	16-QAM	1#0	\	21.34	\
		1#24	\	21.53	\
		1#49	\	21.31	\
		25#0	\	21.23	\
		25#12	\	21.32	\
		25#24	\	21.12	\
		50#0	\	22.00	\

LTE Band 40 Upper

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.73	21.73	21.47
		1#12	21.50	21.28	21.57
		1#24	21.53	21.96	21.66
		12#0	21.40	21.14	21.64
		12#6	21.86	21.95	21.55
		12#11	21.79	21.37	21.92
		25#0	22.16	21.76	21.78
	16-QAM	1#0	21.67	21.12	21.67
		1#12	22.15	21.85	21.04
		1#24	**22.21**	21.35	21.77
		12#0	21.41	21.90	21.90
		12#6	22.06	21.54	21.48
		12#11	21.80	21.51	22.00
		25#0	21.33	22.01	21.72
10M	QPSK	1#0	\	21.96	\
		1#24	\	21.98	\
		1#49	\	21.89	\
		25#0	\	21.36	\
		25#12	\	21.34	\
		25#24	\	21.23	\
		50#0	\	21.58	\
	16-QAM	1#0	\	21.75	\
		1#24	\	21.51	\
		1#49	\	21.34	\
		25#0	\	21.94	\
		25#12	\	21.32	\
		25#24	\	22.07	\
		50#0	\	21.89	\

LTE Band 41

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.54	21.87	21.37
		1#12	22.06	21.21	21.03
		1#24	21.38	21.14	21.93
		12#0	21.82	21.17	21.94
		12#6	21.50	21.50	21.24
		12#11	21.46	21.12	21.17
		25#0	21.97	21.45	22.02
	16-QAM	1#0	22.25	21.31	21.30
		1#12	21.66	21.69	21.66
		1#24	22.01	21.52	21.11
		12#0	22.25	22.03	21.38
		12#6	21.98	21.45	21.11
		12#11	21.28	22.09	21.51
		25#0	21.45	22.11	21.82
10M	QPSK	1#0	21.41	21.36	21.32
		1#24	22.17	21.11	21.45
		1#49	22.09	22.01	21.85
		25#0	22.10	21.69	21.21
		25#12	21.63	21.58	21.94
		25#24	21.79	21.41	21.04
		50#0	21.37	21.84	21.20
	16-QAM	1#0	22.13	21.66	21.20
		1#24	22.17	21.39	21.83
		1#49	21.53	21.22	21.37
		25#0	21.75	21.39	21.92
		25#12	22.23	21.86	21.96
		25#24	21.62	21.92	21.18
		50#0	21.87	21.50	21.37

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	22.04	21.92	21.13
		1#37	22.21	21.91	21.10
		1#74	21.47	21.82	21.33
		36#0	21.71	22.02	21.96
		36#17	21.58	21.92	21.74
		36#35	21.68	21.96	21.57
		75#0	21.38	21.17	21.05
	16-QAM	1#0	21.83	21.27	21.77
		1#37	22.21	22.09	21.91
		1#74	21.94	22.05	21.62
		36#0	**22.25**	21.15	21.96
		36#17	21.68	21.33	21.70
		36#35	21.45	21.29	21.45
		75#0	21.66	21.94	21.72
20M	QPSK	1#0	21.30	21.65	22.00
		1#49	22.22	21.54	21.05
		1#99	22.17	21.83	21.19
		50#0	21.76	21.21	21.31
		50#24	21.79	21.71	21.59
		50#49	21.60	21.93	21.18
		100#0	22.04	21.51	21.46
	16-QAM	1#0	22.09	21.24	21.48
		1#49	21.49	21.31	21.03
		1#99	22.24	21.54	21.63
		50#0	22.17	21.75	21.03
		50#24	21.80	21.43	21.65
		50#49	21.93	21.88	21.08
		100#0	21.75	21.36	21.44

LTE Band 66

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	21.34	21.58	21.92
		1#3	21.56	21.79	21.68
		1#5	21.75	21.90	21.20
		3#0	21.35	22.09	21.19
		3#1	21.80	21.94	21.81
		3#3	22.03	21.27	21.93
		6#0	21.51	21.94	21.68
	16-QAM	1#0	21.52	22.05	21.52
		1#3	21.27	21.73	21.16
		1#5	22.19	21.35	21.37
		3#0	21.70	21.57	21.44
		3#1	21.93	21.27	21.21
		3#3	22.09	21.61	21.36
		6#0	21.43	21.22	21.11
3M	QPSK	1#0	22.12	21.26	21.28
		1#7	21.59	21.47	21.68
		1#14	21.62	21.21	21.68
		8#0	22.20	22.01	21.32
		8#4	**22.26**	22.03	21.85
		8#7	21.30	21.63	21.26
		15#0	21.29	21.29	21.38
	16-QAM	1#0	21.80	21.96	21.55
		1#7	21.88	21.37	21.63
		1#14	21.34	21.38	21.36
		8#0	21.51	21.45	21.94
		8#4	21.74	21.84	21.75
		8#7	21.30	21.68	21.29
		15#0	21.56	21.30	21.21

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	22.15	22.05	21.58
		1#12	21.80	21.65	21.93
		1#24	21.37	21.85	21.67
		12#0	21.69	21.87	21.51
		12#6	22.25	21.16	21.51
		12#11	22.14	21.44	21.59
		25#0	21.35	21.70	21.87
	16-QAM	1#0	21.79	21.86	21.16
		1#12	22.02	21.78	21.82
		1#24	21.32	21.85	21.66
		12#0	21.28	21.72	21.34
		12#6	21.50	21.99	21.32
		12#11	21.89	21.42	21.79
		25#0	22.22	21.68	21.19
10M	QPSK	1#0	21.64	22.04	21.75
		1#24	22.17	21.42	21.47
		1#49	21.66	21.86	21.60
		25#0	22.25	21.43	21.83
		25#12	21.99	21.41	21.37
		25#24	21.97	21.52	21.07
		50#0	21.60	21.44	21.40
	16-QAM	1#0	21.88	21.14	21.85
		1#24	21.72	21.84	21.32
		1#49	21.27	21.88	21.75
		25#0	21.94	21.68	21.65
		25#12	21.98	21.73	21.14
		25#24	21.83	22.01	21.21
		50#0	21.40	22.04	21.67

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.49	21.92	21.68
		1#37	21.96	21.84	21.05
		1#74	21.29	21.62	21.72
		36#0	22.15	21.73	21.13
		36#17	21.80	21.70	21.18
		36#35	22.23	21.69	21.27
		75#0	21.81	21.66	21.63
	16-QAM	1#0	21.90	21.44	21.22
		1#37	22.24	21.86	21.14
		1#74	21.68	21.55	21.20
		36#0	21.61	21.57	21.26
		36#17	22.16	21.52	21.21
		36#35	21.67	21.21	21.83
		75#0	22.10	21.67	21.13
20M	QPSK	1#0	21.41	22.00	21.96
		1#49	22.12	22.08	21.48
		1#99	21.75	21.46	21.73
		50#0	21.55	21.12	21.08
		50#24	21.59	21.44	21.66
		50#49	22.16	21.88	21.80
		100#0	21.69	21.34	21.72
	16-QAM	1#0	22.13	22.01	21.69
		1#49	21.38	21.82	21.24
		1#99	21.33	21.53	21.99
		50#0	22.18	21.97	21.70
		50#24	22.05	21.54	21.57
		50#49	21.83	21.24	21.19
		100#0	21.70	21.61	21.41

FCC § 2.1053; § 22.917 (a); § 24.238 (a)& §27.53(a) (g) (h) (m); § 90.691 - SPURIOUS RADIATED EMISSIONS

Applicable Standards

FCC § 2.1053, §22.917(a) and § 24.238(a), §90.691 and § 27.53(a) (g) (h) (m)

22.917 (a) Out of band emissions. 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) Out of band emissions. 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（a）, For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:
(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz;
(ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2296 and 2300 MHz, 61 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz;
(iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

27.53(g), For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.
27.53 (h) AWS emission limits —
(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 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 log10 (P) Db

27.53 (m), for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Rule Part 90.691 specifies that “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.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TX pwr in Watts/0.001) – the absolute level

Spurious attenuation limit in dB = 43 + 10 Log_{10} (power out in Watts)

Test Data

Environmental Conditions & Test Information

Temperature:	21.8 ℃
Relative Humidity:	44 %
ATM Pressure:	102.5 kPa
Test Date:	2024-05-06
Test Engineer:	Bard Liu

Test mode: Transmitting (Pre-scan with low, middle and high channels, and the worst case data as below)

30 MHz ~ 10 GHz:

GSM 850 Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
GPRS Mode, Low channel										
320.40	56.65	334	150	H	-51.07	0.47	-1.99	-53.53	-13	40.53
320.40	53.60	335	100	V	-51.66	0.47	-1.99	-54.12	-13	41.12
GPRS Mode, Middle channel										
320.40	56.77	69	100	H	-50.95	0.47	-1.99	-53.41	-13	40.41
320.40	53.14	8	100	V	-52.12	0.47	-1.99	-54.58	-13	41.58
GPRS Mode, High channel										
320.40	56.89	169	100	H	-50.83	0.47	-1.99	-53.29	-13	40.29
320.40	53.55	353	100	V	-51.71	0.47	-1.99	-54.17	-13	41.17

WCDMA Band V

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
WCDMA Mode, Low channel										
287.30	56.85	132	200	H	-48.90	0.45	-2.18	-51.53	-13	38.53
287.30	57.24	212	200	V	-49.72	0.45	-2.18	-52.35	-13	39.35
WCDMA Mode, Middle channel										
287.30	56.51	147	100	H	-49.24	0.45	-2.18	-51.87	-13	38.87
287.30	56.95	203	100	V	-50.01	0.45	-2.18	-52.64	-13	39.64
WCDMA Mode, High channel										
287.30	56.90	20	100	H	-48.85	0.45	-2.18	-51.48	-13	38.48
287.30	56.81	338	100	V	-50.15	0.45	-2.18	-52.78	-13	39.78

30 MHz ~ 20 GHz:

PCS 1900 Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
GPRS Mode, Low channel										
242.30	49.77	279	150	H	-52.30	0.44	-2.51	-55.25	-13	42.25
242.30	55.62	87	100	V	-53.37	0.44	-2.51	-56.32	-13	43.32
GPRS Mode, Middle channel										
242.30	49.51	130	200	H	-52.56	0.44	-2.51	-55.51	-13	42.51
242.30	55.71	119	200	V	-53.28	0.44	-2.51	-56.23	-13	43.23
GPRS Mode, High channel										
242.30	49.35	223	100	H	-52.72	0.44	-2.51	-55.67	-13	42.67
242.30	55.55	295	100	V	-53.44	0.44	-2.51	-56.39	-13	43.39

WCDMA Band II

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
WCDMA Mode, Low channel										
268.50	50.87	120	150	H	-52.70	0.45	-2.21	-55.36	-13	42.36
268.50	54.72	312	100	V	-53.62	0.45	-2.21	-56.28	-13	43.28
WCDMA Mode, Middle channel										
268.50	50.99	269	100	H	-52.58	0.45	-2.21	-55.24	-13	42.24
268.50	54.65	358	200	V	-53.69	0.45	-2.21	-56.35	-13	43.35
WCDMA Mode, High channel										
268.50	50.81	234	100	H	-52.76	0.45	-2.21	-55.42	-13	42.42
268.50	54.80	347	100	V	-53.54	0.45	-2.21	-56.20	-13	43.20

WCDMA Band IV

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
WCDMA Mode, Low channel										
329.40	53.58	175	200	H	-54.36	0.48	-1.91	-56.75	-13	43.75
329.40	50.01	253	150	V	-54.91	0.48	-1.91	-57.30	-13	44.30
WCDMA Mode, Middle channel										
329.40	53.81	97	200	H	-54.13	0.48	-1.91	-56.52	-13	43.52
329.40	50.07	229	100	V	-54.85	0.48	-1.91	-57.24	-13	44.24
WCDMA Mode, High channel										
329.40	54.03	127	150	H	-53.91	0.48	-1.91	-56.30	-13	43.30
329.40	49.78	239	100	V	-55.14	0.48	-1.91	-57.53	-13	44.53

Test mode: Transmitting (Pre-scan with all the bandwidth, and worst case as below)

30 MHz ~ 20 GHz:

LTE Band 2:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Low Channel										
420.80	45.17	352	150	H	-57.24	0.53	-1.47	-59.24	-13	46.24
420.80	46.15	356	100	V	-58.15	0.53	-1.47	-60.15	-13	47.15
16-QAM 1.4MHz Bandwidth Low Channel										
420.80	45.03	73	150	H	-57.38	0.53	-1.47	-59.38	-13	46.38
420.80	46.18	62	100	V	-58.12	0.53	-1.47	-60.12	-13	47.12

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Middle Channel										
420.80	44.21	276	150	H	-58.20	0.53	-1.47	-60.20	-13	47.20
420.80	45.02	298	150	V	-59.28	0.53	-1.47	-61.28	-13	48.28
16-QAM 1.4MHz Bandwidth Middle Channel										
420.80	44.03	220	150	H	-58.38	0.53	-1.47	-60.38	-13	47.38
420.80	45.18	304	200	V	-59.12	0.53	-1.47	-61.12	-13	48.12

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth High Channel										
420.80	44.18	250	150	H	-58.23	0.53	-1.47	-60.23	-13	47.23
420.80	44.84	298	100	V	-59.46	0.53	-1.47	-61.46	-13	48.46
16-QAM 1.4MHz Bandwidth High Channel										
420.80	43.85	319	100	H	-58.56	0.53	-1.47	-60.56	-13	47.56
420.80	45.10	156	100	V	-59.20	0.53	-1.47	-61.20	-13	48.20

LTE Band 4:

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Low Channel										
375.25	47.33	94	150	H	-59.48	0.51	-1.55	-61.54	-13	48.54
375.25	43.51	284	150	V	-60.79	0.51	-1.55	-62.85	-13	49.85
16-QAM 1.4MHz Bandwidth Low Channel										
375.25	47.08	352	150	H	-59.73	0.51	-1.55	-61.79	-13	48.79
375.25	43.91	267	100	V	-60.39	0.51	-1.55	-62.45	-13	49.45

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Middle Channel										
375.25	47.59	264	150	H	-59.22	0.51	-1.55	-61.28	-13	48.28
375.25	47.87	137	200	V	-56.43	0.37	-6.05	-62.85	-13	49.85
16-QAM 1.4MHz Bandwidth Middle Channel										
375.25	47.57	53	200	H	-59.24	0.51	-1.55	-61.30	-13	48.30
375.25	43.78	318	100	V	-60.52	0.51	-1.55	-62.58	-13	49.58

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth High Channel										
375.25	47.49	141	150	H	-59.32	0.51	-1.55	-61.38	-13	48.38
375.25	44.22	26	200	V	-60.08	0.51	-1.55	-62.14	-13	49.14
16-QAM 1.4MHz Bandwidth High Channel										
375.25	47.34	93	150	H	-59.47	0.51	-1.55	-61.53	-13	48.53
375.25	43.62	5	100	V	-60.68	0.51	-1.55	-62.74	-13	49.74

30 MHz ~ 10 GHz:

LTE Band 5:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Low Channel										
258.70	51.62	244	150	H	-50.81	0.44	-2.23	-53.48	-13	40.48
258.70	57.36	47	100	V	-51.70	0.44	-2.23	-54.37	-13	41.37
16-QAM 1.4MHz Bandwidth Low Channel										
258.70	51.83	358	200	H	-50.60	0.44	-2.23	-53.27	-13	40.27
258.70	57.05	346	150	V	-52.01	0.44	-2.23	-54.68	-13	41.68

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Middle Channel										
258.70	51.69	121	100	H	-50.74	0.44	-2.23	-53.41	-13	40.41
258.70	57.18	151	100	V	-51.88	0.44	-2.23	-54.55	-13	41.55
16-QAM 1.4MHz Bandwidth Middle Channel										
258.70	51.86	233	200	H	-50.57	0.44	-2.23	-53.24	-13	40.24
258.70	56.98	105	100	V	-52.08	0.44	-2.23	-54.75	-13	41.75

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth High Channel										
258.70	52.15	49	150	H	-50.28	0.44	-2.23	-52.95	-13	39.95
258.70	58.14	268	100	V	-50.92	0.44	-2.23	-53.59	-13	40.59
16-QAM 1.4MHz Bandwidth High Channel										
258.70	51.85	15	200	H	-50.58	0.44	-2.23	-53.25	-13	40.25
258.70	57.25	82	150	V	-51.81	0.44	-2.23	-54.48	-13	41.48

30MHz~26.5GHz:
LTE Band 7:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Low Channel										
395.80	44.15	105	150	H	-61.34	0.53	-1.38	-63.25	-25	38.25
395.80	41.83	236	200	V	-62.59	0.53	-1.38	-64.50	-25	39.50
16-QAM 5MHz Bandwidth Low Channel										
395.80	43.87	349	200	H	-61.62	0.53	-1.38	-63.53	-25	38.53
395.80	42.06	182	150	V	-62.36	0.53	-1.38	-64.27	-25	39.27

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Middle Channel										
395.80	44.25	20	150	H	-61.24	0.53	-1.38	-63.15	-25	38.15
395.80	41.98	156	200	V	-62.44	0.53	-1.38	-64.35	-25	39.35
16-QAM 5MHz Bandwidth Middle Channel										
395.80	44.12	258	150	H	-61.37	0.53	-1.38	-63.28	-25	38.28
395.80	42.23	60	150	V	-62.19	0.53	-1.38	-64.10	-25	39.10

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth High Channel										
395.80	44.46	175	100	H	-61.03	0.53	-1.38	-62.94	-25	37.94
395.80	42.74	132	200	V	-61.68	0.53	-1.38	-63.59	-25	38.59
16-QAM 5MHz Bandwidth High Channel										
395.80	43.88	29	100	H	-61.61	0.53	-1.38	-63.52	-25	38.52
395.80	41.82	80	200	V	-62.60	0.53	-1.38	-64.51	-25	39.51

30MHz~10GHz:

LTE Band 12:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Low Channel										
325.60	54.59	204	200	H	-53.25	0.48	-1.95	-55.68	-13	42.68
325.60	51.08	306	100	V	-53.99	0.48	-1.95	-56.42	-13	43.42
16-QAM 1.4MHz Bandwidth Low Channel										
325.60	54.76	182	200	H	-53.08	0.48	-1.95	-55.51	-13	42.51
325.60	50.87	89	200	V	-54.20	0.48	-1.95	-56.63	-13	43.63

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Middle Channel										
325.60	54.38	104	150	H	-53.46	0.48	-1.95	-55.89	-13	42.89
325.60	50.75	87	100	V	-54.32	0.48	-1.95	-56.75	-13	43.75
16-QAM 1.4MHz Bandwidth Middle Channel										
325.60	54.98	131	100	H	-52.86	0.48	-1.95	-55.29	-13	42.29
325.60	51.15	106	200	V	-53.92	0.48	-1.95	-56.35	-13	43.35

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth High Channel										
325.60	55.17	105	150	H	-52.67	0.48	-1.95	-55.10	-13	42.10
325.60	51.02	221	200	V	-54.05	0.48	-1.95	-56.48	-13	43.48
16-QAM 1.4MHz Bandwidth High Channel										
325.60	55.02	180	150	H	-52.82	0.48	-1.95	-55.25	-13	42.25
325.60	50.82	220	200	V	-54.25	0.48	-1.95	-56.68	-13	43.68

LTE Band 17:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Low Channel										
358.12	51.96	145	150	H	-55.96	0.50	-1.69	-58.15	-13	45.15
358.12	47.03	55	200	V	-57.17	0.50	-1.69	-59.36	-13	46.36
16-QAM 5MHz Bandwidth Low Channel										
358.12	52.24	247	200	H	-55.68	0.50	-1.69	-57.87	-13	44.87
358.12	48.06	274	100	V	-56.14	0.50	-1.69	-58.33	-13	45.33

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Middle Channel										
358.12	52.86	170	100	H	-55.06	0.50	-1.69	-57.25	-13	44.25
358.12	47.94	91	100	V	-56.26	0.50	-1.69	-58.45	-13	45.45
16-QAM 5MHz Bandwidth Middle Channel										
358.12	52.63	175	100	H	-55.29	0.50	-1.69	-57.48	-13	44.48
358.12	48.14	90	100	V	-56.06	0.50	-1.69	-58.25	-13	45.25

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth High Channel										
358.12	51.70	338	150	H	-56.22	0.50	-1.69	-58.41	-13	45.41
358.12	46.61	75	200	V	-57.59	0.50	-1.69	-59.78	-13	46.78
16-QAM 5MHz Bandwidth High Channel										
358.12	51.84	317	100	H	-56.08	0.50	-1.69	-58.27	-13	45.27
358.12	47.03	112	200	V	-57.17	0.50	-1.69	-59.36	-13	46.36

30 MHz ~ 20 GHz:

LTE Band 25:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Low Channel										
248.40	46.05	325	200	H	-55.50	0.44	-2.30	-58.24	-13	45.24
248.40	52.91	161	200	V	-56.64	0.44	-2.30	-59.38	-13	46.38
16-QAM 1.4MHz Bandwidth Low Channel										
248.40	46.15	13	200	H	-55.40	0.44	-2.30	-58.14	-13	45.14
248.40	52.64	6	150	V	-56.91	0.44	-2.30	-59.65	-13	46.65

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Middle Channel										
248.40	45.97	31	150	H	-55.58	0.44	-2.30	-58.32	-13	45.32
248.40	52.75	319	100	V	-56.80	0.44	-2.30	-59.54	-13	46.54
16-QAM 1.4MHz Bandwidth Middle Channel										
248.40	46.45	359	150	H	-55.10	0.44	-2.30	-57.84	-13	44.84
248.40	53.09	202	150	V	-56.46	0.44	-2.30	-59.20	-13	46.20

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth High Channel										
248.40	46.00	11	150	H	-55.55	0.44	-2.30	-58.29	-13	45.29
248.40	53.08	24	150	V	-56.47	0.44	-2.30	-59.21	-13	46.21
16-QAM 1.4MHz Bandwidth High Channel										
248.40	45.71	201	200	H	-55.84	0.44	-2.30	-58.58	-13	45.58
248.40	52.60	349	150	V	-56.95	0.44	-2.30	-59.69	-13	46.69

30 MHz ~ 10 GHz:

LTE Band 26:

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Low Channel										
375.50	48.61	94	150	H	-58.19	0.51	-1.55	-60.25	-13	47.25
375.50	44.88	132	100	V	-59.42	0.51	-1.55	-61.48	-13	48.48
16-QAM 1.4MHz Bandwidth Low Channel										
375.50	48.38	350	200	H	-58.42	0.51	-1.55	-60.48	-13	47.48
375.50	45.11	63	200	V	-59.19	0.51	-1.55	-61.25	-13	48.25

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Middle Channel										
375.50	48.27	209	200	H	-58.53	0.51	-1.55	-60.59	-13	47.59
375.50	45.11	153	200	V	-59.19	0.51	-1.55	-61.25	-13	48.25
16-QAM 1.4MHz Bandwidth Middle Channel										
375.50	48.11	352	150	H	-58.69	0.51	-1.55	-60.75	-13	47.75
375.50	45.00	49	100	V	-59.30	0.51	-1.55	-61.36	-13	48.36

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth High Channel										
375.50	48.11	199	150	H	-58.69	0.51	-1.55	-60.75	-13	47.75
375.50	44.51	154	100	V	-59.79	0.51	-1.55	-61.85	-13	48.85
16-QAM 1.4MHz Bandwidth High Channel										
375.50	47.83	203	100	H	-58.97	0.51	-1.55	-61.03	-13	48.03
375.50	44.61	129	200	V	-59.69	0.51	-1.55	-61.75	-13	48.75

LTE Band 40:

2305-2315MHz

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Low Channel										
358.50	48.84	274	100	H	-59.05	0.50	-1.68	-61.23	-40	21.23
358.50	43.71	257	100	V	-60.49	0.50	-1.68	-62.67	-40	22.67
16-QAM 5MHz Bandwidth Low Channel										
358.50	48.75	69	100	H	-59.14	0.50	-1.68	-61.32	-40	21.32
358.50	44.33	184	150	V	-59.87	0.50	-1.68	-62.05	-40	22.05

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Middle Channel										
358.50	49.29	293	150	H	-58.60	0.50	-1.68	-60.78	-40	20.78
358.50	45.03	15	150	V	-59.17	0.50	-1.68	-61.35	-40	21.35
16-QAM 5MHz Bandwidth Middle Channel										
358.50	49.53	237	100	H	-58.36	0.50	-1.68	-60.54	-40	20.54
358.50	44.45	306	100	V	-59.75	0.50	-1.68	-61.93	-40	21.93

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth High Channel										
358.50	49.22	37	150	H	-58.67	0.50	-1.68	-60.85	-40	20.85
358.50	45.23	35	100	V	-58.97	0.50	-1.68	-61.15	-40	21.15
16-QAM 5MHz Bandwidth High Channel										
358.50	48.95	221	150	H	-58.94	0.50	-1.68	-61.12	-40	21.12
358.50	44.10	55	200	V	-60.10	0.50	-1.68	-62.28	-40	22.28

2350-2360MHz

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Low Channel										
358.50	50.80	358	150	H	-57.09	0.50	-1.68	-59.27	-40	19.27
358.50	45.80	283	100	V	-58.40	0.50	-1.68	-60.58	-40	20.58
16-QAM 5MHz Bandwidth Low Channel										
358.50	50.22	110	150	H	-57.67	0.50	-1.68	-59.85	-40	19.85
358.50	45.59	60	150	V	-58.61	0.50	-1.68	-60.79	-40	20.79

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Middle Channel										
358.50	50.97	260	150	H	-56.92	0.50	-1.68	-59.10	-40	19.10
358.50	45.84	354	150	V	-58.36	0.50	-1.68	-60.54	-40	20.54
16-QAM 5MHz Bandwidth Middle Channel										
358.50	50.83	269	100	H	-57.06	0.50	-1.68	-59.24	-40	19.24
358.50	45.97	347	150	V	-58.23	0.50	-1.68	-60.41	-40	20.41

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth High Channel										
358.50	50.92	147	200	H	-56.97	0.50	-1.68	-59.15	-40	19.15
358.50	46.03	37	150	V	-58.17	0.50	-1.68	-60.35	-40	20.35
16-QAM 5MHz Bandwidth High Channel										
358.50	50.65	150	150	H	-57.24	0.50	-1.68	-59.42	-40	19.42
358.50	45.93	52	200	V	-58.27	0.50	-1.68	-60.45	-40	20.45

LTE Band 41:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Low Channel										
367.50	46.68	174	200	H	-60.63	0.50	-1.61	-62.74	-25	37.74
367.50	42.83	92	200	V	-61.43	0.50	-1.61	-63.54	-25	38.54
16-QAM 5MHz Bandwidth Low Channel										
367.50	46.95	252	100	H	-60.36	0.50	-1.61	-62.47	-25	37.47
367.50	42.91	205	200	V	-61.35	0.50	-1.61	-63.46	-25	38.46

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth Middle Channel										
367.50	47.13	50	100	H	-60.18	0.50	-1.61	-62.29	-25	37.29
367.50	42.79	55	100	V	-61.47	0.50	-1.61	-63.58	-25	38.58
16-QAM 5MHz Bandwidth Middle Channel										
367.50	47.09	157	150	H	-60.22	0.50	-1.61	-62.33	-25	37.33
367.50	42.96	140	150	V	-61.30	0.50	-1.61	-63.41	-25	38.41

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 5MHz Bandwidth High Channel										
367.50	46.90	214	200	H	-60.41	0.50	-1.61	-62.52	-25	37.52
367.50	43.13	112	200	V	-61.13	0.50	-1.61	-63.24	-25	38.24
16-QAM 5MHz Bandwidth High Channel										
367.50	46.74	199	200	H	-60.57	0.50	-1.61	-62.68	-25	37.68
367.50	43.23	355	100	V	-61.03	0.50	-1.61	-63.14	-25	38.14

30 MHz ~ 20 GHz:

LTE Band 66:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Low Channel										
202.50	51.50	159	200	H	-53.92	0.42	-3.87	-58.21	-13	45.21
202.50	50.25	205	100	V	-55.06	0.42	-3.87	-59.35	-13	46.35
16-QAM 1.4MHz Bandwidth Low Channel										
202.50	52.43	170	200	H	-52.99	0.42	-3.87	-57.28	-13	44.28
202.50	50.18	332	100	V	-55.13	0.42	-3.87	-59.42	-13	46.42

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth Middle Channel										
202.50	51.61	273	100	H	-53.81	0.42	-3.87	-58.10	-13	45.10
202.50	50.23	151	150	V	-55.08	0.42	-3.87	-59.37	-13	46.37
16-QAM 1.4MHz Bandwidth Middle Channel										
202.50	51.19	55	100	H	-54.23	0.42	-3.87	-58.52	-13	45.52
202.50	50.27	355	150	V	-55.04	0.42	-3.87	-59.33	-13	46.33

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd)			
QPSK 1.4MHz Bandwidth High Channel										
202.50	51.34	177	150	H	-54.08	0.42	-3.87	-58.37	-13	45.37
202.50	50.35	341	150	V	-54.96	0.42	-3.87	-59.25	-13	46.25
16-QAM 1.4MHz Bandwidth High Channel										
202.50	51.18	6	200	H	-54.24	0.42	-3.87	-58.53	-13	45.53
202.50	50.27	31	200	V	-55.04	0.42	-3.87	-59.33	-13	46.33

Note:
1) Absolute Level (dBm) = Submitted Level (dBm) - Cable loss (dB) + Antenna Gain (dBd)
2) Margin (dB) = Limit (dBm) - Absolute Level (dBm)

EUT PHOTOGRAPHS

Please refer to the attachment EXHIBIT B - EUT EXTERNAL PHOTOGRAPHS and EXHIBIT C - EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment EXHIBIT E - TEST SETUP PHOTOGRAPHS.

Declarations

1. The laboratory is not responsible for the authenticity of any information provided by the applicant. Information from the applicant that may affect test results is marked with "★".

2. The test data was only valid for the test sample(s).

3. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.

******* END OF REPORT *******