



中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: Feitian Technologies Co., Ltd.

Address: Floor 17th, Tower B, Huizhi Mansion, No.9 Xueqing Road, Haidian District, Beijing, China

FCC ID: ZD3FTF210

Product Name: Android POS Terminal

Standard(s): 47 CFR Part 2, 47 CFR Part 22, Subpart H
47 CFR Part 24, Subpart E
47 CFR Part 27
47 CFR Part 90
ANSI C63.26-2015
KDB 971168 D01 Power Meas License Digital Systems
v03r01

The above equipment has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR230636432-00H

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “▲”. Customer model name, addresses, names, trademarks etc. are not considered data.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR230636432-00H	Original Report	2023/8/17

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Android POS Terminal
EUT Model:	F210
Operation Bands and modes:	GSM/GPRS/EDGE: 850/1900 WCDMA: Band 2/4/5 LTE: Band 2/4/5/7/12/17/25/26/38/40/41/66
Modulation Type:	GMSK, 8PSK, BPSK, QPSK, 16QAM
Rated Input Voltage:	DC 5V from adapter (for Charging) or DC 3.8V from battery
Serial Number:	27BI-1 (equipped with fingerprint module, for RF Conducted Test) 27BI-2 (equipped with fingerprint module, for AC Line Conducted Emissions Test and Radiation Spurious Emissions Test)
EUT Received Date:	2023/6/27
EUT Received Status:	Good
<p>Note:</p> <p>1. The product of model F210 has two configurations: one is equipped with a fingerprint module, and the other is not. The other configurations are the same, please refer to EUT photos and the declaration letter for details.</p> <p>2. These two configurations of products were evaluated in the CR230636432-00C report for the AC Line Conducted Test and Radiation Spurious Emissions Test, and the report showed that products equipped with fingerprint modules had worse emissions. Therefore, only the test results of products equipped with fingerprint modules are reflected in this report.</p>	

Operation Voltage (V_{DC}) ▲ :

Lowest:	3.5	Normal:	3.8	Highest:	4.35
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Transmission Antenna Information ▲ :

Antenna Type	Operation Bands	Antenna Frequency Range(MHz)	Antenna Gain (G _T) (dBi)	L _c (dB)
FPC	GSM850	824-849	-0.32	0.1
	PCS1900	1850-1910	1.21	0.2
	WCDMA B2	1850-1910	1.21	0.2
	WCDMA B4	1710-1755	2.13	0.2
	WCDMA B5	824-849	-0.32	0.1
	LTE B2	1850-1910	1.21	0.2
	LTE B4	1710-1755	2.13	0.2
	LTE B5	824-849	-0.32	0.1
	LTE B7	2500-2570	4.52	0.3
	LTE B12	699-716	-6.07	0.1
	LTE B17	704-716	-6.07	0.1
	LTE B25	1850-1915	1.21	0.2
	LTE B26	814-849	0.58	0.1
	LTE B38	2570-2620	3.89	0.3
	LTE B40 Lower	2305-2315	2.56	0.3
	LTE B40 Upper	2350-2360	2.81	0.3
	LTE B41	2535-2655	4.52	0.3
LTE B66	1710-1780	2.13	0.2	

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Adapter	SHENZHEN TEKA TECHNOLOGY CO., LTD	TEKA-UCA20US	Input: 100-240V~50/60Hz 0.35A MAX Output: 5.0V = 2A
USB Cable	/	/	Unshielded without ferrite; 1.20 Meter

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mode:	The system was configured for testing in each operation mode.
Equipment Modifications:	No
EUT Exercise Software:	No

The maximum power was configured per 3GPP Standard for each operation modes as below setting:

GSM/GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900
 Press Connection control to choose the different menus
 Press RESET > choose all the reset all settings
 Connection Press Signal Off to turn off the signal and change settings
 Network Support > GSM + GPRS or GSM + EGSM
 Main Service > Packet Data
 Service selection > Test Mode A – Auto Slot Config. off
 MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting
 > Slot configuration > Uplink/Gamma
 > 33 dBm for GPRS 850
 > 30 dBm for GPRS 1900
 > 27 dBm for EGPRS 850
 > 26 dBm for EGPRS 1900
 BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel
 Frequency Offset > + 0 Hz
 Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)
 BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off
 P0 > 4 dB
 Slot Config > Unchanged (if already set under MS signal)
 TCH > choose desired test channel
 Hopping > Off
 Main Timeslot > 3
 Network Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)

Bit Stream > 2E9-1 PSR Bit Stream
 AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input
 Connection Press Signal on to turn on the signal and change settings

WCDMA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2		4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/ 5	0
	β_{ec}	209/225	12/15	30 15	2/15	5/15
	β_c / β_d	11/15	6/15	15/9	2/15	-
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
PR(dB)	0	2	1	2	0	
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback	4ms				
	CQI Repetition Factor	2				
	A _{hs} = β_{hs} / β_c	30/15				
HSUPA Specific Settings	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFICI	75	67	92	71	81
	Associated Max UL Data Rate k ps	242.1	174.9	482.8	205.8	308.9
	Reference E_FCI	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	E-TFCI 11 E-TFCI PO4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27		

LTE (FDD):

The following tests were conducted according to the test requirements in 3GPP TS36.101

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
NS_04	6.6.2.2.2	41	20	>10	≤ 1
			5	>6	≤ 1
NS_05	6.6.3.3.1	1	10, 15, 20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3	13	10	Table 6.2.4-2	Table 6.2.4-2
	6.6.3.3.2				
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE(TDD):

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

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

Table 4.2-2: Uplink-downlink configurations.

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

Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

Calculated Duty Cycle = Extended cyclic prefix in uplink x (T_s) x # of S + # of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6 ms = 63.33%

where

T_s = 1/(15000 x 2048) seconds

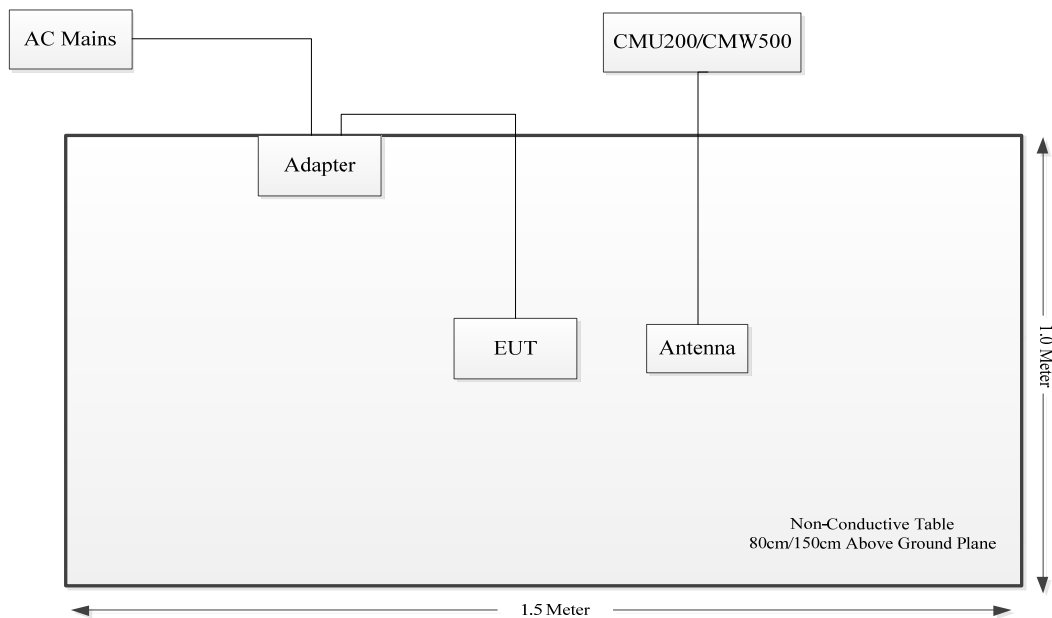
1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
/	/	/	/	/	/

1.2.4 Block Diagram of Test Setup



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB,200M~1GHz: 5.61 dB,1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions, conducted	±1.26 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
RF Frequency	±0.082×10 ⁻⁶

2. SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
FCC§2.1046; § 22.913; § 24.232; §27.50; §90.635	RF Output Power	Compliant
FCC§ 2.1047	Modulation Characteristics	Not Applicable
FCC§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53; §90.209	Occupied Bandwidth	Compliant
FCC§ 2.1051; § 22.917; § 24.238; §27.53; §90.691	Spurious Emissions at Antenna Terminal	Compliant
FCC§ 22.917; § 24.238; §27.53; §90.691	Out of band emission, Band Edge	Compliant
FCC§ 2.1055; § 22.355; § 24.235; §27.54; §90.213	Frequency stability vs. temperature Frequency stability vs. voltage	Compliant
FCC§ 2.1053; § 22.917; § 24.238; §27.53; §90.691	Field Strength of Spurious Radiation	Compliant

3. REQUIREMENTS AND TEST PROCEDURES

3.1 Applicable Standard For Part 22 Subpart H:

3.1.1 RF Output Power

FCC §22.913

(a)(5) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7watts.

(d) *Power measurement.* Measurement of the ERP of Cellular base transmitters and repeaters must be made using an average power measurement technique. The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB. Power measurements for base transmitters and repeaters must be made in accordance with either of the following:

- (1) A Commission-approved average power technique (*see* FCC Laboratory's Knowledge Database); or
- (2) For purposes of this section, peak transmit power must be measured over an interval of continuous transmission using instrumentation calibrated in terms of an rms equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, *etc.*, so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

3.1.2 Spurious Emissions

FCC §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.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a reference bandwidth as follows:

(1) In the spectrum below 1 GHz, instrumentation should employ a reference bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy, provided that the measured power is integrated over the full required reference bandwidth (i.e., 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(2) In the spectrum above 1 GHz, instrumentation should employ a reference bandwidth of 1 MHz

3.1.3 Frequency stability

FCC §22.355

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-1 - Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile >3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20	20	50
50 to 450	5	5	50
450 to 512	2.5	5	5
821 to 896	1.5	2.5	2.5
928 to 929	5	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10	n/a	n/a

3.2 Applicable Standard For Part 24 Subpart E:

3.2.1 RF Output Power

FCC §24.232

(c) Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

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

3.2.2 Spurious Emissions

FCC §24.238

The rules in this section govern the spectral characteristics of emissions in the Broadband Personal Communications Service.

(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.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(c) Alternative out of band emission limit. Licensees in this service may establish an alternative out of band emission limit to be used at specified band edge(s) in specified geographical areas, in lieu of that set forth in this section, pursuant to a private contractual arrangement of all affected licensees and applicants. In this event, each party to such contract shall maintain a copy of the contract in their station files and disclose it to prospective assignees or transferees and, upon request, to the FCC.

(d) Interference caused by out of band emissions. If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

3.2.3 Frequency stability

FCC §24.235

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.3 Applicable Standard For Part 27:

3.3.1 RF Output Power

FCC §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.

(ii) Mobile and portable stations are not permitted to transmit in the 2315-2320 MHz and 2345-2350 MHz bands.

(iii) *Automatic transmit power control.* Mobile and portable stations transmitting in the 2305-2315 MHz band or in the 2350-2360 MHz band must employ automatic transmit power control when operating so the stations operate with the minimum power necessary for successful communications.

(iv) *Prohibition on external vehicle-mounted antennas.* The use of external vehicle-mounted antennas for mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band is prohibited.

(b)(10) Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

(c)(10) 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.

(d)(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(h) The following power limits shall apply in the BRS and EBS:

(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.

3.3.2 Spurious Emissions

FCC §27.53

(a) For operations in the 2305-2320 MHz band and the 2345-2360 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power P (with averaging performed only during periods of transmission) within the licensed band(s) of operation, in watts, by the following amounts:

(4) 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.

(c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

(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.

(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 $43 + 10 \log_{10} (P)$ dB.

(m)(4) 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 than $43 + 10 \log (P)$ 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.

3.3.3 Frequency stability

FCC §27.54

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.4 Applicable Standard For Part 90:

3.4.1 RF Output Power

FCC §90.635

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

3.4.2 Spurious Emissions

FCC §90.691

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \text{ Log}_{10}(f/6.1)$ decibels or $50 + 10 \text{ Log}_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \text{ Log}_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

3.4.3 Frequency stability

FCC §90.213

809-824 MHz band, 2.5ppm for 2W or less output power.

3.5 Test Method:

3.5.1 Transmitter output power, e.r.p. and e.i.r.p

According to CFR Part 2.1046, ANSI C63.26-2015 Section 5.2.5.5 and KDB 971168 D01 Power Meas License Digital Systems v03r01:

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

where:

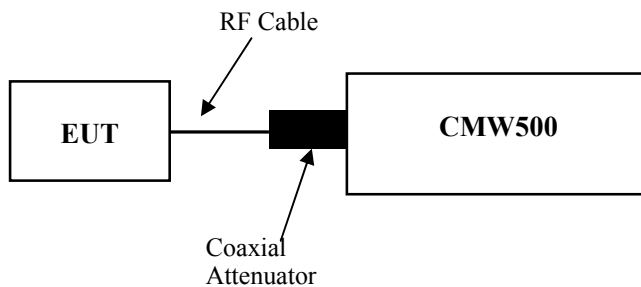
ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

Test Setup Block:



Note: The Insertion loss of the RF cable and coaxial Attenuator was offset into the Reading of CMW500.

3.5.2 Occupied Bandwidth

According to ANSI C63.26-2015 Section 5.4.4

The OBW is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The following procedure shall be used for measuring (99%) power bandwidth:

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient).

b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.

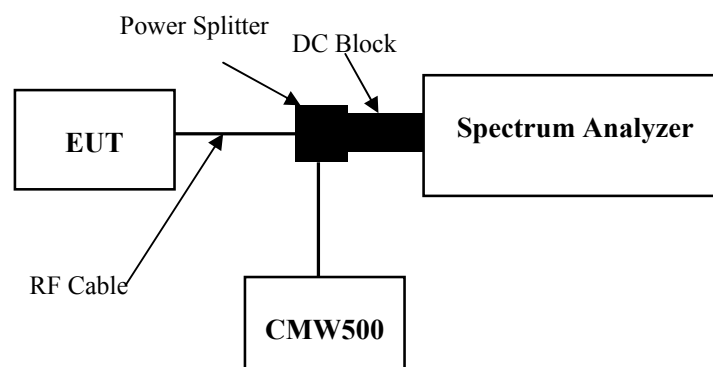
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation. See guidance provided in 4.2.3.
NOTE—Step a), step b), and step c) may require iteration to adjust within the specified tolerances.

d) Set the detection mode to peak, and the trace mode to max-hold.

e) If the instrument does not have a 99% OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5% of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5% of the total is reached and record that frequency as the upper OBW frequency. The 99% power OBW can be determined by computing the difference these two frequencies.

f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

Test Setup Block:

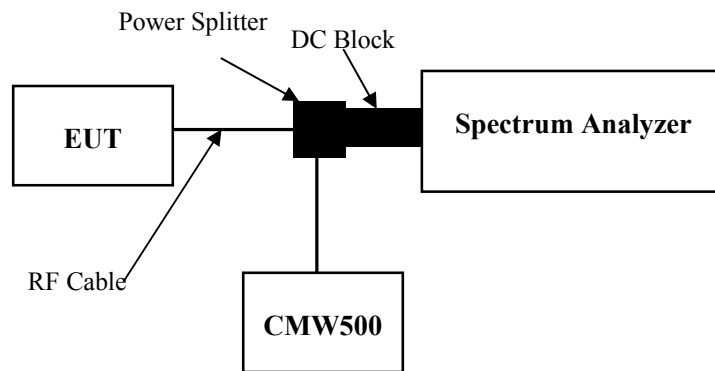


3.5.3 Transmitter unwanted emissions-at antenna terminals

According to ANSI C63.26-2015 Section 5.7.4, KDB 971168 D01 Power Meas License Digital Systems v03r01:

the applicable rule part specifies the reference bandwidth for measuring unwanted emission levels (typically, 100 kHz if the authorized frequency band/block is at or below 1 GHz and 1 MHz if the authorized frequency band/block is above 1 GHz),⁸ effectively depicting the unwanted emission limit in terms of a power spectral density. In those cases where no reference bandwidth is explicitly specified, the values in the preceding sentence should be used.

Test Setup Block:

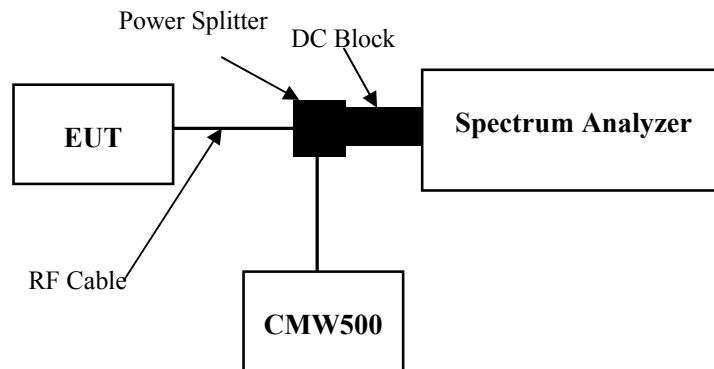


3.5.4 Transmitter unwanted emissions-Out of band emission

According to ANSI C63.26-2015 Section 5.7.3, KDB 971168 D01 Power Meas License Digital Systems v03r01:

Typically, a measurement (resolution) bandwidth smaller than the reference bandwidth is allowed for measurements within a specified frequency range at the edge of the authorized frequency block/band (e.g., within the first Y MHz outside of the authorized frequency band/block, where the value of Y is specified in the relevant rule part). Some FCC out-of-band emission rules permit the use of a narrower RBW (typically limited to a minimum RBW of 1 % of the OBW) for measuring the out-of-band emissions without a requirement to integrate the result over the full reference bandwidth. Beyond the specified frequency range in which this relaxation of the uniform reference bandwidth is permitted, it typically is also acceptable to use a narrower RBW (again limited to a minimum of 1 % of OBW) to increase accuracy, but the measurement result must subsequently be integrated over the full reference bandwidth.

Test Setup Block:



3.5.5 Frequency stability

According to ANSI C63.26-2015 Section 5.6, KDB 971168 D01 Power Meas License Digital Systems v03r01:

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage.

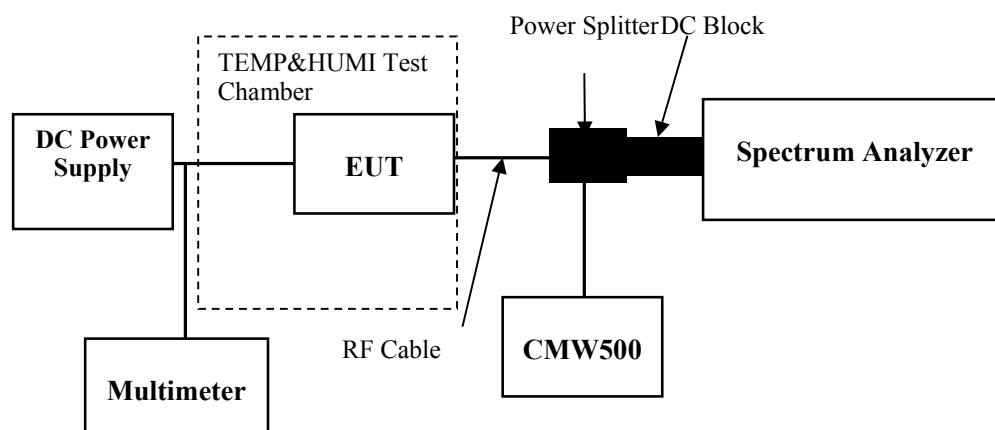
The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is tested:

- a) At 10 °C intervals of temperatures between –30 °C and +50 °C at the manufacturer's rated supply voltage, and
- b) At +20 °C temperature and ±15% supply voltage variations. If a product is specified to operate over a range of input voltage then the –15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage.

During the test all necessary settings, adjustments and control of the EUT have to be performed without disturbing the test environment, i.e., without opening the environmental chamber. The frequency stabilities can be maintained to a lesser temperature range provided that the transmitter is automatically inhibited from operating outside the lesser temperature range. For handheld equipment that is only capable of operating from internal batteries and the supply voltage cannot be varied, the frequency stability tests shall be performed at the nominal battery voltage and the battery end point voltage specified by the manufacturer. An external supply voltage can be used and set at the internal battery nominal voltage, and again at the battery operating end point voltage which shall be specified by the equipment manufacturer.

If an unmodulated carrier is not available, the mean frequency of a modulated carrier can be obtained by using a frequency counter with gating time set to an appropriately large multiple of bit periods (gating time depending on the required accuracy). Full details on the choice of values shall be included in the test report.

Test Setup Block:



3.5.6 Transmitter unwanted emissions- Radiated Spurious emissions

According to ANSI C63.26-2015 Section 5.5.3:

Test setup:

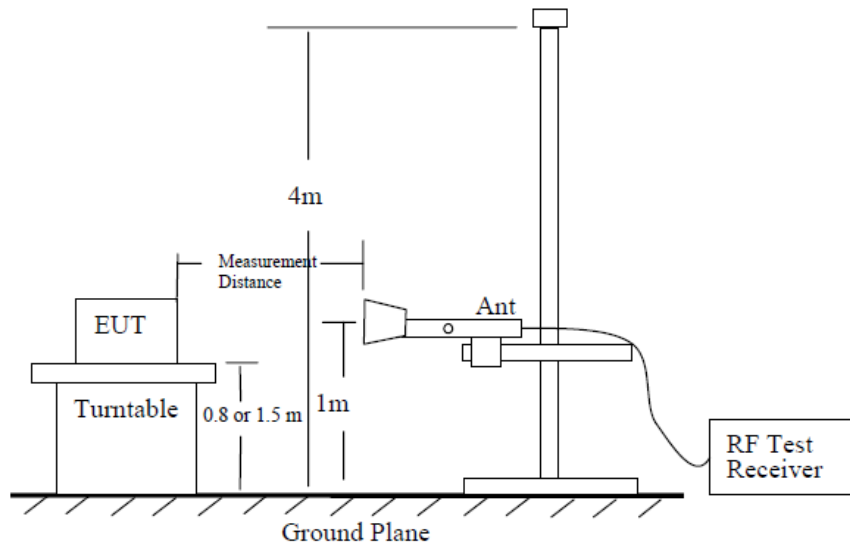


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

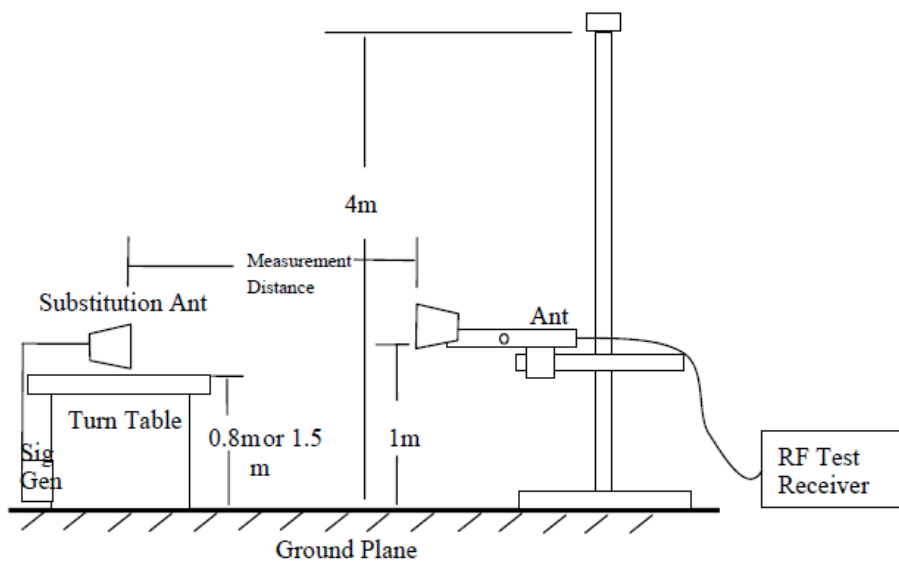


Figure 7—Substitution method set-up for radiated emission

Test Procedure:

- a) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.
- b) Each emission under consideration shall be evaluated:
 - 1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
 - 2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
 - 3) Return the turntable to the azimuth where the highest emission amplitude level was observed.
 - 4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
 - 5) Record the measured emission amplitude level and frequency using the appropriate RBW.
- c) Repeat step b) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
- d) Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
- e) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
- f) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
- g) For each emission that was detected and measured in the initial test [i.e., in step b) and step c)]:
 - 1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
 - 2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step b) and step c).
 - 3) Record the output power level of the signal generator when equivalence is achieved in step 2).
- h) Repeat step e) through step g) with the measurement antenna oriented in the opposite polarization.
- i) Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:
$$P_e = P_s(\text{dBm}) - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$
where
$$P_e = \text{equivalent emission power in dBm}$$
$$P_s = \text{source (signal generator) power in dBm}$$
NOTE—dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.
- j) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: $\text{gain (dBd)} = \text{gain (dBi)} - 2.15 \text{ dB}$. If necessary, the antenna gain can be calculated from calibrated antenna factor information
- k) Provide the complete measurement results as a part of the test report.

4. Test DATA AND RESULTS

4.1 Antenna Port Test Data and Results for GSM 850 band:

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency for Each Mode:

Operation Modes	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
GSM	824.2	836.6	848.8
GPRS	824.2	836.6	848.8
EDGE	824.2	836.6	848.8

Test Data:

FCC§2.1046; § 22.913 (a): RF Output Power					
Test Mode	Conducted Peak Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
GSM	32.45	32.32	32.19	29.88	38.45
GPRS 1 Slot	32.51	32.49	32.42	29.94	38.45
GPRS 2 Slots	30.34	30.48	30.34	27.91	38.45
GPRS 3 Slots	28.39	28.26	28.39	25.82	38.45
GPRS 4 Slots	26.23	26.34	26.23	23.77	38.45
EDGE 1 Slot	27.02	26.98	26.94	24.45	38.45
EDGE 2 Slots	26.82	26.76	26.73	24.25	38.45
EDGE 3 Slots	26.55	26.42	26.27	23.98	38.45
EDGE 4 Slots	26.28	26.14	26.03	23.71	38.45

Note:
 $ERP = \text{Conducted Power(dBm)} - L_c(\text{dB}) + G_T(\text{dBd})$
 $G_T(\text{dBd}) = G_T(\text{dBi}) - 2.15$

Result:	Pass
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FCC §2.1049, §22.917, §22.905: Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
GSM	0.246	0.247	0.246	0.314	0.320	0.317
EDGE	0.243	0.244	0.243	0.316	0.316	0.319

Note: The test plots please refer to the Plots of Occupied Bandwidth

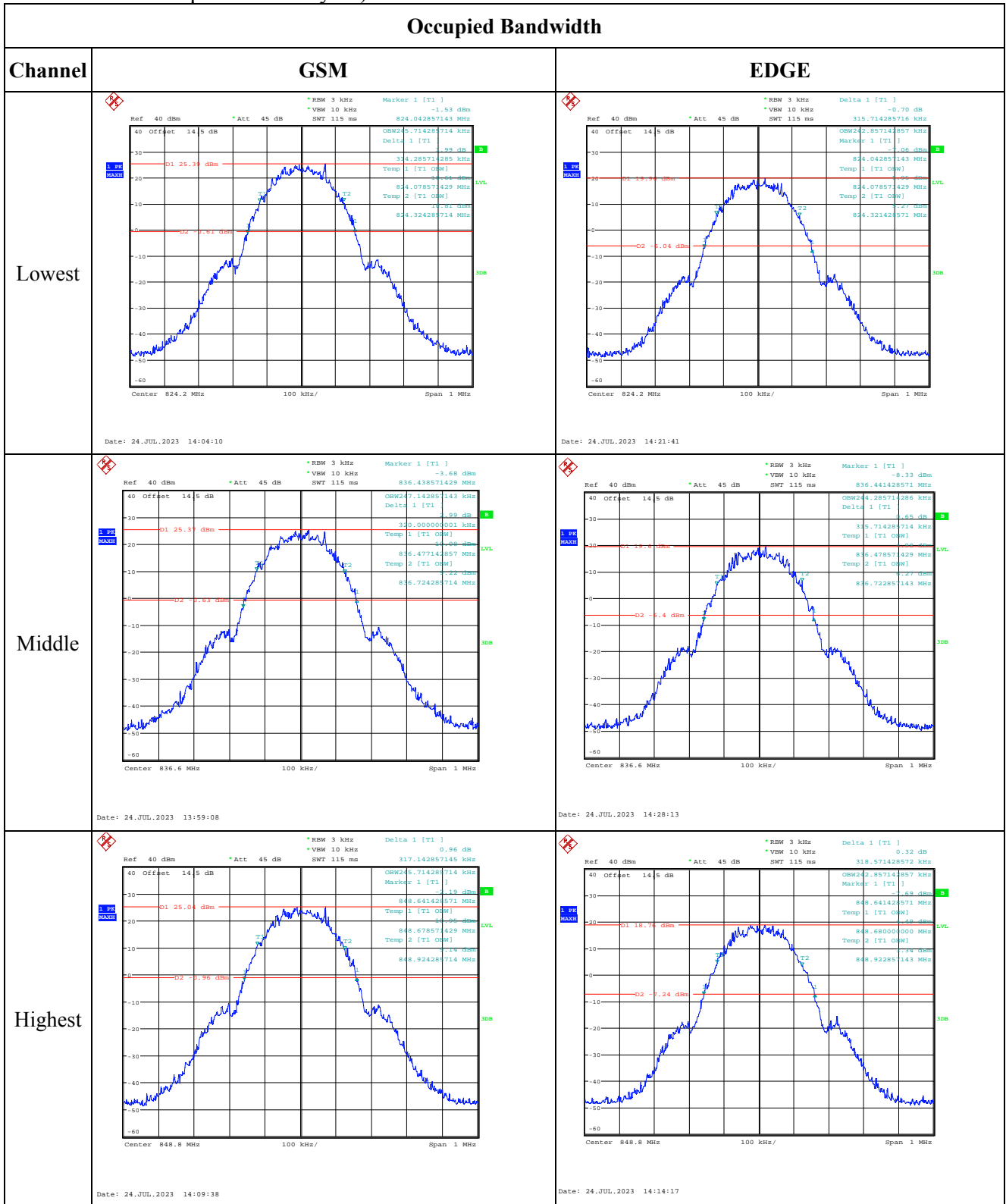
FCC §2.1051, §22.917(a): Spurious Emissions at Antenna Terminal	
Result:	Pass, please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, §22.917(a): Out of band emission, Band Edge	
Result:	Pass, please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §22.355: Frequency Stability					
Test Modulation:	GMSK		Test Channel:	836.6	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	13	0.016	2.5
	-20	3.8	42	0.050	2.5
	-10	3.8	15	0.018	2.5
	0	3.8	37	0.044	2.5
	10	3.8	29	0.035	2.5
	20	3.8	18	0.022	2.5
	30	3.8	28	0.033	2.5
	40	3.8	34	0.041	2.5
	50	3.8	76	0.091	2.5
Frequency Stability vs. Voltage	20	3.5	65	0.078	2.5
	20	4.35	42	0.050	2.5
				Result:	Pass

Test Modulation:	8PSK		Test Channel:	836.6	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	31	0.037	2.5
	-20	3.8	49	0.059	2.5
	-10	3.8	22	0.026	2.5
	0	3.8	26	0.031	2.5
	10	3.8	57	0.068	2.5
	20	3.8	64	0.077	2.5
	30	3.8	61	0.073	2.5
	40	3.8	28	0.033	2.5
	50	3.8	37	0.044	2.5
Frequency Stability vs. Voltage	20	3.5	49	0.059	2.5
	20	4.35	51	0.061	2.5
				Result:	Pass

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



Spurious Emissions at Antenna Terminal

Channel	GSM	
Lowest	<p>Ref 40 dBm *Att 45 dB *RBW 100 kHz *Marker 1 [T1] -27.81 dBm *VBW 300 kHz *VSM 300 kHz 424.928571429 MHz *SWT 100 ms</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 24.JUL.2023 15:23:43</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz *Marker 1 [T1] -27.17 dBm *VBW 3 MHz *VSM 3 MHz 1.648000000 GHz *SWT 55 ms</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 24.JUL.2023 15:23:11</p>
Middle	<p>Ref 40 dBm *Att 45 dB *RBW 100 kHz *Marker 1 [T1] -27.95 dBm *VBW 300 kHz *VSM 300 kHz 397.214285714 MHz *SWT 100 ms</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 24.JUL.2023 15:24:39</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz *Marker 1 [T1] -26.48 dBm *VBW 3 MHz *VSM 3 MHz 1.666000000 GHz *SWT 55 ms</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 24.JUL.2023 15:24:59</p>
Highest	<p>Ref 40 dBm *Att 45 dB *RBW 100 kHz *Marker 1 [T1] -27.89 dBm *VBW 300 kHz *VSM 300 kHz 566.271428571 MHz *SWT 100 ms</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 24.JUL.2023 15:26:54</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz *Marker 1 [T1] -25.39 dBm *VBW 3 MHz *VSM 3 MHz 3.142000000 GHz *SWT 55 ms</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 24.JUL.2023 15:26:07</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
GSM		
EDGE		

4.2 Antenna Port Test Data and Results for GSM 1900 band:

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency for Each Mode:

Operation Modes	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
GSM	1850.2	1880	1909.8
GPRS	1850.2	1880	1909.8
EDGE	1850.2	1880	1909.8

Test Data:

FCC§2.1046; § 24.232 (c): RF Output Power					
Test Mode	Conducted Peak Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
GSM	28.49	28.47	28.36	29.50	33
GPRS 1 Slot	28.52	28.43	28.37	29.53	33
GPRS 2 Slots	26.32	26.65	26.24	27.66	33
GPRS 3 Slots	24.72	24.51	24.65	25.73	33
GPRS 4 Slots	22.71	22.37	22.63	23.72	33
EDGE 1 Slot	25.06	24.91	24.73	26.07	33
EDGE 2 Slots	25.04	24.89	24.67	26.05	33
EDGE 3 Slots	25.03	24.85	24.64	26.04	33
EDGE 4 Slots	23.02	24.85	22.63	25.86	33

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)

Result:	Pass
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FCC §2.1049, §24.238: Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
GSM	0.246	0.249	0.246	0.316	0.317	0.316
EDGE	0.246	0.244	0.246	0.317	0.316	0.32

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, § 24.238 (a): Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, § 24.238 (a): Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §24.235: Frequency Stability						
Test Mode:	GMSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1850.002	1850.000	1909.991	1910.000
	-20	3.8	1850.068	1850.000	1909.914	1910.000
	-10	3.8	1850.006	1850.000	1909.993	1910.000
	0	3.8	1850.065	1850.000	1909.963	1910.000
	10	3.8	1850.024	1850.000	1909.945	1910.000
	20	3.8	1850.077	1850.000	1909.924	1910.000
	30	3.8	1850.023	1850.000	1909.911	1910.000
	40	3.8	1850.040	1850.000	1909.972	1910.000
	50	3.8	1850.048	1850.000	1909.921	1910.000
Frequency Stability vs. Voltage	20	3.5	1850.053	1850.000	1909.968	1910.000
	20	4.35	1850.027	1850.000	1909.991	1910.000
					Result:	Pass

FCC §2.1055, §24.235: Frequency Stability						
Test Mode:	8PSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1850.004	1850.000	1909.993	1910.000
	-20	3.8	1850.073	1850.000	1909.919	1910.000
	-10	3.8	1850.012	1850.000	1909.999	1910.000
	0	3.8	1850.066	1850.000	1909.964	1910.000
	10	3.8	1850.028	1850.000	1909.949	1910.000
	20	3.8	1850.326	1850.000	1909.924	1910.000
	30	3.8	1850.028	1850.000	1909.916	1910.000
	40	3.8	1850.046	1850.000	1909.978	1910.000
	50	3.8	1850.049	1850.000	1909.922	1910.000
Frequency Stability vs. Voltage	20	3.5	1850.057	1850.000	1909.972	1910.000
	20	4.35	1850.029	1850.000	1909.993	1910.000
					Result:	Pass

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

Occupied Bandwidth		
Channel	GSM	EDGE
Lowest	<p>Ref 40 dBm *Att 45 dB *RBW 3 kHz *VBW 10 kHz *SWT 115 ms</p> <p>Marker 1 [T1] -2.02 dBm 1.850042857 GHz</p> <p>Marker 2 [T2] -7.76 dBm 1.85007143 GHz</p> <p>Marker 3 [T3] -13.50 dBm 1.850322857 GHz</p> <p>Delta 1 [T1] -2.02 dBm 315.71428712 kHz</p> <p>Temp 1 [T1] 0.00 GHz Temp 2 [T1] 0.00 GHz</p> <p>Center 1.8502 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 24.JUL.2023 15:06:54</p>	<p>Ref 40 dBm *Att 45 dB *RBW 3 kHz *VBW 10 kHz *SWT 115 ms</p> <p>Marker 1 [T1] 1.52 dBm 317.142857143 kHz</p> <p>Marker 2 [T2] -13.16 dBm 1.850042857 GHz</p> <p>Marker 3 [T3] -18.86 dBm 1.85008000 GHz</p> <p>Delta 1 [T1] 1.52 dBm 317.142857143 kHz</p> <p>Temp 1 [T1] 0.00 GHz Temp 2 [T1] 0.00 GHz</p> <p>Center 1.8502 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 24.JUL.2023 14:34:58</p>
Middle	<p>Ref 40 dBm *Att 45 dB *RBW 3 kHz *VBW 10 kHz *SWT 115 ms</p> <p>Marker 1 [T1] -3.65 dBm 1.87984429 GHz</p> <p>Marker 2 [T2] -0.02 dBm 337.142857142 kHz</p> <p>Marker 3 [T3] -13.50 dBm 1.87987143 GHz</p> <p>Delta 1 [T1] -3.65 dBm 337.142857142 kHz</p> <p>Temp 1 [T1] 0.00 GHz Temp 2 [T1] 0.00 GHz</p> <p>Center 1.88 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 24.JUL.2023 14:52:35</p>	<p>Ref 40 dBm *Att 45 dB *RBW 3 kHz *VBW 10 kHz *SWT 115 ms</p> <p>Marker 1 [T1] 1.47 dBm 315.714285714 kHz</p> <p>Marker 2 [T2] -0.02 dBm 1.87984429 GHz</p> <p>Marker 3 [T3] -13.50 dBm 1.87987143 GHz</p> <p>Delta 1 [T1] 1.47 dBm 315.714285714 kHz</p> <p>Temp 1 [T1] 0.00 GHz Temp 2 [T1] 0.00 GHz</p> <p>Center 1.88 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 24.JUL.2023 14:48:59</p>
Highest	<p>Ref 40 dBm *Att 45 dB *RBW 3 kHz *VBW 10 kHz *SWT 115 ms</p> <p>Marker 1 [T1] -4.31 dBm 1.909642857 GHz</p> <p>Marker 2 [T2] -0.84 dBm 335.71428713 kHz</p> <p>Marker 3 [T3] -13.50 dBm 1.90967871 GHz</p> <p>Delta 1 [T1] -4.31 dBm 335.71428713 kHz</p> <p>Temp 1 [T1] 0.00 GHz Temp 2 [T1] 0.00 GHz</p> <p>Center 1.9098 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 24.JUL.2023 15:13:38</p>	<p>Ref 40 dBm *Att 45 dB *RBW 3 kHz *VBW 10 kHz *SWT 115 ms</p> <p>Marker 1 [T1] 1.35 dBm 320.000000002 kHz</p> <p>Marker 2 [T2] -13.48 dBm 1.909631571 GHz</p> <p>Marker 3 [T3] -18.86 dBm 1.90967871 GHz</p> <p>Delta 1 [T1] 1.35 dBm 320.000000002 kHz</p> <p>Temp 1 [T1] 0.00 GHz Temp 2 [T1] 0.00 GHz</p> <p>Center 1.9098 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 24.JUL.2023 14:44:36</p>

Spurious Emissions at Antenna Terminal

Channel	GSM	
Lowest	<p>Ref 40 dBm Offset 14.5 dB Att 45 dB *RBW 100 kHz Marker 1 [T1] -27.74 dBm *VSW 300 kHz *VSW 300 kHz *SWT 100 ms *SWT 100 ms 290.514285714 MHz</p> <p>Date: 24.JUL.2023 15:20:44</p>	<p>Ref 40 dBm Offset 14.5 dB Att 30 dB *RBW 1 MHz Marker 1 [T1] -29.60 dBm *VSW 3 MHz *VSW 3 MHz *SWT 110 ms *SWT 110 ms 3.127025641 GHz</p> <p>Date: 24.JUL.2023 15:21:39</p>
Middle	<p>Ref 40 dBm Offset 14.5 dB Att 45 dB *RBW 100 kHz Marker 1 [T1] -27.52 dBm *VSW 300 kHz *VSW 300 kHz *SWT 100 ms *SWT 100 ms 318.228571429 MHz</p> <p>Date: 24.JUL.2023 15:20:14</p>	<p>Ref 40 dBm Offset 14.5 dB Att 30 dB *RBW 1 MHz Marker 1 [T1] -28.37 dBm *VSW 3 MHz *VSW 3 MHz *SWT 110 ms *SWT 110 ms 3.134576923 GHz</p> <p>Date: 24.JUL.2023 15:19:39</p>
Highest	<p>Ref 40 dBm Offset 14.5 dB Att 45 dB *RBW 100 kHz Marker 1 [T1] -27.55 dBm *VSW 300 kHz *VSW 300 kHz *SWT 100 ms *SWT 100 ms 351.485714286 MHz</p> <p>Date: 24.JUL.2023 15:15:44</p>	<p>Ref 40 dBm Offset 14.5 dB Att 30 dB *RBW 1 MHz Marker 1 [T1] -28.15 dBm *VSW 3 MHz *VSW 3 MHz *SWT 110 ms *SWT 110 ms 3.134576923 GHz</p> <p>Date: 24.JUL.2023 15:16:58</p>

Out of band emission, Band Edge

Channel	Lowest	Highest
GSM	<p>Ref 40 dBm Att 45 dB RBW 3 kHz Marker 1 [T1] -20.14 dBm VBW 10 kHz SWT 225 ms Center 1.85 GHz</p> <p>Date: 24.JUL.2023 15:07:44</p>	<p>Ref 40 dBm Att 45 dB RBW 3 kHz Marker 1 [T1] -21.80 dBm VBW 10 kHz SWT 225 ms Center 1.91 GHz</p> <p>Date: 24.JUL.2023 15:10:19</p>
EDGE	<p>Ref 40 dBm Att 45 dB RBW 3 kHz Marker 1 [T1] -20.14 dBm VBW 10 kHz SWT 225 ms Center 1.85 GHz</p> <p>Date: 24.JUL.2023 14:36:10</p>	<p>Ref 40 dBm Att 45 dB RBW 3 kHz Marker 1 [T1] -21.57 dBm VBW 10 kHz SWT 225 ms Center 1.91 GHz</p> <p>Date: 24.JUL.2023 14:38:34</p>

4.3 Antenna Port Test Data and Results for WCDMA Band 2:

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency for Each Mode:

Operation Modes	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
WCDMA	1852.4	1880	1907.6

Test Data:**FCC§2.1046;§ 24.232****RF Output Power:**

Test Mode	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	22.78	22.64	22.52	23.79	33
HSDPA Subtest 1	21.93	21.86	21.68	22.94	33
HSDPA Subtest 2	21.94	21.89	21.74	22.95	33
HSDPA Subtest 3	21.89	21.74	21.62	22.9	33
HSDPA Subtest 4	21.78	21.81	21.79	22.82	33
HSUPA Subtest 1	22.01	21.91	21.74	23.02	33
HSUPA Subtest 2	21.98	21.89	21.83	22.99	33
HSUPA Subtest 3	21.96	21.91	21.79	22.97	33
HSUPA Subtest 4	21.99	21.86	21.81	23.00	33
HSUPA Subtest 5	21.78	21.84	21.72	22.85	33

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)

Result: Pass**Peak-to-average Ratio (PAR)**

Test Mode	Peak-to-Average Ratio(dB)			Limit (dB)
	Lowest Channel	Middle Channel	Highest Channel	
WCDMA R99	2.92	2.95	2.95	13
HSDPA	3.72	4.04	4.23	13
HSUPA	4.20	3.78	4.04	13

Result: Pass**FCC §2.1049, §24.238: Occupied Bandwidth**

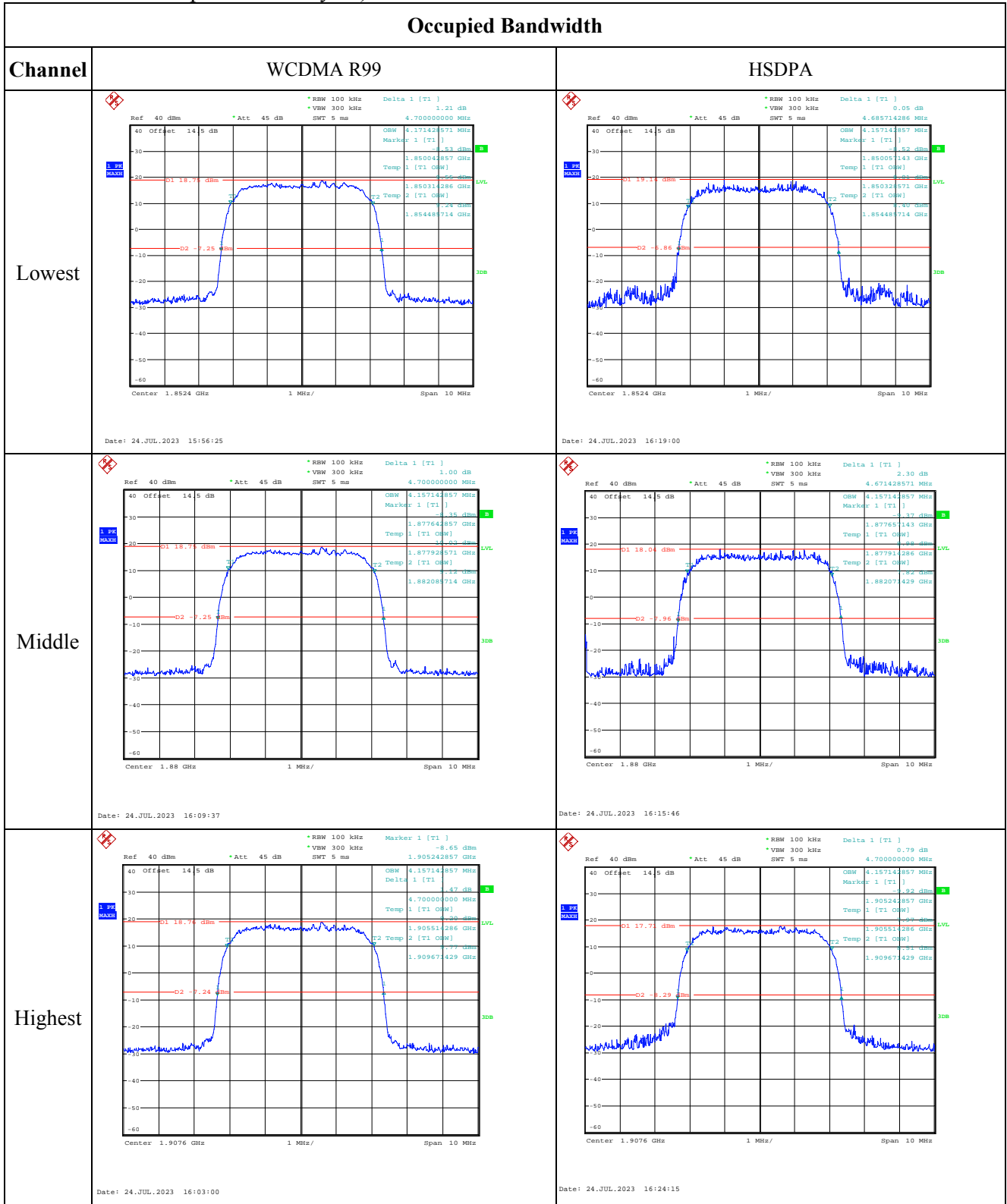
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
WCDMA R99	4.17	4.16	4.16	4.7	4.7	4.7
HSDPA	4.16	4.16	4.16	4.69	4.67	4.7
HSUPA	4.17	4.14	4.16	4.7	4.7	4.67

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, § 24.238 (a): Spurious Emissions at Antenna Terminal**Result: Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.****FCC §2.1051, § 24.238 (a): Out of band emission, Band Edge****Result: Pass, Please refer to the test plots of Out of band emission, Band Edge.**

FCC §2.1055, §24.235: Frequency Stability						
Test Mode:	WCDMA R99	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1850.041	1850.000	1909.989	1910.000
	-20	3.8	1850.063	1850.000	1909.909	1910.000
	-10	3.8	1850.005	1850.000	1909.992	1910.000
	0	3.8	1850.064	1850.000	1909.962	1910.000
	10	3.8	1850.020	1850.000	1909.941	1910.000
	20	3.8	1850.314	1850.000	1909.671	1910.000
	30	3.8	1850.018	1850.000	1909.906	1910.000
	40	3.8	1850.039	1850.000	1909.971	1910.000
	50	3.8	1850.047	1850.000	1909.920	1910.000
Frequency Stability vs. Voltage	20	3.5	1850.049	1850.000	1909.964	1910.000
	20	4.35	1850.025	1850.000	1909.989	1910.000
					Result:	Pass

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

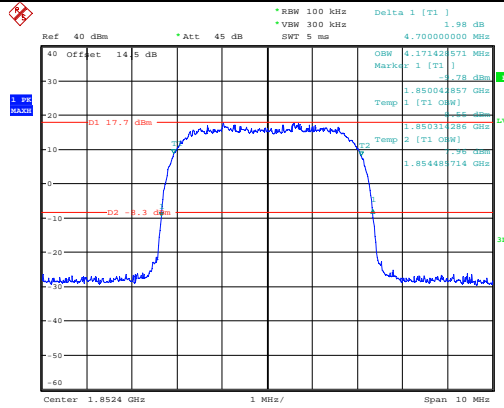


Occupied Bandwidth

Channel

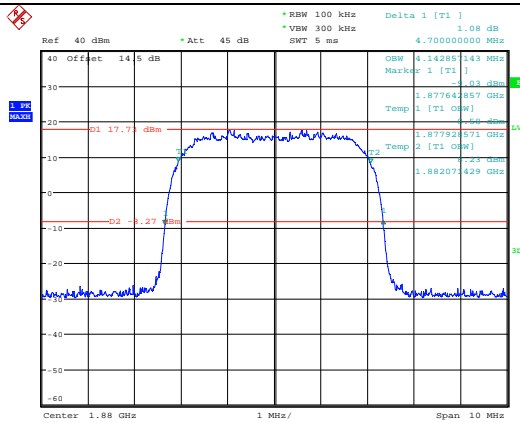
HSUPA

Lowest



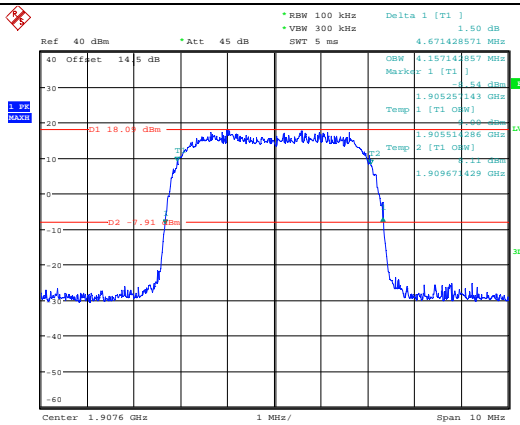
Date: 24.JUL.2023 16:33:16

Middle



Date: 24.JUL.2023 16:35:39

Highest



Date: 24.JUL.2023 16:28:53

Spurious Emissions at Antenna Terminal

Channel	WCDMA R99	
Lowest	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.42 dBm *VSW 300 kHz SWT 100 ms 861.428571429 MHz</p> <p>Date: 24.JUL.2023 15:32:33</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -28.45 dBm *VSW 3 MHz SWT 110 ms 3.142000000 GHz</p> <p>Date: 24.JUL.2023 15:33:14</p>
Middle	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.98 dBm *VSW 300 kHz SWT 100 ms 646.642857143 MHz</p> <p>Date: 24.JUL.2023 15:34:42</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -29.19 dBm *VSW 3 MHz SWT 110 ms 3.142000000 GHz</p> <p>Date: 24.JUL.2023 15:34:20</p>
Highest	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.67 dBm *VSW 300 kHz SWT 100 ms 255.871428571 MHz</p> <p>Date: 24.JUL.2023 15:35:00</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -28.33 dBm *VSW 3 MHz SWT 110 ms 3.142000000 GHz</p> <p>Date: 24.JUL.2023 15:35:37</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
R99	<p>Date: 24.JUL.2023 15:58:53</p>	<p>Date: 24.JUL.2023 15:59:53</p>
HSUPA	<p>Date: 24.JUL.2023 16:31:03</p>	<p>Date: 24.JUL.2023 16:30:22</p>
HSDPA	<p>Date: 24.JUL.2023 16:20:31</p>	<p>Date: 24.JUL.2023 16:21:17</p>

4.4 Antenna Port Test Data and Results for WCDMA Band 4:

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency:

Operation Modes	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
WCDMA	1712.4	1732.6	1752.6

Test Data:**FCC§2.1046; §27.50(d)(4)
RF Output Power:**

Test Mode	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	22.84	22.81	22.77	24.77	30
HSDPA Subtest 1	22.34	22.17	22.25	24.27	30
HSDPA Subtest 2	21.56	22.12	22.17	24.10	30
HSDPA Subtest 3	21.98	21.89	22.04	23.97	30
HSDPA Subtest 4	21.99	22.11	21.89	24.04	30
HSUPA Subtest 1	22.29	22.14	22.09	24.22	30
HSUPA Subtest 2	22.18	22.01	21.97	24.11	30
HSUPA Subtest 3	22.11	21.99	21.89	24.04	30
HSUPA Subtest 4	22.17	21.89	21.78	24.10	30
HSUPA Subtest 5	22.13	22.01	21.89	24.06	30

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G_T(dBi)**Result: Pass****Peak-to-average Ratio (PAR)**

Test Mode	Peak-to-Average Ratio(dB)			Limit (dB)
	Lowest Channel	Middle Channel	Highest Channel	
WCDMA R99	3.04	3.01	3.08	13
HSDPA	3.91	4.07	3.85	13
HSUPA	3.88	3.81	3.94	13

Result: Pass**FCC §2.1049, §27.53: Occupied Bandwidth**

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
WCDMA R99	4.16	4.16	4.16	4.69	4.7	4.69
HSDPA	4.16	4.16	4.16	4.7	4.7	4.7
HSUPA	4.16	4.16	4.17	4.69	4.69	4.69

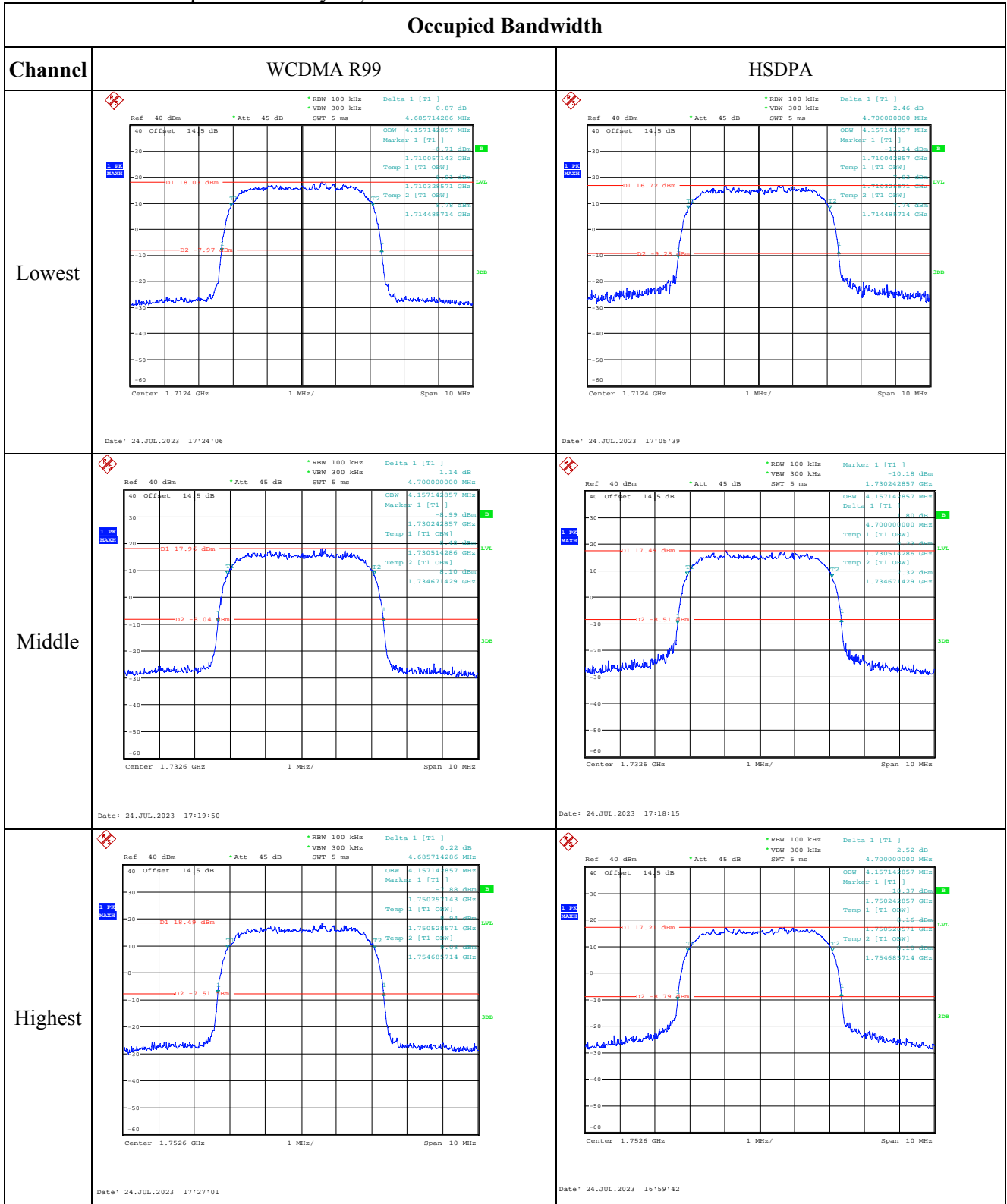
Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, § 27.53: Spurious Emissions at Antenna Terminal**Result: Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.****FCC §2.1051, § 27.53: Out of band emission, Band Edge****Result: Pass, Please refer to the test plots of Out of band emission, Band Edge.**

FCC §2.1055, §27.54: Frequency Stability

Test Mode:	WCDMA R99	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1710.352	1710.000	1754.602	1755.000
	-20	3.8	1710.350	1710.000	1754.635	1755.000
	-10	3.8	1710.333	1710.000	1754.629	1755.000
	0	3.8	1710.381	1710.000	1754.642	1755.000
	10	3.8	1710.333	1710.000	1754.621	1755.000
	20	3.8	1710.329	1710.000	1754.686	1755.000
	30	3.8	1710.336	1710.000	1754.638	1755.000
	40	3.8	1710.386	1710.000	1754.689	1755.000
	50	3.8	1710.337	1710.000	1754.676	1755.000
Frequency Stability vs. Voltage	20	3.5	1710.299	1710.000	1754.627	1755.000
	20	4.35	1710.379	1710.000	1754.669	1755.000
Result:					Pass	

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

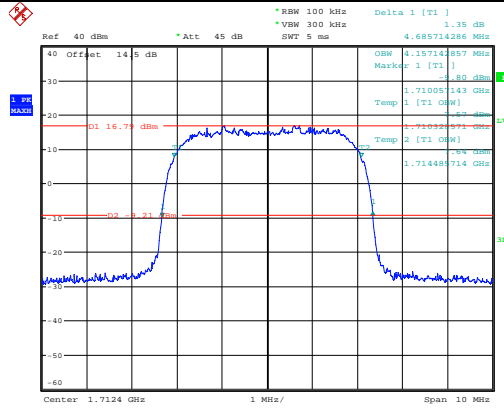


Occupied Bandwidth

Channel

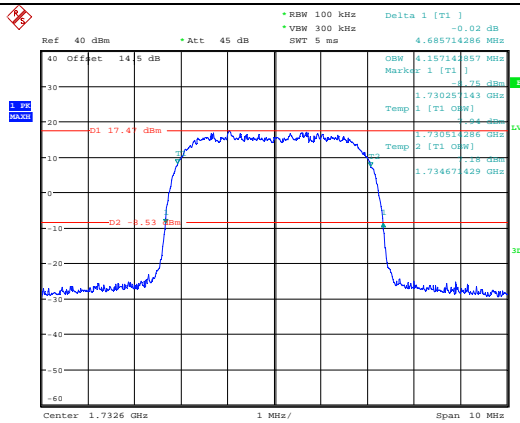
HSUPA

Lowest



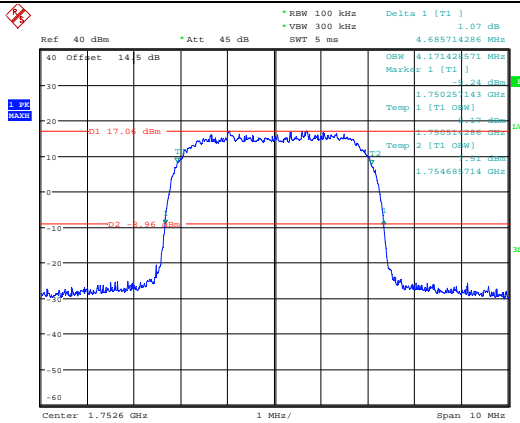
Date: 24.JUL.2023 16:44:12

Middle



Date: 24.JUL.2023 16:40:24

Highest



Date: 24.JUL.2023 16:48:39

Spurious Emissions at Antenna Terminal

Channel	WCDMA R99	
Lowest	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.56 dBm *VSW 300 kHz SWT 100 ms Start 30 MHz 97 MHz/ Stop 1 GHz Date: 24.JUL.2023 15:37:52</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -29.77 dBm *VSW 3 MHz SWT 110 ms Start 1 GHz 1.9 GHz/ Stop 20 GHz Date: 24.JUL.2023 15:37:29</p>
Middle	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.67 dBm *VSW 300 kHz SWT 100 ms Start 30 MHz 97 MHz/ Stop 1 GHz Date: 24.JUL.2023 15:38:21</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -29.62 dBm *VSW 3 MHz SWT 110 ms Start 1 GHz 1.9 GHz/ Stop 20 GHz Date: 24.JUL.2023 15:40:03</p>
Highest	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.17 dBm *VSW 300 kHz SWT 100 ms Start 30 MHz 97 MHz/ Stop 1 GHz Date: 24.JUL.2023 15:41:27</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -29.68 dBm *VSW 3 MHz SWT 110 ms Start 1 GHz 1.9 GHz/ Stop 20 GHz Date: 24.JUL.2023 15:41:10</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
R99	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -19.52 dBm VSW 300 kHz SWT 5 ms 1.710000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>10 dB MARKER</p> <p>30</p> <p>20</p> <p>10</p> <p>0</p> <p>-10</p> <p>-20</p> <p>-30</p> <p>-40</p> <p>-50</p> <p>-60</p> <p>Center 1.71 GHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:24:42</p>	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -19.31 dBm VSW 300 kHz SWT 5 ms 1.755000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>10 dB MARKER</p> <p>30</p> <p>20</p> <p>10</p> <p>0</p> <p>-10</p> <p>-20</p> <p>-30</p> <p>-40</p> <p>-50</p> <p>-60</p> <p>Center 1.755 GHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:25:25</p>
HSUPA	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -20.04 dBm VSW 300 kHz SWT 5 ms 1.710000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>10 dB MARKER</p> <p>30</p> <p>20</p> <p>10</p> <p>0</p> <p>-10</p> <p>-20</p> <p>-30</p> <p>-40</p> <p>-50</p> <p>-60</p> <p>Center 1.71 GHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 16:45:10</p>	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -17.86 dBm VSW 300 kHz SWT 5 ms 1.755000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>10 dB MARKER</p> <p>30</p> <p>20</p> <p>10</p> <p>0</p> <p>-10</p> <p>-20</p> <p>-30</p> <p>-40</p> <p>-50</p> <p>-60</p> <p>Center 1.755 GHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 16:46:18</p>
HSDPA	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -20.71 dBm VSW 300 kHz SWT 5 ms 1.710000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>10 dB MARKER</p> <p>30</p> <p>20</p> <p>10</p> <p>0</p> <p>-10</p> <p>-20</p> <p>-30</p> <p>-40</p> <p>-50</p> <p>-60</p> <p>Center 1.71 GHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:01:59</p>	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -19.03 dBm VSW 300 kHz SWT 5 ms 1.755000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>10 dB MARKER</p> <p>30</p> <p>20</p> <p>10</p> <p>0</p> <p>-10</p> <p>-20</p> <p>-30</p> <p>-40</p> <p>-50</p> <p>-60</p> <p>Center 1.755 GHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:00:45</p>

4.5 Antenna Port Test Data and Results for WCDMA Band 5:

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency:

Operation Modes	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
WCDMA	826.4	836.6	846.6

Test Data:**FCC §2.1046; § 22.913 (a)****RF Output Power:**

Test Mode	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	22.73	22.56	22.54	20.16	38.45
HSDPA Subtest 1	22.54	22.31	22.24	19.97	38.45
HSDPA Subtest 2	22.59	22.07	22.17	20.02	38.45
HSDPA Subtest 3	22.47	22.16	22.08	19.9	38.45
HSDPA Subtest 4	22.31	22.18	21.99	19.74	38.45
HSUPA Subtest 1	22.09	21.97	21.95	19.52	38.45
HSUPA Subtest 2	22.18	22.07	21.98	19.61	38.45
HSUPA Subtest 3	22.24	22.16	21.89	19.67	38.45
HSUPA Subtest 4	22.03	22.05	21.85	19.48	38.45
HSUPA Subtest 5	22.09	22.18	21.92	19.61	38.45

Note:
 $ERP = \text{Conducted Power(dBm)} - L_c(\text{dB}) + G_T(\text{dBd})$
 $G_T(\text{dBd}) = G_T(\text{dBi}) - 2.15$

Result:	Pass
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Peak-to-average Ratio (PAR)

Test Mode	Peak-to-Average Ratio(dB)			Limit (dB)
	Lowest Channel	Middle Channel	Highest Channel	
WCDMA R99	3.27	3.11	3.17	13
HSDPA	4.33	3.81	3.88	13
HSUPA	4.04	4.29	4.17	13

Result:	Pass
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FCC §2.1049, §22.917, §22.905: Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
WCDMA R99	4.17	4.16	4.14	4.69	4.67	4.66
HSDPA	4.16	4.14	4.14	4.7	4.7	4.69
HSUPA	4.17	4.14	4.14	4.71	4.67	4.67

Note: The test plots please refer to the Plots of Occupied Bandwidth

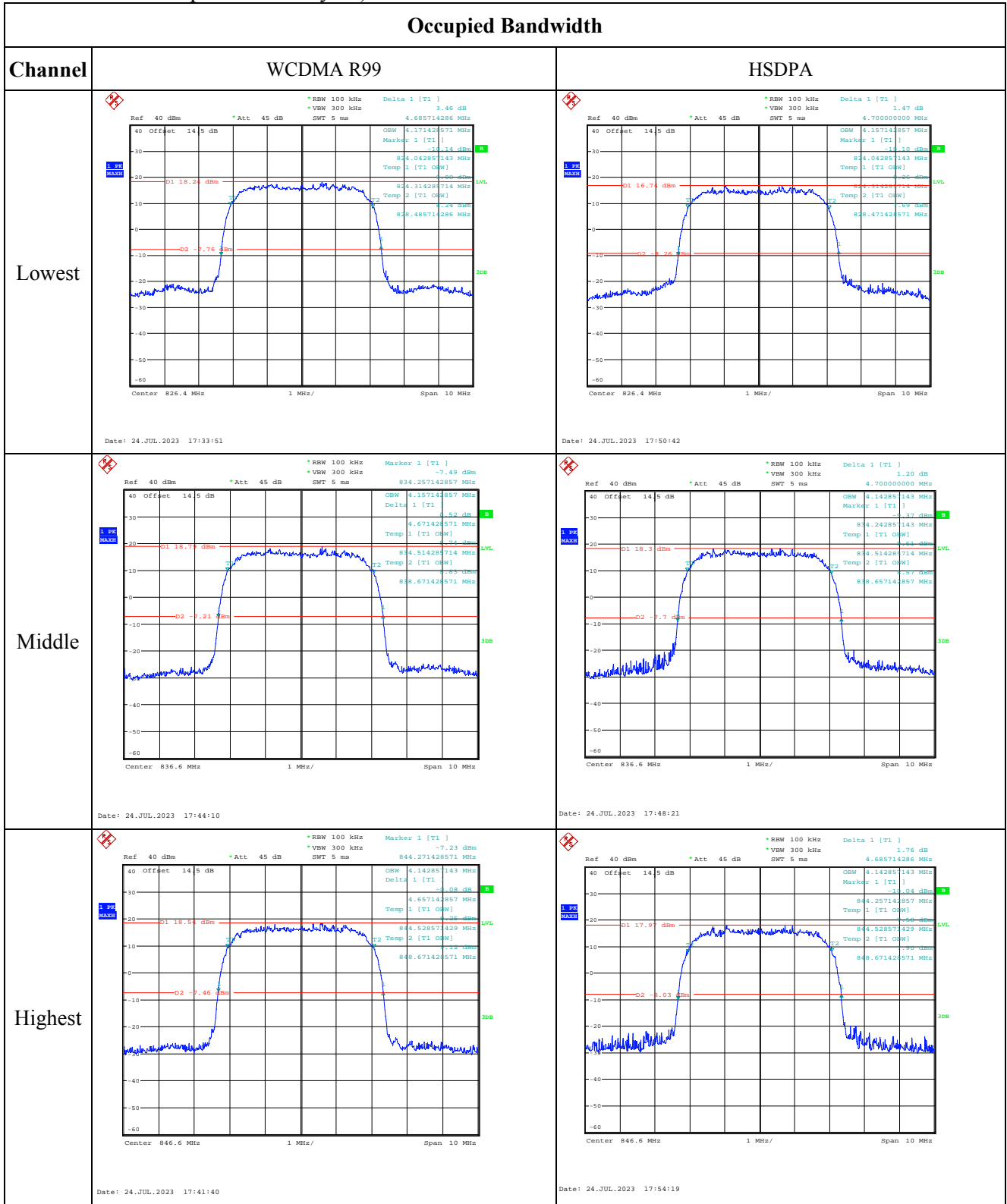
FCC §2.1051, §22.917(a): Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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FCC §2.1051, §22.917(a): Out of band emission, Band Edge**Result: Pass, Please refer to the test plots of Out of band emission, Band Edge.****FCC §2.1055, §22.355: Frequency Stability**

Test Modulation:	WCDMA R99		Test Channel:	836.6	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	1.89	0.002	2.5
	-20	3.8	3.74	0.004	2.5
	-10	3.8	0.98	0.001	2.5
	0	3.8	0.46	0.001	2.5
	10	3.8	11.2	0.013	2.5
	20	3.8	3.15	0.004	2.5
	30	3.8	10.81	0.013	2.5
	40	3.8	11.78	0.014	2.5
Frequency Stability vs. Voltage	50	3.8	0.69	0.001	2.5
	20	3.5	1.56	0.002	2.5
	20	4.35	2.57	0.003	2.5
Result:				Pass	

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



Occupied Bandwidth

Channel	HSUPA
Lowest	<p>Date: 24.JUL.2023 17:59:24</p>
Middle	<p>Date: 24.JUL.2023 18:01:29</p>
Highest	<p>Date: 24.JUL.2023 17:56:16</p>

Spurious Emissions at Antenna Terminal

Channel	WCDMA R99	
Lowest	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.99 dBm *VSW 300 kHz SWT 100 ms 715.928571429 MHz</p> <p>40 Offset 14.5 dB</p> <p>D1 -13 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 24.JUL.2023 15:44:40</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -27.57 dBm *VSW 3 MHz SWT 55 ms 3.142000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>D1 -13 dBm</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 24.JUL.2023 15:43:35</p>
Middle	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -27.77 dBm *VSW 300 kHz SWT 100 ms 449.871428571 MHz</p> <p>40 Offset 14.5 dB</p> <p>D1 -13 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 24.JUL.2023 15:46:06</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -28.20 dBm *VSW 3 MHz SWT 55 ms 3.142000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>D1 -13 dBm</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 24.JUL.2023 15:46:35</p>
Highest	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -26.86 dBm *VSW 300 kHz SWT 100 ms 725.628571429 MHz</p> <p>40 Offset 14.5 dB</p> <p>D1 -13 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 24.JUL.2023 15:48:01</p>	<p>Ref 40 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -28.22 dBm *VSW 3 MHz SWT 55 ms 3.142000000 GHz</p> <p>40 Offset 14.5 dB</p> <p>D1 -13 dBm</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 24.JUL.2023 15:47:33</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
R99	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -17.73 dBm VSW 300 kHz SWT 5 ms 824.000000000 MHz</p> <p>Center 824 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:39:02</p>	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -19.69 dBm VSW 300 kHz SWT 5 ms 849.000000000 MHz</p> <p>Center 849 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:40:19</p>
HSUPA	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -18.93 dBm VSW 300 kHz SWT 5 ms 824.000000000 MHz</p> <p>Center 824 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:57:46</p>	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -20.50 dBm VSW 300 kHz SWT 5 ms 849.000000000 MHz</p> <p>Center 849 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:56:57</p>
HSDPA	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -18.77 dBm VSW 300 kHz SWT 5 ms 824.000000000 MHz</p> <p>Center 824 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:51:37</p>	<p>Ref 40 dBm Att 45 dB RBW 100 kHz Marker 1 [T1] -19.84 dBm VSW 300 kHz SWT 5 ms 849.000000000 MHz</p> <p>Center 849 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 24.JUL.2023 17:52:18</p>

4.6 Antenna Port Test Data and Results for LTE Band 2

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1850.7	1880	1909.3
3MHz	1851.5	1880	1908.5
5MHz	1852.5	1880	1907.5
10MHz	1855	1880	1905
15MHz	1857.5	1880	1902.5
20MHz	1860	1880	1900

Test Data:

FCC§2.1046; § 24.232						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP(dBm)	EIRP Limit(dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	21.12	21.09	20.96	22.38	33
	RB1#3	21.19	21.14	20.91		
	RB1#5	21.14	21.16	20.87		
	RB3#0	21.33	21.28	21.02		
	RB3#3	21.37	21.22	20.99		
	RB6#0	20.82	20.81	20.48		
1.4MHz 16QAM	RB1#0	21.12	21.78	21.75	22.79	33
	RB1#3	21.18	21.75	21.78		
	RB1#5	21.16	21.78	21.71		
	RB3#0	21.52	21.25	21.13		
	RB3#3	21.44	21.22	21.13		
	RB6#0	20.56	20.37	20.27		
3MHz QPSK	RB1#0	21.37	21.17	20.73	22.38	33
	RB1#8	21.34	21.21	20.73		
	RB1#14	21.36	21.12	20.68		
	RB6#0	20.89	20.77	20.29		
	RB6#9	20.83	20.73	20.2		
	RB15#0	20.85	20.81	20.28		
3MHz 16QAM	RB1#0	22.13	21.11	21.21	23.17	33
	RB1#8	22.13	21.1	21.15		
	RB1#14	22.16	21.12	21.21		
	RB6#0	20.47	20.37	19.76		
	RB6#9	20.5	20.36	19.82		
	RB15#0	20.45	20.38	19.93		
5MHz QPSK	RB1#0	21.45	20.77	20.63	22.48	33
	RB1#13	21.37	20.75	20.62		
	RB1#24	21.47	20.69	20.52		
	RB15#0	20.89	20.26	20.16		
	RB15#10	20.74	20.22	20.14		
	RB25#0	20.88	20.24	20.17		
5MHz 16QAM	RB1#0	21.5	20.51	19.85	22.57	33
	RB1#13	21.56	20.54	19.8		
	RB1#24	21.56	20.45	19.75		
	RB15#0	20.33	19.88	19.79		
	RB15#10	20.36	19.89	19.73		
	RB25#0	20.42	19.78	19.83		
10MHz QPSK	RB1#0	21.15	20.96	20.55	22.25	33
	RB1#25	21.17	20.79	20.4		
	RB1#49	21.24	20.86	20.38		

	RB25#0	20.58	20.44	20.06		
	RB25#25	20.49	20.41	19.99		
	RB50#0	20.54	20.43	20		
10MHz 16QAM	RB1#0	21.23	20.43	20.93	22.31	33
	RB1#25	21.3	20.38	20.8		
	RB1#49	21.24	20.25	20.77		
	RB25#0	20.22	20.14	19.67		
	RB25#25	20.22	20.06	19.67		
	RB50#0	20.24	19.92	19.7		
15MHz QPSK	RB1#0	21.56	20.94	20.97	22.57	33
	RB1#38	21.52	20.97	20.9		
	RB1#74	21.49	20.76	20.83		
	RB36#0	20.95	20.44	20.54		
	RB36#39	20.86	20.41	20.5		
	RB75#0	20.93	20.47	20.49		
15MHz 16QAM	RB1#0	22.2	21.46	21.39	23.23	33
	RB1#38	22.22	21.39	21.25		
	RB1#74	22.12	21.34	21.23		
	RB36#0	20.53	20.08	20.19		
	RB36#39	20.51	19.98	20.19		
	RB75#0	20.52	20.06	20.17		
20MHz QPSK	RB1#0	21.41	20.95	20.7	22.42	33
	RB1#50	21.4	20.74	20.61		
	RB1#99	21.28	20.69	20.47		
	RB50#0	20.94	20.19	20.13		
	RB50#50	20.98	20.09	20		
	RB100#0	20.87	20.13	19.97		
20MHz 16QAM	RB1#0	21.83	21.77	20.65	22.9	33
	RB1#50	21.89	21.63	20.74		
	RB1#99	21.72	21.55	20.64		
	RB50#0	20.7	19.84	19.7		
	RB50#50	20.62	19.71	19.65		
	RB100#0	20.5	19.77	19.58		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G_T(dBi)**Result:****Pass**

Peak-to-average Ratio (PAR)					
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-Average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	4.78	5.26	5.29	13
	RB100#0	6.44	6.51	6.54	13
20MHz 16QAM	RB1#0	4.94	5.48	5.87	13
	RB100#0	7.24	7.15	7.31	13
				Result:	Pass

FCC §2.1049, §24.238: Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.098	1.110	1.104	1.284	1.314	1.314
1.4MHz 16QAM	1.116	1.098	1.110	1.278	1.296	1.302
3MHz QPSK	2.700	2.700	2.700	3.012	3.012	3.000
3MHz 16QAM	2.687	2.712	2.687	3.072	3.084	3.000
5MHz QPSK	4.520	4.520	4.540	5.260	5.580	5.320
5MHz 16QAM	4.540	4.560	4.540	5.500	5.480	5.200
10MHz QPSK	8.960	8.960	8.960	9.840	9.840	9.920
10MHz 16QAM	8.960	8.960	8.960	9.800	9.960	9.960
15MHz QPSK	13.620	13.500	13.560	15.360	15.420	16.020
15MHz 16QAM	13.560	13.560	13.560	15.120	15.240	15.060
20MHz QPSK	18.000	18.080	18.080	19.680	20.240	19.920
20MHz 16QAM	18.080	18.080	18.000	19.760	20.160	20.080

Note: The test plots please refer to the Plots of Occupied Bandwidth

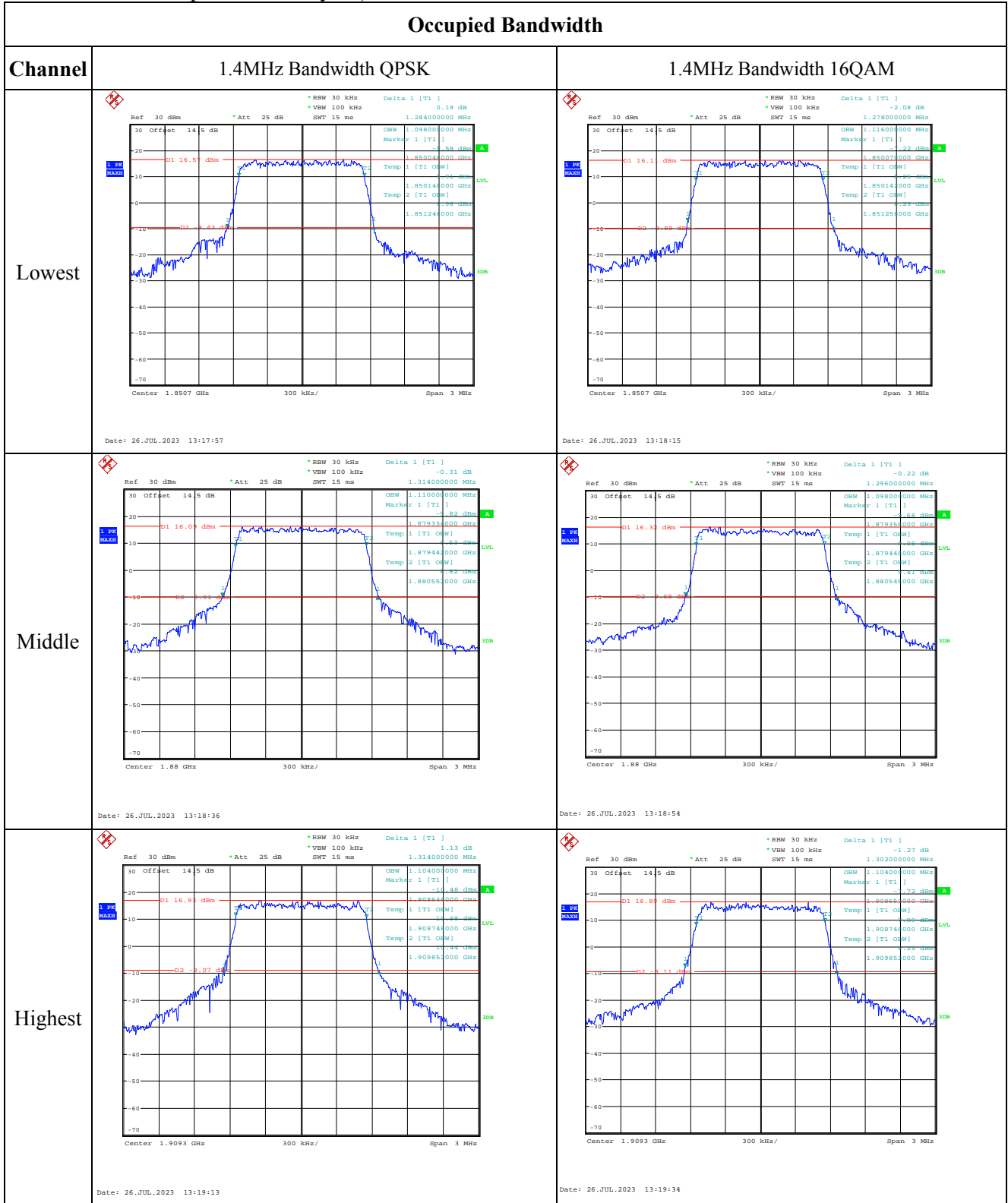
FCC §2.1051, § 24.238 (a):Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, § 24.238 (a):Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §24.235: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1851.052	1850.000	1909.045	1910.000
	-20	3.8	1851.031	1850.000	1909.087	1910.000
	-10	3.8	1851.084	1850.000	1909.042	1910.000
	0	3.8	1851.066	1850.000	1909.115	1910.000
	10	3.8	1851.036	1850.000	1909.109	1910.000
	20	3.8	1851.040	1850.000	1909.040	1910.000
	30	3.8	1851.015	1850.000	1909.058	1910.000
	40	3.8	1851.064	1850.000	1909.069	1910.000
	50	3.8	1851.097	1850.000	1909.021	1910.000
Frequency Stability vs. Voltage	20	3.5	1851.019	1850.000	1909.097	1910.000
	20	4.35	1851.070	1850.000	1909.049	1910.000
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1850.942	1850.000	1909.038	1910.000
	-20	3.8	1850.921	1850.000	1909.080	1910.000
	-10	3.8	1850.974	1850.000	1909.035	1910.000
	0	3.8	1850.956	1850.000	1909.108	1910.000
	10	3.8	1850.926	1850.000	1909.102	1910.000
	20	3.8	1850.960	1850.000	1909.040	1910.000
	30	3.8	1850.905	1850.000	1909.051	1910.000
	40	3.8	1850.954	1850.000	1909.062	1910.000
	50	3.8	1850.987	1850.000	1909.014	1910.000
Frequency Stability vs. Voltage	20	3.5	1850.909	1850.000	1909.090	1910.000
	20	4.35	1850.960	1850.000	1909.042	1910.000
					Result:	Pass

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.25 dB *VSW 100 kHz *VSW 100 kHz SWT 30 ms 3.012000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.81 dBm 1.849980000 GHz Temp 1 [T1 OSW] 1.850150000 GHz Temp 2 [T1 OSW] 1.852850000 GHz</p> <p>Center 1.8515 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:19:56</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.01 dB *VSW 100 kHz *VSW 100 kHz SWT 30 ms 3.072000000 MHz</p> <p>OSW 2.888000000 MHz Marker 1 [T1] -11.88 dBm 1.849980000 GHz Temp 1 [T1 OSW] 1.850150000 GHz Temp 2 [T1 OSW] 1.852840000 GHz</p> <p>Center 1.8515 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:20:13</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.93 dB *VSW 100 kHz *VSW 100 kHz SWT 30 ms 3.013000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.24 dBm 1.878500000 GHz Temp 1 [T1 OSW] 1.878650000 GHz Temp 2 [T1 OSW] 1.881350000 GHz</p> <p>Center 1.88 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:20:29</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.75 dB *VSW 100 kHz *VSW 100 kHz SWT 30 ms 3.084000000 MHz</p> <p>OSW 2.712000000 MHz Marker 1 [T1] -11.51 dBm 1.878450000 GHz Temp 1 [T1 OSW] 1.878640000 GHz Temp 2 [T1 OSW] 1.881350000 GHz</p> <p>Center 1.88 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:20:46</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.34 dB *VSW 100 kHz *VSW 100 kHz SWT 30 ms 3.000000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.88 dBm 1.907000000 GHz Temp 1 [T1 OSW] 1.907150000 GHz Temp 2 [T1 OSW] 1.909850000 GHz</p> <p>Center 1.9085 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:21:05</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -1.37 dB *VSW 100 kHz *VSW 100 kHz SWT 30 ms 3.000000000 MHz</p> <p>OSW 2.888000000 MHz Marker 1 [T1] -11.37 dBm 1.907000000 GHz Temp 1 [T1 OSW] 1.907150000 GHz Temp 2 [T1 OSW] 1.909840000 GHz</p> <p>Center 1.9085 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:21:23</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>Date: 26.JUL.2023 13:21:51</p>	<p>Date: 26.JUL.2023 13:22:15</p>
Middle	<p>Date: 26.JUL.2023 13:22:40</p>	<p>Date: 26.JUL.2023 13:23:07</p>
Highest	<p>Date: 26.JUL.2023 13:23:39</p>	<p>Date: 26.JUL.2023 13:23:59</p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Date: 26.JUL.2023 13:27:58</p>	<p>Date: 26.JUL.2023 13:28:20</p>
Middle	<p>Date: 26.JUL.2023 13:28:42</p>	<p>Date: 26.JUL.2023 13:29:03</p>
Highest	<p>Date: 26.JUL.2023 13:29:31</p>	<p>Date: 26.JUL.2023 13:29:49</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 1.13 dB *VBW 1 MHz *VMW 1 MHz *SWT 2.5 ms 15.360000000 MHz Marker 1 [T1] -10.47 dBm D1 16.97 dBm D2 13.0 dBm D3 13.0 dBm Temp 1 [T1 OSW] 1.864340000 GHz Temp 2 [T1 OSW] 1.850720000 GHz Temp 3 [T1 OSW] 1.864340000 GHz Center 1.8575 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:32:08</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 1.70 dB *VBW 1 MHz *VMW 1 MHz *SWT 2.5 ms 15.120000000 MHz Marker 1 [T1] -11.07 dBm D1 16.54 dBm D2 13.0 dBm D3 13.0 dBm Temp 1 [T1 OSW] 1.864280000 GHz Temp 2 [T1 OSW] 1.850720000 GHz Temp 3 [T1 OSW] 1.864280000 GHz Center 1.8575 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:32:32</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] -0.65 dB *VBW 1 MHz *VMW 1 MHz *SWT 2.5 ms 15.420000000 MHz Marker 1 [T1] -10.42 dBm D1 16.22 dBm D2 13.0 dBm D3 13.0 dBm Temp 1 [T1 OSW] 1.872440000 GHz Temp 2 [T1 OSW] 1.873280000 GHz Temp 3 [T1 OSW] 1.886780000 GHz Center 1.88 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:32:51</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 2.70 dB *VBW 1 MHz *VMW 1 MHz *SWT 2.5 ms 15.240000000 MHz Marker 1 [T1] -10.51 dBm D1 16.24 dBm D2 13.0 dBm D3 13.0 dBm Temp 1 [T1 OSW] 1.872180000 GHz Temp 2 [T1 OSW] 1.873220000 GHz Temp 3 [T1 OSW] 1.886780000 GHz Center 1.88 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:33:15</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] -0.44 dB *VBW 1 MHz *VMW 1 MHz *SWT 2.5 ms 16.020000000 MHz Marker 1 [T1] -10.41 dBm D1 16.44 dBm D2 13.0 dBm D3 13.0 dBm Temp 1 [T1 OSW] 1.893460000 GHz Temp 2 [T1 OSW] 1.895720000 GHz Temp 3 [T1 OSW] 1.909280000 GHz Center 1.9025 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:33:37</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] -1.00 dB *VBW 1 MHz *VMW 1 MHz *SWT 2.5 ms 15.060000000 MHz Marker 1 [T1] -10.21 dBm D1 16.43 dBm D2 13.0 dBm D3 13.0 dBm Temp 1 [T1 OSW] 1.895000000 GHz Temp 2 [T1 OSW] 1.895720000 GHz Temp 3 [T1 OSW] 1.909280000 GHz Center 1.9025 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:33:57</p>

Occupied Bandwidth

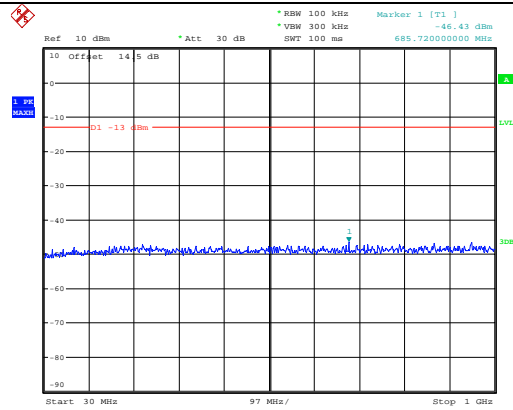
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm Offset 14.5 dB Att 25 dB *RBW 300 kHz Delta 1 [T1] -0.65 dB *VBW 1 MHz SWT 2.5 ms OSW 19.68000000 MHz Marker 1 [T1] -5.61 dBm D1 15.88 dBm Temp 1 [T1 OSW] 1.85024000 GHz Temp 2 [T1 OSW] 1.85104000 GHz Temp 3 [T1 OSW] 1.86904000 GHz Center 1.86 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 13:34:18</p>	<p>Ref 30 dBm Offset 14.5 dB Att 25 dB *RBW 300 kHz Delta 1 [T1] -1.69 dB *VBW 1 MHz SWT 2.5 ms OSW 19.76000000 MHz Marker 1 [T1] -5.93 dBm D1 15.24 dBm Temp 1 [T1 OSW] 1.85016000 GHz Temp 2 [T1 OSW] 1.85096000 GHz Temp 3 [T1 OSW] 1.86904000 GHz Center 1.86 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 13:34:39</p>
Middle	<p>Ref 30 dBm Offset 14.5 dB Att 25 dB *RBW 300 kHz Delta 1 [T1] 1.07 dB *VBW 1 MHz SWT 2.5 ms OSW 20.24000000 MHz Marker 1 [T1] -11.68 dBm D1 15.2 dBm Temp 1 [T1 OSW] 1.86928000 GHz Temp 2 [T1 OSW] 1.87096000 GHz Temp 3 [T1 OSW] 1.88904000 GHz Center 1.88 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 13:34:59</p>	<p>Ref 30 dBm Offset 14.5 dB Att 25 dB *RBW 300 kHz Delta 1 [T1] -3.46 dB *VBW 1 MHz SWT 2.5 ms OSW 20.16000000 MHz Marker 1 [T1] -11.25 dBm D1 15.07 dBm Temp 1 [T1 OSW] 1.86976000 GHz Temp 2 [T1 OSW] 1.87096000 GHz Temp 3 [T1 OSW] 1.88904000 GHz Center 1.88 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 13:35:17</p>
Highest	<p>Ref 30 dBm Offset 14.5 dB Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.63 dB *VBW 1 MHz SWT 2.5 ms OSW 19.92000000 MHz Marker 1 [T1] -11.67 dBm D1 15.34 dBm Temp 1 [T1 OSW] 1.89000000 GHz Temp 2 [T1 OSW] 1.89096000 GHz Temp 3 [T1 OSW] 1.90904000 GHz Center 1.9 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 13:35:35</p>	<p>Ref 30 dBm Offset 14.5 dB Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.36 dB *VBW 1 MHz SWT 2.5 ms OSW 20.08000000 MHz Marker 1 [T1] -11.81 dBm D1 15.04 dBm Temp 1 [T1 OSW] 1.88976000 GHz Temp 2 [T1 OSW] 1.89096000 GHz Temp 3 [T1 OSW] 1.90904000 GHz Center 1.9 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 13:35:53</p>

Spurious Emissions at Antenna Terminal

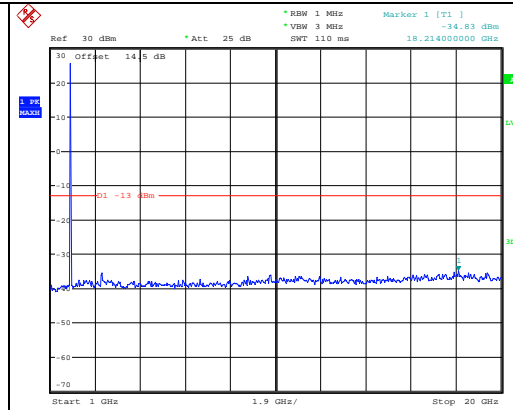
Channel

1.4MHz Bandwidth QPSK

Lowest

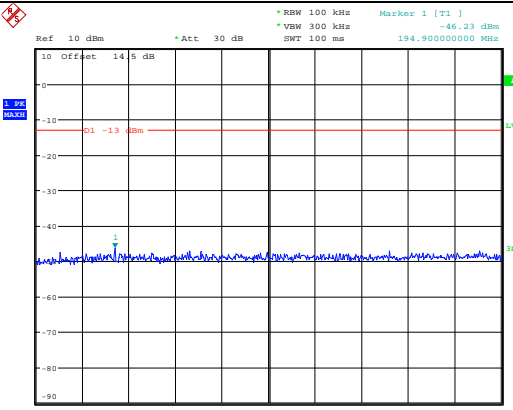


Date: 27.JUL.2023 13:02:55

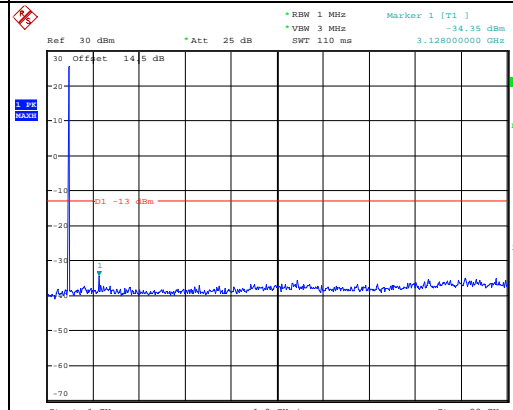


Date: 27.JUL.2023 13:03:07

Middle

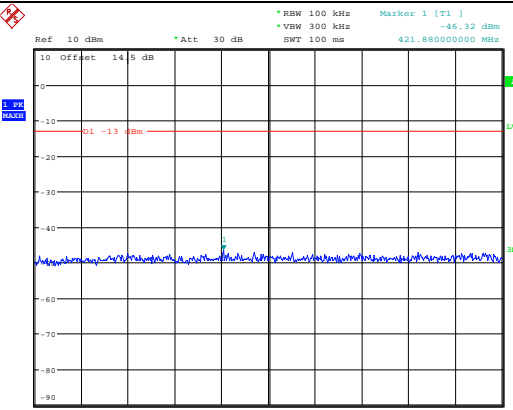


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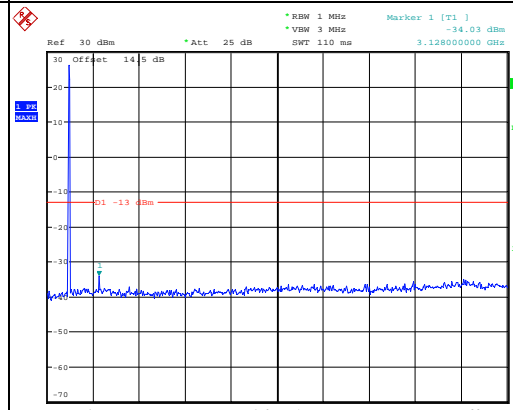


Date: 27.JUL.2023 13:03:32

Highest



Date: 27.JUL.2023 13:03:45



Date: 27.JUL.2023 13:03:56

Spurious Emissions at Antenna Terminal

Channel	3MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.56 dBm *VMW 300 kHz -46.56 dBm SWT 100 ms 288.02000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:04:15</p>	<p>Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -33.59 dBm *VMW 3 MHz -33.59 dBm SWT 110 ms 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:04:27</p>
Middle	<p>Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.02 dBm *VMW 300 kHz -46.02 dBm SWT 100 ms 992.24000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:04:44</p>	<p>Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -33.83 dBm *VMW 3 MHz -33.83 dBm SWT 110 ms 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:04:55</p>
Highest	<p>Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.38 dBm *VMW 300 kHz -46.38 dBm SWT 100 ms 897.18000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:05:09</p>	<p>Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -34.10 dBm *VMW 3 MHz -34.10 dBm SWT 110 ms 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:05:20</p>

Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.36 dBm VSW 300 kHz SWT 100 ms 935.98000000 MHz</p> <p>Date: 27.JUL.2023 13:10:05</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -34.83 dBm VSW 3 MHz SWT 110 ms 17.416000000 GHz</p> <p>Date: 27.JUL.2023 13:10:16</p>
Middle	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.41 dBm VSW 300 kHz SWT 100 ms 204.600000000 MHz</p> <p>Date: 27.JUL.2023 13:10:30</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -33.76 dBm VSW 3 MHz SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:10:41</p>
Highest	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.39 dBm VSW 300 kHz SWT 100 ms 918.520000000 MHz</p> <p>Date: 27.JUL.2023 13:10:58</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.45 dBm VSW 3 MHz SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:11:09</p>

Spurious Emissions at Antenna Terminal

Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.65 dBm VSW 300 kHz SWT 100 ms 762.728000000 MHz</p> <p>Date: 27.JUL.2023 13:11:26</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -33.03 dBm VSW 3 MHz SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:11:37</p>
Middle	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -45.98 dBm VSW 300 kHz SWT 100 ms 891.960000000 MHz</p> <p>Date: 27.JUL.2023 13:11:51</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -35.40 dBm VSW 3 MHz SWT 110 ms 19.392000000 GHz</p> <p>Date: 27.JUL.2023 13:12:02</p>
Highest	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -45.98 dBm VSW 300 kHz SWT 100 ms 891.960000000 MHz</p> <p>Date: 27.JUL.2023 13:12:19</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -34.09 dBm VSW 3 MHz SWT 110 ms 19.784000000 GHz</p> <p>Date: 27.JUL.2023 13:12:30</p>

Spurious Emissions at Antenna Terminal

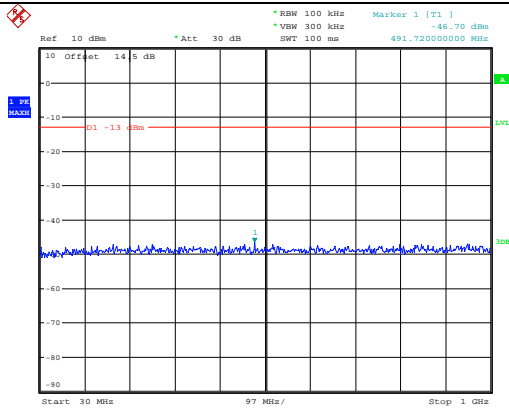
Channel	15MHz Bandwidth QPSK	
Lowest	<p> Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.23 dBm *VMW 300 kHz -46.23 dBm SWT 100 ms 994.180000000 MHz </p> <p>Date: 27.JUL.2023 13:12:50</p>	<p> Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -34.87 dBm *VMW 3 MHz -34.87 dBm SWT 110 ms 18.404000000 GHz </p> <p>Date: 27.JUL.2023 13:13:01</p>
Middle	<p> Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.24 dBm *VMW 300 kHz -46.24 dBm SWT 100 ms 524.700000000 MHz </p> <p>Date: 27.JUL.2023 13:13:14</p>	<p> Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -34.58 dBm *VMW 3 MHz -34.58 dBm SWT 110 ms 3.128000000 GHz </p> <p>Date: 27.JUL.2023 13:13:26</p>
Highest	<p> Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.12 dBm *VMW 300 kHz -46.12 dBm SWT 100 ms 239.520000000 MHz </p> <p>Date: 27.JUL.2023 13:13:39</p>	<p> Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -34.34 dBm *VMW 3 MHz -34.34 dBm SWT 110 ms 3.128000000 GHz </p> <p>Date: 27.JUL.2023 13:13:51</p>

Spurious Emissions at Antenna Terminal

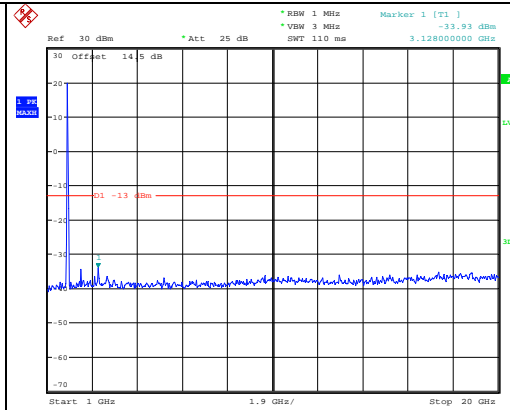
Channel

20MHz Bandwidth QPSK

Lowest

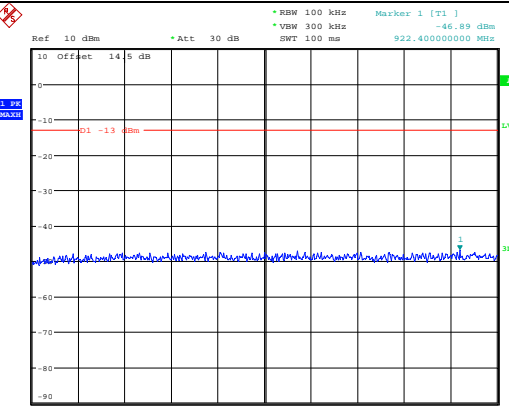


Date: 27.JUL.2023 13:14:07

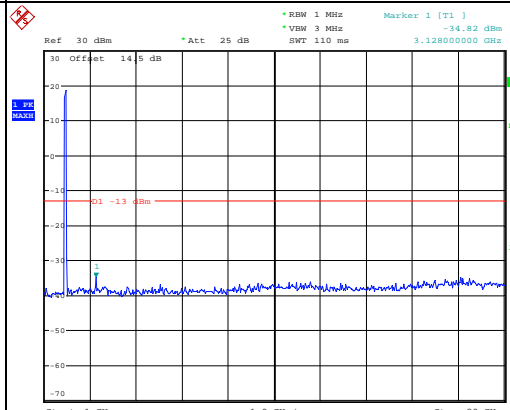


Date: 27.JUL.2023 13:14:18

Middle

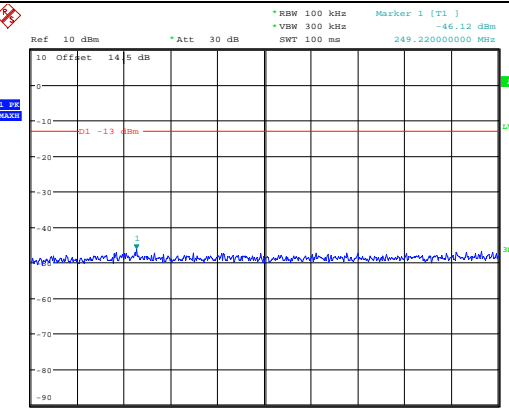


Date: 27.JUL.2023 13:14:32

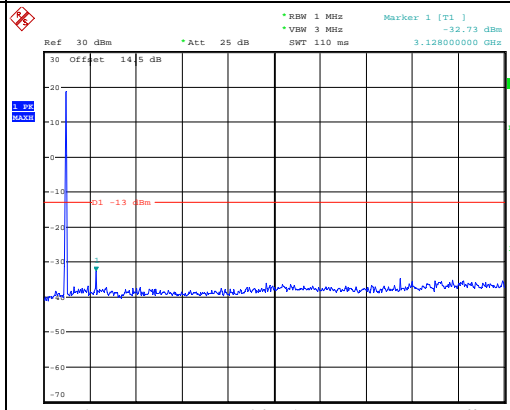


Date: 27.JUL.2023 13:14:43

Highest



Date: 27.JUL.2023 13:15:00



Date: 27.JUL.2023 13:15:11

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Date: 27.JUL.2023 11:17:19</p>	<p>Date: 27.JUL.2023 11:17:35</p>
QPSK 3MHz	<p>Date: 27.JUL.2023 11:17:54</p>	<p>Date: 27.JUL.2023 11:18:11</p>
QPSK 5MHz	<p>Date: 27.JUL.2023 11:18:30</p>	<p>Date: 27.JUL.2023 11:18:47</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -31.52 dBm VSW 1 MHz SWT 35 ms 1.850000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>D1 -13 dBm</p> <p>SWP 50 OF 50</p> <p>Center 1.85 GHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:19:07</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -34.47 dBm VSW 1 MHz SWT 35 ms 1.910040000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>D1 -13 dBm</p> <p>SWP 50 OF 50</p> <p>Center 1.91 GHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:19:25</p>
QPSK 15MHz	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -28.48 dBm VSW 1 MHz SWT 35 ms 1.850000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>D1 -13 dBm</p> <p>SWP 50 OF 50</p> <p>Center 1.85 GHz 3 MHz/ Span 30 MHz</p> <p>Date: 27.JUL.2023 11:19:44</p>	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -28.70 dBm VSW 1 MHz SWT 35 ms 1.910000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>D1 -13 dBm</p> <p>SWP 50 OF 50</p> <p>Center 1.91 GHz 3 MHz/ Span 30 MHz</p> <p>Date: 27.JUL.2023 11:19:59</p>
QPSK 20MHz	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -32.45 dBm VSW 1 MHz SWT 35 ms 1.850000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>D1 -13 dBm</p> <p>SWP 50 OF 50</p> <p>Center 1.85 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 27.JUL.2023 11:20:16</p>	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -34.10 dBm VSW 1 MHz SWT 35 ms 1.910000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>D1 -13 dBm</p> <p>SWP 50 OF 50</p> <p>Center 1.91 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 27.JUL.2023 11:20:31</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Date: 27.JUL.2023 11:17:27</p>	<p>Date: 27.JUL.2023 11:17:43</p>
16QAM 3MHz	<p>Date: 27.JUL.2023 11:18:02</p>	<p>Date: 27.JUL.2023 11:18:19</p>
16QAM 5MHz	<p>Date: 27.JUL.2023 11:18:38</p>	<p>Date: 27.JUL.2023 11:18:55</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz	<p>Date: 27.JUL.2023 11:19:07</p>	<p>Date: 27.JUL.2023 11:19:25</p>
16QAM 15MHz	<p>Date: 27.JUL.2023 11:19:44</p>	<p>Date: 27.JUL.2023 11:19:59</p>
16QAM 20MHz	<p>Date: 27.JUL.2023 11:20:16</p>	<p>Date: 27.JUL.2023 11:20:31</p>

4.7 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1710.7	1732.5	1754.3
3MHz	1711.5	1732.5	1753.5
5MHz	1712.5	1732.5	1752.5
10MHz	1715	1732.5	1750
15MHz	1717.5	1732.5	1747.5
20MHz	1720	1732.5	1745

Test Data:

FCC§2.1046; § 27.50(d)(4)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.52	22.59	21.83	24.71	30
	RB1#3	22.5	22.61	21.78		
	RB1#5	22.56	22.64	21.86		
	RB3#0	22.55	22.78	22.12		
	RB3#3	22.49	22.78	22.06		
	RB6#0	21.45	21.74	20.94		
1.4MHz 16QAM	RB1#0	21.66	21.49	21.6	23.78	30
	RB1#3	21.67	21.55	21.59		
	RB1#5	21.68	21.48	21.6		
	RB3#0	21.63	21.85	21.05		
	RB3#3	21.66	21.84	21.06		
	RB6#0	20.76	21.03	19.96		
3MHz QPSK	RB1#0	22.92	22.75	22.05	24.93	30
	RB1#8	22.94	22.68	22.11		
	RB1#14	23	22.78	22		
	RB6#0	22.01	21.78	21.15		
	RB6#9	22.1	21.83	21.05		
	RB15#0	21.99	21.78	21.12		
3MHz 16QAM	RB1#0	22.72	21.54	21.26	24.71	30
	RB1#8	22.78	21.56	21.23		
	RB1#14	22.76	21.61	21.17		
	RB6#0	21.2	21.13	20.2		
	RB6#9	21.19	21.06	20.2		
	RB15#0	21.07	20.96	20.24		
5MHz QPSK	RB1#0	22.31	22.16	22.85	24.78	30
	RB1#13	22.3	22.18	22.76		
	RB1#24	22.35	22.23	22.74		
	RB15#0	21.29	21.22	21.71		
	RB15#10	21.25	21.16	21.7		
	RB25#0	21.3	21.15	21.6		
5MHz 16QAM	RB1#0	21.47	20.89	20.93	23.40	30
	RB1#13	21.47	20.87	20.92		
	RB1#24	21.43	20.96	20.97		
	RB15#0	20.3	20.38	20.84		
	RB15#10	20.23	20.32	20.85		
	RB25#0	20.41	20.26	20.94		
10MHz QPSK	RB1#0	22.79	22.81	22.69	24.78	30
	RB1#25	22.8	22.78	22.72		
	RB1#49	22.81	22.85	22.68		

	RB25#0	21.69	21.75	21.66		
	RB25#25	21.74	21.85	21.78		
	RB50#0	21.64	21.81	21.64		
10MHz 16QAM	RB1#0	21.88	21.31	22.03	23.96	30
	RB1#25	21.86	21.28	22.03		
	RB1#49	21.83	21.22	22.02		
	RB25#0	20.87	21.09	20.96		
	RB25#25	20.89	21.03	20.82		
	RB50#0	20.84	20.83	20.93		
15MHz QPSK	RB1#0	22.71	22.73	22.77	24.70	30
	RB1#38	22.63	22.7	22.74		
	RB1#74	22.64	22.65	22.66		
	RB36#0	21.59	21.81	21.77		
	RB36#39	21.55	21.69	21.65		
	RB75#0	21.65	21.81	21.81		
15MHz 16QAM	RB1#0	21.77	22.26	22.15	24.19	30
	RB1#38	21.75	22.18	22.08		
	RB1#74	21.72	22.17	22.01		
	RB36#0	20.76	20.88	21.02		
	RB36#39	20.76	20.83	20.91		
	RB75#0	20.75	20.93	21.01		
20MHz QPSK	RB1#0	22.41	22.64	23.27	25.20	30
	RB1#50	22.33	22.51	23.15		
	RB1#99	22.3	22.52	23.16		
	RB50#0	21.47	21.46	21.9		
	RB50#50	21.43	21.46	21.92		
	RB100#0	21.34	21.42	22		
20MHz 16QAM	RB1#0	21.74	22.31	21.5	24.25	30
	RB1#50	21.77	22.14	21.34		
	RB1#99	21.79	22.21	21.31		
	RB50#0	20.59	20.51	21.18		
	RB50#50	20.62	20.46	21.02		
	RB100#0	20.51	20.6	20.97		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)

Result:**Pass****Peak-to-average Ratio (PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-Average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	5.06	4.36	4.13	13
	RB100#0	6.54	6.41	6.57	13
20MHz 16QAM	RB1#0	5.96	5.32	4.84	13
	RB100#0	7.28	7.12	7.31	13
				Result:	Pass

FCC §2.1049, §27.53: Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.104	1.104	1.110	1.308	1.266	1.314
1.4MHz 16QAM	1.104	1.116	1.110	1.278	1.266	1.296
3MHz QPSK	2.700	2.687	2.700	3.000	3.012	3.012
3MHz 16QAM	2.700	2.700	2.700	3.084	3.048	3.024
5MHz QPSK	4.520	4.520	4.560	5.260	5.460	5.280
5MHz 16QAM	4.540	4.560	4.540	5.540	5.480	5.300
10MHz QPSK	8.960	8.960	9.000	9.840	9.880	9.800
10MHz 16QAM	9.000	8.960	8.960	9.960	10.080	9.760
15MHz QPSK	13.560	13.560	13.620	15.240	15.900	15.600
15MHz 16QAM	13.620	13.560	13.560	15.360	15.120	15.060
20MHz QPSK	17.920	18.080	18.080	19.760	20.080	19.840
20MHz 16QAM	18.000	18.080	18.160	19.760	20.240	20.080

Note: The test plots please refer to the Plots of Occupied Bandwidth

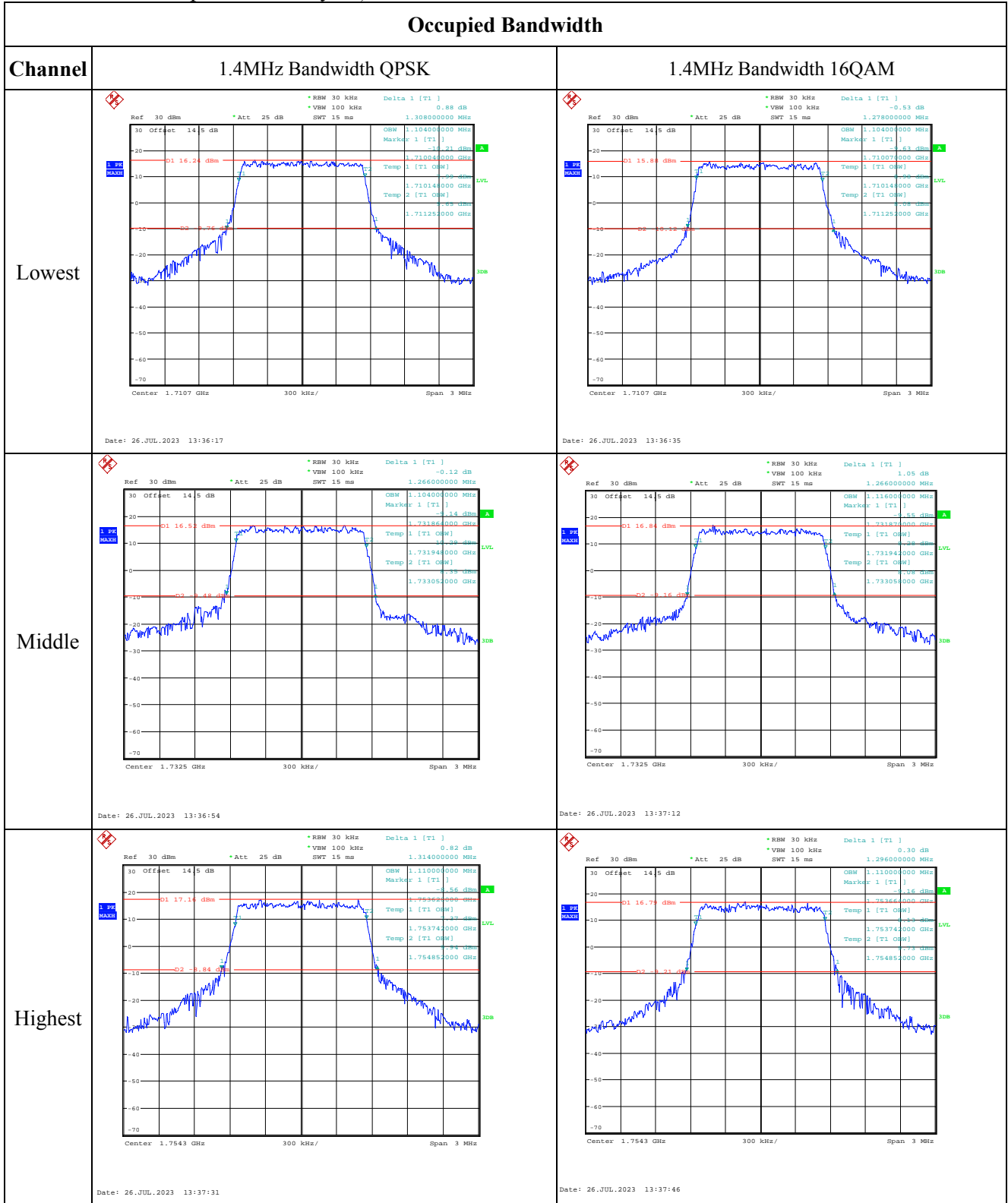
FCC §2.1051, § 27.53: Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, § 27.53: Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1711.070	1710.00	1754.027	1755
	-20	3.8	1711.023	1710.00	1754.064	1755
	-10	3.8	1711.047	1710.00	1754.022	1755
	0	3.8	1711.058	1710.00	1754.080	1755
	10	3.8	1711.083	1710.00	1754.101	1755
	20	3.8	1711.120	1710.00	1754.040	1755
	30	3.8	1711.023	1710.00	1754.047	1755
	40	3.8	1711.037	1710.00	1754.104	1755
	50	3.8	1711.059	1710.00	1754.090	1755
Frequency Stability vs. Voltage	20	3.5	1711.103	1710.00	1754.077	1755
	20	4.35	1711.040	1710.00	1754.078	1755
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1711.063	1710.00	1754.021	1755
	-20	3.8	1711.016	1710.00	1754.058	1755
	-10	3.8	1711.040	1710.00	1754.016	1755
	0	3.8	1711.051	1710.00	1754.074	1755
	10	3.8	1711.076	1710.00	1754.095	1755
	20	3.8	1711.040	1710.00	1754.120	1755
	30	3.8	1711.016	1710.00	1754.041	1755
	40	3.8	1711.030	1710.00	1754.098	1755
	50	3.8	1711.052	1710.00	1754.084	1755
Frequency Stability vs. Voltage	20	3.5	1711.096	1710.00	1754.071	1755
	20	4.35	1711.033	1710.00	1754.072	1755
					Result:	Pass

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.74 dB *VBW 100 kHz SWF 30 ms 3.000000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.84 dBm 1.710000000 GHz 1.710150000 GHz 1.712850000 GHz</p> <p>D1 13.7 dBm D2 -13.3 dBm</p> <p>Center 1.7115 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:38:07</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.21 dB *VBW 100 kHz SWF 30 ms 3.084000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.87 dBm 1.709980000 GHz 1.710140000 GHz 1.712840000 GHz</p> <p>D1 12.8 dBm D2 -13.1 dBm</p> <p>Center 1.7115 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:38:25</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.27 dB *VBW 100 kHz SWF 30 ms 3.013000000 MHz</p> <p>OSW 2.688000000 MHz Marker 1 [T1] -11.70 dBm 1.730980000 GHz 1.731150000 GHz 1.733840000 GHz</p> <p>D1 13.4 dBm D2 -13.3 dBm</p> <p>Center 1.7325 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:38:44</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.54 dB *VBW 100 kHz SWF 30 ms 3.048000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.38 dBm 1.730970000 GHz 1.731140000 GHz 1.733840000 GHz</p> <p>D1 13.3 dBm D2 -13.3 dBm</p> <p>Center 1.7325 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:39:03</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.12 dB *VBW 100 kHz SWF 30 ms 3.012000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.15 dBm 1.752010000 GHz 1.752150000 GHz 1.754850000 GHz</p> <p>D1 14.7 dBm D2 -11.2 dBm</p> <p>Center 1.7535 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:39:22</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -1.67 dB *VBW 100 kHz SWF 30 ms 3.024000000 MHz</p> <p>OSW 2.700000000 MHz Marker 1 [T1] -11.47 dBm 1.752000000 GHz 1.752150000 GHz 1.754850000 GHz</p> <p>D1 12.8 dBm D2 -13.1 dBm</p> <p>Center 1.7535 GHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 13:39:37</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 9.840000000 MHz Marker 1 [T1] 1.715000000 GHz D1 13.94 dBm D2 -12.04 dBm Date: 26.JUL.2023 13:42:55</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 9.960000000 MHz Marker 1 [T1] 1.715000000 GHz D1 12.33 dBm D2 -13.67 dBm Date: 26.JUL.2023 13:43:16</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 9.880000000 MHz Marker 1 [T1] 1.732500000 GHz D1 13.77 dBm D2 -12.27 dBm Date: 26.JUL.2023 13:43:36</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 10.080000000 MHz Marker 1 [T1] 1.732500000 GHz D1 12.77 dBm D2 -13.33 dBm Date: 26.JUL.2023 13:43:57</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 9.800000000 MHz Marker 1 [T1] 1.750000000 GHz D1 13.47 dBm D2 -12.57 dBm Date: 26.JUL.2023 13:44:16</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 9.760000000 MHz Marker 1 [T1] 1.750000000 GHz D1 15.11 dBm D2 -10.83 dBm Date: 26.JUL.2023 13:44:37</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz -0.61 dB SWT 2.5 ms 15.240000000 MHz OSW 15.240000000 MHz Marker 1 [T1] -1.32 dBm D1 17.15 dBm D2 8.83 dBm D3 -1.32 dBm Temp 1 [T1 OSW] 1.71078000 GHz Temp 2 [T1 OSW] 1.72434000 GHz Center 1.7175 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:45:06</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz -0.35 dB SWT 2.5 ms 15.360000000 MHz OSW 15.360000000 MHz Marker 1 [T1] -1.71 dBm D1 15.84 dBm D2 -1.71 dBm D3 -1.84 dBm Temp 1 [T1 OSW] 1.70988000 GHz Temp 2 [T1 OSW] 1.71072000 GHz Center 1.7175 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:45:31</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz -2.88 dB SWT 2.5 ms 15.900000000 MHz OSW 15.900000000 MHz Marker 1 [T1] -1.21 dBm D1 17 dBm D2 8.31 dBm D3 -1.21 dBm Temp 1 [T1 OSW] 1.72480000 GHz Temp 2 [T1 OSW] 1.73528000 GHz Center 1.7325 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:45:56</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz -1.17 dB SWT 2.5 ms 15.120000000 MHz OSW 15.120000000 MHz Marker 1 [T1] -1.21 dBm D1 16.97 dBm D2 -1.21 dBm D3 -1.21 dBm Temp 1 [T1 OSW] 1.72480000 GHz Temp 2 [T1 OSW] 1.73528000 GHz Center 1.7325 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:46:18</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz -0.13 dB SWT 2.5 ms 15.600000000 MHz OSW 15.600000000 MHz Marker 1 [T1] -1.16 dBm D1 17.64 dBm D2 8.37 dBm D3 -1.16 dBm Temp 1 [T1 OSW] 1.73976000 GHz Temp 2 [T1 OSW] 1.75434000 GHz Center 1.7475 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:46:50</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz 0.30 dB SWT 2.5 ms 15.060000000 MHz OSW 15.060000000 MHz Marker 1 [T1] -1.16 dBm D1 16.38 dBm D2 -1.16 dBm D3 -1.16 dBm Temp 1 [T1 OSW] 1.74000000 GHz Temp 2 [T1 OSW] 1.75428000 GHz Center 1.7475 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 13:47:14</p>

Occupied Bandwidth

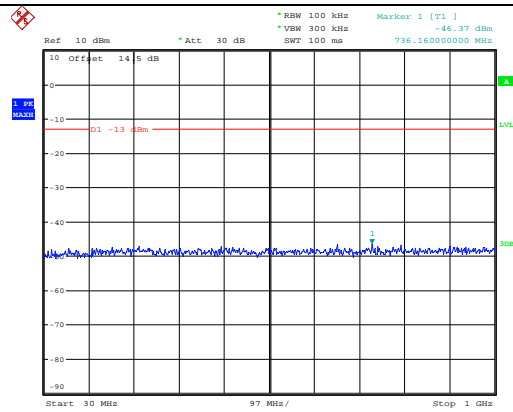
Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VSW 1 MHz *SWT 2.5 ms 19.760000000 MHz</p> <p>OSW 17.920000000 MHz Marker 1 [T1] -10.42 dB</p> <p>D1 16.57 dBm</p> <p>Temp 1 [T1 OSW] 1.711320000 GHz -10.42 dBm</p> <p>Temp 2 [T1 OSW] 1.711120000 GHz -10.42 dBm</p> <p>Temp 3 [T1 OSW] 1.729040000 GHz -10.42 dBm</p> <p>Center 1.720 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 26.JUL.2023 13:47:36</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VSW 1 MHz *SWT 2.5 ms 19.760000000 MHz</p> <p>OSW 18.000000000 MHz Marker 1 [T1] -11.14 dB</p> <p>D1 15.8 dBm</p> <p>Temp 1 [T1 OSW] 1.710080000 GHz -11.14 dBm</p> <p>Temp 2 [T1 OSW] 1.711040000 GHz -11.14 dBm</p> <p>Temp 3 [T1 OSW] 1.729040000 GHz -11.14 dBm</p> <p>Center 1.720 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 26.JUL.2023 13:48:00</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VSW 1 MHz *SWT 2.5 ms 20.080000000 MHz</p> <p>OSW 18.080000000 MHz Marker 1 [T1] -11.41 dB</p> <p>D1 15.8 dBm</p> <p>Temp 1 [T1 OSW] 1.722500000 GHz -11.41 dBm</p> <p>Temp 2 [T1 OSW] 1.723460000 GHz -11.41 dBm</p> <p>Temp 3 [T1 OSW] 1.741540000 GHz -11.41 dBm</p> <p>Center 1.7325 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 26.JUL.2023 13:48:22</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VSW 1 MHz *SWT 2.5 ms 20.080000000 MHz</p> <p>OSW 18.080000000 MHz Marker 1 [T1] -11.88 dB</p> <p>D1 14.8 dBm</p> <p>Temp 1 [T1 OSW] 1.722260000 GHz -11.88 dBm</p> <p>Temp 2 [T1 OSW] 1.723460000 GHz -11.88 dBm</p> <p>Temp 3 [T1 OSW] 1.741540000 GHz -11.88 dBm</p> <p>Center 1.7325 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 26.JUL.2023 13:48:40</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VSW 1 MHz *SWT 2.5 ms 19.840000000 MHz</p> <p>OSW 18.080000000 MHz Marker 1 [T1] -11.62 dB</p> <p>D1 15.8 dBm</p> <p>Temp 1 [T1 OSW] 1.735160000 GHz -11.62 dBm</p> <p>Temp 2 [T1 OSW] 1.735960000 GHz -11.62 dBm</p> <p>Temp 3 [T1 OSW] 1.754040000 GHz -11.62 dBm</p> <p>Center 1.745 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 26.JUL.2023 13:48:59</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VSW 1 MHz *SWT 2.5 ms 20.080000000 MHz</p> <p>OSW 18.160000000 MHz Marker 1 [T1] -12.46 dB</p> <p>D1 15.63 dBm</p> <p>Temp 1 [T1 OSW] 1.735000000 GHz -12.46 dBm</p> <p>Temp 2 [T1 OSW] 1.735960000 GHz -12.46 dBm</p> <p>Temp 3 [T1 OSW] 1.754120000 GHz -12.46 dBm</p> <p>Center 1.745 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 26.JUL.2023 13:49:17</p>

Spurious Emissions at Antenna Terminal

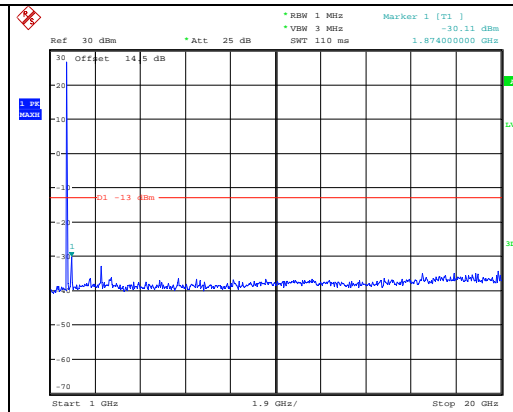
Channel

1.4MHz Bandwidth QPSK

Lowest

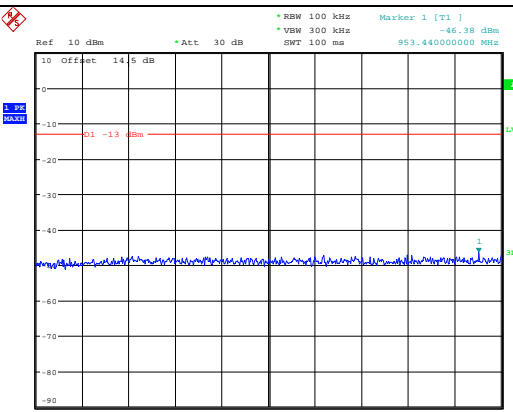


Date: 27.JUL.2023 13:15:33

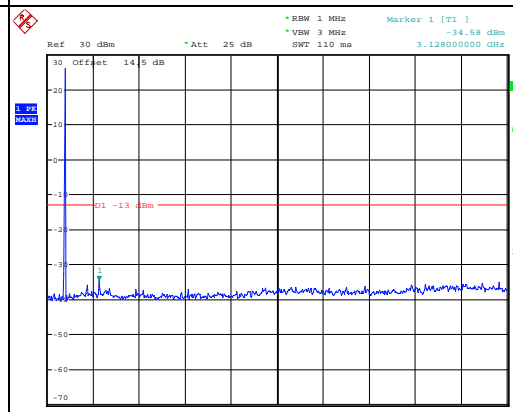


Date: 27.JUL.2023 13:15:44

Middle

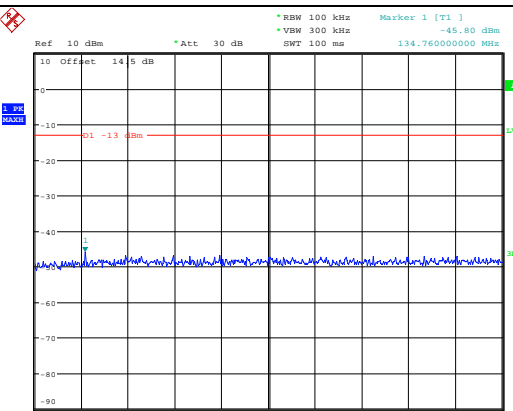


Date: 27.JUL.2023 13:15:58

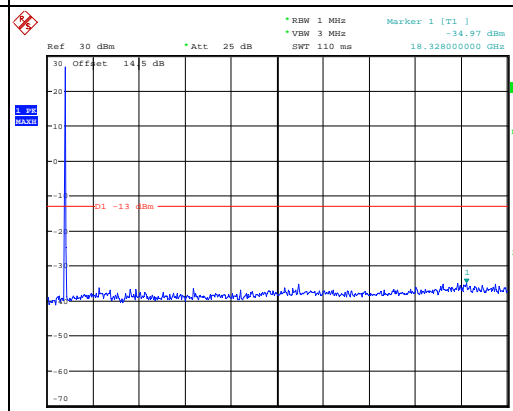


Date: 27.JUL.2023 13:16:09

Highest



Date: 27.JUL.2023 13:16:30



Date: 27.JUL.2023 13:16:41

Spurious Emissions at Antenna Terminal

Channel	3MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.13 dBm *VMW 300 kHz -46.13 dBm *SWT 100 ms 934.04000000 MHz</p> <p>Date: 27.JUL.2023 13:16:58</p>	<p>Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -32.39 dBm *VMW 3 MHz -32.39 dBm *SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:17:09</p>
Middle	<p>Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.93 dBm *VMW 300 kHz -46.93 dBm *SWT 100 ms 357.86000000 MHz</p> <p>Date: 27.JUL.2023 13:17:26</p>	<p>Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -34.98 dBm *VMW 3 MHz -34.98 dBm *SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:17:37</p>
Highest	<p>Ref 10 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.73 dBm *VMW 300 kHz -46.73 dBm *SWT 100 ms 965.08000000 MHz</p> <p>Date: 27.JUL.2023 13:17:51</p>	<p>Ref 30 dBm Att 25 dB *RBW 1 MHz Marker 1 [T1] -33.53 dBm *VMW 3 MHz -33.53 dBm *SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:18:02</p>

Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.21 dBm *VBW 300 kHz *VMW 300 kHz -46.21 dBm SWT 100 ms 247.28000000 MHz</p> <p>Date: 27.JUL.2023 13:18:18</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -34.23 dBm *VBW 3 MHz *VMW 3 MHz -34.23 dBm SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:18:30</p>
Middle	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.69 dBm *VBW 300 kHz *VMW 300 kHz -46.69 dBm SWT 100 ms 419.94000000 MHz</p> <p>Date: 27.JUL.2023 13:18:43</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -33.36 dBm *VBW 3 MHz *VMW 3 MHz -33.36 dBm SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:18:55</p>
Highest	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -46.18 dBm *VBW 300 kHz *VMW 300 kHz -46.18 dBm SWT 100 ms 450.98000000 MHz</p> <p>Date: 27.JUL.2023 13:19:08</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] -32.12 dBm *VBW 3 MHz *VMW 3 MHz -32.12 dBm SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:19:19</p>

Spurious Emissions at Antenna Terminal

Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -46.18 dBm 229.82000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:19:36</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz *VSW 3 MHz *SWT 110 ms Marker 1 [T1] -34.53 dBm 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:19:47</p>
Middle	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -46.66 dBm 445.160000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:20:01</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz *VSW 3 MHz *SWT 110 ms Marker 1 [T1] -33.56 dBm 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:20:12</p>
Highest	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -46.66 dBm 710.940000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:20:26</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz *VSW 3 MHz *SWT 110 ms Marker 1 [T1] -34.98 dBm 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:20:37</p>

Spurious Emissions at Antenna Terminal

Channel	15MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.60 dBm VSW 300 kHz SWT 100 ms 990.300000000 MHz</p> <p>Date: 27.JUL.2023 13:20:58</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -33.50 dBm VSW 3 MHz SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:21:09</p>
Middle	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.86 dBm VSW 300 kHz SWT 100 ms 491.720000000 MHz</p> <p>Date: 27.JUL.2023 13:21:26</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -34.13 dBm VSW 3 MHz SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:21:37</p>
Highest	<p>Ref 10 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.61 dBm VSW 300 kHz SWT 100 ms 445.160000000 MHz</p> <p>Date: 27.JUL.2023 13:21:54</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -33.19 dBm VSW 3 MHz SWT 110 ms 3.128000000 GHz</p> <p>Date: 27.JUL.2023 13:22:05</p>

Spurious Emissions at Antenna Terminal

Channel	20MHz Bandwidth QPSK	
Lowest	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] *VSW 300 kHz -45.58 dBm SWT 100 ms 497.540000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:22:24</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] *VSW 3 MHz -33.56 dBm SWT 110 ms 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:22:36</p>
Middle	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] *VSW 300 kHz -46.80 dBm SWT 100 ms 953.440000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:22:49</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] *VSW 3 MHz -34.84 dBm SWT 110 ms 18.404000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:23:00</p>
Highest	<p>Ref 10 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] *VSW 300 kHz -46.41 dBm SWT 100 ms 381.140000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:23:17</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz Marker 1 [T1] *VSW 3 MHz -32.80 dBm SWT 110 ms 3.128000000 GHz</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>Date: 27.JUL.2023 13:23:28</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz		
QPSK 3MHz		
QPSK 5MHz		

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 10MHz	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -34.68 dBm VSW 1 MHz SWT 35 ms 1.710000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>Center 1.71 GHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:22:43</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -32.00 dBm VSW 300 kHz SWT 35 ms 1.755000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>Center 1.755 GHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:23:01</p>
QPSK 15MHz	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -29.99 dBm VSW 1 MHz SWT 35 ms 1.710000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>Center 1.71 GHz 3 MHz/ Span 30 MHz</p> <p>Date: 27.JUL.2023 11:23:20</p>	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -27.10 dBm VSW 1 MHz SWT 35 ms 1.755000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>Center 1.755 GHz 3 MHz/ Span 30 MHz</p> <p>Date: 27.JUL.2023 11:23:35</p>
QPSK 20MHz	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -34.26 dBm VSW 1 MHz SWT 35 ms 1.710000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>Center 1.71 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 27.JUL.2023 11:23:53</p>	<p>Ref 30 dBm Att 25 dB RBW 300 kHz Marker 1 [T1] -32.09 dBm VSW 1 MHz SWT 35 ms 1.755000000 GHz</p> <p>30 Offset 14.5 dB -20 -10 0 -10 -20 -30 -40 -50 -60 -70</p> <p>Center 1.755 GHz 4 MHz/ Span 40 MHz</p> <p>Date: 27.JUL.2023 11:24:08</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Date: 27.JUL.2023 11:21:00</p>	<p>Date: 27.JUL.2023 11:21:19</p>
16QAM 3MHz	<p>Date: 27.JUL.2023 11:21:39</p>	<p>Date: 27.JUL.2023 11:21:54</p>
16QAM 5MHz	<p>Date: 27.JUL.2023 11:22:14</p>	<p>Date: 27.JUL.2023 11:22:31</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 10MHz	<p>Date: 27.JUL.2023 11:22:52</p>	<p>Date: 27.JUL.2023 11:23:09</p>
16QAM 15MHz	<p>Date: 27.JUL.2023 11:23:27</p>	<p>Date: 27.JUL.2023 11:23:42</p>
16QAM 20MHz	<p>Date: 27.JUL.2023 11:24:00</p>	<p>Date: 27.JUL.2023 11:24:15</p>

4.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	824.7	836.5	848.3
3MHz	825.5	836.5	847.5
5MHz	826.5	836.5	846.5
10MHz	829	836.5	844

Test Data:

FCC§2.1046; § 22.913 (a)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	24.28	24.52	23.48	21.95	38.45
	RB1#3	24.33	24.26	23.58		
	RB1#5	24.24	24.31	23.54		
	RB3#0	24.39	24.42	23.47		
	RB3#3	24.39	24.33	23.63		
	RB6#0	23.45	23.34	22.46		
1.4MHz 16QAM	RB1#0	22.92	23.9	22.19	21.34	38.45
	RB1#3	22.92	23.9	22.15		
	RB1#5	22.95	23.91	22.2		
	RB3#0	23.39	23.47	22.54		
	RB3#3	23.44	23.55	22.53		
	RB6#0	22.57	22.75	21.73		
3MHz QPSK	RB1#0	24.27	24.31	24.36	21.82	38.45
	RB1#8	24.28	24.22	24.28		
	RB1#14	24.39	24.26	24.26		
	RB6#0	23.46	23.35	23.4		
	RB6#9	23.3	23.39	23.29		
	RB15#0	23.41	23.34	23.36		
3MHz 16QAM	RB1#0	24.23	23.02	23.62	21.66	38.45
	RB1#8	24.17	22.94	23.51		
	RB1#14	24.14	23.02	23.47		
	RB6#0	22.43	22.63	22.54		
	RB6#9	22.39	22.75	22.28		
	RB15#0	22.37	22.62	22.55		
5MHz QPSK	RB1#0	24.31	24.33	24.37	21.85	38.45
	RB1#13	24.31	24.23	24.35		
	RB1#24	24.42	24.29	24.26		
	RB15#0	23.44	23.55	23.39		
	RB15#10	23.35	23.4	23.33		
	RB25#0	23.37	23.46	23.42		
5MHz 16QAM	RB1#0	23.55	23.09	22.45	20.98	38.45
	RB1#13	23.43	23.04	22.45		
	RB1#24	23.41	23.02	22.3		
	RB15#0	22.2	22.45	22.37		
	RB15#10	22.12	22.63	22.61		
	RB25#0	22.27	22.45	22.66		
10MHz QPSK	RB1#0	24.47	24.44	24.26	21.95	38.45
	RB1#25	24.5	24.27	24.24		
	RB1#49	24.52	24.5	24.28		

	RB25#0	23.36	23.54	23.39		
	RB25#25	23.32	23.48	23.42		
	RB50#0	23.34	23.39	23.36		
10MHz 16QAM	RB1#0	23.61	22.81	23.56	21.04	38.45
	RB1#25	23.48	22.87	23.49		
	RB1#49	23.52	22.91	23.47		
	RB25#0	22.44	22.57	22.54		
	RB25#25	22.52	22.62	22.6		
	RB50#0	22.62	22.58	22.56		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)

Gr(dBd)=Gr(dBi)-2.15

Result:**Pass****Peak-to-average Ratio(PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit(dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	5.77	5.77	5.38	13
	RB50#0	5.9	5.54	5.77	13
10MHz 16QAM	RB1#0	6.38	6.31	6.51	13
	RB50#0	6.76	6.44	6.67	13

Result:**Pass****FCC §2.1049, §22.905: Occupied Bandwidth**

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.110	1.104	1.104	1.308	1.320	1.290
1.4MHz 16QAM	1.098	1.110	1.110	1.296	1.320	1.266
3MHz QPSK	2.712	2.687	2.712	3.036	3.000	3.000
3MHz 16QAM	2.700	2.700	2.700	3.084	3.072	3.000
5MHz QPSK	4.540	4.520	4.540	5.340	5.440	5.300
5MHz 16QAM	4.560	4.560	4.520	5.520	5.380	5.320
10MHz QPSK	9.000	8.960	8.960	9.800	9.880	9.760
10MHz 16QAM	9.000	8.960	8.960	9.960	9.840	9.880

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, §22.917(a): Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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FCC §2.1051, §22.917(a): Out of band emission, Band Edge

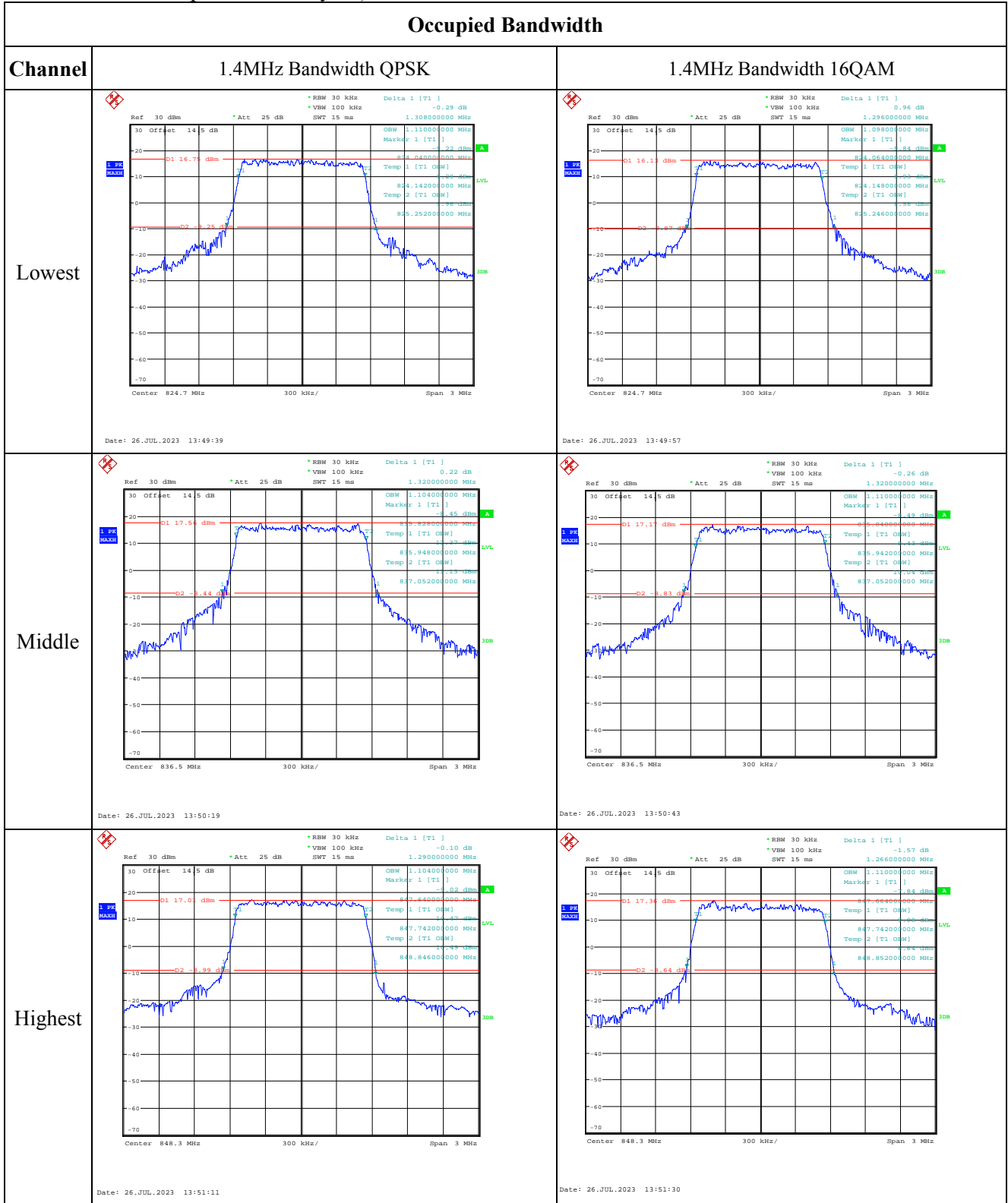
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §22.355: Frequency Stability

Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	2	0.002	2.5
	-20	3.8	9	0.011	2.5
	-10	3.8	4.19	0.005	2.5
	0	3.8	8.5	0.010	2.5
	10	3.8	6.43	0.008	2.5
	20	3.8	10.32	0.012	2.5
	30	3.8	5.34	0.006	2.5
	40	3.8	11.91	0.014	2.5
Frequency Stability vs. Voltage	50	3.8	5.87	0.007	2.5
	20	3.6	4.15	0.005	2.5
	20	4.35	12.59	0.015	2.5
Result:				Pass	

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature(°C)	Voltage(V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.8	4.9	0.006	2.5
	-20	3.8	10.69	0.013	2.5
	-10	3.8	3.39	0.004	2.5
	0	3.8	4.64	0.006	2.5
	10	3.8	2.95	0.004	2.5
	20	3.8	10.29	0.012	2.5
	30	3.8	5.63	0.007	2.5
	40	3.8	10.29	0.012	2.5
Frequency Stability vs. Voltage	50	3.8	6.16	0.007	2.5
	20	3.6	7.88	0.009	2.5
	20	4.35	4.32	0.005	2.5
Result:				Pass	

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.47 dB *VSW 100 kHz *VSW 100 kHz *VSW 100 kHz SWF 30 ms SWF 30 ms SWF 30 ms OSW 3.0386000000 MHz Marker 1 [T1] 2.712000000 MHz Marker 2 [T1] 823.976000000 MHz Marker 3 [T1] 826.856000000 MHz Temp 1 [T1 OSW] 824.144000000 MHz Temp 2 [T1 OSW] 826.856000000 MHz</p> <p>Center 825.5 MHz 600 kHz/ Span 6 MHz Date: 26.JUL.2023 13:51:52</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -1.23 dB *VSW 100 kHz *VSW 100 kHz *VSW 100 kHz SWF 30 ms SWF 30 ms SWF 30 ms OSW 3.0384000000 MHz Marker 1 [T1] 2.700000000 MHz Marker 2 [T1] 823.976000000 MHz Marker 3 [T1] 826.844000000 MHz Temp 1 [T1 OSW] 824.144000000 MHz Temp 2 [T1 OSW] 826.844000000 MHz</p> <p>Center 825.5 MHz 600 kHz/ Span 6 MHz Date: 26.JUL.2023 13:52:10</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.02 dB *VSW 100 kHz *VSW 100 kHz *VSW 100 kHz SWF 30 ms SWF 30 ms SWF 30 ms OSW 3.0000000000 MHz Marker 1 [T1] 2.688000000 MHz Marker 2 [T1] 835.000000000 MHz Marker 3 [T1] 837.844000000 MHz Temp 1 [T1 OSW] 836.156000000 MHz Temp 2 [T1 OSW] 837.844000000 MHz</p> <p>Center 836.5 MHz 600 kHz/ Span 6 MHz Date: 26.JUL.2023 13:52:29</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.03 dB *VSW 100 kHz *VSW 100 kHz *VSW 100 kHz SWF 30 ms SWF 30 ms SWF 30 ms OSW 3.0720000000 MHz Marker 1 [T1] 2.760000000 MHz Marker 2 [T1] 834.964000000 MHz Marker 3 [T1] 837.844000000 MHz Temp 1 [T1 OSW] 836.156000000 MHz Temp 2 [T1 OSW] 837.844000000 MHz</p> <p>Center 836.5 MHz 600 kHz/ Span 6 MHz Date: 26.JUL.2023 13:52:50</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 1.35 dB *VSW 100 kHz *VSW 100 kHz *VSW 100 kHz SWF 30 ms SWF 30 ms SWF 30 ms OSW 3.0000000000 MHz Marker 1 [T1] 2.712000000 MHz Marker 2 [T1] 846.000000000 MHz Marker 3 [T1] 848.856000000 MHz Temp 1 [T1 OSW] 846.144000000 MHz Temp 2 [T1 OSW] 848.856000000 MHz</p> <p>Center 847.5 MHz 600 kHz/ Span 6 MHz Date: 26.JUL.2023 13:53:09</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.32 dB *VSW 100 kHz *VSW 100 kHz *VSW 100 kHz SWF 30 ms SWF 30 ms SWF 30 ms OSW 3.0000000000 MHz Marker 1 [T1] 2.700000000 MHz Marker 2 [T1] 846.000000000 MHz Marker 3 [T1] 848.856000000 MHz Temp 1 [T1 OSW] 846.156000000 MHz Temp 2 [T1 OSW] 848.856000000 MHz</p> <p>Center 847.5 MHz 600 kHz/ Span 6 MHz Date: 26.JUL.2023 13:53:30</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>Date: 26.JUL.2023 13:54:02</p>	<p>Date: 26.JUL.2023 13:54:29</p>
Middle	<p>Date: 26.JUL.2023 13:55:03</p>	<p>Date: 26.JUL.2023 13:55:38</p>
Highest	<p>Date: 26.JUL.2023 13:56:06</p>	<p>Date: 26.JUL.2023 13:56:33</p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Spurious Emissions at Antenna Terminal

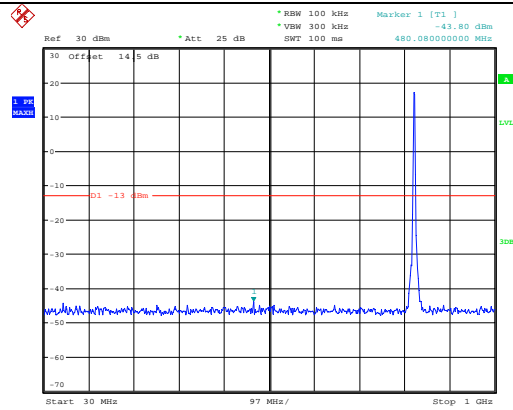
Channel	1.4MHz Bandwidth QPSK	
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Marker 1 [T1] -44.34 dBm *VBW 300 kHz *SWT 100 ms 910.760000000 MHz</p> <p>Date: 27.JUL.2023 13:23:48</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -28.87 dBm *VBW 3 MHz *SWT 55 ms 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:23:59</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Marker 1 [T1] -44.03 dBm *VBW 300 kHz *SWT 100 ms 528.580000000 MHz</p> <p>Date: 27.JUL.2023 13:24:16</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -29.19 dBm *VBW 3 MHz *SWT 55 ms 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:24:27</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Marker 1 [T1] -38.37 dBm *VBW 300 kHz *SWT 100 ms 835.100000000 MHz</p> <p>Date: 27.JUL.2023 13:24:47</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -27.75 dBm *VBW 3 MHz *SWT 55 ms 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:24:59</p>

Spurious Emissions at Antenna Terminal

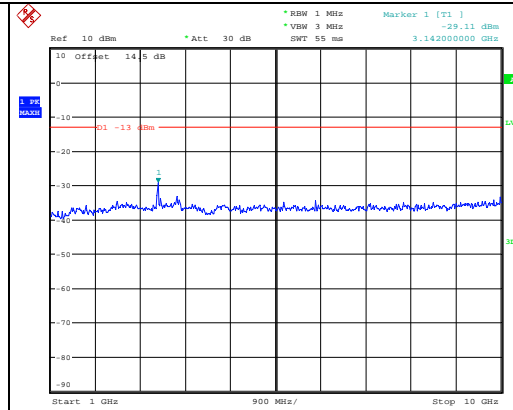
Channel

3MHz Bandwidth QPSK

Lowest

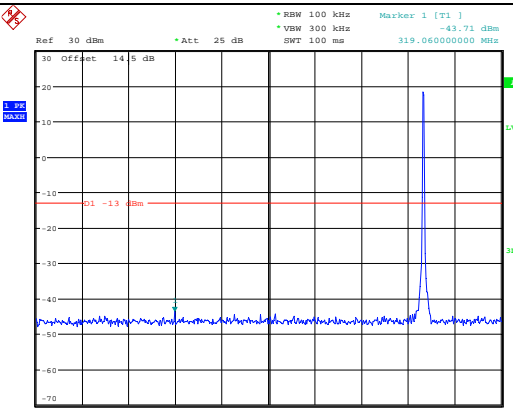


Date: 27.JUL.2023 13:25:14

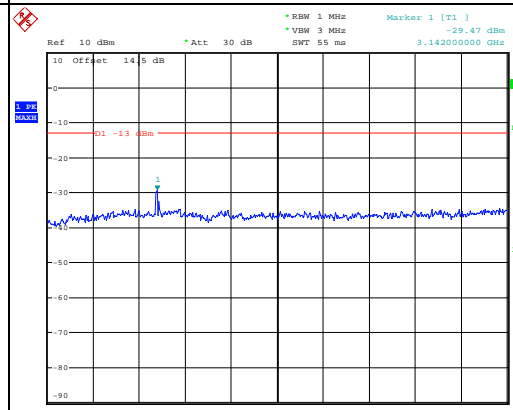


Date: 27.JUL.2023 13:25:26

Middle

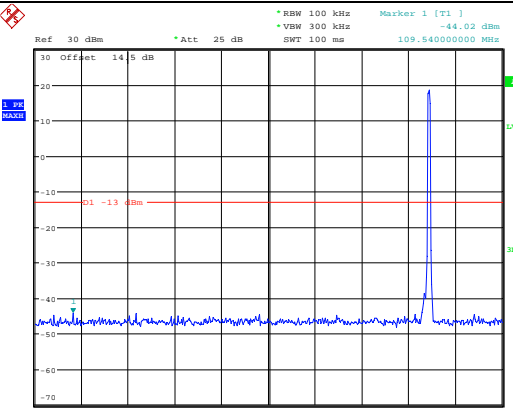


Date: 27.JUL.2023 13:25:42

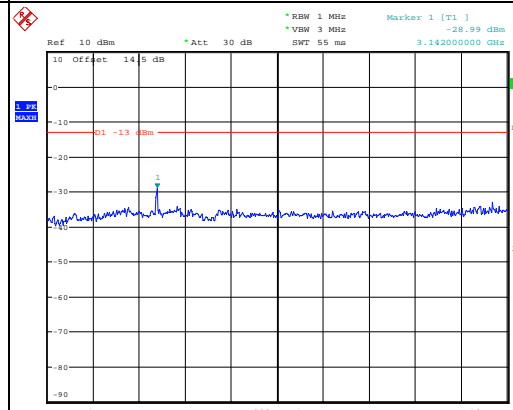


Date: 27.JUL.2023 13:25:54

Highest



Date: 27.JUL.2023 13:26:07



Date: 27.JUL.2023 13:26:19

Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK	
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Marker 1 [T1] -44.39 dBm *VBW 300 kHz -44.39 dBm *SWT 100 ms 150.280000000 MHz</p> <p>Date: 27.JUL.2023 13:26:40</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -29.76 dBm *VBW 3 MHz -29.76 dBm *SWT 55 ms 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:26:51</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Marker 1 [T1] -44.04 dBm *VBW 300 kHz -44.04 dBm *SWT 100 ms 629.460000000 MHz</p> <p>Date: 27.JUL.2023 13:27:08</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -29.71 dBm *VBW 3 MHz -29.71 dBm *SWT 55 ms 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:27:19</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Marker 1 [T1] -44.27 dBm *VBW 300 kHz -44.27 dBm *SWT 100 ms 724.520000000 MHz</p> <p>Date: 27.JUL.2023 13:27:36</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -29.48 dBm *VBW 3 MHz -29.48 dBm *SWT 55 ms 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:27:47</p>

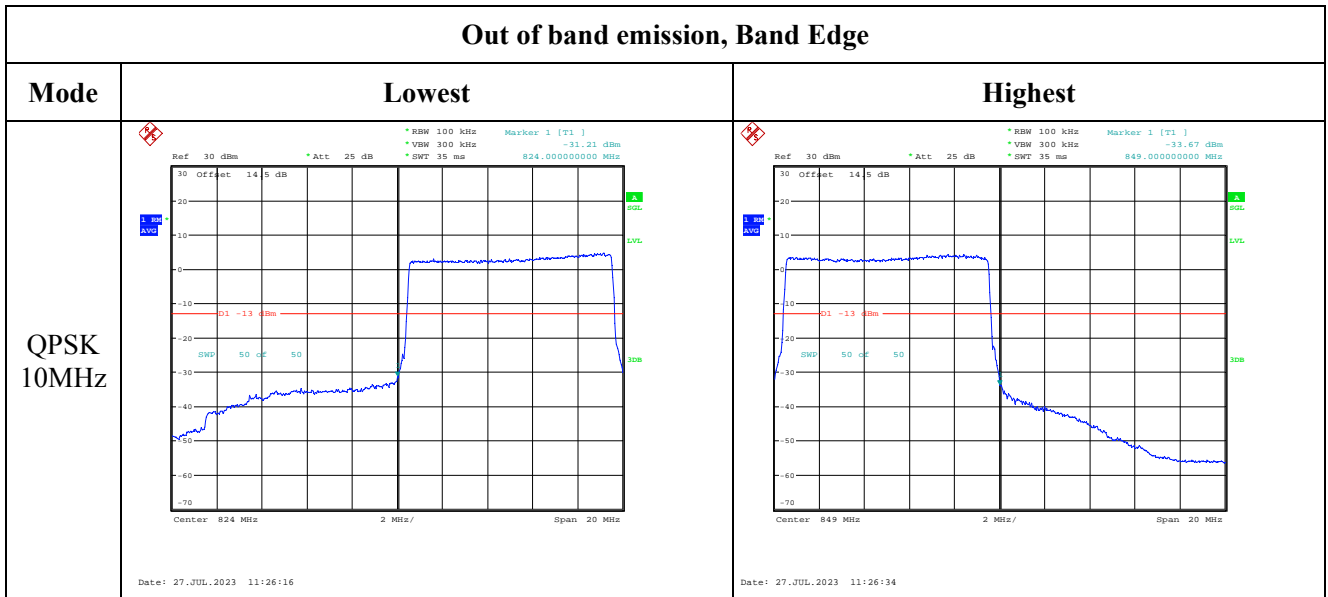
Spurious Emissions at Antenna Terminal

Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -44.39 dBm 357.868000000 MHz</p> <p>Date: 27.JUL.2023 13:28:08</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz *VSW 3 MHz *SWT 55 ms Marker 1 [T1] -28.36 dBm 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:28:19</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -43.98 dBm 974.780000000 MHz</p> <p>Date: 27.JUL.2023 13:28:36</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz *VSW 3 MHz *SWT 55 ms Marker 1 [T1] -28.91 dBm 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:28:47</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -43.98 dBm 447.100000000 MHz</p> <p>Date: 27.JUL.2023 13:29:00</p>	<p>Ref 10 dBm *Att 30 dB *RBW 1 MHz *VSW 3 MHz *SWT 55 ms Marker 1 [T1] -27.62 dBm 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:29:12</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Date: 27.JUL.2023 11:24:28</p>	<p>Date: 27.JUL.2023 11:24:43</p>
QPSK 3MHz	<p>Date: 27.JUL.2023 11:25:03</p>	<p>Date: 27.JUL.2023 11:25:19</p>
QPSK 5MHz	<p>Date: 27.JUL.2023 11:25:39</p>	<p>Date: 27.JUL.2023 11:25:55</p>

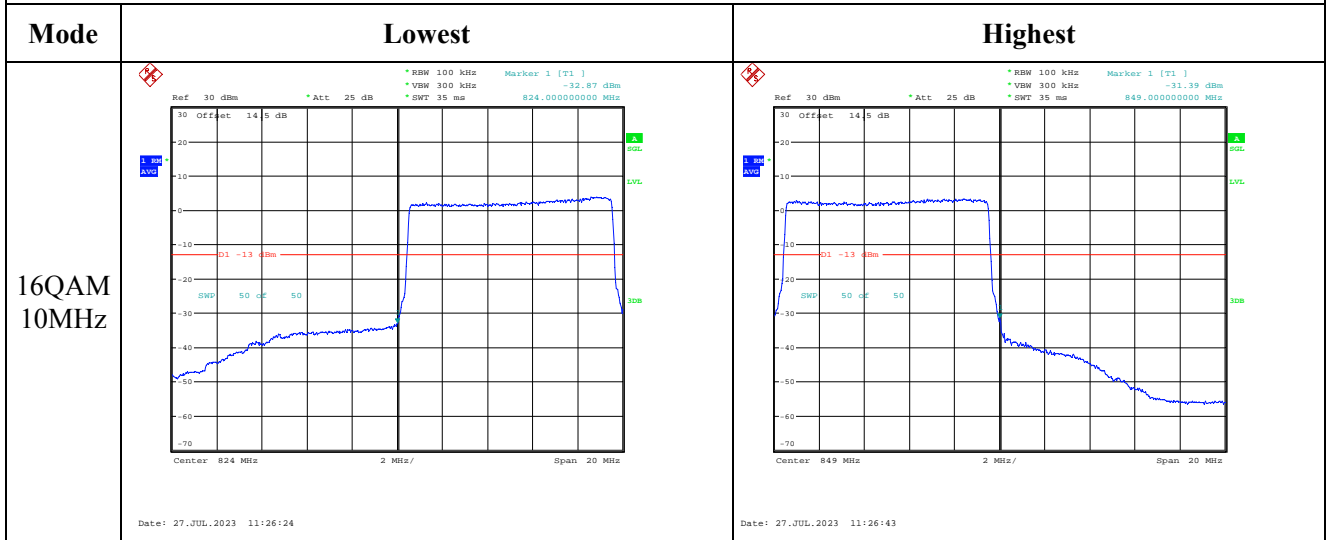
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 1.4MHz	<p>Date: 27.JUL.2023 11:24:35</p>	<p>Date: 27.JUL.2023 11:24:51</p>
16QAM 3MHz	<p>Date: 27.JUL.2023 11:25:10</p>	<p>Date: 27.JUL.2023 11:25:27</p>
16QAM 5MHz	<p>Date: 27.JUL.2023 11:25:46</p>	<p>Date: 27.JUL.2023 11:26:03</p>

Out of band emission, Band Edge



4.9 Antenna Port Test Data and Results for LTE Band 7

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	2502.5	2535	2567.5
10MHz	2505	2535	2565
15MHz	2507.5	2535	2562.5
20MHz	2510	2535	2560

Test Data:

FCC§2.1046; § 27.50(h)(2)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	17.55	17.37	17.72	21.94	33
	RB1#13	17.5	17.31	17.66		
	RB1#24	17.59	17.46	17.65		
	RB15#0	16.9	16.88	17.23		
	RB15#10	16.95	16.89	17.21		
	RB25#0	16.89	16.96	17.13		
5MHz 16QAM	RB1#0	17.39	17.05	16.95	21.61	33
	RB1#13	17.33	17.06	16.91		
	RB1#24	17.38	17.13	17.04		
	RB15#0	16.52	16.64	16.85		
	RB15#10	16.5	16.61	16.79		
	RB25#0	16.45	16.47	16.89		
10MHz QPSK	RB1#0	17.14	17.47	17.35	21.75	33
	RB1#25	17.12	17.48	17.26		
	RB1#49	17.12	17.53	17.4		
	RB25#0	16.64	16.97	16.92		
	RB25#25	16.58	17.04	16.83		
	RB50#0	16.55	16.91	16.93		
10MHz 16QAM	RB1#0	17.28	16.98	17.61	21.91	33
	RB1#25	17.26	17.08	17.66		
	RB1#49	17.26	17.08	17.69		
	RB25#0	16.3	16.73	16.57		
	RB25#25	16.28	16.78	16.52		
	RB50#0	16.31	16.6	16.64		
15MHz QPSK	RB1#0	17.14	17.82	17.84	22.15	33
	RB1#38	17.06	17.84	17.83		
	RB1#74	17.15	17.93	17.82		
	RB36#0	16.6	17.36	17.35		
	RB36#39	16.56	17.43	17.43		
	RB75#0	16.61	17.4	17.49		
15MHz 16QAM	RB1#0	17.4	18.42	18.19	22.69	33
	RB1#38	17.35	18.33	18.17		
	RB1#74	17.45	18.47	18.22		
	RB36#0	16.26	16.98	17.09		
	RB36#39	16.35	17.05	17.08		
	RB75#0	16.26	17.03	17.14		
20MHz QPSK	RB1#0	17.23	17.73	17.66	21.99	33
	RB1#50	17.24	17.74	17.7		
	RB1#99	17.34	17.77	17.71		

	RB50#0	16.63	17.01	17.15		
	RB50#50	16.76	17.17	17.13		
	RB100#0	16.69	17.11	17.23		
20MHz 16QAM	RB1#0	17.81	18.19	17.56	22.41	33
	RB1#50	17.79	18.09	17.51		
	RB1#99	17.81	18.08	17.53		
	RB50#0	16.44	16.7	16.85		
	RB50#50	16.4	16.77	16.9		
	RB100#0	16.31	16.76	16.25		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)

Result:

Pass

Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit(dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	5.03	5.54	5.22	13
	RB100#0	6.51	6.47	6.44	13
20MHz 16QAM	RB1#0	5.74	5.99	6.12	13
	RB100#0	7.18	7.24	7.21	13
Result:					Pass

FCC §2.1049, §27.53: Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.540	4.540	4.560	5.200	5.460	5.240
5MHz 16QAM	4.560	4.560	4.540	5.440	5.360	5.200
10MHz QPSK	8.960	8.960	8.960	9.840	9.920	9.880
10MHz 16QAM	9.000	8.960	8.960	9.840	9.960	9.800
15MHz QPSK	13.560	13.620	13.560	15.360	16.020	15.600
15MHz 16QAM	13.620	13.560	13.560	15.240	15.120	15.180
20MHz QPSK	18.080	18.080	18.000	20.000	20.080	19.920
20MHz 16QAM	18.080	18.080	18.000	19.840	20.080	20.000

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, § 27.53: Spurious Emissions at Antenna Terminal

Result: Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, § 27.53: Out of band emission, Band Edge

Result: Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	2501.054	2500.00	2569.052	2570
	-20	3.8	2501.051	2500.00	2569.061	2570
	-10	3.8	2501.055	2500.00	2569.041	2570
	0	3.8	2501.064	2500.00	2569.057	2570
	10	3.8	2501.057	2500.00	2569.058	2570
	20	3.8	2501.040	2500.00	2569.040	2570
	30	3.8	2501.051	2500.00	2569.052	2570
	40	3.8	2501.053	2500.00	2569.053	2570
	50	3.8	2501.057	2500.00	2569.057	2570
Frequency Stability vs. Voltage	20	3.5	2501.074	2500.00	2569.054	2570
	20	4.35	2501.084	2500.00	2569.052	2570
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	2500.974	2500.00	2569.028	2570
	-20	3.8	2500.971	2500.00	2569.019	2570
	-10	3.8	2500.975	2500.00	2569.039	2570
	0	3.8	2500.984	2500.00	2569.023	2570
	10	3.8	2500.977	2500.00	2569.022	2570
	20	3.8	2500.960	2500.00	2569.040	2570
	30	3.8	2500.971	2500.00	2569.028	2570
	40	3.8	2500.973	2500.00	2569.027	2570
	50	3.8	2500.977	2500.00	2569.023	2570
Frequency Stability vs. Voltage	20	3.5	2500.994	2500.00	2569.026	2570
	20	4.35	2501.004	2500.00	2569.028	2570
					Result:	Pass

Test Plots(Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

Occupied Bandwidth		
Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p style="font-size: small;"> Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] -0.64 dB *VBW 300 kHz *VSW 5 ms 5.200000000 MHz Marker 1 [T1] 1.64 dBm 2.499900000 GHz 2.500220000 GHz 2.504760000 GHz Center 2.5025 GHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 13:59:17 </p>	<p style="font-size: small;"> Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 0.24 dB *VBW 300 kHz *VSW 5 ms 5.440000000 MHz Marker 1 [T1] 1.72 dBm 2.499880000 GHz 2.500220000 GHz 2.504760000 GHz Center 2.5025 GHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 13:59:48 </p>
Middle	<p style="font-size: small;"> Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] -0.06 dB *VBW 300 kHz *VSW 5 ms 5.460000000 MHz Marker 1 [T1] 1.39 dBm 2.532300000 GHz 2.537280000 GHz Center 2.535 GHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:00:23 </p>	<p style="font-size: small;"> Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.62 dB *VBW 300 kHz *VSW 5 ms 5.360000000 MHz Marker 1 [T1] 1.20 dBm 2.532320000 GHz 2.537280000 GHz Center 2.535 GHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:00:50 </p>
Highest	<p style="font-size: small;"> Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.13 dB *VBW 300 kHz *VSW 5 ms 5.240000000 MHz Marker 1 [T1] 1.13 dBm 2.564880000 GHz 2.569780000 GHz Center 2.5675 GHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:01:16 </p>	<p style="font-size: small;"> Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 0.19 dB *VBW 300 kHz *VSW 5 ms 5.200000000 MHz Marker 1 [T1] 1.28 dBm 2.564880000 GHz 2.569780000 GHz Center 2.5675 GHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:01:47 </p>

Occupied Bandwidth

Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.11 dB *VSW 300 kHz *VSW 300 kHz *VSW 300 kHz SWT 10 ms SWT 10 ms SWT 10 ms Center 2.505 GHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:02:10</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] -3.03 dB *VSW 300 kHz *VSW 300 kHz *VSW 300 kHz SWT 10 ms SWT 10 ms SWT 10 ms Center 2.505 GHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:02:28</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.11 dB *VSW 300 kHz *VSW 300 kHz *VSW 300 kHz SWT 10 ms SWT 10 ms SWT 10 ms Center 2.535 GHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:02:53</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 0.86 dB *VSW 300 kHz *VSW 300 kHz *VSW 300 kHz SWT 10 ms SWT 10 ms SWT 10 ms Center 2.535 GHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:03:14</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] -0.22 dB *VSW 300 kHz *VSW 300 kHz *VSW 300 kHz SWT 10 ms SWT 10 ms SWT 10 ms Center 2.565 GHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:03:36</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] -0.39 dB *VSW 300 kHz *VSW 300 kHz *VSW 300 kHz SWT 10 ms SWT 10 ms SWT 10 ms Center 2.565 GHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:04:02</p>

Occupied Bandwidth

Channel	15MHz Bandwidth QPSK	15MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.72 dB *VSW 1 MHz SWT 2.5 ms 15.360000000 MHz Marker 1 [T1] 15.35 dBm OSW 15.360000000 MHz Temp 1 [T1 OSW] 15.35 dBm Temp 2 [T1 OSW] 15.35 dBm Center 2.5075 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 14:04:28</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 2.85 dB *VSW 1 MHz SWT 2.5 ms 15.240000000 MHz Marker 1 [T1] 15.3 dBm OSW 15.240000000 MHz Temp 1 [T1 OSW] 15.3 dBm Temp 2 [T1 OSW] 15.3 dBm Center 2.5075 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 14:04:46</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] 0.56 dB *VSW 1 MHz SWT 2.5 ms 16.020000000 MHz Marker 1 [T1] 15.24 dBm OSW 16.020000000 MHz Temp 1 [T1 OSW] 15.24 dBm Temp 2 [T1 OSW] 15.24 dBm Center 2.535 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 14:05:11</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] -1.19 dB *VSW 1 MHz SWT 2.5 ms 15.120000000 MHz Marker 1 [T1] 15.24 dBm OSW 15.120000000 MHz Temp 1 [T1 OSW] 15.24 dBm Temp 2 [T1 OSW] 15.24 dBm Center 2.535 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 14:05:35</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] -0.35 dB *VSW 1 MHz SWT 2.5 ms 15.600000000 MHz Marker 1 [T1] 15.9 dBm OSW 15.600000000 MHz Temp 1 [T1 OSW] 15.9 dBm Temp 2 [T1 OSW] 15.9 dBm Center 2.5625 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 14:05:55</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] -1.50 dB *VSW 1 MHz SWT 2.5 ms 15.180000000 MHz Marker 1 [T1] 15.44 dBm OSW 15.180000000 MHz Temp 1 [T1 OSW] 15.44 dBm Temp 2 [T1 OSW] 15.44 dBm Center 2.5625 GHz 3 MHz/ Span 30 MHz Date: 26.JUL.2023 14:06:13</p>

Occupied Bandwidth

Channel	20MHz Bandwidth QPSK	20MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz *SWT 2.5 ms 20.00000000 MHz Center 2.51 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 14:06:39</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz *SWT 2.5 ms 19.84000000 MHz Center 2.51 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 14:06:57</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz *SWT 2.5 ms 20.08000000 MHz Center 2.535 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 14:07:19</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz *SWT 2.5 ms 20.08000000 MHz Center 2.535 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 14:07:40</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz *SWT 2.5 ms 19.92000000 MHz Center 2.56 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 14:08:06</p>	<p>Ref 30 dBm *Att 25 dB *RBW 300 kHz Delta 1 [T1] *VMW 1 MHz *SWT 2.5 ms 20.00000000 MHz Center 2.56 GHz 4 MHz/ Span 40 MHz Date: 26.JUL.2023 14:08:27</p>

Spurious Emissions at Antenna Terminal

Channel	5MHz Bandwidth QPSK	
Lowest	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.51 dBm VSW 300 kHz SWT 100 ms 928.220000000 MHz</p> <p>Date: 27.JUL.2023 13:29:34</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -31.82 dBm VSW 3 MHz SWT 150 ms 24.919000000 GHz</p> <p>Date: 27.JUL.2023 13:29:45</p>
Middle	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.71 dBm VSW 300 kHz SWT 100 ms 220.120000000 MHz</p> <p>Date: 27.JUL.2023 13:30:02</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.00 dBm VSW 3 MHz SWT 150 ms 24.205000000 GHz</p> <p>Date: 27.JUL.2023 13:30:13</p>
Highest	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -45.54 dBm VSW 300 kHz SWT 100 ms 255.040000000 MHz</p> <p>Date: 27.JUL.2023 13:30:30</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.43 dBm VSW 3 MHz SWT 150 ms 24.205000000 GHz</p> <p>Date: 27.JUL.2023 13:30:41</p>

Spurious Emissions at Antenna Terminal

Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref 0 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -46.59 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:31:02</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz *VSW 3 MHz *SWT 150 ms Marker 1 [T1] -32.20 dBm</p> <p>Start 1 GHz 2.55 GHz/ Stop 26.5 GHz</p> <p>Date: 27.JUL.2023 13:31:13</p>
Middle	<p>Ref 0 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -46.73 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:31:27</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz *VSW 3 MHz *SWT 150 ms Marker 1 [T1] -32.46 dBm</p> <p>Start 1 GHz 2.55 GHz/ Stop 26.5 GHz</p> <p>Date: 27.JUL.2023 13:31:38</p>
Highest	<p>Ref 0 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz *SWT 100 ms Marker 1 [T1] -46.11 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:31:52</p>	<p>Ref 30 dBm *Att 25 dB *RBW 1 MHz *VSW 3 MHz *SWT 150 ms Marker 1 [T1] -32.51 dBm</p> <p>Start 1 GHz 2.55 GHz/ Stop 26.5 GHz</p> <p>Date: 27.JUL.2023 13:32:03</p>

Spurious Emissions at Antenna Terminal

Channel	15MHz Bandwidth QPSK	
Lowest	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.50 dBm VSW 300 kHz SWT 100 ms 722.580000000 MHz</p> <p>Date: 27.JUL.2023 13:32:24</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.38 dBm VSW 3 MHz SWT 150 ms 26.295000000 GHz</p> <p>Date: 27.JUL.2023 13:32:35</p>
Middle	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -47.08 dBm VSW 300 kHz SWT 100 ms 495.600000000 MHz</p> <p>Date: 27.JUL.2023 13:32:52</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -31.84 dBm VSW 3 MHz SWT 150 ms 24.915000000 GHz</p> <p>Date: 27.JUL.2023 13:33:03</p>
Highest	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.43 dBm VSW 300 kHz SWT 100 ms 815.700000000 MHz</p> <p>Date: 27.JUL.2023 13:33:20</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.50 dBm VSW 3 MHz SWT 150 ms 25.480000000 GHz</p> <p>Date: 27.JUL.2023 13:33:31</p>

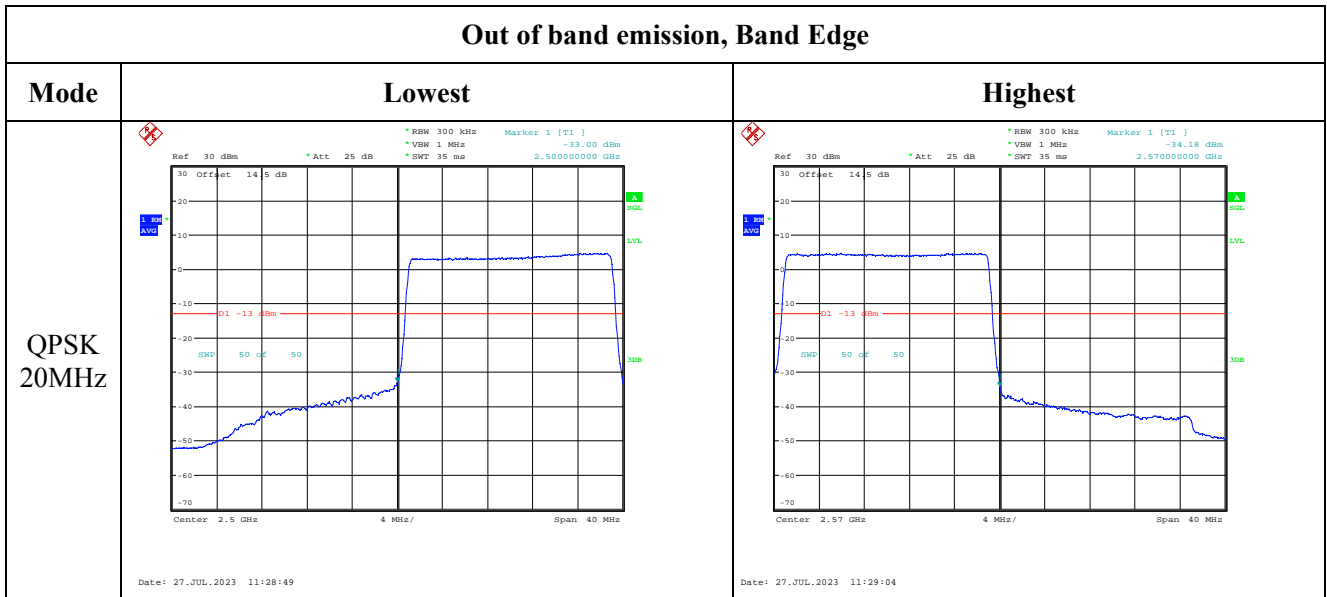
Spurious Emissions at Antenna Terminal

Channel	20MHz Bandwidth QPSK	
Lowest	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.89 dBm VSW 300 kHz SWT 100 ms 412.188000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:33:49</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.20 dBm VSW 3 MHz SWT 150 ms 24.970000000 GHz</p> <p>Start 1 GHz 2.55 GHz/ Stop 26.5 GHz</p> <p>Date: 27.JUL.2023 13:34:00</p>
Middle	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.68 dBm VSW 300 kHz SWT 100 ms 192.960000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:34:14</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.06 dBm VSW 3 MHz SWT 150 ms 24.868000000 GHz</p> <p>Start 1 GHz 2.55 GHz/ Stop 26.5 GHz</p> <p>Date: 27.JUL.2023 13:34:25</p>
Highest	<p>Ref 0 dBm Att 30 dB RBW 100 kHz Marker 1 [T1] -46.20 dBm VSW 300 kHz SWT 100 ms 627.520000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:34:42</p>	<p>Ref 30 dBm Att 25 dB RBW 1 MHz Marker 1 [T1] -32.74 dBm VSW 3 MHz SWT 150 ms 24.766000000 GHz</p> <p>Start 1 GHz 2.55 GHz/ Stop 26.5 GHz</p> <p>Date: 27.JUL.2023 13:34:53</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	<p>Date: 27.JUL.2023 11:26:58</p>	<p>Date: 27.JUL.2023 11:27:15</p>
QPSK 10MHz	<p>Date: 27.JUL.2023 11:27:36</p>	<p>Date: 27.JUL.2023 11:27:54</p>
QPSK 15MHz	<p>Date: 27.JUL.2023 11:28:14</p>	<p>Date: 27.JUL.2023 11:28:29</p>

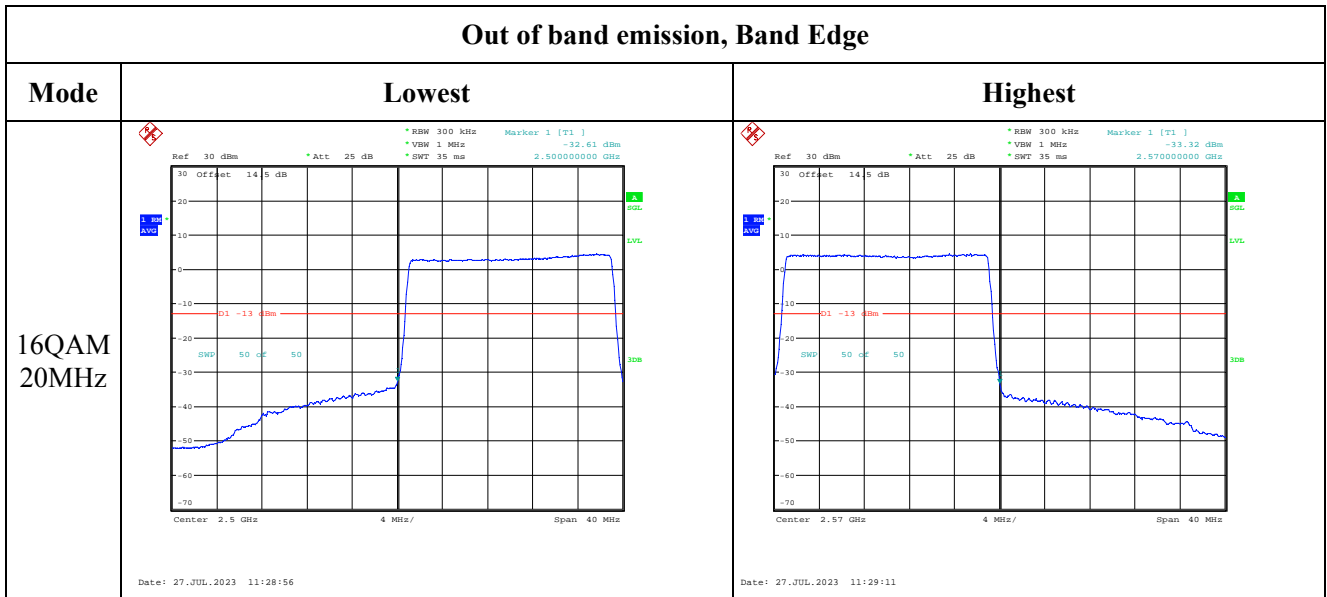
Out of band emission, Band Edge



Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	<p>Date: 27.JUL.2023 11:27:06</p>	<p>Date: 27.JUL.2023 11:27:23</p>
16QAM 10MHz	<p>Date: 27.JUL.2023 11:27:45</p>	<p>Date: 27.JUL.2023 11:28:02</p>
16QAM 15MHz	<p>Date: 27.JUL.2023 11:28:21</p>	<p>Date: 27.JUL.2023 11:28:37</p>

Out of band emission, Band Edge



4.10 Antenna Port Test Data and Results for LTE Band 12

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	699.7	707.5	715.3
3MHz	700.5	707.5	714.5
5MHz	701.5	707.5	713.5
10MHz	704	707.5	711

Test Data:

FCC§2.1046;§ 27.50(c) (10)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	25.15	24.86	24.88	16.83	34.77
	RB1#3	25.1	24.92	24.9		
	RB1#5	25.08	24.96	24.95		
	RB3#0	25.12	24.97	24.91		
	RB3#3	25.11	25.03	24.95		
	RB6#0	23.91	23.92	24.05		
1.4MHz 16QAM	RB1#0	23.6	24.67	23.71	16.35	34.77
	RB1#3	23.54	24.67	23.65		
	RB1#5	23.5	24.64	23.71		
	RB3#0	23.84	23.9	24.18		
	RB3#3	23.76	23.95	24.16		
	RB6#0	23.1	23.01	23.26		
3MHz QPSK	RB1#0	25.11	24.94	24.93	16.80	34.77
	RB1#8	25.01	24.82	24.93		
	RB1#14	25.12	24.79	24.95		
	RB6#0	24.08	23.88	24.02		
	RB6#9	24.14	23.91	24.04		
	RB15#0	23.89	23.89	24.12		
3MHz 16QAM	RB1#0	24.22	23.42	24.33	16.01	34.77
	RB1#8	24.22	23.58	24.33		
	RB1#14	24.26	23.53	24.32		
	RB6#0	23.25	23.46	22.97		
	RB6#9	23.42	23.16	23		
	RB15#0	23.15	23.01	23.08		
5MHz QPSK	RB1#0	25.13	24.96	24.94	16.81	34.77
	RB1#13	25.07	24.89	24.98		
	RB1#24	25.07	24.75	24.95		
	RB15#0	24	23.89	23.79		
	RB15#10	24.08	23.9	24.12		
	RB25#0	24.18	24.01	24.02		
5MHz 16QAM	RB1#0	24	23.43	22.98	15.69	34.77
	RB1#13	24.01	23.46	23.07		
	RB1#24	23.98	23.57	23.09		
	RB15#0	22.97	23.23	23.17		
	RB15#10	23.11	23.03	23.11		
	RB25#0	23.17	23.06	23.11		
10MHz QPSK	RB1#0	25.01	25.08	24.92	16.76	34.77
	RB1#25	25.04	25.05	24.74		
	RB1#49	25.02	24.93	24.94		

	RB25#0	24.12	23.87	23.87		
	RB25#25	23.79	23.9	24.11		
	RB50#0	24.08	23.96	23.97		
10MHz 16QAM	RB1#0	24.8	23.54	23.99	16.48	34.77
	RB1#25	24.77	23.44	23.88		
	RB1#49	24.66	23.35	24.1		
	RB25#0	23.32	23.31	23.05		
	RB25#25	23.24	23.13	23.02		
	RB50#0	23.2	23.08	22.99		

Note:

ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd)

Gr(dBd)=Gr(dBi)-2.15

Result:	Pass
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Peak-to-average Ratio(PAR)

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit(dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	6.25	5.77	6.28	13
	RB50#0	5.51	5.83	6.15	13
10MHz 16QAM	RB1#0	7.34	6.41	7.47	13
	RB50#0	6.54	6.7	6.86	13

Result:	Pass
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FCC §2.1049, §27.53: Occupied Bandwidth

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.110	1.104	1.110	1.308	1.284	1.308
1.4MHz 16QAM	1.110	1.110	1.110	1.332	1.266	1.308
3MHz QPSK	2.700	2.712	2.700	3.012	3.012	2.988
3MHz 16QAM	2.700	2.700	2.700	3.096	3.096	3.000
5MHz QPSK	4.540	4.540	4.540	5.260	5.300	5.180
5MHz 16QAM	4.580	4.560	4.540	5.560	5.400	5.240
10MHz QPSK	8.920	8.960	9.000	9.680	9.800	9.760
10MHz 16QAM	8.920	9.000	9.000	9.720	10.000	9.960

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, §27.53: Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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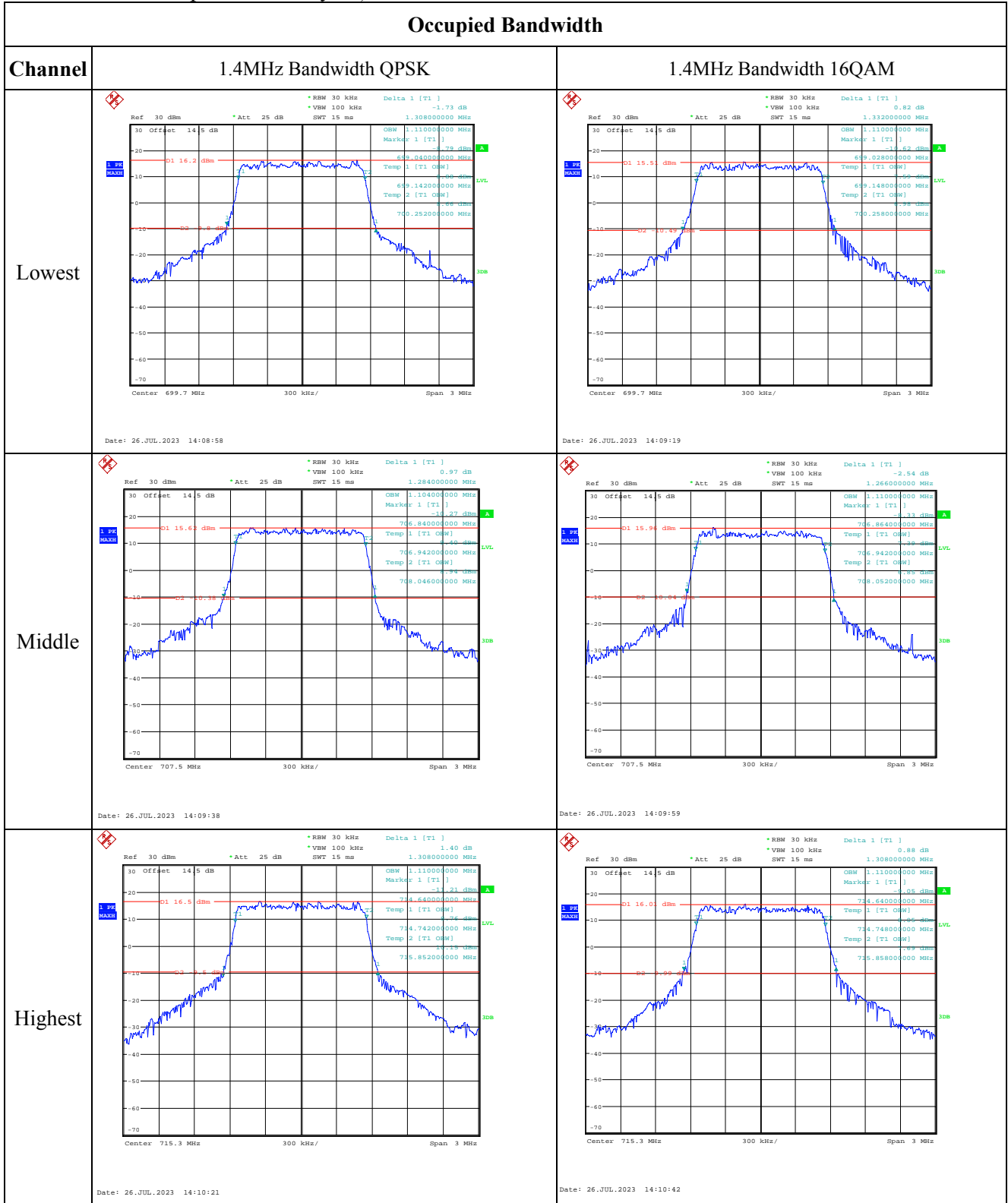
FCC §2.1051, §27.53: Out of band emission, Band Edge

Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.
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FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.565	699.00	715.491	716.00
	-20	3.8	699.525	699.00	715.463	716.00
	-10	3.8	699.581	699.00	715.512	716.00
	0	3.8	699.585	699.00	715.482	716.00
	10	3.8	699.557	699.00	715.476	716.00
	20	3.8	699.560	699.00	715.520	716.00
	30	3.8	699.568	699.00	715.462	716.00
	40	3.8	699.566	699.00	715.459	716.00
	50	3.8	699.545	699.00	715.477	716.00
Frequency Stability vs. Voltage	20	3.5	699.546	699.00	715.446	716.00
	20	4.35	699.588	699.00	715.439	716.00
					Result:	Pass

Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature(°C)	Voltage(V _{DC})	Lower Edge(MHz)		Upper Edge(MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	699.574	699.00	715.508	716.00
	-20	3.8	699.571	699.00	715.499	716.00
	-10	3.8	699.575	699.00	715.519	716.00
	0	3.8	699.584	699.00	715.503	716.00
	10	3.8	699.577	699.00	715.502	716.00
	20	3.8	699.560	699.00	715.520	716.00
	30	3.8	699.571	699.00	715.508	716.00
	40	3.8	699.573	699.00	715.507	716.00
	50	3.8	699.577	699.00	715.503	716.00
Frequency Stability vs. Voltage	20	3.5	699.594	699.00	715.506	716.00
	20	4.35	699.604	699.00	715.508	716.00
					Result:	Pass

Test Plots(Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



Occupied Bandwidth

Channel	3MHz Bandwidth QPSK	3MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -1.24 dB *VBW 100 kHz SWT 30 ms Obs 3.012000000 MHz Marker 1 [T1] -1.45 dBm 699.012000000 MHz Temp 1 [T1 OSW] 699.156000000 MHz Temp 2 [T1 OSW] 701.856000000 MHz D1 13.14 dBm D2 -12.11 dBm</p> <p>Center 700.5 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 14:11:01</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.90 dB *VBW 100 kHz SWT 30 ms Obs 3.096000000 MHz Marker 1 [T1] -1.33 dBm 698.976000000 MHz Temp 1 [T1 OSW] 699.156000000 MHz Temp 2 [T1 OSW] 701.856000000 MHz D1 12.04 dBm D2 -13.97 dBm</p> <p>Center 700.5 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 14:11:18</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] 0.75 dB *VBW 100 kHz SWT 30 ms Obs 3.013000000 MHz Marker 1 [T1] -1.36 dBm 705.988000000 MHz Temp 1 [T1 OSW] 706.144000000 MHz Temp 2 [T1 OSW] 708.856000000 MHz D1 12.24 dBm D2 -13.76 dBm</p> <p>Center 707.5 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 14:11:37</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.23 dB *VBW 100 kHz SWT 30 ms Obs 3.096000000 MHz Marker 1 [T1] -1.27 dBm 705.952000000 MHz Temp 1 [T1 OSW] 706.144000000 MHz Temp 2 [T1 OSW] 708.844000000 MHz D1 12.17 dBm D2 -13.88 dBm</p> <p>Center 707.5 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 14:11:55</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -2.42 dB *VBW 100 kHz SWT 30 ms Obs 2.988000000 MHz Marker 1 [T1] -1.04 dBm 713.012000000 MHz Temp 1 [T1 OSW] 713.156000000 MHz Temp 2 [T1 OSW] 715.856000000 MHz D1 14.24 dBm D2 -11.77 dBm</p> <p>Center 714.5 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 14:12:14</p>	<p>Ref 30 dBm *Att 25 dB *RBW 30 kHz Delta 1 [T1] -0.10 dB *VBW 100 kHz SWT 30 ms Obs 2.700000000 MHz Marker 1 [T1] -1.87 dBm 713.000000000 MHz Temp 1 [T1 OSW] 713.156000000 MHz Temp 2 [T1 OSW] 715.856000000 MHz D1 12.71 dBm D2 -13.24 dBm</p> <p>Center 714.5 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 26.JUL.2023 14:12:28</p>

Occupied Bandwidth

Channel	5MHz Bandwidth QPSK	5MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] -0.12 dB *VSW 300 kHz *SWT 5 ms OBSW 5.260000000 MHz Marker 1 [T1] 658.940000000 MHz Temp 1 [T1 OSW] -11.71 dBm Temp 2 [T1 OSW] 659.240000000 MHz Temp 3 [T1 OSW] 703.780000000 MHz Center 701.5 MHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:12:56</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 0.43 dB *VSW 300 kHz *SWT 5 ms OBSW 5.560000000 MHz Marker 1 [T1] 658.960000000 MHz Temp 1 [T1 OSW] -11.18 dBm Temp 2 [T1 OSW] 659.240000000 MHz Temp 3 [T1 OSW] 703.820000000 MHz Center 701.5 MHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:13:23</p>
Middle	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 0.70 dB *VSW 300 kHz *SWT 5 ms OBSW 5.300000000 MHz Marker 1 [T1] 704.760000000 MHz Temp 1 [T1 OSW] -11.40 dBm Temp 2 [T1 OSW] 705.220000000 MHz Temp 3 [T1 OSW] 709.760000000 MHz Center 707.5 MHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:13:58</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.21 dB *VSW 300 kHz *SWT 5 ms OBSW 5.400000000 MHz Marker 1 [T1] 704.720000000 MHz Temp 1 [T1 OSW] -11.61 dBm Temp 2 [T1 OSW] 705.200000000 MHz Temp 3 [T1 OSW] 709.760000000 MHz Center 707.5 MHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:14:19</p>
Highest	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] -0.03 dB *VSW 300 kHz *SWT 5 ms OBSW 5.180000000 MHz Marker 1 [T1] 710.46 dBm Temp 1 [T1 OSW] -11.35 dBm Temp 2 [T1 OSW] 711.240000000 MHz Temp 3 [T1 OSW] 715.780000000 MHz Center 713.5 MHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:14:51</p>	<p>Ref 30 dBm *Att 25 dB *RBW 100 kHz Delta 1 [T1] 1.40 dB *VSW 300 kHz *SWT 5 ms OBSW 5.240000000 MHz Marker 1 [T1] 710.340000000 MHz Temp 1 [T1 OSW] -11.20 dBm Temp 2 [T1 OSW] 711.240000000 MHz Temp 3 [T1 OSW] 715.780000000 MHz Center 713.5 MHz 1 MHz/ Span 10 MHz Date: 26.JUL.2023 14:15:15</p>

Occupied Bandwidth

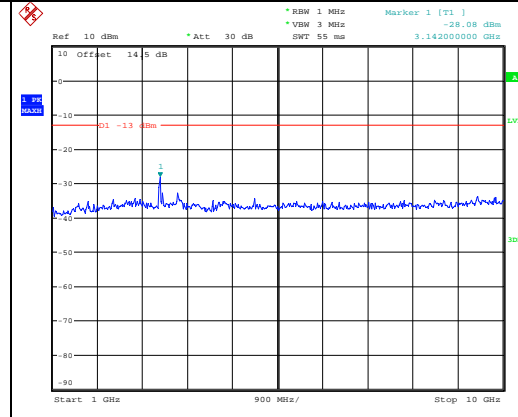
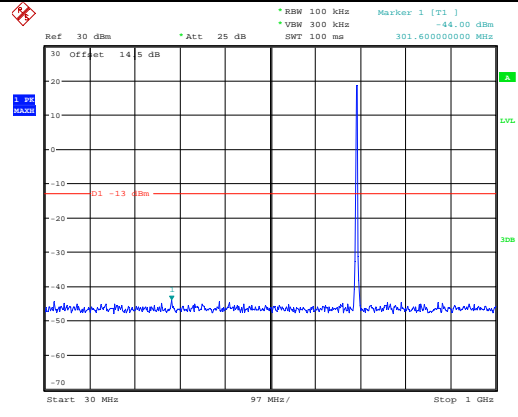
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest	<p>Ref 30 dBm Att 25 dB RBW 100 kHz VSW 300 kHz SWT 10 ms Delta 1 [T1] 0.30 dB Center 704 MHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:15:36</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz VSW 300 kHz SWT 10 ms Delta 1 [T1] -1.13 dB Center 704 MHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:15:54</p>
Middle	<p>Ref 30 dBm Att 25 dB RBW 100 kHz VSW 300 kHz SWT 10 ms Delta 1 [T1] 0.28 dB Center 707.5 MHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:16:16</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz VSW 300 kHz SWT 10 ms Delta 1 [T1] -0.73 dB Center 707.5 MHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:16:34</p>
Highest	<p>Ref 30 dBm Att 25 dB RBW 100 kHz VSW 300 kHz SWT 10 ms Delta 1 [T1] 1.30 dB Center 711 MHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:16:55</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz VSW 300 kHz SWT 10 ms Delta 1 [T1] 0.73 dB Center 711 MHz 2 MHz/ Span 20 MHz Date: 26.JUL.2023 14:17:20</p>

Spurious Emissions at Antenna Terminal

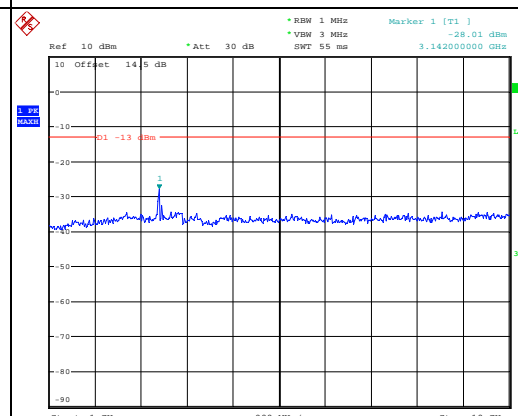
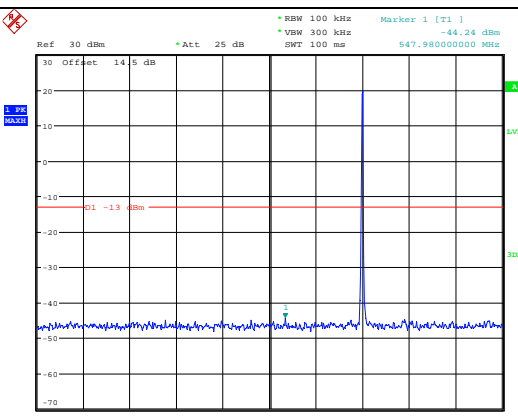
Channel

1.4MHz Bandwidth QPSK

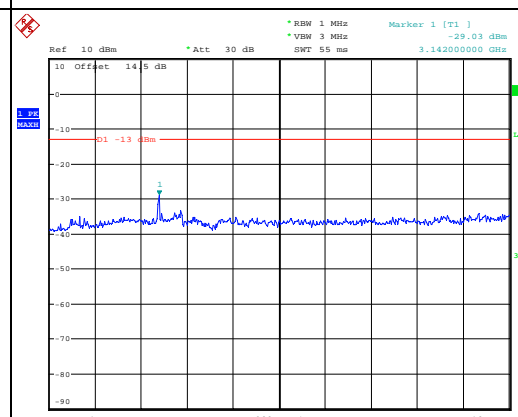
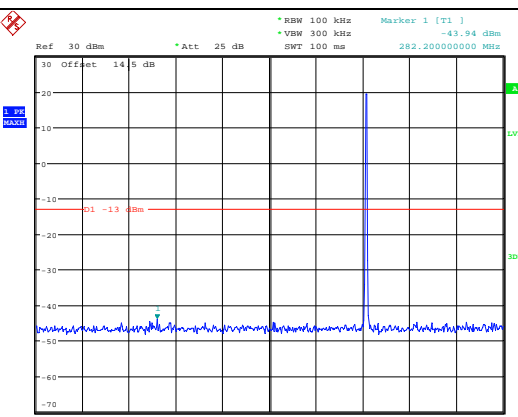
Lowest



Middle



Highest

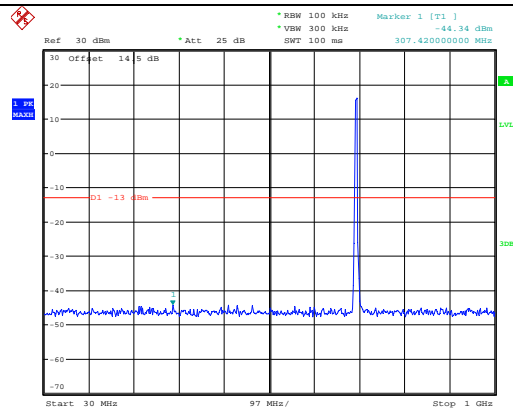


Spurious Emissions at Antenna Terminal

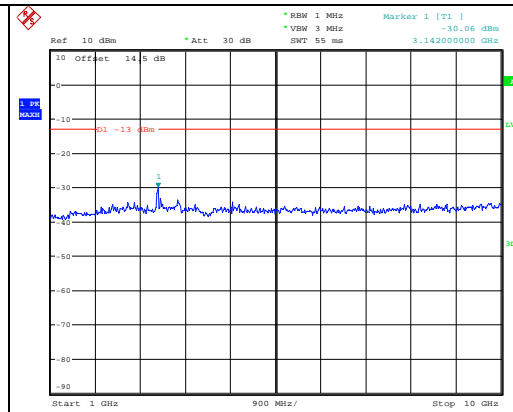
Channel

3MHz Bandwidth QPSK

Lowest

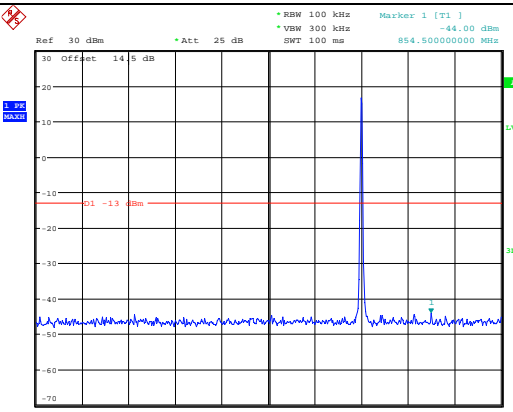


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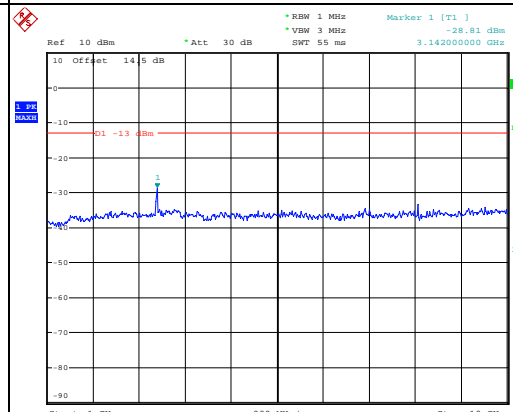


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Middle

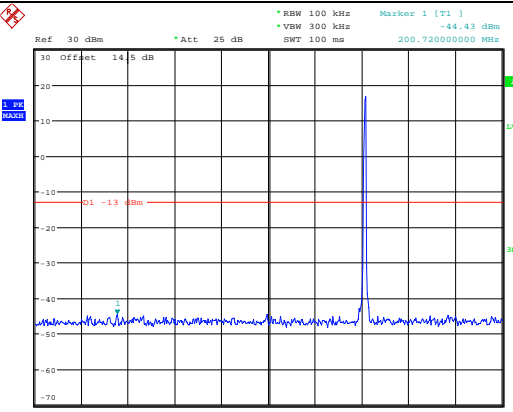


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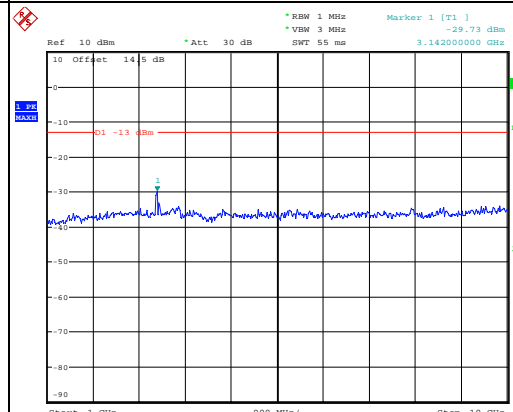


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Highest



Date: 27.JUL.2023 13:37:26



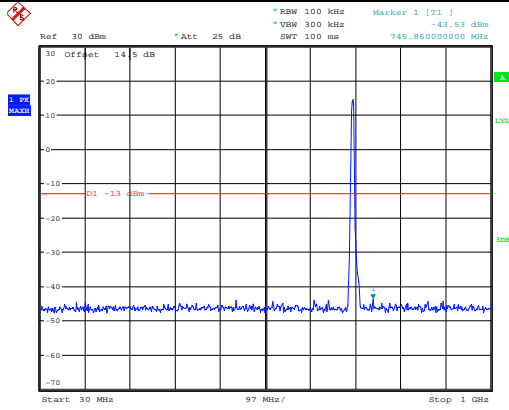
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Spurious Emissions at Antenna Terminal

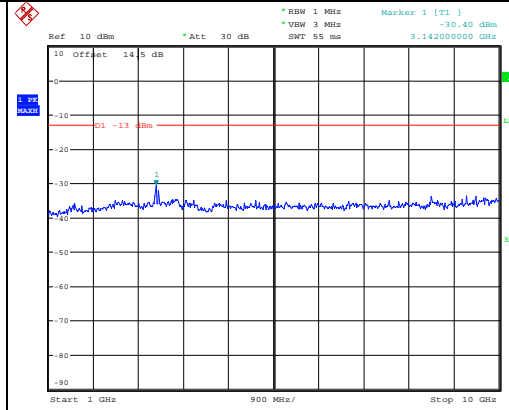
Channel

5MHz Bandwidth QPSK

Lowest

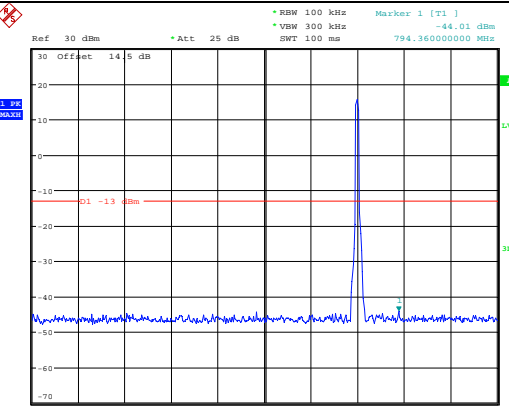


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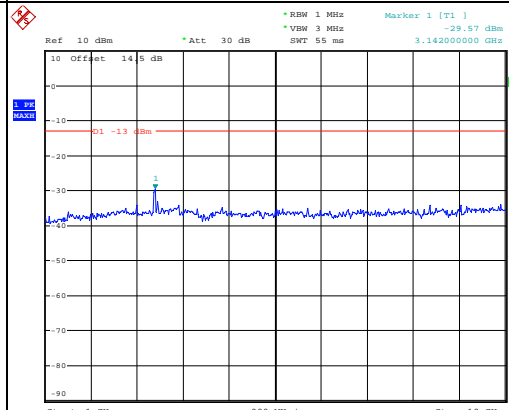


Date: 27.JUL.2023 13:38:08

Middle

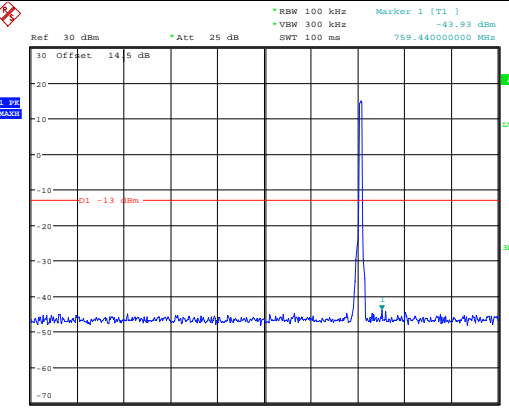


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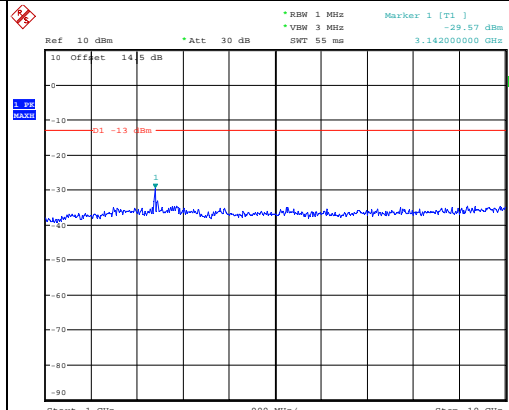


Date: 27.JUL.2023 13:38:37

Highest



Date: 27.JUL.2023 13:38:51



Date: 27.JUL.2023 13:39:02

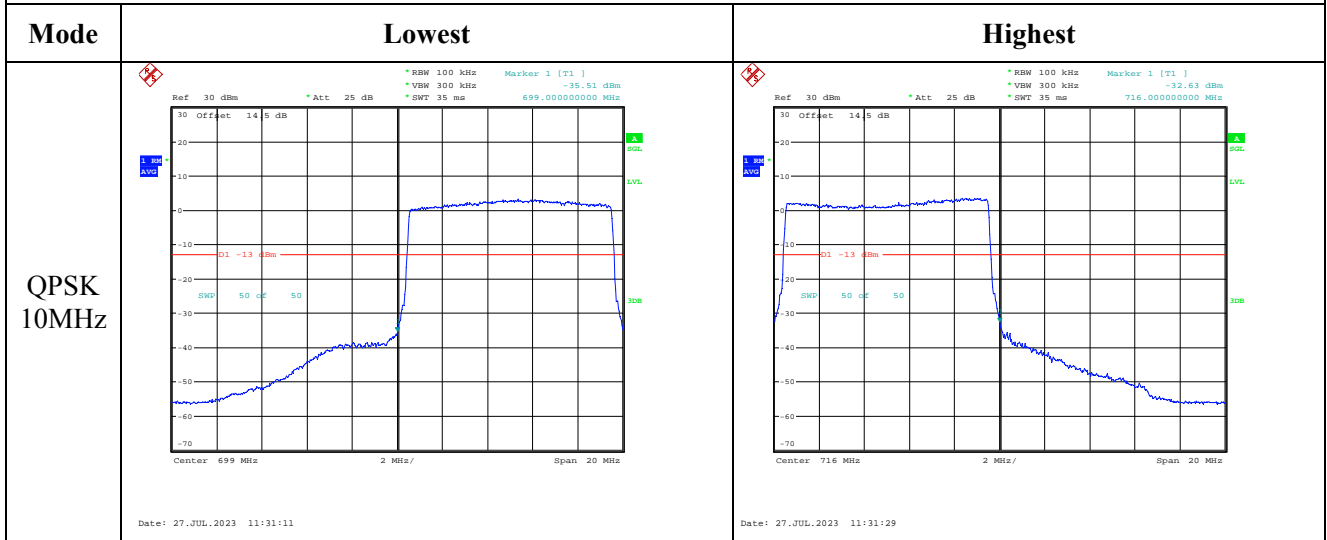
Spurious Emissions at Antenna Terminal

Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -43.98 dBm VSW 300 kHz SWT 100 ms 669.72000000 MHz</p> <p>Date: 27.JUL.2023 13:39:21</p>	<p>Ref 10 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -29.36 dBm VSW 3 MHz SWT 55 ms 3.142000000 GHz</p> <p>Date: 27.JUL.2023 13:39:33</p>
	Middle	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -44.40 dBm VSW 300 kHz SWT 100 ms 111.48000000 MHz</p> <p>Date: 27.JUL.2023 13:39:49</p>
Highest		<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -44.56 dBm VSW 300 kHz SWT 100 ms 676.02000000 MHz</p> <p>Date: 27.JUL.2023 13:40:18</p>

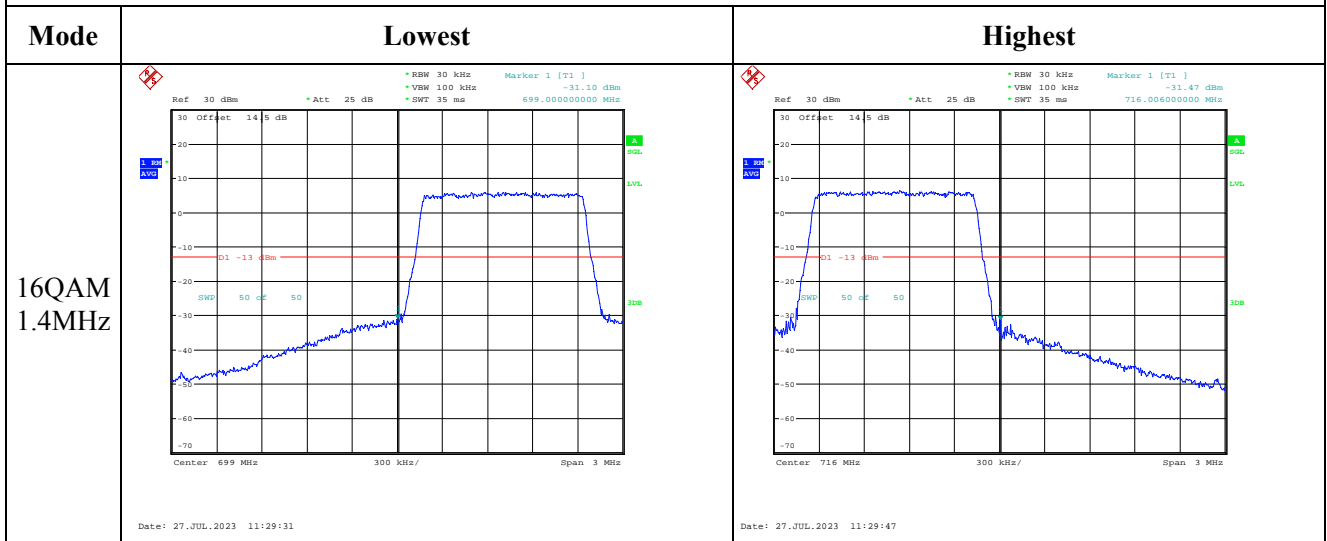
Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 1.4MHz	<p>Ref 30 dBm Att 25 dB RBW 30 kHz Marker 1 [T1] -30.91 dBm VSW 100 kHz SWT 35 ms 698.970000000 MHz</p> <p>Center 699 MHz 300 kHz/ Span 3 MHz</p> <p>Date: 27.JUL.2023 11:29:24</p>	<p>Ref 30 dBm Att 25 dB RBW 30 kHz Marker 1 [T1] -31.57 dBm VSW 100 kHz SWT 35 ms 716.036000000 MHz</p> <p>Center 716 MHz 300 kHz/ Span 3 MHz</p> <p>Date: 27.JUL.2023 11:29:40</p>
QPSK 3MHz	<p>Ref 30 dBm Att 25 dB RBW 30 kHz Marker 1 [T1] -28.16 dBm VSW 100 kHz SWT 35 ms 699.000000000 MHz</p> <p>Center 699 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 27.JUL.2023 11:29:59</p>	<p>Ref 30 dBm Att 25 dB RBW 30 kHz Marker 1 [T1] -25.56 dBm VSW 100 kHz SWT 35 ms 716.000000000 MHz</p> <p>Center 716 MHz 600 kHz/ Span 6 MHz</p> <p>Date: 27.JUL.2023 11:30:15</p>
QPSK 5MHz	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -28.55 dBm VSW 500 kHz SWT 35 ms 699.000000000 MHz</p> <p>Center 699 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 27.JUL.2023 11:30:34</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -27.88 dBm VSW 500 kHz SWT 35 ms 716.000000000 MHz</p> <p>Center 716 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 27.JUL.2023 11:30:51</p>

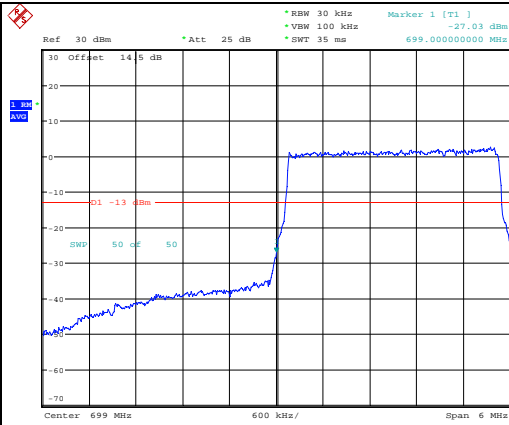
Out of band emission, Band Edge



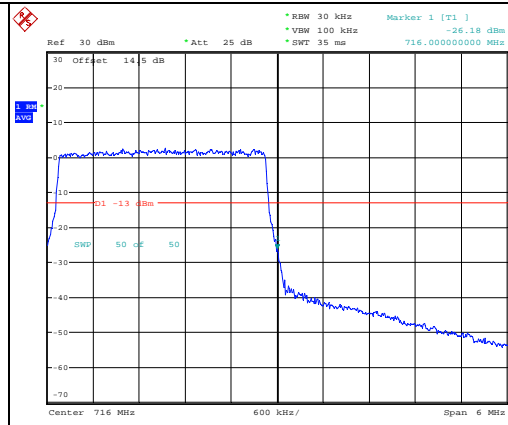
Out of band emission, Band Edge



16QAM
3MHz

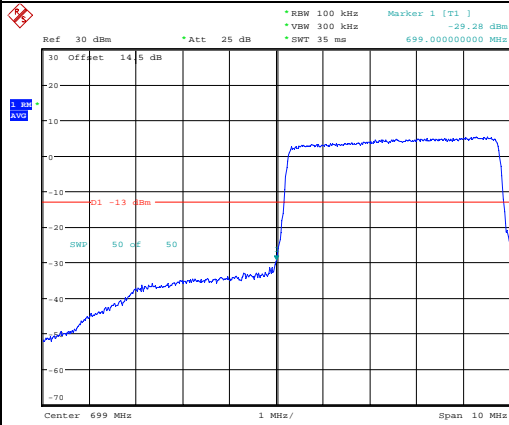


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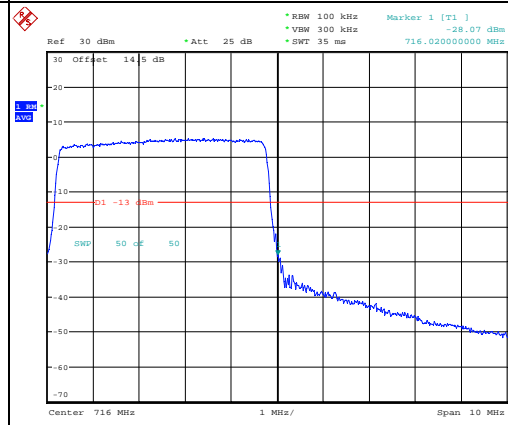


Date: 27.JUL.2023 11:30:22

16QAM
5MHz



Date: 27.JUL.2023 11:30:43



Date: 27.JUL.2023 11:30:59

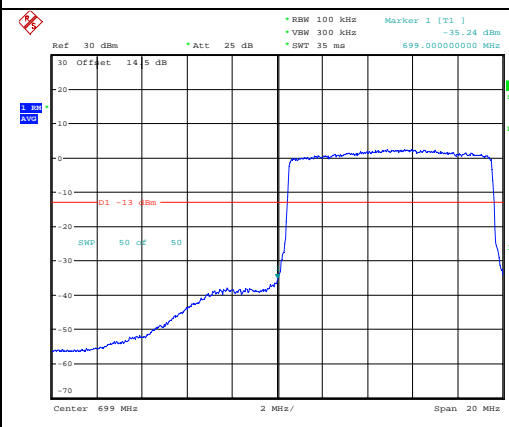
Out of band emission, Band Edge

Mode

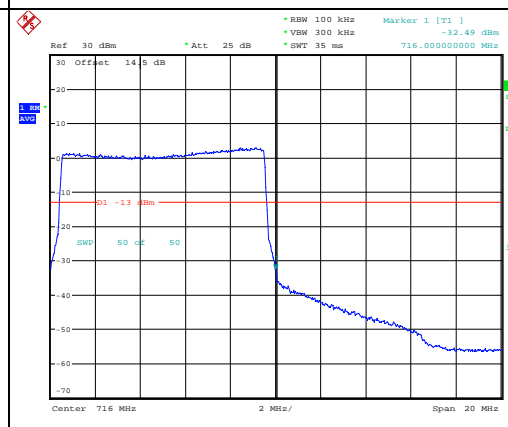
Lowest

Highest

16QAM
10MHz



Date: 27.JUL.2023 11:31:20



Date: 27.JUL.2023 11:31:37

4.11 Antenna Port Test Data and Results for LTE Band 17

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/7/28
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.3	Relative Humidity: (%)	46-62	ATM Pressure: (kPa)	99.7-100.6
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
5MHz	706.5	710	713.5
10MHz	709	710	711

Test Data:

FCC§2.1046; § 27.50(c) (10)						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	24.98	24.88	24.93	16.66	34.77
	RB1#13	24.91	24.72	24.96		
	RB1#24	24.93	24.8	24.94		
	RB15#0	23.91	24.02	23.86		
	RB15#10	23.96	23.94	24.12		
	RB25#0	23.97	23.99	24.18		
5MHz 16QAM	RB1#0	23.97	23.47	23	15.65	34.77
	RB1#13	23.83	23.44	23.09		
	RB1#24	23.86	23.4	23.12		
	RB15#0	23.08	23.17	23.15		
	RB15#10	22.99	23.03	23.1		
	RB25#0	23.2	22.91	23.13		
10MHz QPSK	RB1#0	25.05	24.85	24.95	16.75	34.77
	RB1#25	24.97	24.76	24.67		
	RB1#49	25.07	24.75	24.95		
	RB25#0	23.88	23.76	23.87		
	RB25#25	23.84	23.66	24.12		
	RB50#0	23.88	23.85	23.98		
10MHz 16QAM	RB1#0	24.1	23.32	23.99	15.83	34.77
	RB1#25	24.07	23.29	23.91		
	RB1#49	24.15	23.43	24.11		
	RB25#0	23.24	22.95	23.05		
	RB25#25	23.16	23.03	23.12		
	RB50#0	23.09	22.87	23.01		
Note: ERP= Conducted Power(dBm) - Lc(dB) + Gr(dBd) Gr(dBd)=Gr(dBi)-2.15						
					Result:	Pass

Peak-to-average Ratio(PAR)						
Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)	
		Lowest Channel	Middle Channel	Highest Channel		
10MHz QPSK	RB1#0	6.09	5.9	6.28	13	
	RB50#0	6.09	6.06	6.12	13	
10MHz 16QAM	RB1#0	7.21	6.38	7.53	13	
	RB50#0	6.89	6.79	6.89	13	
					Result:	Pass

FCC §2.1049, §27.53: Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.540	4.560	4.540	5.260	5.580	5.280
5MHz 16QAM	4.560	4.580	4.540	5.240	5.600	5.340
10MHz QPSK	9.000	9.040	9.000	9.800	9.960	9.760
10MHz 16QAM	9.000	9.000	9.000	9.800	10.000	9.920

Note: The test plots please refer to the Plots of Occupied Bandwidth

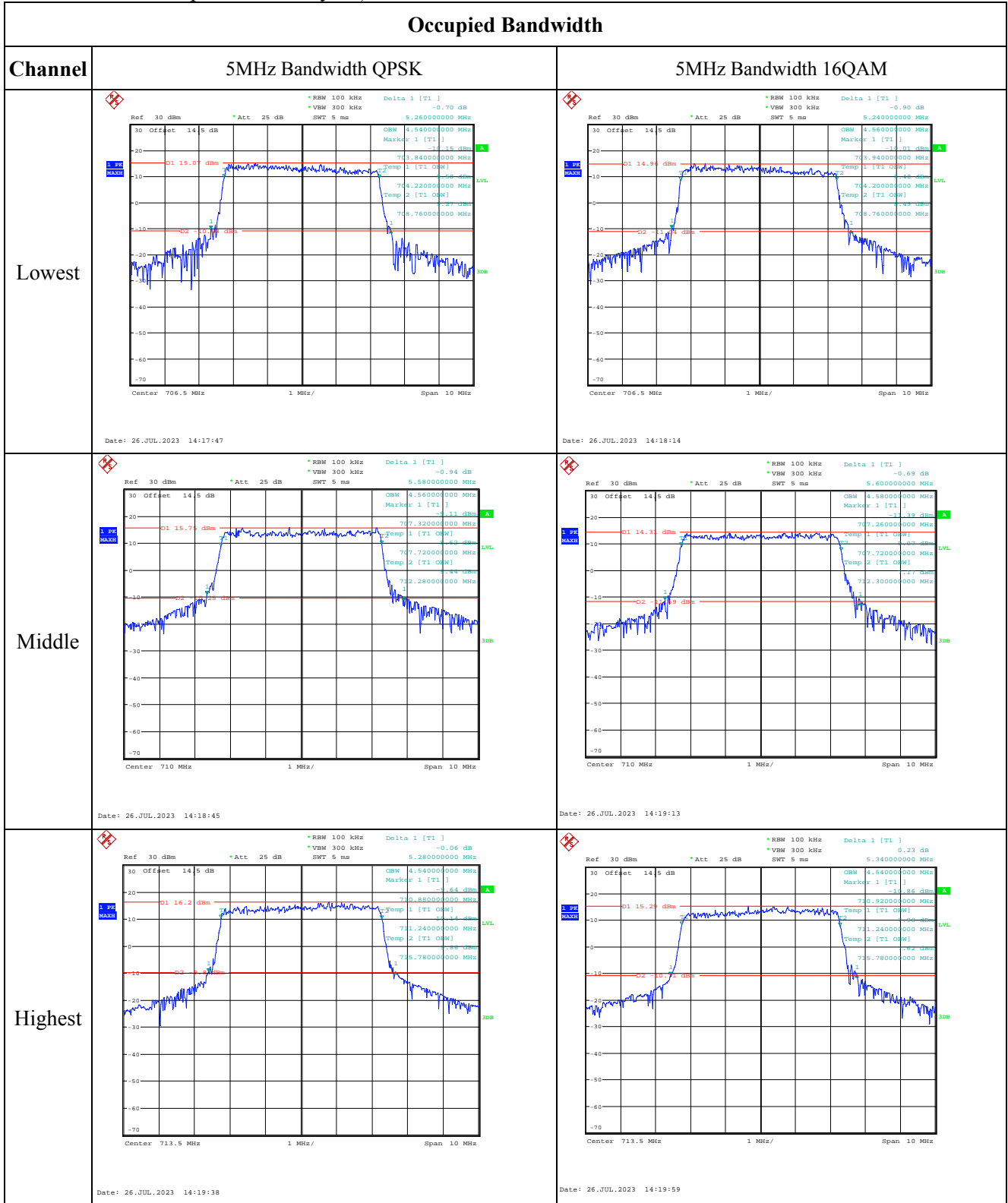
FCC §2.1051, §27.53: Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, §27.53: Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §27.54: Frequency Stability						
Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	704.590	704.00	715.441	716.00
	-20	3.8	704.525	704.00	715.414	716.00
	-10	3.8	704.526	704.00	715.497	716.00
	0	3.8	704.540	704.00	715.419	716.00
	10	3.8	704.556	704.00	715.497	716.00
	20	3.8	704.480	704.00	715.520	716.00
	30	3.8	704.501	704.00	715.411	716.00
	40	3.8	704.502	704.00	715.484	716.00
Frequency Stability vs. Voltage	20	3.5	704.542	704.00	715.469	716.00
	20	4.35	704.549	704.00	715.430	716.00
					Result:	Pass

Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	704.580	704.00	715.408	716.00
	-20	3.8	704.570	704.00	715.490	716.00
	-10	3.8	704.578	704.00	715.466	716.00
	0	3.8	704.554	704.00	715.445	716.00
	10	3.8	704.518	704.00	715.412	716.00
	20	3.8	704.520	704.00	715.520	716.00
	30	3.8	704.548	704.00	715.409	716.00
	40	3.8	704.587	704.00	715.442	716.00
	50	3.8	704.516	704.00	715.480	716.00
Frequency Stability vs. Voltage	20	3.5	704.525	704.00	715.401	716.00
	20	4.35	704.569	704.00	715.418	716.00
					Result:	Pass

Test Plots(Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):



Occupied Bandwidth

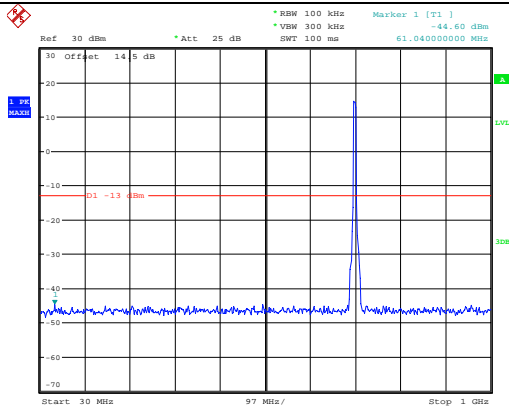
Channel	10MHz Bandwidth QPSK	10MHz Bandwidth 16QAM
Lowest		
Middle		
Highest		

Spurious Emissions at Antenna Terminal

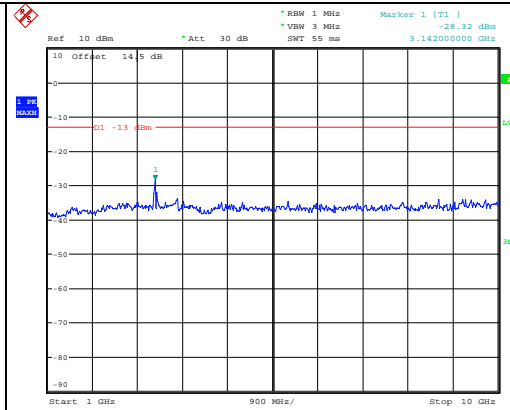
Channel

5MHz Bandwidth QPSK

Lowest

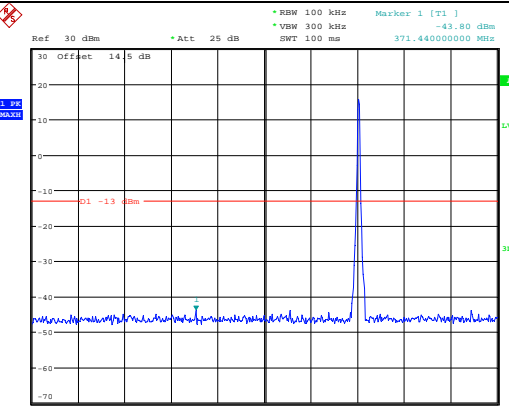


Date: 27.JUL.2023 13:40:48

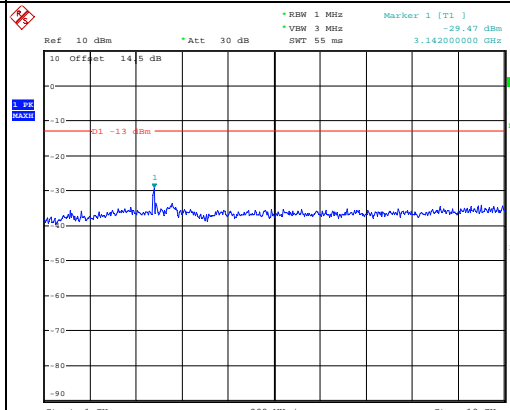


Date: 27.JUL.2023 13:40:59

Middle

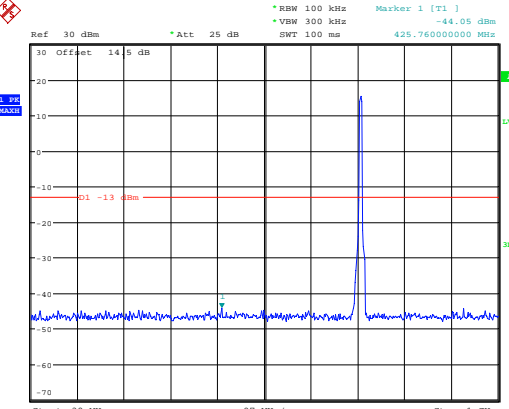


Date: 27.JUL.2023 13:41:16

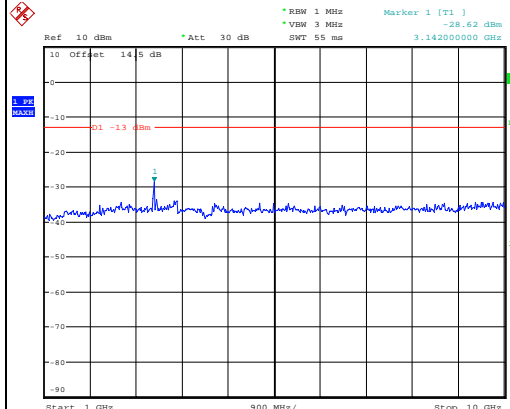


Date: 27.JUL.2023 13:41:27

Highest



Date: 27.JUL.2023 13:41:40



Date: 27.JUL.2023 13:41:52

Spurious Emissions at Antenna Terminal

Channel	10MHz Bandwidth QPSK	
Lowest	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -43.95 dBm VSW 300 kHz SWT 100 ms 169.688000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:42:08</p>	<p>Ref 10 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -28.28 dBm VSW 3 MHz SWT 55 ms 3.142000000 GHz</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 27.JUL.2023 13:42:19</p>
Middle	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -43.68 dBm VSW 300 kHz SWT 100 ms 809.880000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 14:40:22</p>	<p>Ref 10 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -28.77 dBm VSW 3 MHz SWT 55 ms 3.142000000 GHz</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 27.JUL.2023 13:42:47</p>
Highest	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -44.26 dBm VSW 300 kHz SWT 100 ms 922.400000000 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>Date: 27.JUL.2023 13:43:01</p>	<p>Ref 10 dBm Att 30 dB RBW 1 MHz Marker 1 [T1] -30.02 dBm VSW 3 MHz SWT 55 ms 3.142000000 GHz</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>Date: 27.JUL.2023 13:43:12</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
QPSK 5MHz	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -28.20 dBm VSW 300 kHz SWT 35 ms 704.00000000 MHz</p> <p>Center: 704 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 27.JUL.2023 11:31:52</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -25.88 dBm VSW 300 kHz SWT 35 ms 716.00000000 MHz</p> <p>Center: 716 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 27.JUL.2023 11:32:08</p>
QPSK 10MHz	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -32.45 dBm VSW 300 kHz SWT 35 ms 704.00000000 MHz</p> <p>Center: 704 MHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:32:28</p>	<p>Ref 30 dBm Att 25 dB RBW 100 kHz Marker 1 [T1] -32.90 dBm VSW 300 kHz SWT 35 ms 716.00000000 MHz</p> <p>Center: 716 MHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:32:45</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
16QAM 5MHz	<p>Ref 30 dBm * Act 25 dB * RBW 100 kHz Marker 1 [T1] -27.49 dBm * VBW 300 kHz * SWT 35 ms 704.00000000 MHz</p> <p>Center 704 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 27.JUL.2023 11:32:00</p>	<p>Ref 30 dBm * Act 25 dB * RBW 100 kHz Marker 1 [T1] -26.32 dBm * VBW 300 kHz * SWT 35 ms 716.00000000 MHz</p> <p>Center 716 MHz 1 MHz/ Span 10 MHz</p> <p>Date: 27.JUL.2023 11:32:15</p>
16QAM 10MHz	<p>Ref 30 dBm * Act 25 dB * RBW 100 kHz Marker 1 [T1] -33.33 dBm * VBW 300 kHz * SWT 35 ms 704.00000000 MHz</p> <p>Center 704 MHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:32:37</p>	<p>Ref 30 dBm * Act 25 dB * RBW 100 kHz Marker 1 [T1] -32.79 dBm * VBW 300 kHz * SWT 35 ms 716.00000000 MHz</p> <p>Center 716 MHz 2 MHz/ Span 20 MHz</p> <p>Date: 27.JUL.2023 11:32:53</p>

4.12 Antenna Port Test Data and Results for LTE Band 25

Serial Number:	27BI-1	Test Date:	2023/7/24-2023/8/1
Test Site:	RF	Test Mode:	Transmitting
Tester:	Claire Liu	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.5-26.7	Relative Humidity: (%)	46-65	ATM Pressure: (kPa)	99.7-100.9
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Weinschel	Power splitter	1515	RA915	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060302	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30

** Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Test Frequency for Each Mode:

Operation Bandwidth	Lowest Frequency (MHz)	Middle Frequency (MHz)	Highest Frequency (MHz)
1.4MHz	1850.7	1882.5	1914.3
3MHz	1851.5	1882.5	1913.5
5MHz	1852.5	1882.5	1912.5
10MHz	1855	1882.5	1910
15MHz	1857.5	1882.5	1907.5
20MHz	1860	1882.5	1905

Test Data:

FCC§2.1046; § 24.232						
RF Output Power:						
Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	20.73	20.19	23.7	23.73	33
	RB1#3	20.7	20.28	23.67		
	RB1#5	20.73	20.15	23.55		
	RB3#0	20.63	20.48	23.73		
	RB3#3	20.63	20.47	23.66		
	RB6#0	20.31	19.94	23.38		
1.4MHz 16QAM	RB1#0	21.46	20.17	23.36	23.38	33
	RB1#3	21.53	20.13	23.37		
	RB1#5	21.47	20.15	23.07		
	RB3#0	20.6	20.64	23.38		
	RB3#3	20.62	20.61	23.32		
	RB6#0	19.83	19.44	23.12		
3MHz QPSK	RB1#0	21.15	21.02	23.97	23.97	33
	RB1#8	21.09	21.02	23.71		
	RB1#14	21.12	21.02	23.5		
	RB6#0	20.68	20.72	23.62		
	RB6#9	20.74	20.66	23.34		
	RB15#0	20.58	20.71	23.56		
3MHz 16QAM	RB1#0	21.97	20.99	23.93	23.93	33
	RB1#8	21.91	20.94	23.66		
	RB1#14	21.97	21.07	23.47		
	RB6#0	20.36	20.28	23.58		
	RB6#9	20.3	20.26	23.28		
	RB15#0	20.23	20.22	23.48		
5MHz QPSK	RB1#0	20.75	21.1	24.09	24.09	33
	RB1#13	20.77	21.01	23.84		
	RB1#24	20.77	20.98	23.28		
	RB15#0	20.14	20.66	23.86		
	RB15#10	20.18	20.58	23.56		
	RB25#0	20.14	20.58	23.64		
5MHz 16QAM	RB1#0	20.88	20.87	23.76	23.82	33
	RB1#13	20.89	20.74	23.51		
	RB1#24	20.89	20.84	22.97		
	RB15#0	19.59	20.29	23.82		
	RB15#10	19.64	20.21	23.46		
	RB25#0	19.76	20.09	23.63		
10MHz QPSK	RB1#0	20.92	20.34	21.59	21.59	33
	RB1#25	20.91	20.25	21.51		
	RB1#49	20.93	20.29	21.54		

	RB25#0	20.22	19.76	21.2		
	RB25#25	20.31	19.78	21.32		
	RB50#0	20.31	19.78	21.27		
10MHz 16QAM	RB1#0	20.93	19.82	22.14	22.14	33
	RB1#25	21.04	19.76	22		
	RB1#49	21.08	19.72	21.83		
	RB25#0	19.94	19.57	21.69		
	RB25#25	19.95	19.47	21.66		
	RB50#0	19.99	19.37	21.66		
15MHz QPSK	RB1#0	21.21	21.17	21	21.21	33
	RB1#38	21.15	20.98	20.76		
	RB1#74	21.16	20.96	20.7		
	RB36#0	20.6	20.62	20.44		
	RB36#39	20.64	20.47	19.92		
	RB75#0	20.51	20.64	20.39		
15MHz 16QAM	RB1#0	21.26	21.57	21.38	21.57	33
	RB1#38	21.29	21.57	21.24		
	RB1#74	21.23	21.37	21		
	RB36#0	20.25	20.18	20.21		
	RB36#39	20.26	20.14	19.7		
	RB75#0	20.1	20.22	20.07		
20MHz QPSK	RB1#0	20.94	21.18	21.17	21.24	33
	RB1#50	20.95	21.12	21.05		
	RB1#99	20.94	21	21.24		
	RB50#0	20.4	20.65	20.56		
	RB50#50	20.42	20.62	20.43		
	RB100#0	20.52	20.61	20.48		
20MHz 16QAM	RB1#0	21.29	22	21.16	22	33
	RB1#50	21.34	21.87	20.97		
	RB1#99	21.2	21.79	21.16		
	RB50#0	20.17	20.37	20.25		
	RB50#50	20.18	20.16	20.08		
	RB100#0	20.07	20.17	20.17		

Note: EIRP=Conducted Power(dBm) - Lc(dB) + G_T(dBi)**Result:****Pass****Peak-to-average Ratio (PAR)**

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	4.74	5.19	4.94	13
	RB100#0	6.54	6.47	6.47	13
20MHz 16QAM	RB1#0	4.81	5.58	5.58	13
	RB100#0	7.21	7.24	7.24	13
				Result:	Pass

FCC §2.1049, §24.238: Occupied Bandwidth						
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.104	1.110	1.110	1.320	1.314	1.348
1.4MHz 16QAM	1.104	1.104	1.104	1.290	1.314	1.312
3MHz QPSK	2.687	2.700	2.700	3.036	3.012	3.029
3MHz 16QAM	2.712	2.700	2.700	3.060	3.012	3.048
5MHz QPSK	4.520	4.540	4.520	5.480	5.360	5.331
5MHz 16QAM	4.560	4.560	4.540	5.500	5.260	5.496
10MHz QPSK	8.960	8.960	8.960	10.000	9.800	9.760
10MHz 16QAM	8.960	8.960	9.000	10.080	9.840	9.800
15MHz QPSK	13.560	13.620	13.500	15.840	15.660	15.300
15MHz 16QAM	13.620	13.560	13.620	15.060	15.060	15.300
20MHz QPSK	18.000	18.080	18.000	19.920	20.320	19.760
20MHz 16QAM	18.080	18.000	18.000	19.760	19.760	20.000

Note: The test plots please refer to the Plots of Occupied Bandwidth

FCC §2.1051, § 24.238 (a): Spurious Emissions at Antenna Terminal	
Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

FCC §2.1051, § 24.238 (a): Out of band emission, Band Edge	
Result:	Pass, Please refer to the test plots of Out of band emission, Band Edge.

FCC §2.1055, §24.235: Frequency Stability						
Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1851.069	1850.000	1914.032	1915.000
	-20	3.8	1851.092	1850.000	1914.053	1915.000
	-10	3.8	1851.092	1850.000	1914.065	1915.000
	0	3.8	1851.056	1850.000	1914.002	1915.000
	10	3.8	1851.053	1850.000	1914.092	1915.000
	20	3.8	1851.040	1850.000	1914.040	1915.000
	30	3.8	1851.054	1850.000	1914.074	1915.000
	40	3.8	1851.064	1850.000	1914.043	1915.000
	50	3.8	1851.066	1850.000	1914.016	1915.000
Frequency Stability vs. Voltage	20	3.5	1851.071	1850.000	1914.001	1915.000
	20	4.35	1851.021	1850.000	1914.039	1915.000
					Result:	Pass

Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	3.8	1850.936	1850.000	1914.015	1915.000
	-20	3.8	1850.956	1850.000	1914.092	1915.000
	-10	3.8	1850.917	1850.000	1914.029	1915.000
	0	3.8	1850.988	1850.000	1914.062	1915.000
	10	3.8	1850.946	1850.000	1914.017	1915.000
	20	3.8	1850.960	1850.000	1914.040	1915.000
	30	3.8	1850.984	1850.000	1914.024	1915.000
	40	3.8	1850.982	1850.000	1914.089	1915.000
	50	3.8	1850.948	1850.000	1914.069	1915.000
Frequency Stability vs. Voltage	20	3.5	1850.963	1850.000	1914.056	1915.000
	20	4.35	1850.949	1850.000	1914.075	1915.000
					Result:	Pass

Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

