

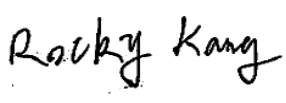
FCC PART 27 TEST REPORT

For

SHENZHEN PCTX TECHNOLOGY DEVELOPMENT CO.,LTD.

Floor 2, Chaolitong Bldg., No.5, Langshan 1st. Rd. Hi-Tech Industrial Park(North), Nanshan
District, Shenzhen, China

FCC ID: 2APSOL519S

Report Type: Original Report	Product Type: 4G Mobile Mifi
Report Number: RSZ180516016-00B	
Report Date: 2018-05-31	
Rocky Kang 	
Reviewed By: RF Engineer	
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Note: This report must not be used by the customer to claim product certification, approval, or endorsement by A2LA* or any agency of the Federal Government. * This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk “*”.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The SHENZHEN PCTX TECHNOLOGY DEVELOPMENT CO.,LTD.'s product, model number: L519S (FCC ID: 2APSOL519S) or the "EUT" in this report was a 4G Mobile Mifi, which was measured approximately: 93 mm (L) × 59 mm (W) × 13 mm (H), rated with input voltage: DC 3.8V from rechargeable Li-ion battery.

**All measurement and test data in this report was gathered from production sample serial number: 180516016 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2018-05-16.*

Objective

This test report is prepared on behalf of SHENZHEN PCTX TECHNOLOGY DEVELOPMENT CO.,LTD. in accordance with Part 2-Subpart J, Subpart 27 of the Federal Communication Commissions rules.

The objective is to determine the compliance of the 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.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DTS submissions with FCC ID: 2APSOL519S.

Test Methodology

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

Part 27 – Miscellaneous wireless communications services

Applicable Standards: TIA/EIA 603-D and KDB 971168 D01 v03.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±1.5dB
Unwanted Emission, conducted		±1.5dB
Emissions, radiated	Below 1GHz	±4.70dB
	Above 1GHz	±4.80dB
Temperature		±1 °C
Supply voltages		±0.4%

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing according to TIA/EIA-603-D.

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

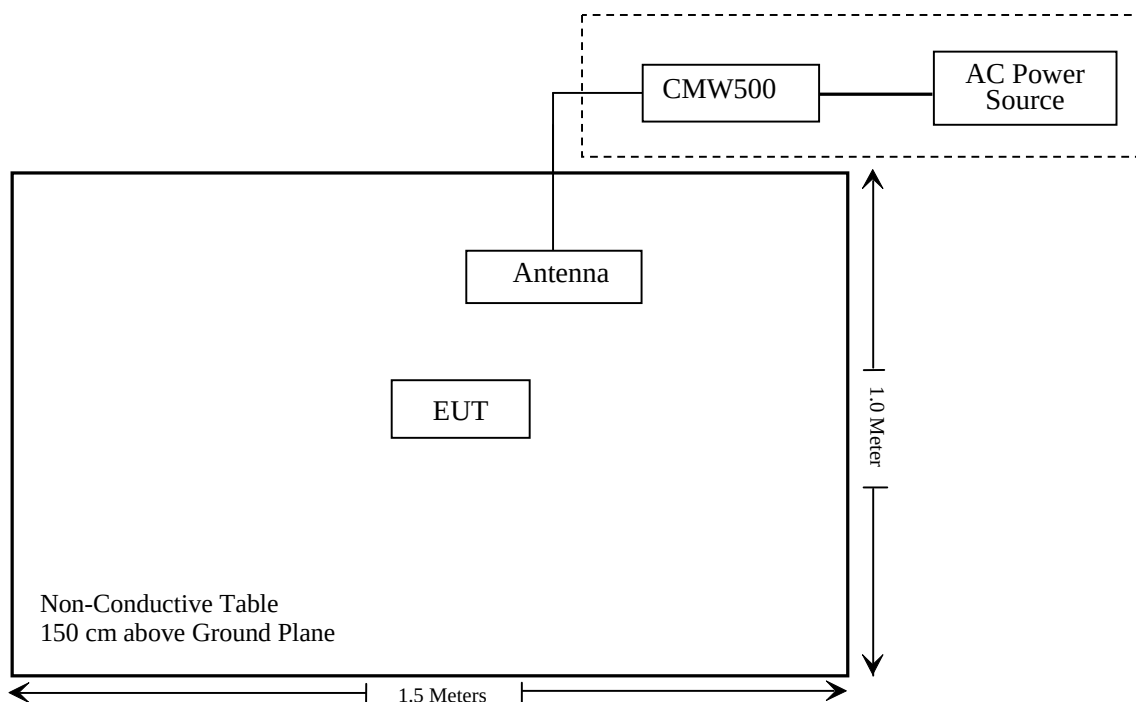
Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-116218-UY

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307, §2.1093	RF Exposure (SAR)	Compliance*
§2.1046; §27.50 (h)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; §27.53	Occupied Bandwidth	Compliance
§ 2.1051; §27.53 (h)(m)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; §27.53 (h)(m)	Field Strength of Spurious Radiation	Compliance
§27.53 (h)(m)	Band Edge	Compliance
§ 2.1055; §27.54;	Frequency stability	Compliance

Note: * Please refer to SAR report released by BACL, report number: RSZ180516016-20.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
A.H.System	Horn Antenna	SAS-200/571	135	2015-08-18	2018-08-17
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017-12-22	2020-12-21
Rohde & Schwarz	Signal Analyzer	FSEM	845987/005	2018-04-24	2019-04-24
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017-12-22	2020-12-21
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2018-05-21	2019-05-21
HP	Amplifier	HP8447E	1937A01046	2018-05-21	2018-11-19
Anritsu	Signal Generator	68369B	004114	2017-12-24	2018-12-24
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2018-01-11	2019-01-11
Rohde & Schwarz	Auto test Software	EMC32	V9.10	NCR	NCR
COM POWER	Dipole Antenna	AD-100	041000	NCR	NCR
Ducommun technologies	RF Cable	UFA210A-1-4724-30050U	MFR64369 223410-001	2018-05-21	2018-11-19
Ducommun technologies	RF Cable	104PEA	218124002	2018-05-21	2018-11-19
Ducommun technologies	RF Cable	RG-214	1	2018-05-21	2018-11-19
Ducommun technologies	RF Cable	RG-214	2	2018-05-22	2018-11-22
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-04	2017-12-29	2018-12-28
Ducommun technologies	Horn Antenna	ARH-4223-02	1007726-03	2017-12-29	2018-12-28
Ducommun technologies	Pre-amplifier	ALN-22093530-01	991373-01	2017-08-03	2018-08-03
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200120	2017-12-24	2018-12-24
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2017-12-21	2018-12-21
Long Wei	DC Power Supply	TPR-6420D	398363	NCR	NCR
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2018-04-24	2019-04-24
Ducommun technologies	RF Cable	RG-214	3	Each Time	
WEINSCHTEL	3dB Attenuator	N/A	N/A	Each Time	
N/A	Power Splitter	N/A	N/A	2018-05-21	2019-05-21

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: RSZ180516016-20.

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC § 2.1046, §27.50 (h) - RF OUTPUT POWER

Applicable Standard

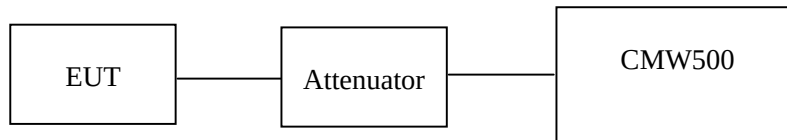
The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

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

Test Procedure

Conducted method:

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



Radiated method:

TIA 603-D section 2.2.17

Test Data**Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Hill He on 2018-05-26.

LTE Band 41:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	21.80	21.82	21.41
		RB Size=1, RB Offset=12	22.68	22.81	22.72
		RB Size=1, RB Offset=24	23.14	22.83	22.69
		RB Size=12, RB Offset=0	21.65	21.49	21.68
		RB Size=12, RB Offset=6	21.78	21.99	21.74
		RB Size=12, RB Offset=11	22.35	21.39	21.76
		RB Size=25, RB Offset=0	21.19	21.55	22.30
	16QAM	RB Size=1, RB Offset=0	22.76	22.14	22.24
		RB Size=1, RB Offset=12	22.84	22.38	22.68
		RB Size=1, RB Offset=24	21.98	21.18	21.70
		RB Size=12, RB Offset=0	21.94	21.39	21.59
		RB Size=12, RB Offset=6	21.68	21.33	21.66
		RB Size=12, RB Offset=11	21.49	20.96	21.00
		RB Size=25, RB Offset=0	20.76	20.74	20.74
10.0	QPSK	RB Size=1, RB Offset=0	21.75	21.85	21.35
		RB Size=1, RB Offset=24	22.99	22.96	22.64
		RB Size=1, RB Offset=49	22.85	22.74	22.95
		RB Size=25, RB Offset=0	21.81	21.91	21.62
		RB Size=25, RB Offset=12	21.93	21.73	21.90
		RB Size=25, RB Offset=24	21.81	22.26	21.88
		RB Size=50, RB Offset=0	22.03	21.89	21.59
	16QAM	RB Size=1, RB Offset=0	21.97	22.16	22.07
		RB Size=1, RB Offset=24	21.96	21.92	21.85
		RB Size=1, RB Offset=49	21.64	21.95	21.60
		RB Size=25, RB Offset=0	21.16	21.47	21.59
		RB Size=25, RB Offset=12	21.59	21.82	22.01
		RB Size=25, RB Offset=24	21.43	21.73	20.63
		RB Size=50, RB Offset=0	20.95	20.98	20.97

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.01	21.78	21.39
		RB Size=1, RB Offset=37	22.49	22.63	22.54
		RB Size=1, RB Offset=74	22.60	22.82	22.39
		RB Size=36, RB Offset=0	21.78	21.78	21.63
		RB Size=36, RB Offset=18	21.56	21.39	21.86
		RB Size=36, RB Offset=37	22.51	22.52	22.55
		RB Size=75, RB Offset=0	22.69	22.90	22.65
	16QAM	RB Size=1, RB Offset=0	21.06	22.03	21.73
		RB Size=1, RB Offset=37	21.69	21.92	21.79
		RB Size=1, RB Offset=74	21.98	21.83	22.01
		RB Size=36, RB Offset=0	21.91	22.15	21.92
		RB Size=36, RB Offset=18	22.11	21.78	22.14
		RB Size=36, RB Offset=37	20.79	20.92	21.42
		RB Size=75, RB Offset=0	20.56	20.85	20.79
20.0	QPSK	RB Size=1, RB Offset=0	23.57	23.20	23.43
		RB Size=1, RB Offset=49	23.42	22.81	23.20
		RB Size=1, RB Offset=99	22.27	22.33	22.33
		RB Size=50, RB Offset=0	22.32	22.34	22.52
		RB Size=50, RB Offset=24	22.29	22.19	22.40
		RB Size=50, RB Offset=49	23.07	22.90	23.01
		RB Size=100, RB Offset=0	23.32	23.48	23.34
	16QAM	RB Size=1, RB Offset=0	22.28	22.18	22.28
		RB Size=1, RB Offset=49	22.44	22.14	22.21
		RB Size=1, RB Offset=99	22.15	21.98	22.25
		RB Size=50, RB Offset=0	22.24	21.98	22.11
		RB Size=50, RB Offset=24	22.10	22.13	22.38
		RB Size=50, RB Offset=49	22.06	22.22	22.31
		RB Size=100, RB Offset=0	21.31	21.35	21.36

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	9.44	13	Pass
QPSK (100RB Size)	9.03	13	Pass
16QAM (1RB Size)	10.82	13	Pass
16QAM (100RB Size)	10.31	13	Pass

EIRP:**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
5 MHz Bandwidth									
2593.00	81.82	293	1.9	H	12.3	2.20	10.20	20.30	33
2593.00	84.10	184	1.5	V	14.9	2.20	10.20	22.90	33
10 MHz Bandwidth									
2593.00	81.62	320	2.4	H	12.1	2.20	10.20	20.10	33
2593.00	83.98	41	2.1	V	14.8	2.20	10.20	22.80	33
15 MHz Bandwidth									
2593.00	81.74	162	1.2	H	12.2	2.20	10.20	20.20	33
2593.00	84.13	111	1.8	V	14.9	2.20	10.20	22.90	33
20 MHz Bandwidth									
2593.00	81.67	324	2.3	H	12.1	2.20	10.20	20.10	33
2593.00	83.82	2	1.1	V	14.6	2.20	10.20	22.60	33

16QAM:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
5 MHz Bandwidth									
2593.00	82.10	48	1.5	H	12.5	2.20	10.20	20.50	33
2593.00	84.24	80	1.2	V	15.0	2.20	10.20	23.00	33
10 MHz Bandwidth									
2593.00	81.79	245	2.1	H	12.2	2.20	10.20	20.20	33
2593.00	84.15	29	1.2	V	14.9	2.20	10.20	22.90	33
15 MHz Bandwidth									
2593.00	81.68	275	1.6	H	12.1	2.20	10.20	20.10	33
2593.00	84.20	310	1.2	V	15.0	2.20	10.20	23.00	33
20 MHz Bandwidth									
2593.00	81.94	226	1.4	H	12.4	2.20	10.20	20.40	33
2593.00	84.11	303	1.4	V	14.9	2.20	10.20	22.90	33

Note:

All above data were tested with no amplifier

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

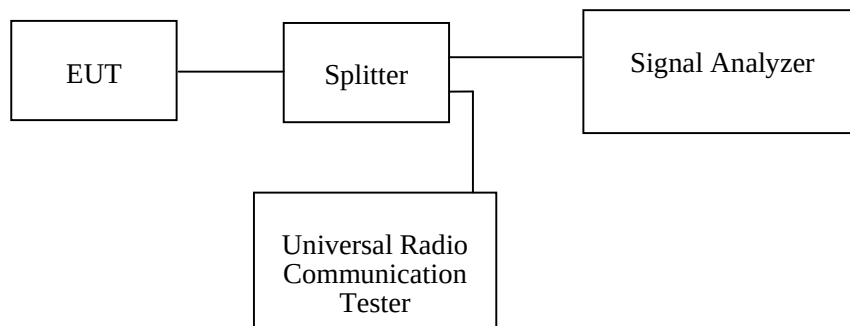
FCC §2.1049, §27.53 - OCCUPIED BANDWIDTH**Applicable Standard**

FCC 47 §2.1049, §27.53.

Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 1% to 5% of the anticipated emission bandwidth and the 26 dB & 99% bandwidth was recorded.

**Test Data****Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Hill He on 2018-05-23.

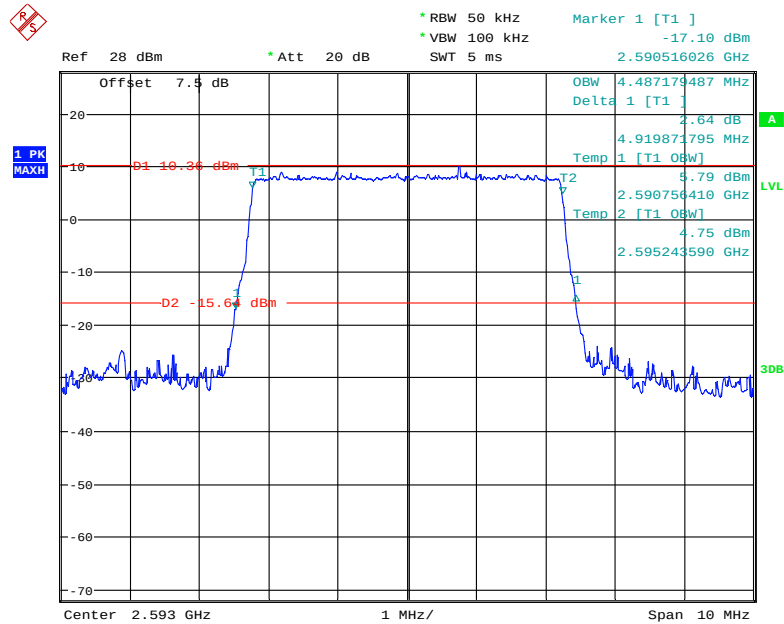
EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables and plots.

LTE Band 41: (Middle Channel)

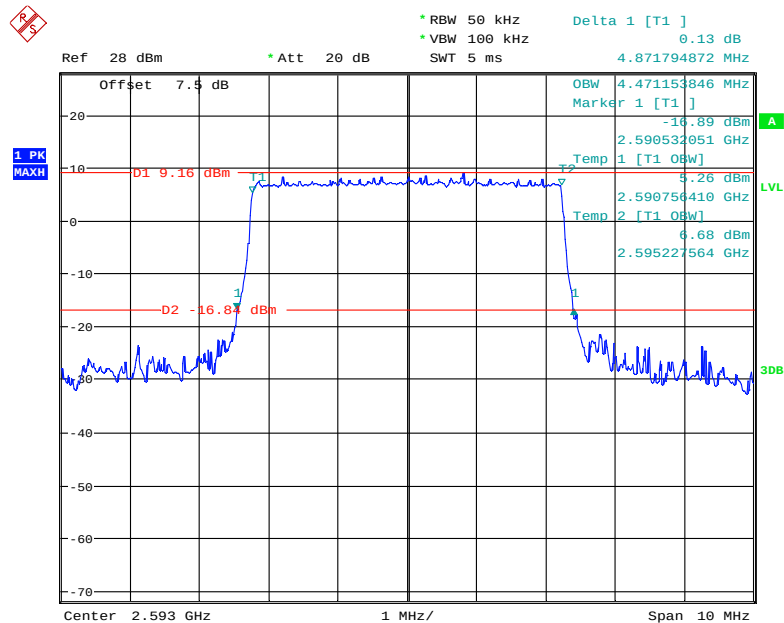
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5.0	QPSK	4.487	4.920
	16QAM	4.471	4.872
10.0	QPSK	8.942	10.032
	16QAM	8.942	9.647
15.0	QPSK	13.413	14.792
	16QAM	13.462	14.744
20.0	QPSK	17.949	19.022
	16QAM	17.885	19.087

QPSK (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

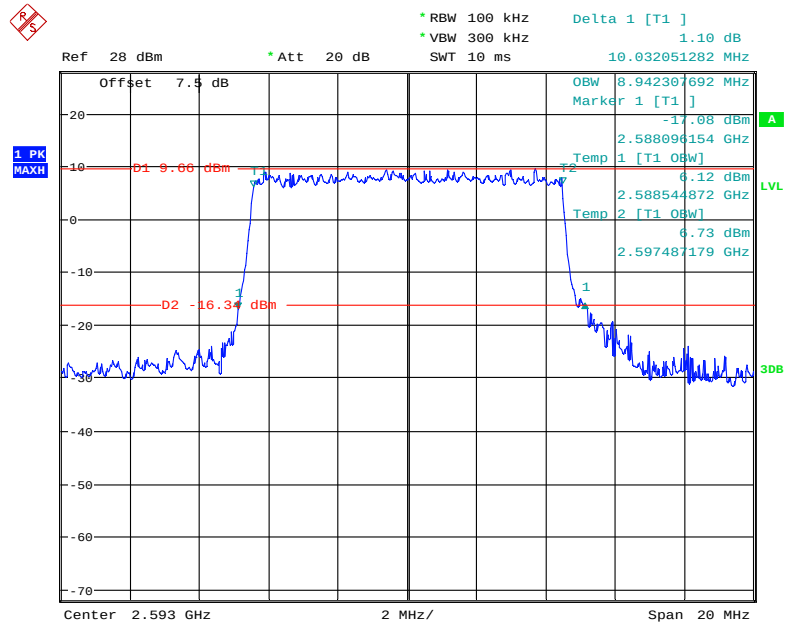


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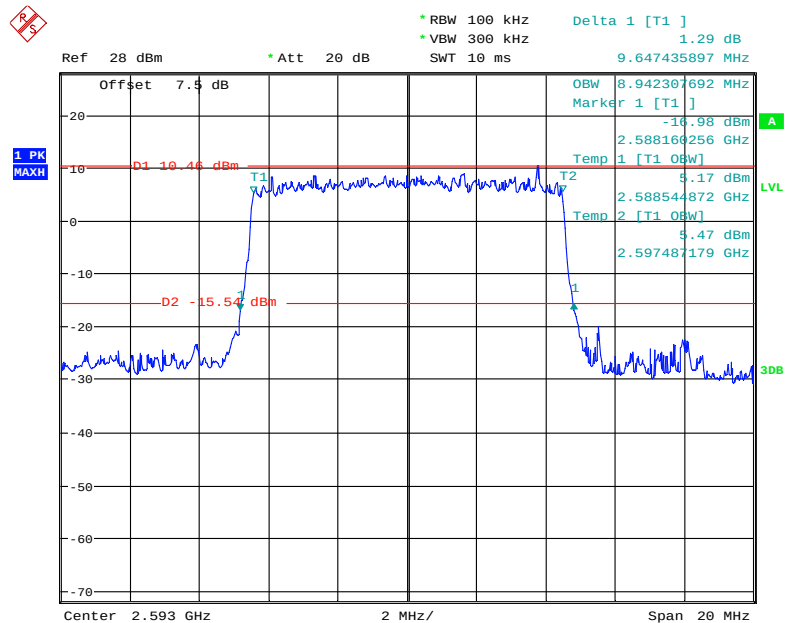
16-QAM (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



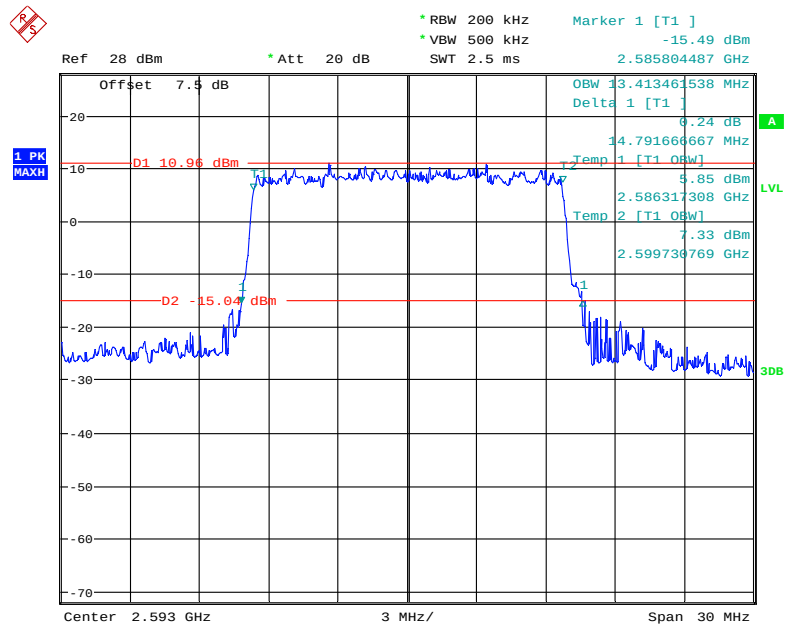
Date: 23.MAY.2018 10:33:11

QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

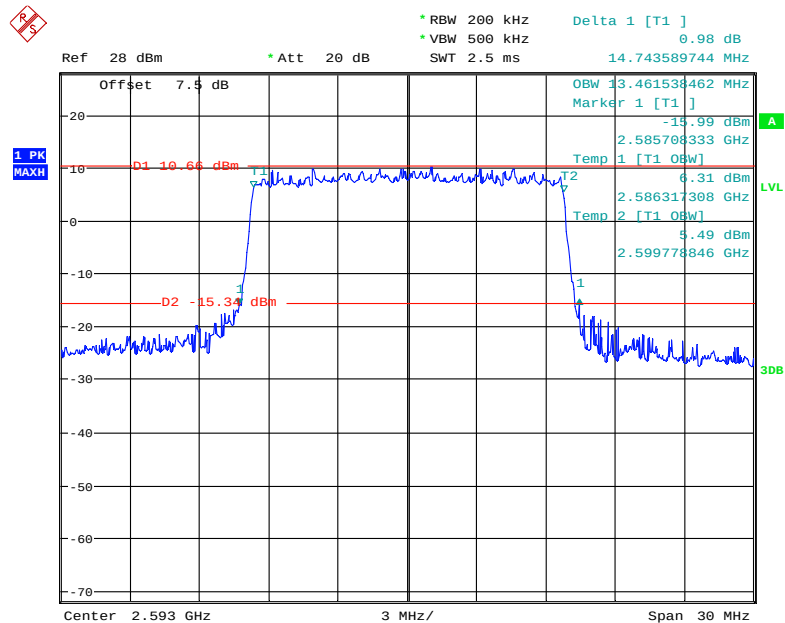
Date: 23.MAY.2018 10:36:54

16-QAM (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

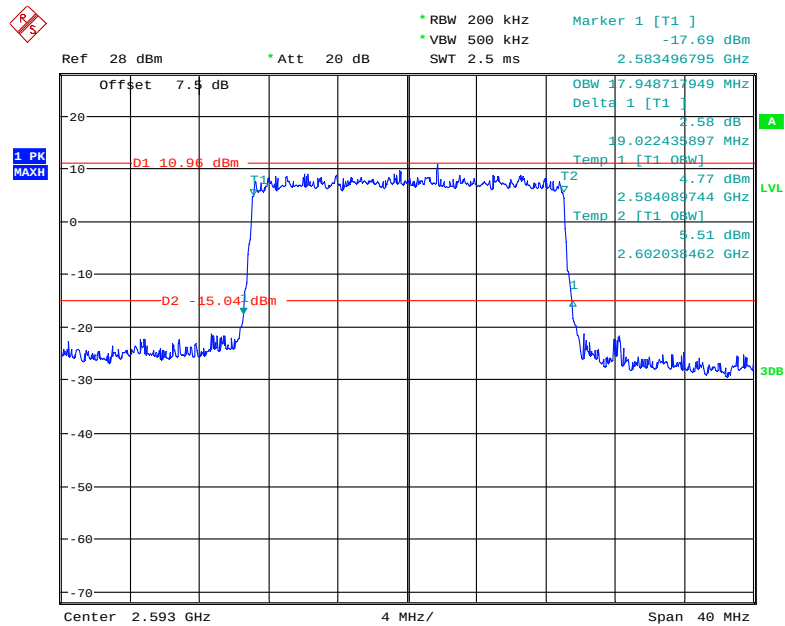
Date: 23.MAY.2018 10:37:54

QPSK (15.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

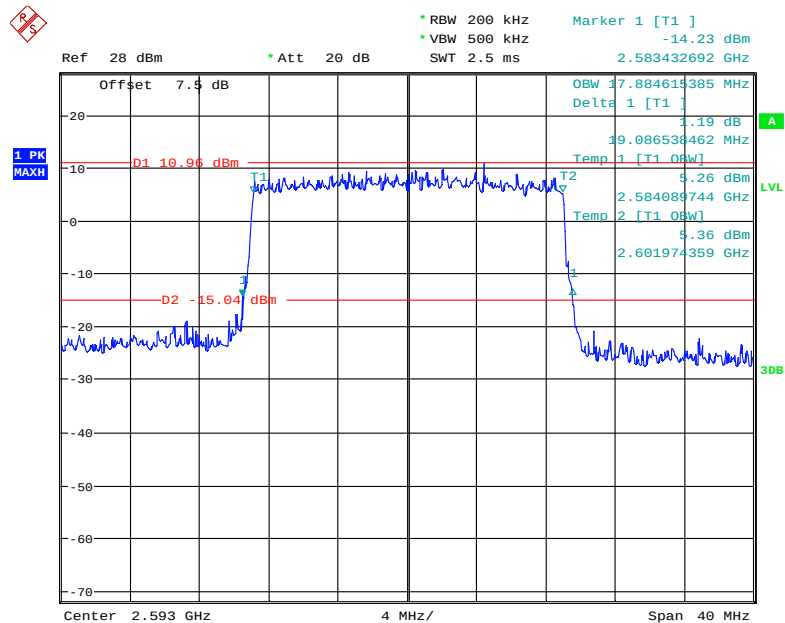
Date: 23.MAY.2018 10:40:18

16-QAM (15.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 23.MAY.2018 10:39:20

QPSK (20.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 23.MAY.2018 10:42:46

16-QAM (20.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 23.MAY.2018 10:41:42

FCC §2.1051, §27.53 (h) (m) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

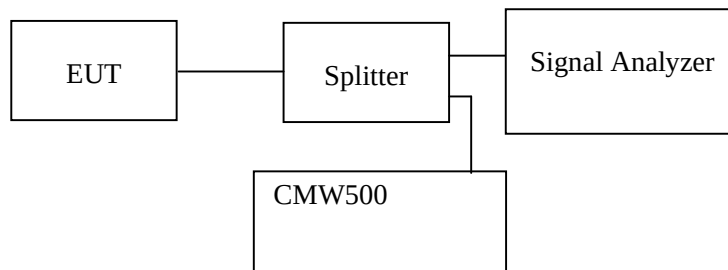
Applicable Standard

FCC §2.1051, §27.53(h) (m).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Data

Environmental Conditions

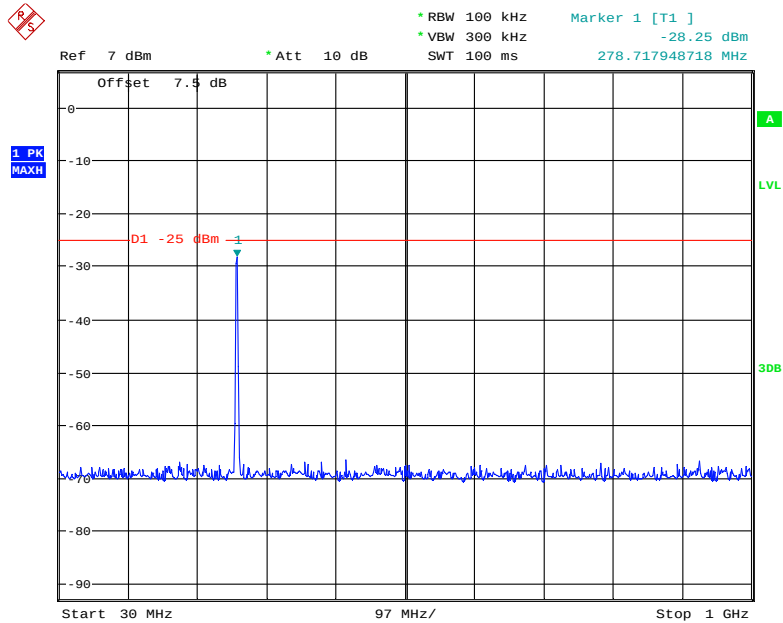
Temperature:	26 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Hill He on 2018-05-23.

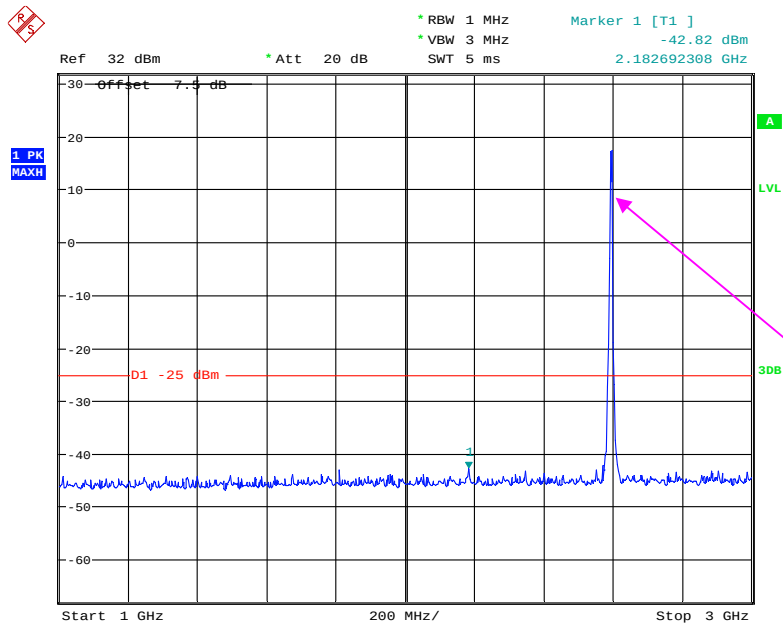
Test result: Compliance,

EUT operation mode: transmitting

Please refer to the following plots.

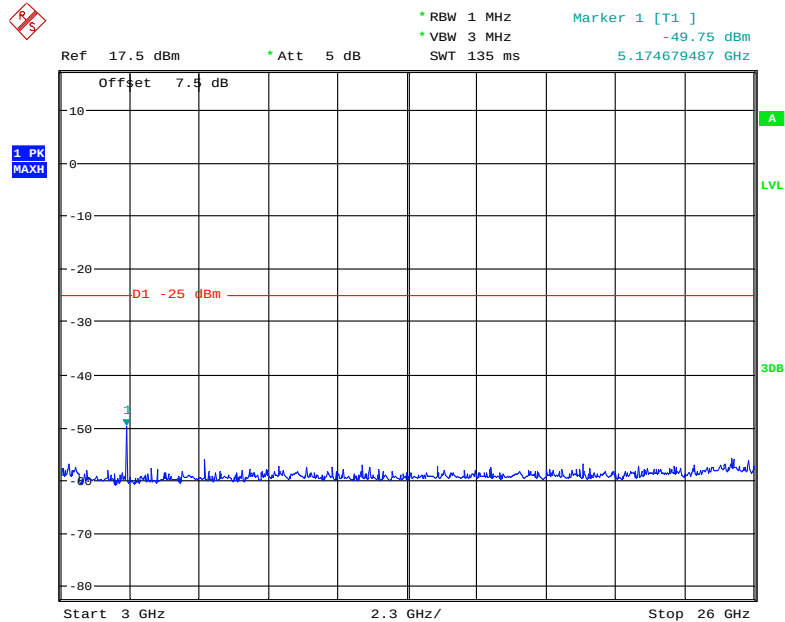
LTE Band 41:**30 MHz - 1 GHz (5.0 MHz, Middle Channel)**

Date: 23.MAY.2018 13:47:11

1 GHz - 3 GHz (5.0 MHz, Middle Channel)

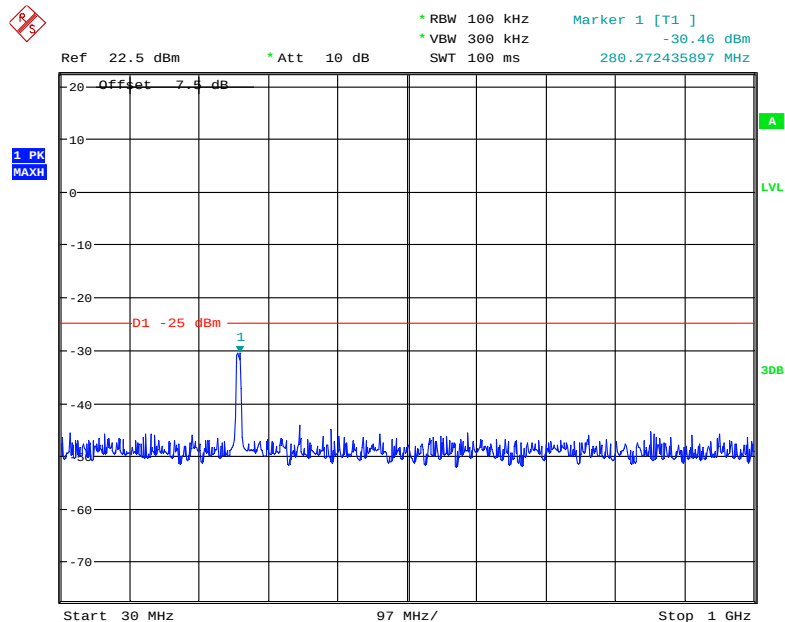
Date: 23.MAY.2018 13:48:05

3 GHz – 26 GHz (5.0 MHz, Middle Channel)



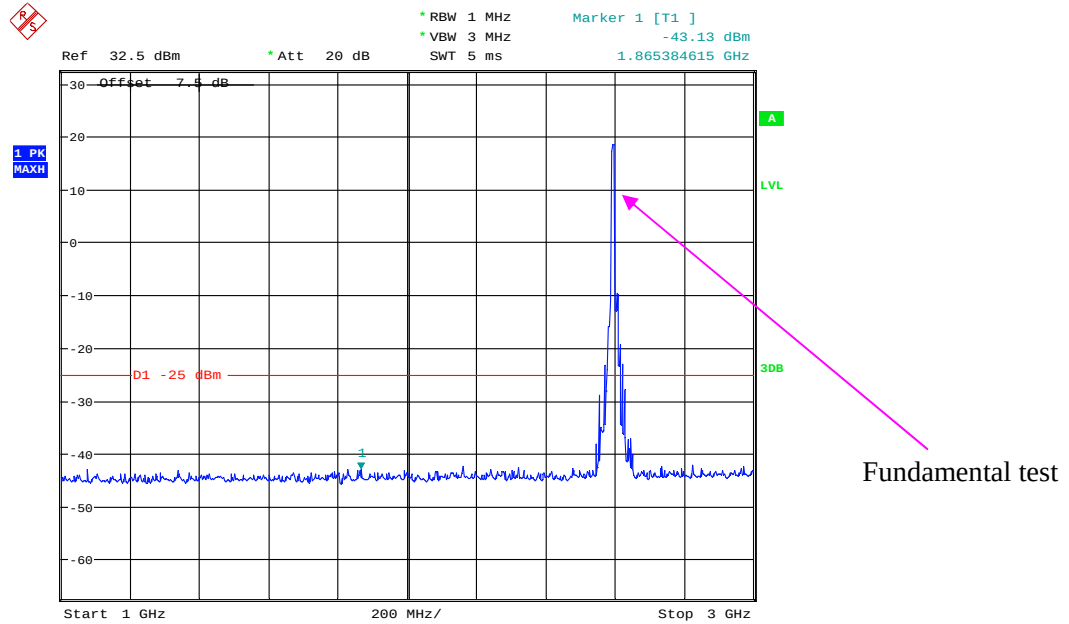
Date: 23.MAY.2018 13:56:36

30 MHz - 1 GHz (10.0 MHz, Middle Channel)



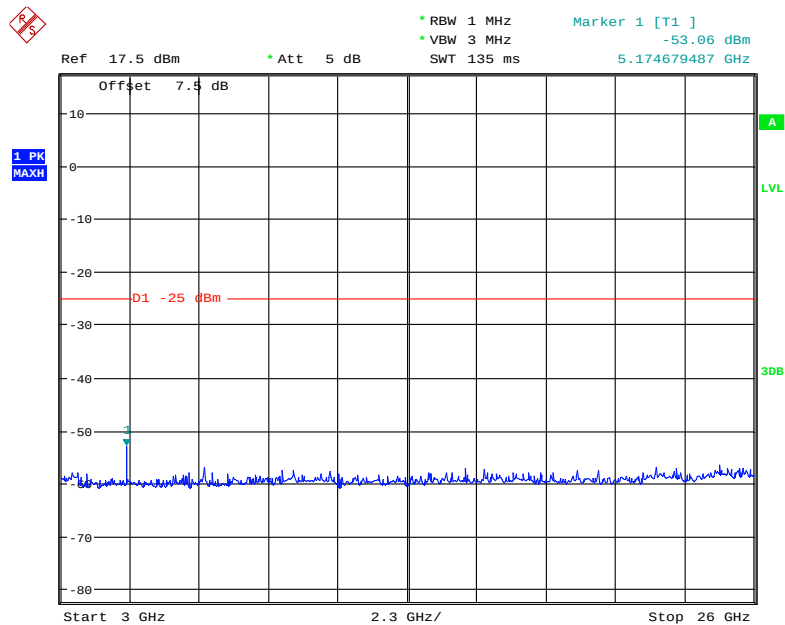
Date: 23.MAY.2018 13:50:08

1 GHz – 3 GHz (10.0 MHz, Middle Channel)



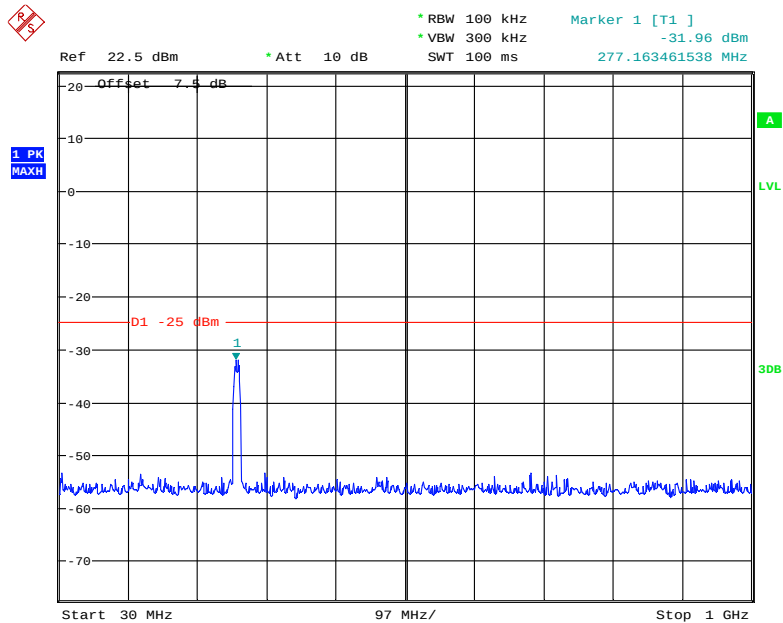
Date: 23.MAY.2018 13:49:39

3 GHz – 26 GHz (10.0 MHz, Middle Channel)



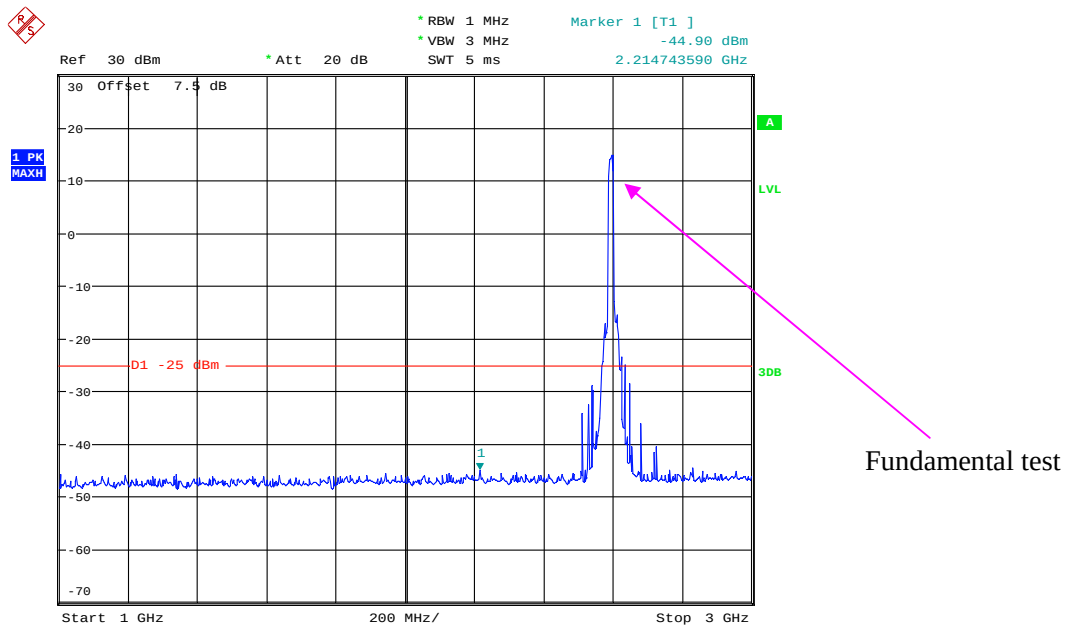
Date: 23.MAY.2018 13:57:29

30 MHz - 1 GHz (15.0 MHz, Middle Channel)



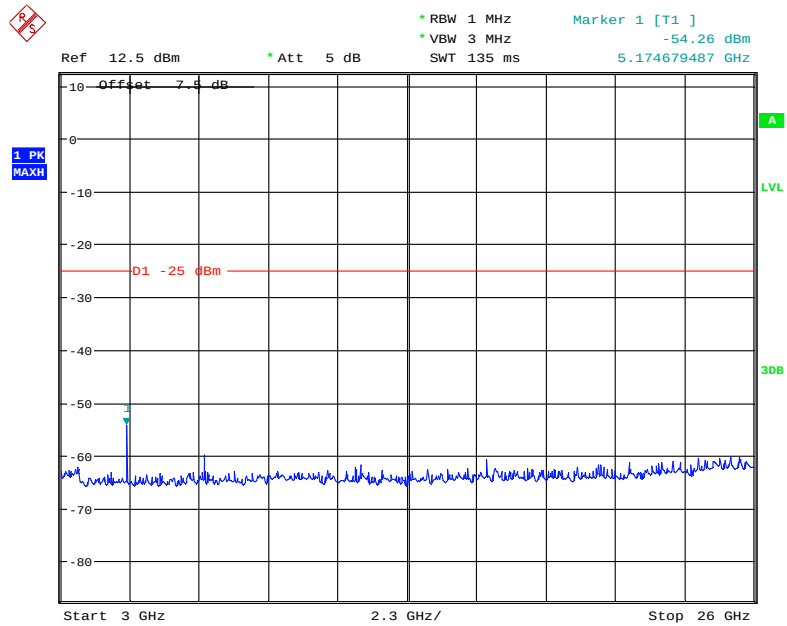
Date: 23.MAY.2018 13:51:55

1 GHz - 3 GHz (15.0 MHz, Middle Channel)



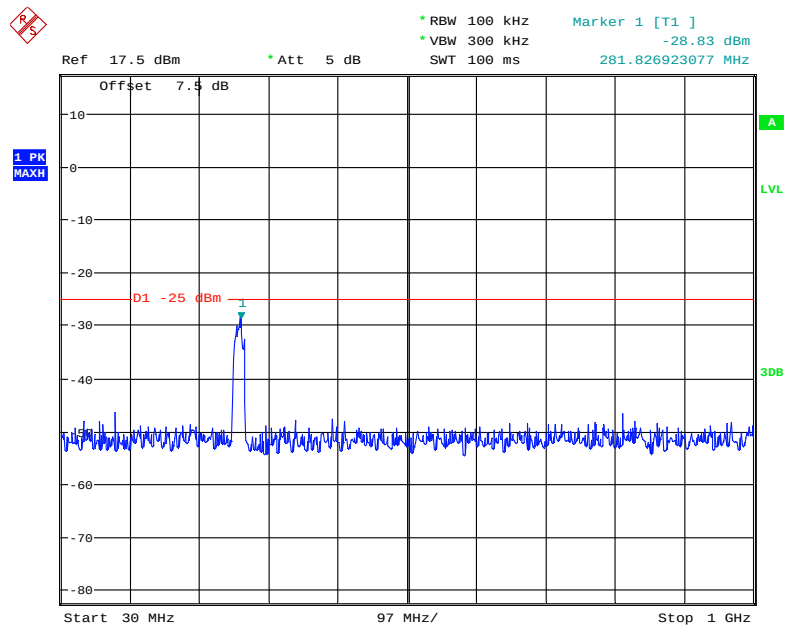
Date: 23.MAY.2018 13:53:13

3 GHz – 26 GHz (15.0 MHz, Middle Channel)



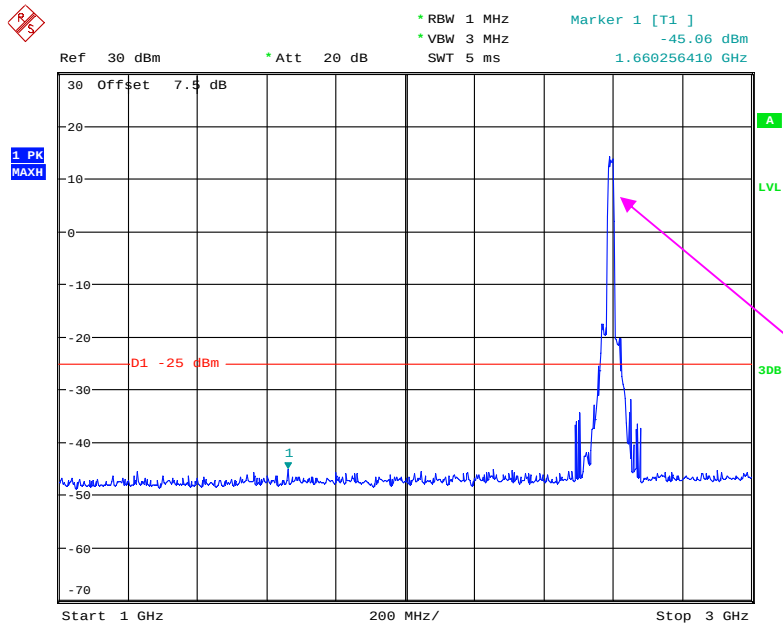
Date: 23.MAY.2018 13:54:11

30 MHz - 1 GHz (20.0 MHz, Middle Channel)



Date: 23.MAY.2018 13:55:38

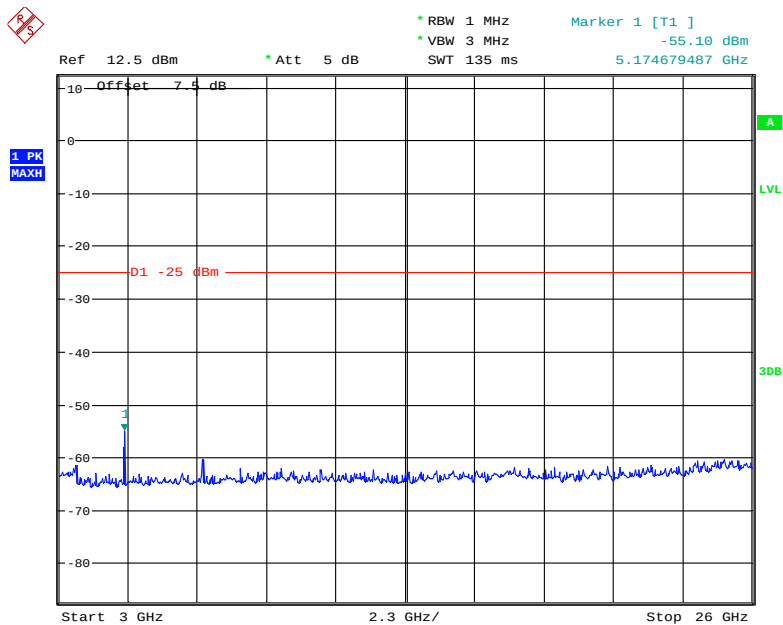
1 GHz – 3 GHz (20.0 MHz, Middle Channel)



Fundamental test

Date: 23.MAY.2018 13:55:14

3 GHz – 26 GHz (20.0 MHz, Middle Channel)



Date: 23.MAY.2018 13:54:40

FCC § 2.1053;§27.53 (h)(m) SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, § 27.53(h)(m)

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 receiving 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.

Test Data

Environmental Conditions

Temperature:	27 °C
Relative Humidity:	53 %
ATM Pressure:	101.0 kPa

The testing was performed by Hill He on 2018-05-26.

EUT operation mode: Transmitting

LTE Band: (Pre-scan with all the bandwidth, and worse case as below)

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level	Limit	Margin
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)	(dBm)	(dBm)	(dB)
Band 41										
Test frequency range: 30 MHz ~ 26GHz										
179.16	38.01	358	1.2	H	-59.0	0.28	0	-59.28	-25	34.28
179.16	38.09	262	2.4	V	-58.9	0.28	0	-59.18	-25	34.18
5186.00	44.12	242	1.8	H	-54.5	1.60	12.10	-44.00	-25	43.00
5186.00	43.70	118	1.5	V	-54.5	1.60	12.10	-44.00	-25	43.00
7779.00	42.67	169	2.2	H	-51.4	2.00	10.50	-42.90	-25	41.90
7779.00	44.3	107	1.5	V	-49.7	2.00	10.50	-41.20	-25	40.20

Note:

- 1) Absolute Level = Substituted Level - Cable loss + Antenna Gain
- 2) Margin = Limit- Absolute Level

§27.53 (h)(m) - BAND EDGES

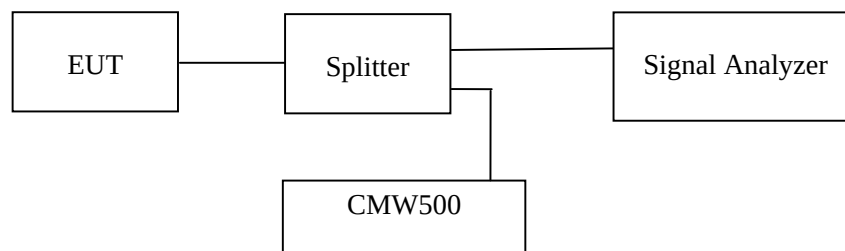
Applicable Standard

According to FCC §27.53 (h)(m), 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 RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

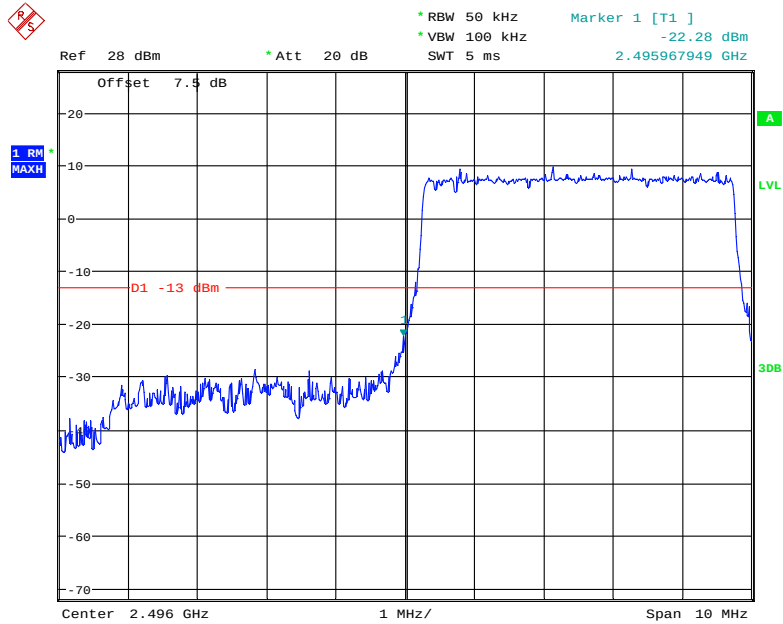
The testing was performed by Hill He on 2018-05-23.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following plots.

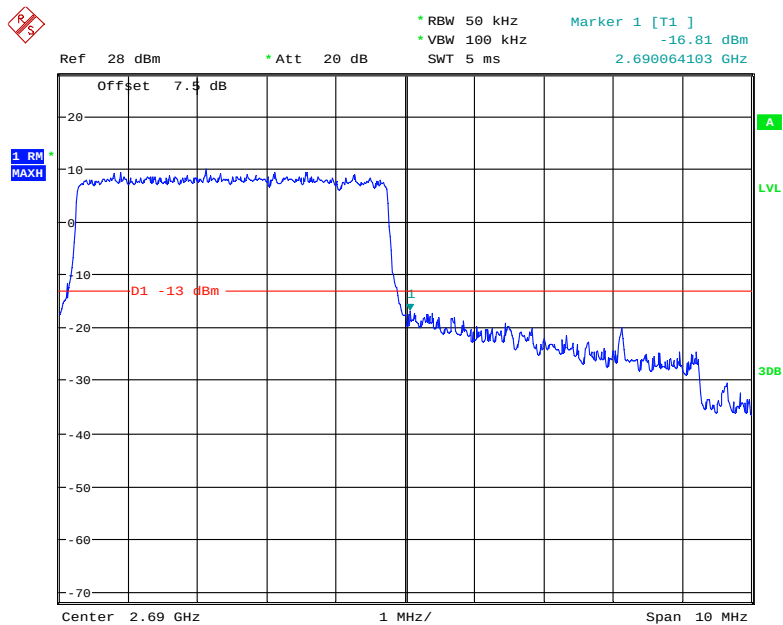
Band 41:

QPSK (5.0 MHz, FULL RB) - Left Band Edge



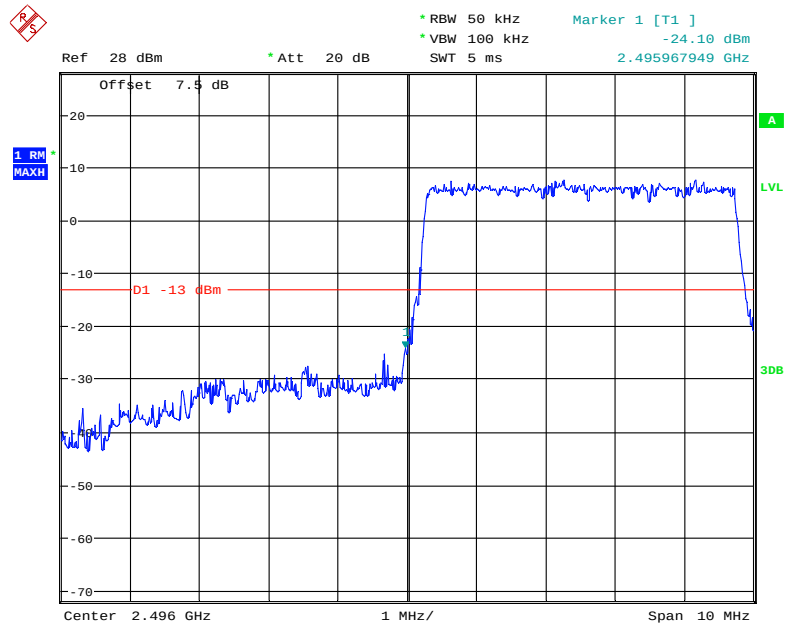
Date: 23.MAY.2018 10:52:27

QPSK (5.0 MHz, FULL RB) - Right Band Edge



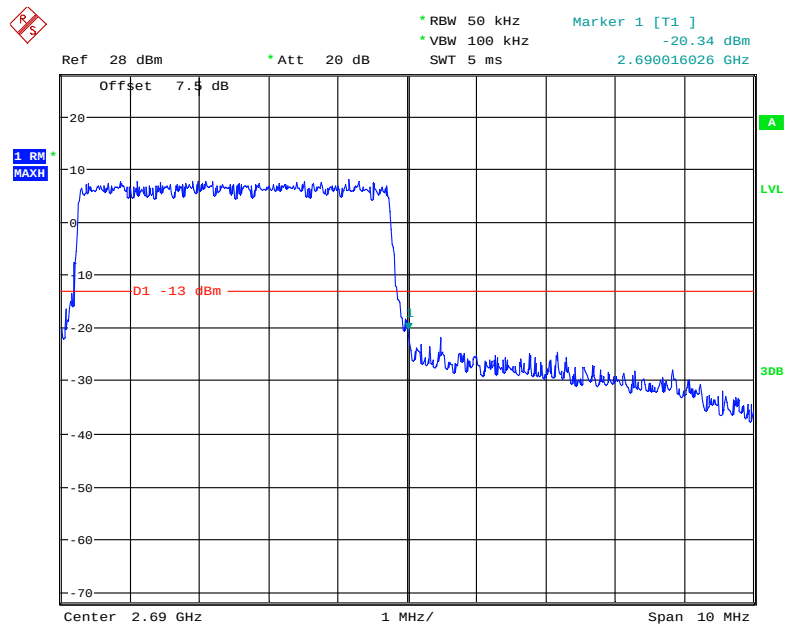
Date: 23.MAY.2018 10:50:21

16-QAM (5.0 MHz, FULL RB) - Left Band Edge



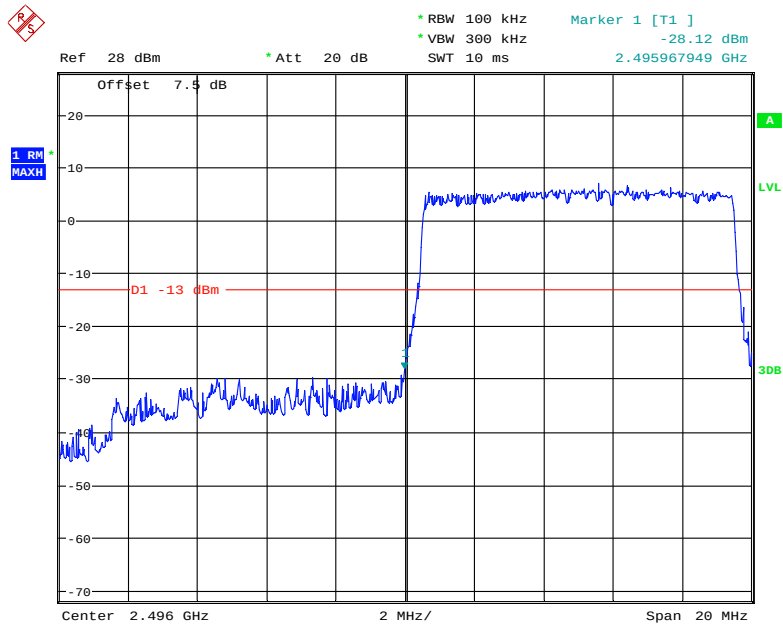
Date: 23.MAY.2018 10:51:41

16-QAM (5.0 MHz, FULL RB) - Right Band Edge



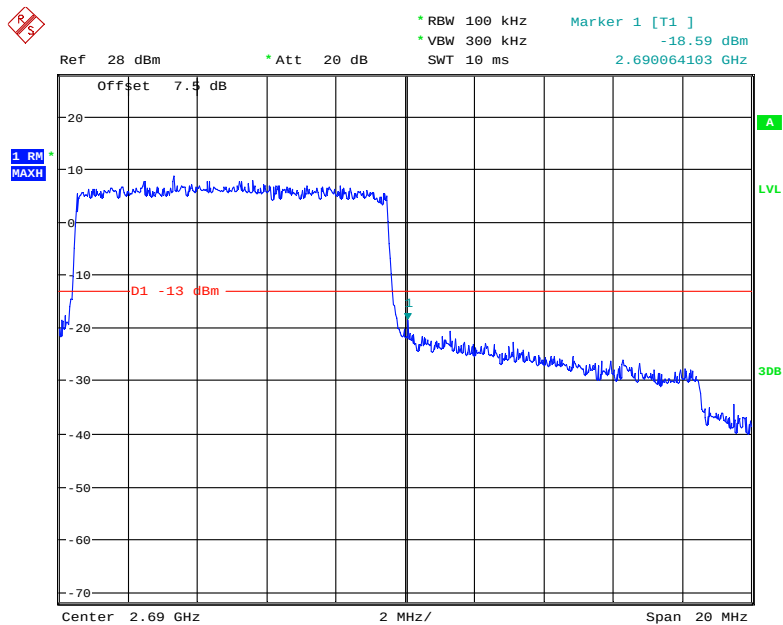
Date: 23.MAY.2018 10:50:58

QPSK (10.0 MHz, FULL RB) - Left Band Edge



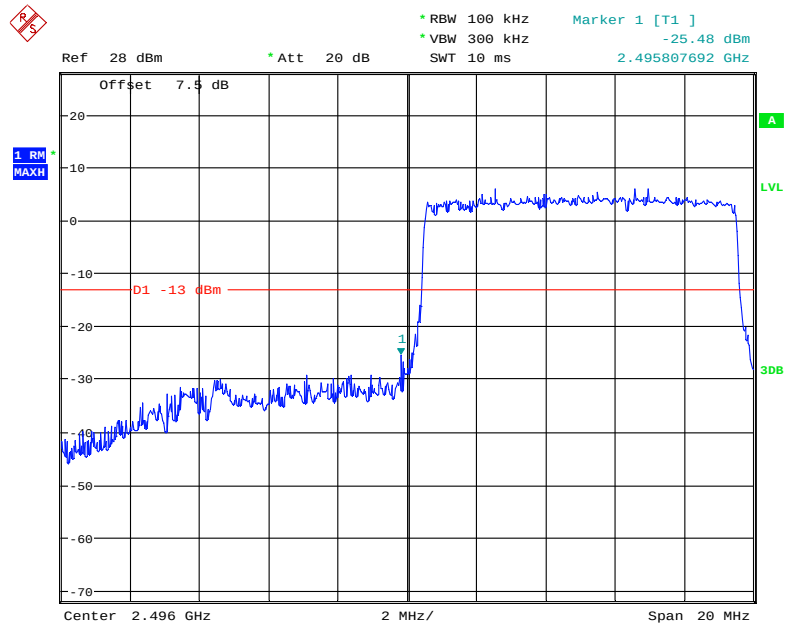
Date: 23.MAY.2018 11:27:40

QPSK (10.0 MHz, FULL RB) - Right Band Edge



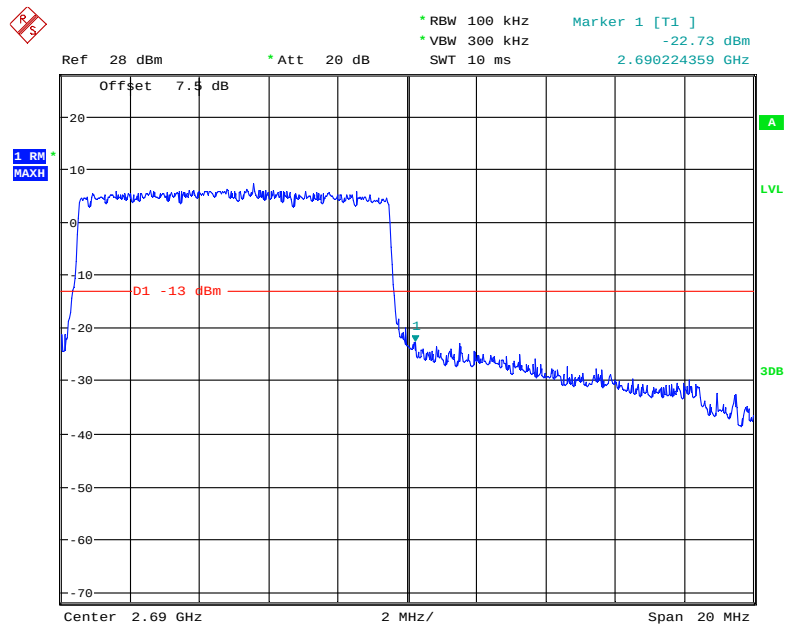
Date: 23.MAY.2018 11:28:34

16-QAM (10.0 MHz, FULL RB) - Left Band Edge



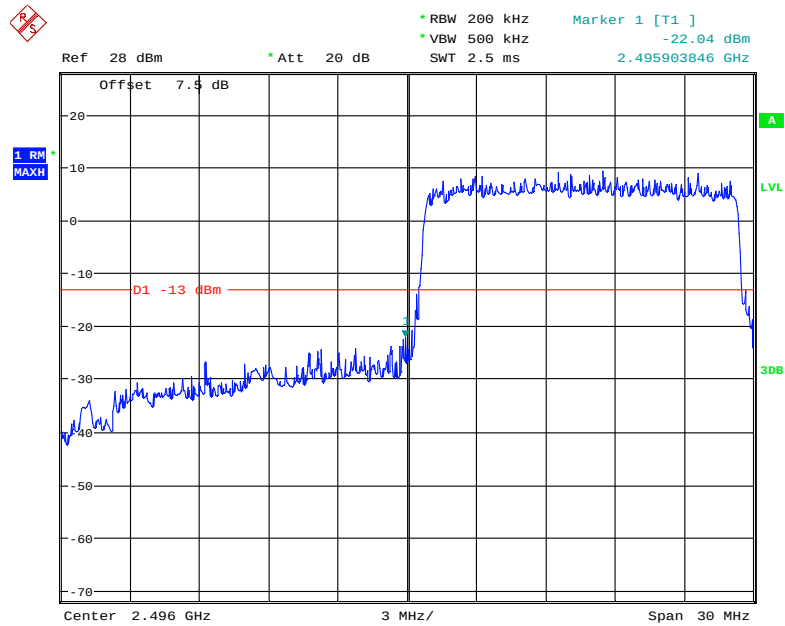
Date: 23.MAY.2018 11:27:01

16-QAM (10.0 MHz, FULL RB) - Right Band Edge



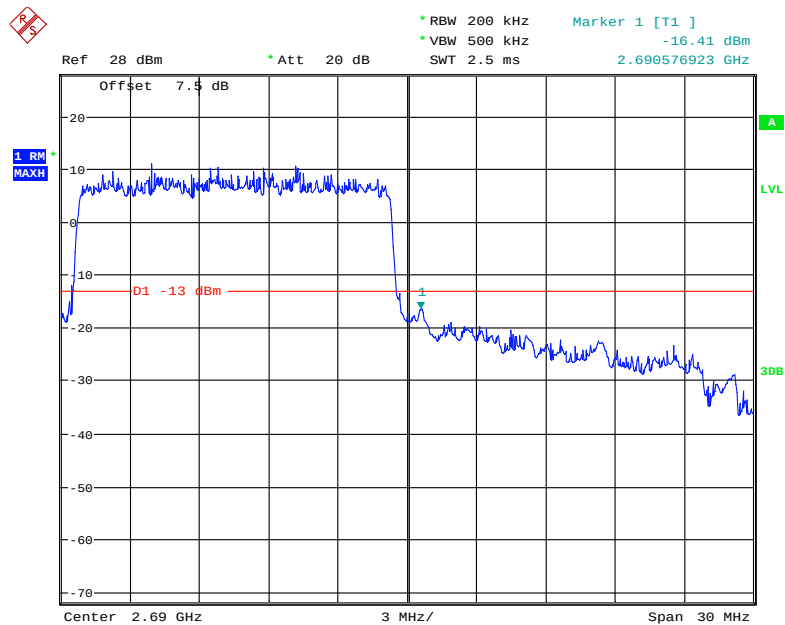
Date: 23.MAY.2018 11:29:18

QPSK (15.0 MHz, FULL RB) - Left Band Edge



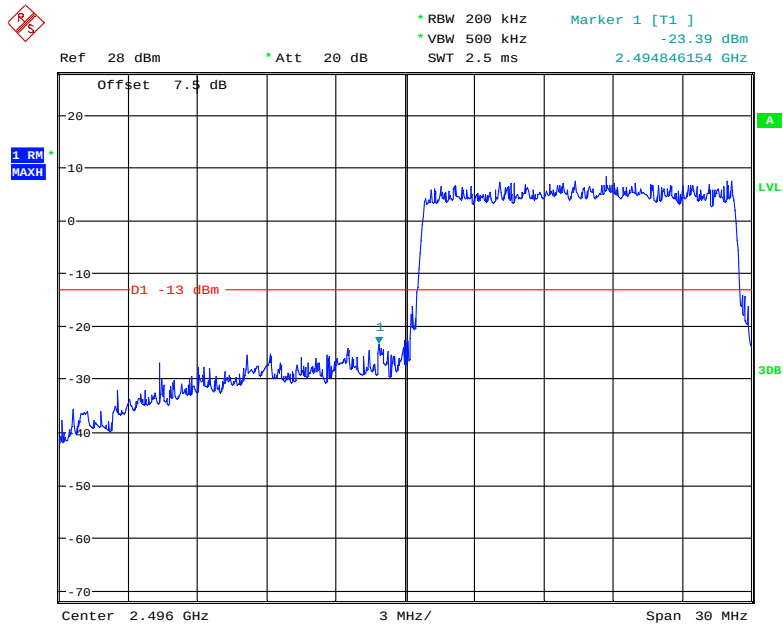
Date: 23.MAY.2018 11:25:21

QPSK (15.0 MHz, FULL RB) - Right Band Edge



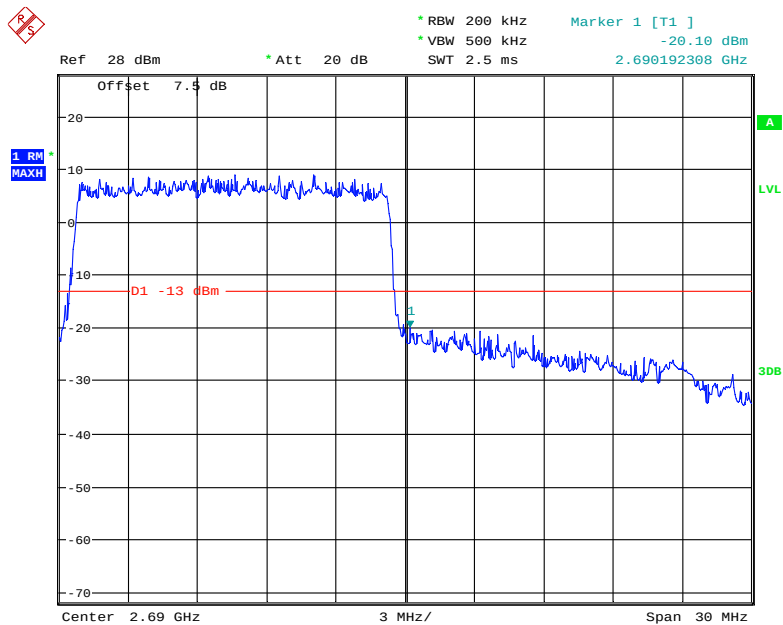
Date: 23.MAY.2018 11:22:38

16-QAM (15.0 MHz, FULL RB) - Left Band Edge



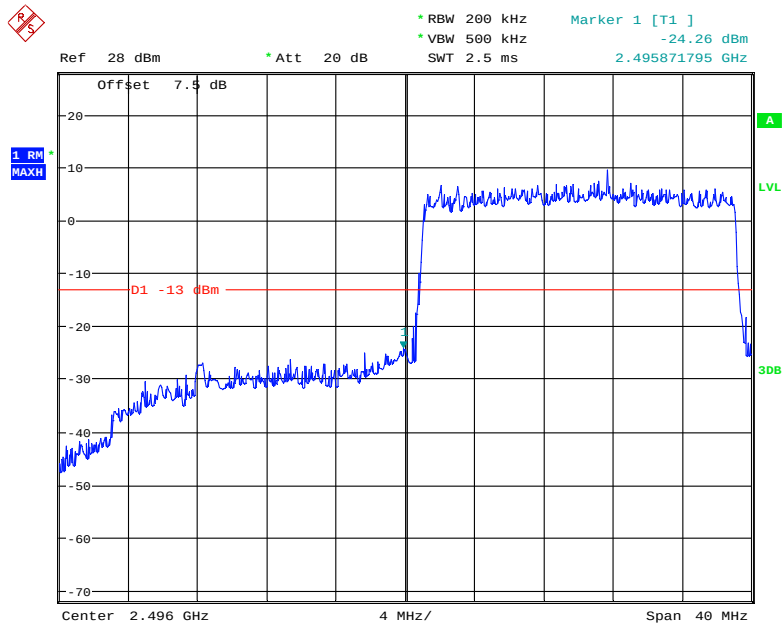
Date: 23.MAY.2018 11:24:28

16-QAM (15.0 MHz, FULL RB) - Right Band Edge



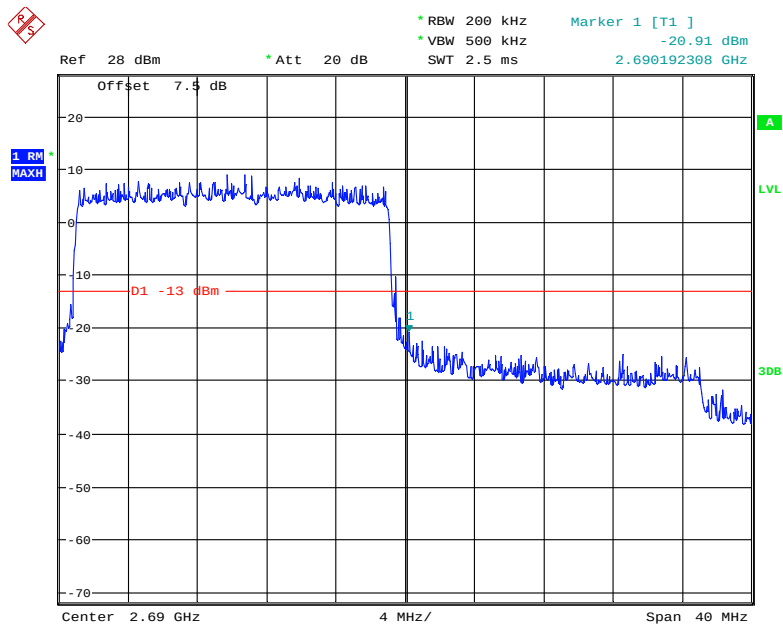
Date: 23.MAY.2018 11:23:34

QPSK (20.0 MHz, FULL RB) - Left Band Edge



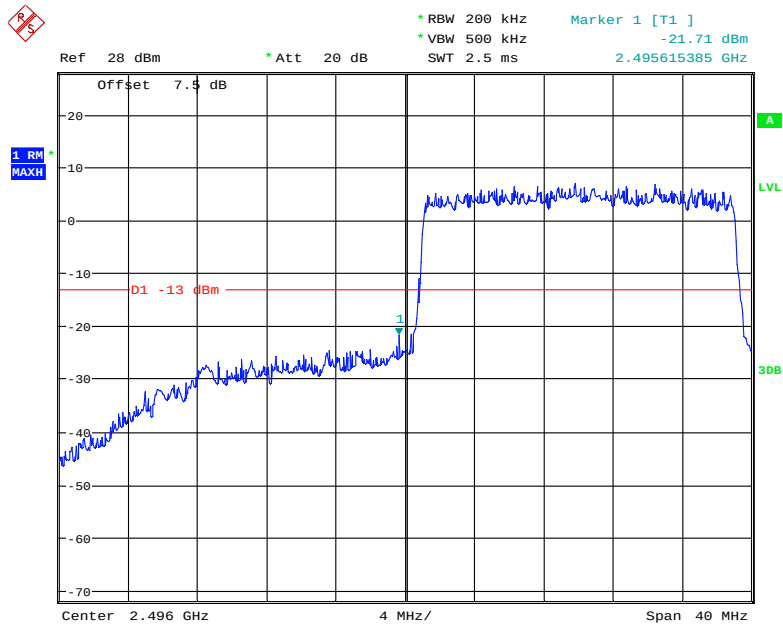
Date: 23.MAY.2018 11:20:20

QPSK (20.0 MHz, FULL RB) - Right Band Edge



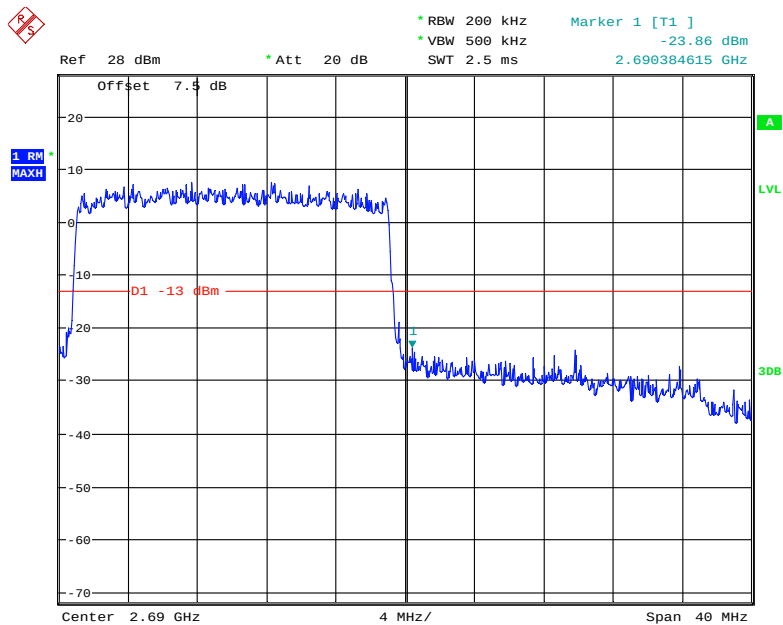
Date: 23.MAY.2018 11:21:11

16-QAM (20.0 MHz, FULL RB) - Left Band Edge



Date: 23.MAY.2018 11:19:49

16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 23.MAY.2018 11:21:44

FCC § 2.1055; §27.54; - FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055, §27.54.

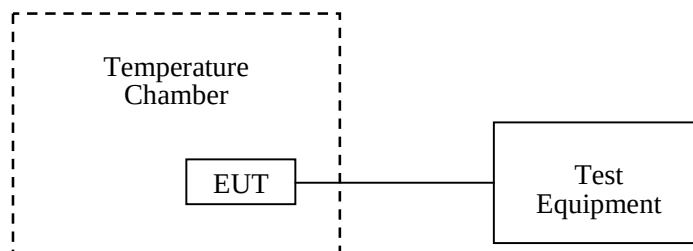
According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Hill He on 2018-05-26.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables.

LTE:**QPSK:****Band41:**

10.0 MHz Middle Channel, $f_o=2593$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.8	5	0.001928	pass
-20		4	0.001543	pass
-10		6	0.002314	pass
0		8	0.003085	pass
10		1	0.000386	pass
20		8	0.003085	pass
30		4	0.001543	pass
40		8	0.003085	pass
50		7	0.002700	pass
20	V min.= 3.6	-5	-0.001928	pass
	V max.= 4.35	10	0.003857	pass

16QAM:**Band 41:**

10.0 MHz Middle Channel, $f_o=2593$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.8	2	0.000771	pass
-20		-4	-0.001543	pass
-10		5	0.001928	pass
0		-3	-0.001157	pass
10		-4	-0.001543	pass
20		-10	-0.003857	pass
30		-8	-0.003085	pass
40		-1	-0.000386	pass
50		-10	-0.003857	pass
20	V min.= 3.6	4	0.001543	pass
	V max.= 4.35	-6	-0.002314	pass

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