



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



TEST REPORT

Applicant: MAXWEST COMMUNICATION LIMITED

Address: FLAT/RM 707 7/F, FORTRESS TOWER 250 KING'S ROAD, NORTH POINT,
HONG KONG

FCC ID: 2ASP8GRAVITYG65

Product Name: Phone

**Standard(s): 47 CFR Part 2,
47 CFR Part 22, Subpart H
47 CFR Part 24, Subpart E
47 CFR Part 27
ANSI C63.26-2015
KDB 971168 D01 Power Meas License Digital Systems
v03r01
KDB 971168 D02 Misc Rev Approv License Devices v02r02**

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

Report Number: CR231278723-00E

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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.

Declarations

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231278723-00E	Original Report	2024/2/1

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	Phone
EUT Model:	GRAVITY G65
Operation Bands and modes:	GSM/GPRS/EDGE: 850/1900 WCDMA: Band 2/4/5 LTE: Band 2/4/5/12/17/41/66/71
Modulation Type:	GMSK,8PSK, BPSK, QPSK, 16QAM
Rated Input Voltage:	DC 5V from adapter or DC 3.85V from battery
Serial Number:	2FUQ-1 (for RF Conducted Test) 2FUQ-2 (for Radiated Spurious Emissions Test)
EUT Received Date:	2023/12/27
EUT Received Status:	Good

Operation Voltage (V_{DC}) ▲:

Lowest:	3.6	Normal:	3.85	Highest:	4.4
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Transmission Antenna Information ▲:

Antenna	Antenna Type	Operation Bands	Antenna Frequency Range (MHz)	Antenna Gain (G _T)(dBi)	L _c (dB)
Main	FPC	GSM850	824-849	0.5	/
		WCDMA B5	824-849	0.5	/
		LTE B5	824-849	0.5	/
		LTE B12	699-716	-0.1	/
		LTE B17	704-716	-0.1	/
		LTE B71	663-698	-0.2	/
Div	FPC	PCS1900	1850-1910	2	0.2
		WCDMA B2	1850-1910	2	0.2
		WCDMA B4	1710-1755	2	0.2
		LTE B2	1850-1910	2	0.2
		LTE B4	1710-1755	2	0.2
		LTE B41	2535-2655	0.37	0.2
		LTE B66	1710-1785	2	0.2

Note:

- 1.L_c= Signal Attenuation in the connecting cable between the transmitter and antenna, in dB; which declared by the manufacturer.
2. GSM850/WCDMA B5/LTE B5/B12/B17/B71 transmits at Main Antenna, another band transmits at Div Antenna.

Accessory Information:

Accessory Description	Manufacturer	Model	Parameters
Adapter 1	MAXWEST	GRAVITY G65	Input: 100-240VAC 50/60Hz 0.2A Output: DC5V 2000mA
Adapter 2	MAXWEST	XY-1304-5V2A	Input: 100-240VAC 0.35A 50/60Hz Output: DC5.0V = 2000mA

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. Per BT report test, test with Powered by Adapter 1 was the worst.
Equipment Modifications:	No
EUT Exercise Software:	No
<p>The maximum power was configured per 3GPP Standard for each operation modes as below setting:</p> <p>GSM/GPRS/EGPRS</p> <p>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</p>	

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	3	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				
	$A_{hs}=\beta_{hs}/\beta_c$	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
	ETFCI	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	$26336 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$			$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-		
9	$13168 \cdot T_s$	-	-	-	-	-

Table 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

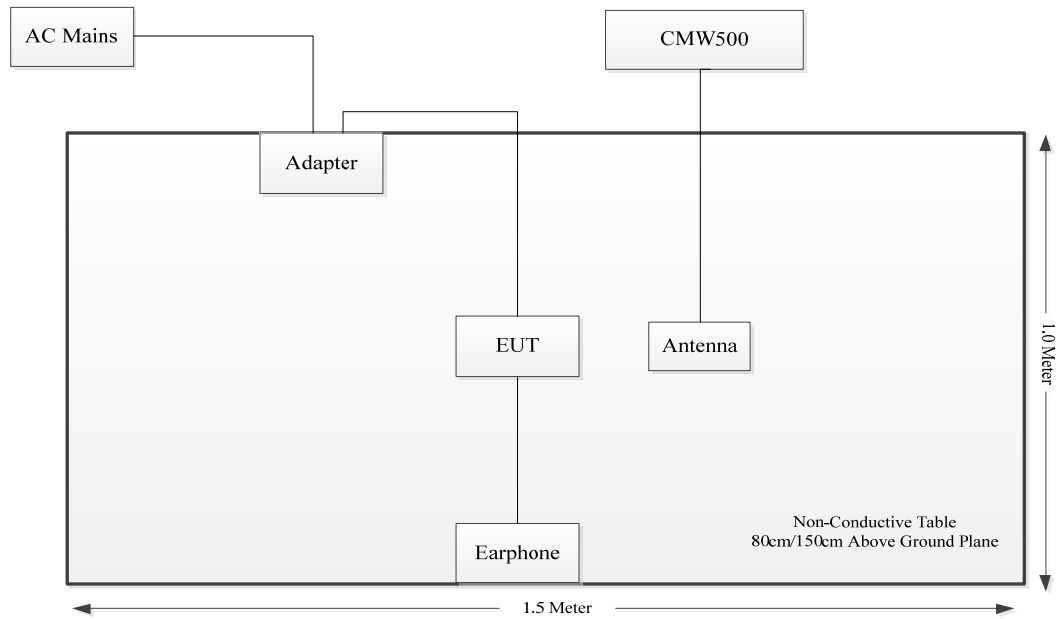
Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:
 Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$
 where
 $T_s = 1/(15000 \times 2048)$ seconds

1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R&S	Wideband Radio Communication Tester	CMW500	143458
Unknown	Antenna	Unknown	Unknown

1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Earphone Cable	No	No	0.8	EUT	Earphone Cable
Coaxial Cable	Yes	No	10	CMW500	Antenna
USB Cable	No	No	0.8	EUT	Adapter

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	9kHz~30MHz: 4.12dB, 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 °C
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	RF Output Power	Compliant
FCC§ 2.1047	Modulation Characteristics	Not Applicable
FCC§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
FCC§ 2.1051; § 22.917; § 24.238; §27.53	Spurious Emissions at Antenna Terminal	Compliant
FCC§ 22.917; § 24.238; §27.53	Out of band emission, Band Edge	Compliant
FCC§ 2.1055; § 22.355; § 24.235; §27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliant
FCC§ 2.1053; § 22.917; § 24.238; §27.53	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-toaverage 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 rmsequivalent 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 \leq3 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.

(d)(5) Equipment employed must be authorized in accordance with the provisions of § 24.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

(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 Test Method

3.4.1 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:

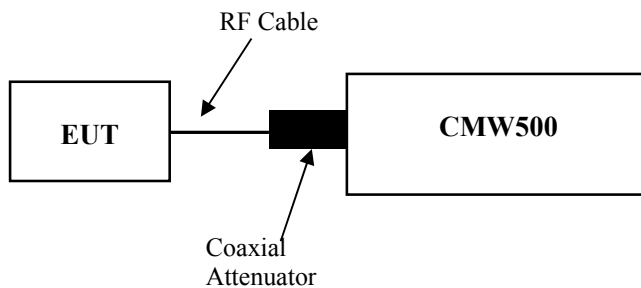
ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively
(expressed in the same units as P_{Meas} , typically dBW or dBm);

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.

3.4.2 Occupied Bandwidth

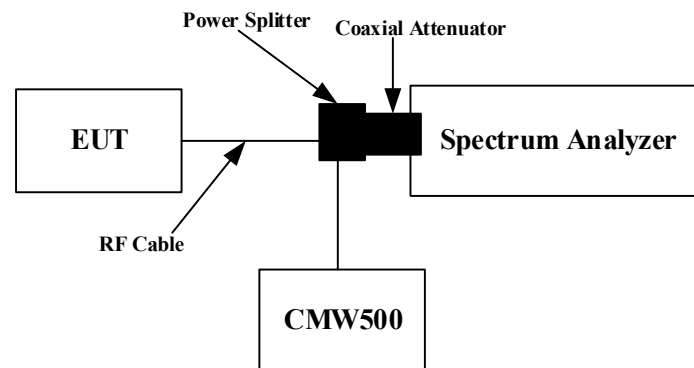
According to ANSI C63.26-2015 Section 5.4.4

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:

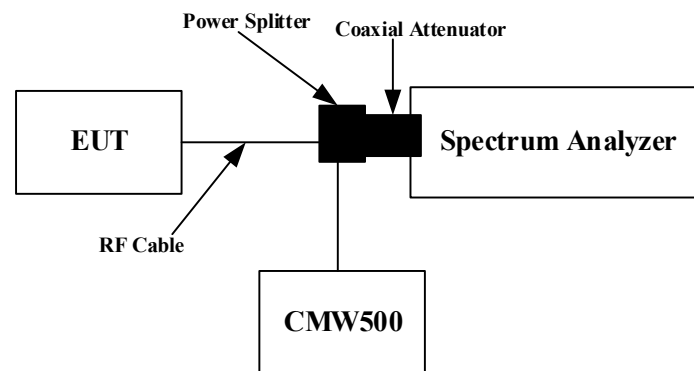


3.4.3 Transmitter unwanted emissions-at antenna terminals

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:

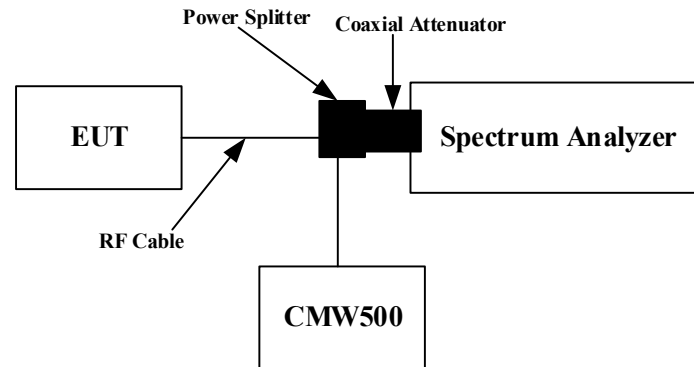


3.4.4 Transmitter unwanted emissions-Out of band emission

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:



3.4.5 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.

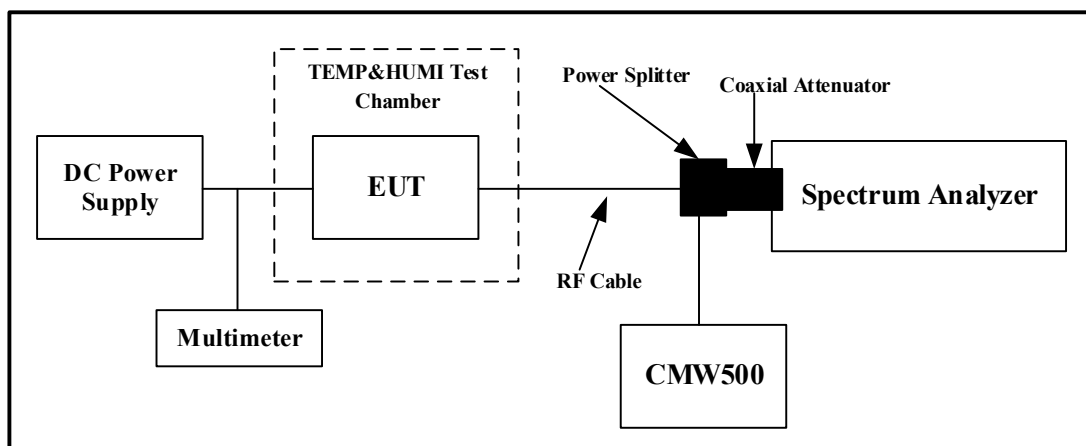
The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is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



3.4.6 Transmitter unwanted emissions- Radiated Spurious emissions

According to ANSI C63.26-2015 Section 5.5.3:

Test setup:

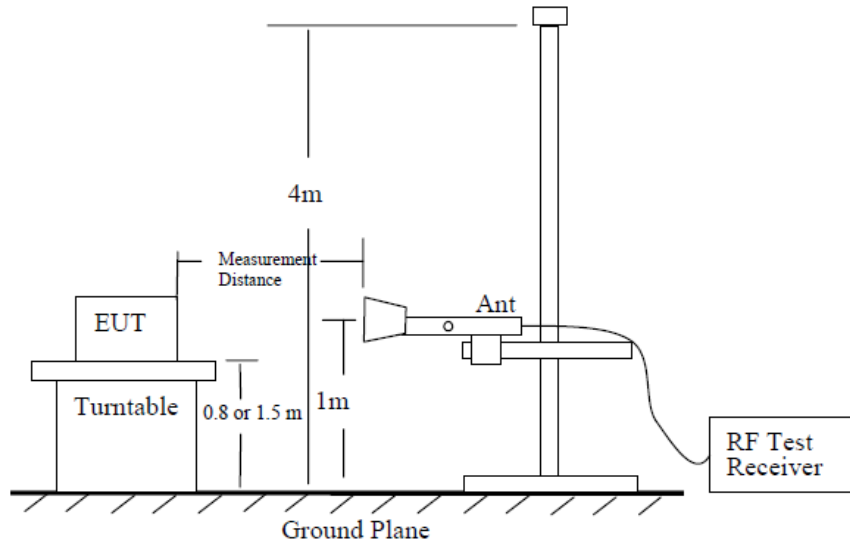


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

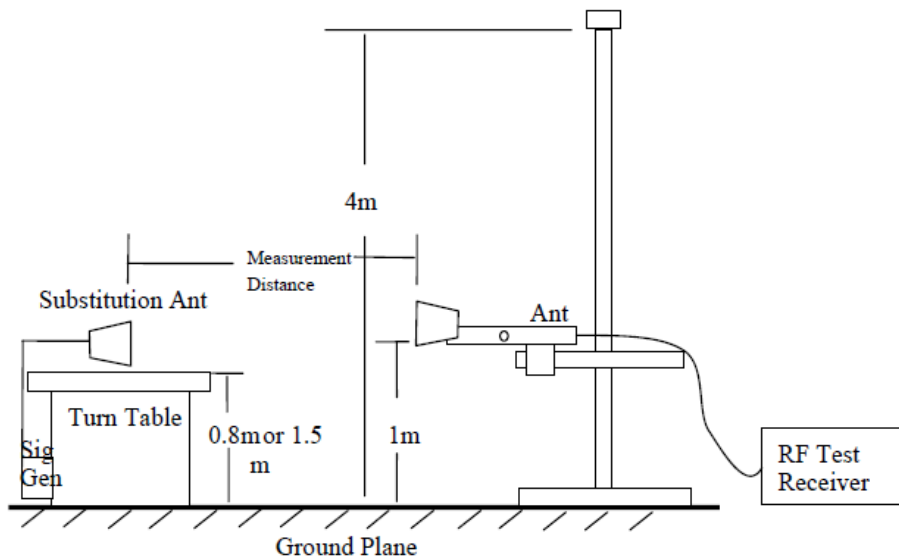


Figure 7—Substitution method set-up for radiated emission

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 = equivalent emission power in dBm
 - P_s = source (signal generator) power in dBmNOTE—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:	2FUQ-1	Test Date:	2024/1/18-2024/1/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.6-24.9	Relative Humidity: (%)	46-49	ATM Pressure: (kPa)	101.5-101.8
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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
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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:

RF Output Power					
Test Mode	Conducted Peak Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
GSM	32.61	32.58	32.54	30.96	38.45
GPRS 1 Slot	32.41	32.47	32.41	30.82	38.45
GPRS 2 Slots	30.51	30.65	30.53	29	38.45
GPRS 3 Slots	28.38	28.5	28.39	26.85	38.45
GPRS 4 Slots	26.18	26.28	26.21	24.63	38.45
EDGE 1 Slot	26.16	25.84	26.07	24.51	38.45
EDGE 2 Slots	24.04	23.49	23.84	22.39	38.45
EDGE 3 Slots	21.48	20.92	21.48	19.83	38.45
EDGE 4 Slots	18.93	18.42	18.82	17.28	38.45

Note:
 ERP= Conducted Power(dBm) - Lc(dB) + G_T(dBd)
 G_T(dBd)=G_T(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	
GSM	3.79	3.33	3.46	13
EDGE	3.48	3.76	4.1	13

Result:	Pass
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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	0.237	0.236	0.237	0.26	0.263	0.263
EDGE	0.245	0.248	0.247	0.313	0.314	0.309

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

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

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

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	3.85	20	0.024	2.5
	-20	3.85	17	0.020	2.5
	-10	3.85	30	0.036	2.5
	0	3.85	18	0.022	2.5
	10	3.85	8	0.010	2.5
	20	3.85	9	0.011	2.5
	30	3.85	3	0.004	2.5
	40	3.85	38	0.045	2.5
	50	3.85	56	0.067	2.5
Frequency Stability vs. Voltage	20	3.6	12	0.014	2.5
	20	4.4	11	0.013	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	3.85	16	0.019	2.5
	-20	3.85	42	0.050	2.5
	-10	3.85	35	0.042	2.5
	0	3.85	21	0.025	2.5
	10	3.85	6	0.007	2.5
	20	3.85	32	0.038	2.5
	30	3.85	17	0.020	2.5
	40	3.85	29	0.035	2.5
	50	3.85	16	0.019	2.5
Frequency Stability vs. Voltage	20	3.6	22	0.026	2.5
	20	4.4	2	0.002	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	GSM	EDGE
Lowest	<p>Ref: 40 dBm *Att: 30 dB *RBW 3 kHz Delta 1 [T1] 1.54 dB *VBW 10 kHz *SWT 115 ms 259.6152946135 MHz Marker 1 [T1] 1.54 dBm 824.070191308 MHz Temp 1 [T1] 0.81 dBm 824.08141256 MHz Temp 2 [T1] 0.81 dBm 824.31858744 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:03:21</p>	<p>Ref: 40 dBm *Att: 30 dB *RBW 3 kHz Delta 1 [T1] 0.10 dB *VBW 10 kHz *SWT 115 ms 312.500000000 MHz Marker 1 [T1] 0.10 dBm 824.04294718 MHz Temp 1 [T1] 0.81 dBm 824.07660364 MHz Temp 2 [T1] 0.81 dBm 824.32179782 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:15:39</p>
Middle	<p>Ref: 40 dBm *Att: 30 dB *RBW 3 kHz Delta 1 [T1] -0.59 dB *VBW 10 kHz *SWT 115 ms 262.500000000 MHz Marker 1 [T1] -0.59 dBm 836.466981779 MHz Temp 1 [T1] 0.81 dBm 836.48141256 MHz Temp 2 [T1] 0.81 dBm 836.71698179 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:08:00</p>	<p>Ref: 40 dBm *Att: 30 dB *RBW 3 kHz Delta 1 [T1] -0.02 dB *VBW 10 kHz *SWT 115 ms 314.102564100 MHz Marker 1 [T1] -0.02 dBm 836.43974590 MHz Temp 1 [T1] 0.81 dBm 836.47500000 MHz Temp 2 [T1] 0.81 dBm 836.723397436 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:18:53</p>
Highest	<p>Ref: 40 dBm *Att: 30 dB *RBW 3 kHz Delta 1 [T1] 0.65 dB *VBW 10 kHz *SWT 115 ms 263.461518461 MHz Marker 1 [T1] 0.65 dBm 848.666981779 MHz Temp 1 [T1] 0.81 dBm 848.68141256 MHz Temp 2 [T1] 0.81 dBm 848.91858744 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:09:39</p>	<p>Ref: 40 dBm *Att: 30 dB *RBW 3 kHz Delta 1 [T1] -0.28 dB *VBW 10 kHz *SWT 115 ms 308.97438976 MHz Marker 1 [T1] -0.28 dBm 848.64775410 MHz Temp 1 [T1] 0.81 dBm 848.67660364 MHz Temp 2 [T1] 0.81 dBm 848.923397436 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:21:02</p>

Spurious Emissions at Antenna Terminal

Channel	GSM	
Lowest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -35.39 dBm *VSW 300 kHz SWT 100 ms 208.766025641 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:03:55</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -26.44 dBm *VSW 3 MHz SWT 55 ms 1.649038462 GHz</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:04:27</p>
Middle	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -35.40 dBm *VSW 300 kHz SWT 100 ms 689.102564103 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:07:55</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -26.16 dBm *VSW 3 MHz SWT 55 ms 1.663461538 GHz</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:08:20</p>
Highest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz Marker 1 [T1] -35.67 dBm *VSW 300 kHz SWT 100 ms 387.532051282 MHz</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:05:29</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] -25.85 dBm *VSW 3 MHz SWT 55 ms 1.692307692 GHz</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:05:50</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
GSM	<p>Ref 40 dBm *Att 30 dB *RBW 3 kHz *VBW 10 kHz *SWT 500 ms Marker 1 [T1] -13.54 dBm 823.996794872 MHz</p> <p>Center 824 MHz 200 kHz/ Span 2 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:05:03</p>	<p>Ref 40 dBm *Att 30 dB *RBW 3 kHz *VBW 10 kHz *SWT 500 ms Marker 1 [T1] -17.99 dBm 849.019230769 MHz</p> <p>Center 849 MHz 200 kHz/ Span 2 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:10:22</p>
EDGE	<p>Ref 40 dBm *Att 30 dB *RBW 3 kHz *VBW 10 kHz *SWT 500 ms Marker 1 [T1] -27.08 dBm 823.987179487 MHz</p> <p>Center 824 MHz 200 kHz/ Span 2 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:12:41</p>	<p>Ref 40 dBm *Att 30 dB *RBW 3 kHz *VBW 10 kHz *SWT 500 ms Marker 1 [T1] -25.83 dBm 849.022435897 MHz</p> <p>Center 849 MHz 200 kHz/ Span 2 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 22:22:17</p>

4.2 Antenna Port Test Data and Results for GSM 1900 band

Serial Number:	2FUQ-1	Test Date:	2024/1/18-2024/1/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.6-24.9	Relative Humidity: (%)	46-49	ATM Pressure: (kPa)	101.5-101.8
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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
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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:

RF Output Power					
Test Mode	Conducted Peak Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
GSM	28.28	28.15	27.96	30.08	33
GPRS 1 Slot	28.16	27.98	27.95	29.96	33
GPRS 2 Slots	27.26	27.26	27.23	29.06	33
GPRS 3 Slots	25.98	25.8	25.71	27.78	33
GPRS 4 Slots	23.96	23.83	23.67	25.76	33
EDGE 1 Slot	25.47	26.08	25.95	27.88	33
EDGE 2 Slots	23.47	24.96	24.26	26.76	33
EDGE 3 Slots	21.34	23.01	22.08	24.81	33
EDGE 4 Slots	18.89	20.33	19.07	22.13	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	
GSM	4.13	3.86	4.42	13
EDGE	3.68	4.13	4.25	13
Result:				Pass

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	0.237	0.237	0.239	0.261	0.262	0.264
EDGE	0.247	0.255	0.263	0.311	0.332	0.345
Note: The test plots please refer to the Plots of Occupied Bandwidth						

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

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

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	3.85	1850.078	1850.000	1909.930	1910.000
	-20	3.85	1850.077	1850.000	1909.937	1910.000
	-10	3.85	1850.054	1850.000	1909.921	1910.000
	0	3.85	1850.055	1850.000	1909.923	1910.000
	10	3.85	1850.062	1850.000	1909.933	1910.000
	20	3.85	1850.081	1850.000	1909.919	1910.000
	30	3.85	1850.059	1850.000	1909.929	1910.000
	40	3.85	1850.061	1850.000	1909.932	1910.000
	50	3.85	1850.073	1850.000	1909.922	1910.000
Frequency Stability vs. Voltage	20	3.6	1850.053	1850.000	1909.935	1910.000
	20	4.4	1850.070	1850.000	1909.926	1910.000
					Result:	Pass

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	3.85	1850.051	1850.000	1909.947	1910.000
	-20	3.85	1850.067	1850.000	1909.952	1910.000
	-10	3.85	1850.050	1850.000	1909.957	1910.000
	0	3.85	1850.062	1850.000	1909.950	1910.000
	10	3.85	1850.069	1850.000	1909.956	1910.000
	20	3.85	1850.077	1850.000	1909.930	1910.000
	30	3.85	1850.072	1850.000	1909.935	1910.000
	40	3.85	1850.059	1850.000	1909.953	1910.000
	50	3.85	1850.058	1850.000	1909.931	1910.000
Frequency Stability vs. Voltage	20	3.6	1850.057	1850.000	1909.957	1910.000
	20	4.4	1850.057	1850.000	1909.932	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>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:20:23</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:31:48</p>
Middle	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:23:05</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:34:42</p>
Highest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:25:54</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:37:53</p>

Spurious Emissions at Antenna Terminal

Channel	GSM	
Lowest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:56:27</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:57:00</p>
Middle	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:53:50</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:54:13</p>
Highest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:57:46</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:58:23</p>

Out of band emission, Band Edge

Channel	Lowest	Highest
GSM	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:21:11</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:26:41</p>
EDGE	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:32:54</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:38:54</p>

4.3 Antenna Port Test Data and Results for WCDMA Band 2

Serial Number:	2FUQ-1	Test Date:	2024/1/18-2024/1/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.6-24.9	Relative Humidity: (%)	46-49	ATM Pressure: (kPa)	101.5-101.8
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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
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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 Band 2	1852.4	1880	1907.6

Test Data:**RF Output Power**

Test Mode	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	17.47	17.42	17.2	19.27	33
HSDPA Subtest 1	17.43	17.46	17.14	19.26	33
HSDPA Subtest 2	17.39	17.4	17.08	19.2	33
HSDPA Subtest 3	17.39	17.36	17.04	19.19	33
HSDPA Subtest 4	17.29	17.29	17.04	19.09	33
HSUPA Subtest 1	17.45	17.48	17.18	19.28	33
HSUPA Subtest 2	17.38	17.39	17.15	19.19	33
HSUPA Subtest 3	17.41	17.33	17.08	19.21	33
HSUPA Subtest 4	17.35	17.45	17.07	19.25	33
HSUPA Subtest 5	17.34	17.37	17.09	19.17	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	3.17	3.01	3.01	13
HSDPA	3.49	3.69	4.23	13
HSUPA	3.85	3.78	3.75	13

Result: **Pass****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	4.151	4.167	4.167	4.699	4.686	4.718
HSDPA	4.151	4.151	4.167	4.689	4.689	4.702
HSUPA	4.151	4.151	4.167	4.718	4.718	4.699

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

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

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	3.85	1850.292	1850.000	1909.705	1910.000
	-20	3.85	1850.299	1850.000	1909.689	1910.000
	-10	3.85	1850.301	1850.000	1909.710	1910.000
	0	3.85	1850.294	1850.000	1909.684	1910.000
	10	3.85	1850.314	1850.000	1909.699	1910.000
	20	3.85	1850.317	1850.000	1909.683	1910.000
	30	3.85	1850.309	1850.000	1909.691	1910.000
	40	3.85	1850.297	1850.000	1909.690	1910.000
	50	3.85	1850.300	1850.000	1909.697	1910.000
Frequency Stability vs. Voltage	20	3.6	1850.296	1850.000	1909.689	1910.000
	20	4.4	1850.295	1850.000	1909.685	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):

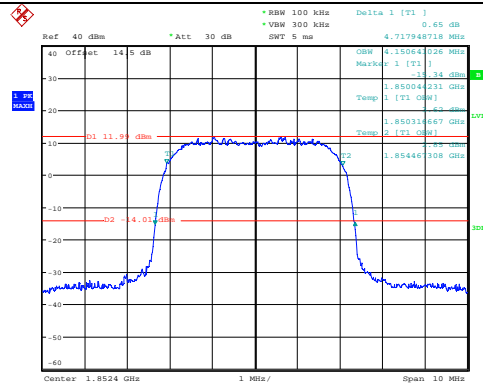
Occupied Bandwidth		
Channel	WCDMA R99	HSDPA
Lowest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:42:15</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:05:42</p>
Middle	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:44:15</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:08:42</p>
Highest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:45:58</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:11:10</p>

Occupied Bandwidth

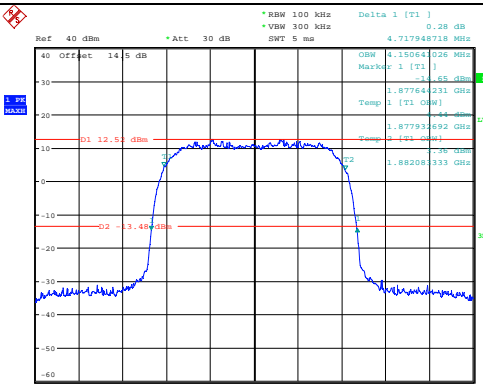
Channel

HSUPA

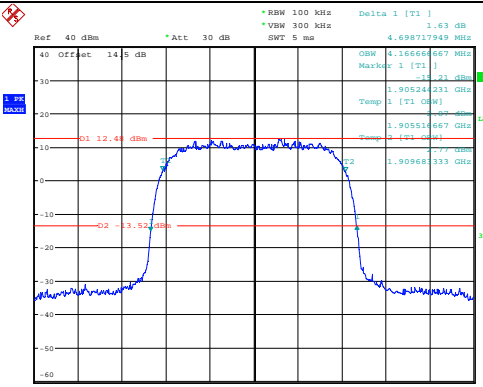
Lowest



Middle



Highest



Spurious Emissions at Antenna Terminal

Channel	WCDMA R99	
Lowest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VSW 100 kHz SWT 100 ms Marker 1 [T1] -25.18 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:44:07</p>	<p>Ref 40 dBm *Att 35 dB *RBW 3 MHz *VSW 3 MHz SWT 110 ms Marker 1 [T1] -23.18 dBm</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:44:41</p>
Middle	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VSW 100 kHz SWT 100 ms Marker 1 [T1] -35.22 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:45:54</p>	<p>Ref 40 dBm *Att 35 dB *RBW 3 MHz *VSW 3 MHz SWT 110 ms Marker 1 [T1] -23.17 dBm</p> <p>Start 1 GHz 1.9 GHz/ Stop 20 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:46:20</p>
Highest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz SWT 100 ms Marker 1 [T1] -35.22 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:47:03</p>	<p>Ref 40 dBm *Att 35 dB *RBW 3 MHz *VSW 3 MHz SWT 110 ms Marker 1 [T1] -23.06 dBm</p> <p>Center 10.5 GHz 1.9 GHz/ Span 19 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:48:20</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
R99	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:42:49</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:46:26</p>
HSUPA	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:18:55</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:22:05</p>
HSDPA	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:06:07</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:11:31</p>

4.4 Antenna Port Test Data and Results for WCDMA Band 4

Serial Number:	2FUQ-1	Test Date:	2024/1/18-2024/1/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.6-24.9	Relative Humidity: (%)	46-49	ATM Pressure: (kPa)	101.5-101.8
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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
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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 Band 4	1712.4	1732.6	1752.6

Test Data:**RF Output Power**

Test Mode	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	17.1	17.56	17.31	19.36	30
HSDPA Subtest 1	17.03	17.54	17.32	19.34	30
HSDPA Subtest 2	16.96	17.39	17.22	19.19	30
HSDPA Subtest 3	17.02	17.47	17.21	19.27	30
HSDPA Subtest 4	16.89	17.45	17.31	19.25	30
HSUPA Subtest 1	17.05	17.5	17.26	19.3	30
HSUPA Subtest 2	16.88	17.35	17.11	19.15	30
HSUPA Subtest 3	16.87	17.49	17.15	19.29	30
HSUPA Subtest 4	16.91	17.39	17.14	19.19	30
HSUPA Subtest 5	16.86	17.49	17.21	19.29	30

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

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	3.17	3.33	3.01	13
HSDPA	3.53	4.01	3.75	13
HSUPA	4.17	3.78	3.75	13

Result:	Pass
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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	4.151	4.151	4.151	4.696	4.686	4.692
HSDPA	4.151	4.151	4.151	4.696	4.692	4.702
HSUPA	4.151	4.151	4.151	4.692	4.692	4.702

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

Spurious Emissions at Antenna Terminal

Result:	Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.
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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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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	3.85	1710.311	1710.000	1754.690	1755.000
	-20	3.85	1710.290	1710.000	1754.683	1755.000
	-10	3.85	1710.307	1710.000	1754.670	1755.000
	0	3.85	1710.309	1710.000	1754.674	1755.000
	10	3.85	1710.308	1710.000	1754.671	1755.000
	20	3.85	1710.317	1710.000	1754.667	1755.000
	30	3.85	1710.293	1710.000	1754.678	1755.000
	40	3.85	1710.295	1710.000	1754.683	1755.000
Frequency Stability vs. Voltage	20	3.6	1710.292	1710.000	1754.692	1755.000
	20	4.4	1710.301	1710.000	1754.670	1755.000
					Result:	Pass

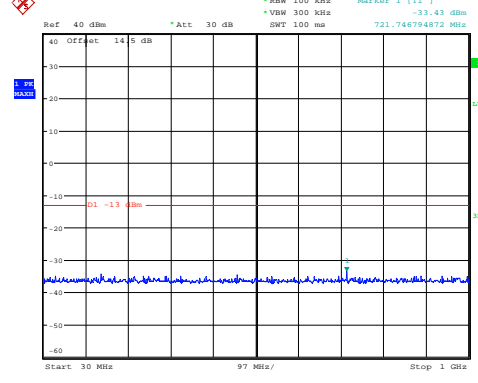
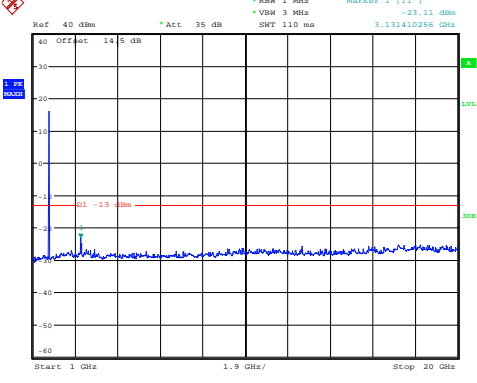
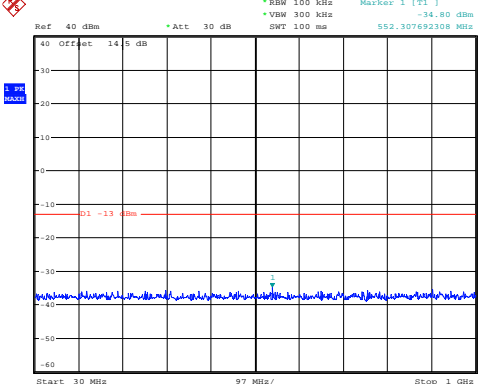
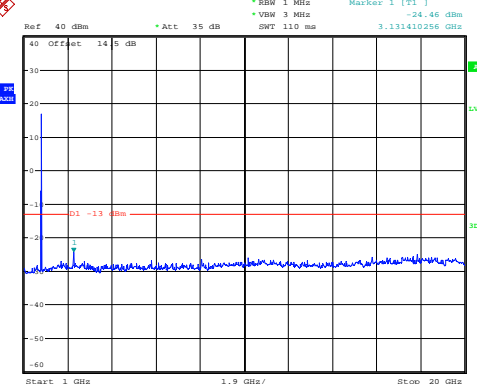
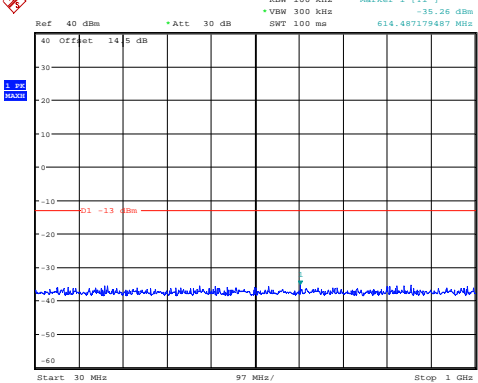
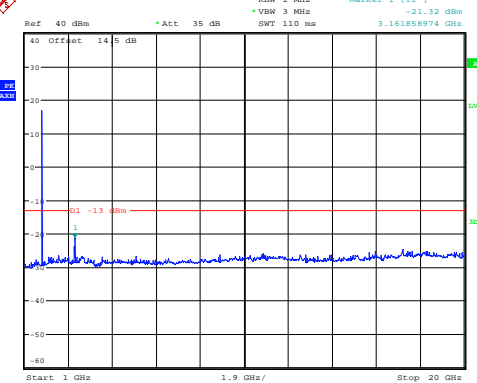
Test Plots (Note: The 14.5 dB is the Insertion loss of the RF cable and Power Splitter, which was offset into the Spectrum Analyzer):

Occupied Bandwidth		
Channel	WCDMA R99	HSDPA
Lowest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:48:45</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:13:13</p>
Middle	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:51:24</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:14:48</p>
Highest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:53:25</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:16:12</p>

Occupied Bandwidth

Channel	HSUPA
Lowest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:23:41</p>
Middle	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:25:24</p>
Highest	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:27:03</p>

Spurious Emissions at Antenna Terminal

Channel	WCDMA R99	
Lowest	 <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:37:58</p>	 <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:39:29</p>
Middle	 <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:40:03</p>	 <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:40:27</p>
Highest	 <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:41:25</p>	 <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 21:42:18</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
R99	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:49:31</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 22:56:07</p>
HSUPA	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:24:04</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:27:24</p>
HSDPA	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:13:38</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 23.JAN.2024 23:16:34</p>

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

Serial Number:	2FUQ-1	Test Date:	2024/1/18-2024/1/23
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	24.6-24.9	Relative Humidity: (%)	46-49	ATM Pressure: (kPa)	101.5-101.8
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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
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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 Band 5	826.4	836.6	846.6

Test Data:

RF Output Power					
Test Mode	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	22.79	22.82	22.81	21.17	38.45
HSDPA Subtest 1	22.58	22.41	22.75	21.1	38.45
HSDPA Subtest 2	22.54	22.21	22.7	21.05	38.45
HSDPA Subtest 3	22.47	22.32	22.58	20.93	38.45
HSDPA Subtest 4	22.42	22.28	22.57	20.92	38.45
HSUPA Subtest 1	22.61	22.36	22.75	21.1	38.45
HSUPA Subtest 2	22.47	22.2	22.61	20.96	38.45
HSUPA Subtest 3	22.42	22.35	22.59	20.94	38.45
HSUPA Subtest 4	22.59	22.22	22.61	20.96	38.45
HSUPA Subtest 5	22.59	22.28	22.73	21.08	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	2.85	3.11	2.85	13
HSDPA	4.04	3.85	3.56	13
HSUPA	3.81	3.85	3.94	13

Result:	Pass
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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	4.151	4.167	4.151	4.712	4.708	4.692
HSDPA	4.151	4.167	4.151	4.712	4.696	4.712
HSUPA	4.151	4.167	4.151	4.712	4.712	4.712

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

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

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

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	3.85	29	0.035	2.5
	-20	3.85	23	0.027	2.5
	-10	3.85	35	0.042	2.5
	0	3.85	6	0.007	2.5
	10	3.85	3	0.004	2.5
	20	3.85	26	0.031	2.5
	30	3.85	8	0.010	2.5
	40	3.85	37	0.044	2.5
	50	3.85	51	0.061	2.5
Frequency Stability vs. Voltage	20	3.6	18	0.022	2.5
	20	4.4	18	0.022	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):

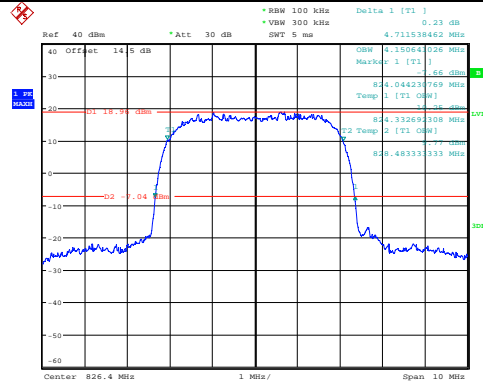
Occupied Bandwidth		
Channel	WCDMA R99	HSDPA
Lowest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 0.41 dB Offset 14.5 dB SWT 5 ms 4.71538462 MHz OSW 4.15064026 MHz Marker 1 [T1] 1.38 dB 844.24423769 MHz 1.58 dB Temp 1 [T1 OSW] 1.58 dB 844.33269309 MHz 1.70 dB T2 Temp 2 [T1 OSW] 1.70 dB 848.48333333 MHz 1.74 dB</p> <p>Center 826.4 MHz 1 MHz/ Span 10 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:46:59</p>	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 1.38 dB Offset 14.5 dB SWT 5 ms 4.71538462 MHz OSW 4.15064026 MHz Marker 1 [T1] 1.38 dB 844.24423769 MHz 1.58 dB Temp 1 [T1 OSW] 1.58 dB 844.33269309 MHz 1.70 dB T2 Temp 2 [T1 OSW] 1.70 dB 848.48333333 MHz 1.74 dB</p> <p>Center 826.4 MHz 1 MHz/ Span 10 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:43:35</p>
Middle	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 0.82 dB Offset 14.5 dB SWT 5 ms 4.70833333 MHz OSW 4.18666867 MHz Marker 1 [T1] 1.21 dB 844.24423769 MHz 1.58 dB Temp 1 [T1 OSW] 1.58 dB 844.51666867 MHz 1.68 dB T2 Temp 2 [T1 OSW] 1.68 dB 848.68333333 MHz 1.74 dB</p> <p>Center 836.6 MHz 1 MHz/ Span 10 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:48:22</p>	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 0.89 dB Offset 14.5 dB SWT 5 ms 4.695512821 MHz OSW 4.18666867 MHz Marker 1 [T1] 1.21 dB 844.24423769 MHz 1.58 dB Temp 1 [T1 OSW] 1.58 dB 844.51666867 MHz 1.68 dB T2 Temp 2 [T1 OSW] 1.68 dB 848.68333333 MHz 1.74 dB</p> <p>Center 836.6 MHz 1 MHz/ Span 10 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:41:54</p>
Highest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 0.23 dB Offset 14.5 dB SWT 5 ms 4.692307692 MHz OSW 4.15064026 MHz Marker 1 [T1] 1.38 dB 844.24423769 MHz 1.58 dB Temp 1 [T1 OSW] 1.58 dB 844.51666867 MHz 1.68 dB T2 Temp 2 [T1 OSW] 1.68 dB 848.667307692 MHz 1.74 dB</p> <p>Center 846.6 MHz 1 MHz/ Span 10 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:50:10</p>	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VBW 300 kHz Delta 1 [T1] 0.86 dB Offset 14.5 dB SWT 5 ms 4.71538462 MHz OSW 4.15064026 MHz Marker 1 [T1] 1.38 dB 844.24423769 MHz 1.58 dB Temp 1 [T1 OSW] 1.58 dB 844.51666867 MHz 1.68 dB T2 Temp 2 [T1 OSW] 1.68 dB 848.667307692 MHz 1.74 dB</p> <p>Center 846.6 MHz 1 MHz/ Span 10 MHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:40:11</p>

Occupied Bandwidth

Channel

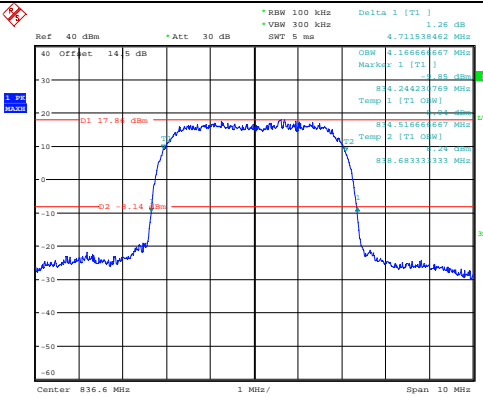
HSUPA

Lowest



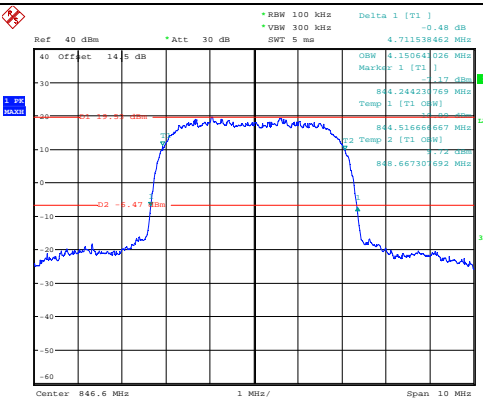
ProjectNo.:CR231278723-RF Tester:Arthur Su
 Date: 18.JAN.2024 21:33:42

Middle



ProjectNo.:CR231278723-RF Tester:Arthur Su
 Date: 18.JAN.2024 21:35:35

Highest



ProjectNo.:CR231278723-RF Tester:Arthur Su
 Date: 18.JAN.2024 21:37:40

Spurious Emissions at Antenna Terminal

Channel	WCDMA R99	
Lowest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz SWT 100 ms Marker 1 [T1] -35.23 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:12:55</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz *VSW 3 MHz SWT 55 ms Marker 1 [T1] -20.43 dBm</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:13:30</p>
Middle	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz SWT 100 ms Marker 1 [T1] -35.47 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:14:35</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz *VSW 3 MHz SWT 55 ms Marker 1 [T1] -19.94 dBm</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:14:54</p>
Highest	<p>Ref 40 dBm *Att 30 dB *RBW 100 kHz *VSW 300 kHz SWT 100 ms Marker 1 [T1] -34.51 dBm</p> <p>Start 30 MHz 97 MHz/ Stop 1 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:15:38</p>	<p>Ref 40 dBm *Att 30 dB *RBW 1 MHz *VSW 3 MHz SWT 55 ms Marker 1 [T1] -19.19 dBm</p> <p>Start 1 GHz 900 MHz/ Stop 10 GHz</p> <p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:16:00</p>

Out of band emission, Band Edge

Mode	Lowest	Highest
R99	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:45:30</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:50:35</p>
HSUPA	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:34:02</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:38:05</p>
HSDPA	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:44:04</p>	<p>ProjectNo.:CR231278723-RF Tester:Arthur Su Date: 18.JAN.2024 21:40:30</p>

4.6 Antenna Port Test Data and Results for LTE Band 2

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	4.60	4.76	4.76	13
	RB100#0	4.63	4.44	4.67	
16QAM	RB1#0	5.42	5.2	5.25	
	RB100#0	5.85	5.30	5.49	

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	3.85	1851.050	1850.000	1909.024	1910.000
	-20	3.85	1851.029	1850.000	1909.011	1910.000
	-10	3.85	1851.034	1850.000	1909.025	1910.000
	0	3.85	1851.036	1850.000	1909.016	1910.000
	10	3.85	1851.041	1850.000	1909.009	1910.000
	20	3.85	1851.050	1850.000	1909.000	1910.000
	30	3.85	1851.039	1850.000	1909.024	1910.000
	40	3.85	1851.041	1850.000	1909.008	1910.000
	50	3.85	1851.031	1850.000	1909.012	1910.000
Frequency Stability vs. Voltage	20	3.27	1851.025	1850.000	1909.008	1910.000
	20	4.43	1851.028	1850.000	1909.004	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	3.85	1851.048	1850.000	1909.012	1910.000
	-20	3.85	1851.045	1850.000	1909.024	1910.000
	-10	3.85	1851.043	1850.000	1909.008	1910.000
	0	3.85	1851.037	1850.000	1909.006	1910.000
	10	3.85	1851.029	1850.000	1909.008	1910.000
	20	3.85	1851.050	1850.000	1909.000	1910.000
	30	3.85	1851.025	1850.000	1909.010	1910.000
	40	3.85	1851.033	1850.000	1909.004	1910.000
	50	3.85	1851.033	1850.000	1909.010	1910.000
Frequency Stability vs. Voltage	20	3.27	1851.031	1850.000	1909.027	1910.000
	20	4.43	1851.033	1850.000	1909.017	1910.000
Result:					Pass	

Note: Except above test items, others please refer to Appendix-00E.

4.7 Antenna Port Test Data and Results for LTE Band 4

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* *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

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	4.32	4.57	4.37	13
	RB100#0	4.39	4.30	4.09	
16QAM	RB1#0	5.40	5.1	5.56	
	RB100#0	5.97	5.70	5.95	

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	3.85	1711.100	1710.00	1753.975	1755
	-20	3.85	1711.096	1710.00	1753.977	1755
	-10	3.85	1711.086	1710.00	1753.956	1755
	0	3.85	1711.098	1710.00	1753.957	1755
	10	3.85	1711.078	1710.00	1753.958	1755
	20	3.85	1711.100	1710.00	1753.950	1755
	30	3.85	1711.076	1710.00	1753.977	1755
	40	3.85	1711.076	1710.00	1753.961	1755
	50	3.85	1711.088	1710.00	1753.951	1755
Frequency Stability vs. Voltage	20	3.27	1711.073	1710.00	1753.964	1755
	20	4.43	1711.075	1710.00	1753.955	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	3.85	1711.099	1710.00	1753.972	1755
	-20	3.85	1711.094	1710.00	1753.976	1755
	-10	3.85	1711.086	1710.00	1753.958	1755
	0	3.85	1711.095	1710.00	1753.967	1755
	10	3.85	1711.093	1710.00	1753.952	1755
	20	3.85	1711.100	1710.00	1753.950	1755
	30	3.85	1711.081	1710.00	1753.962	1755
	40	3.85	1711.077	1710.00	1753.952	1755
	50	3.85	1711.092	1710.00	1753.967	1755
Frequency Stability vs. Voltage	20	3.27	1711.084	1710.00	1753.968	1755
	20	4.43	1711.088	1710.00	1753.965	1755
					Result:	Pass

Note: Except above test items, others please refer to Appendix-00E.

4.8 Antenna Port Test Data and Results for LTE Band 5

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* **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

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	4.90	4.71	4.68	13
	RB100#0	4.41	4.76	4.21	
16QAM	RB1#0	5.37	5.7	5.88	
	RB100#0	5.76	5.69	5.32	

Frequency Stability					
Test Modulation:	10 MHz QPSK		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (VDC)	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	39	0.047	2.5
	-20	3.85	7	0.008	2.5
	-10	3.85	31	0.037	2.5
	0	3.85	8	0.010	2.5
	10	3.85	1	0.001	2.5
	20	3.85	15	0.018	2.5
	30	3.85	22	0.026	2.5
	40	3.85	1	0.001	2.5
Frequency Stability vs. Voltage	20	3.2725	26	0.031	2.5
	20	4.4275	6	0.007	2.5
				Result:	Pass

Test Modulation:	10 MHz 16QAM		Test Channel:	836.5	MHz
Test Item	Temperature (°C)	Voltage (VDC)	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	3.85	13	0.016	2.5
	-20	3.85	43	0.051	2.5
	-10	3.85	32	0.038	2.5
	0	3.85	16	0.019	2.5
	10	3.85	6	0.007	2.5
	20	3.85	32	0.038	2.5
	30	3.85	20	0.024	2.5
	40	3.85	27	0.032	2.5
Frequency Stability vs. Voltage	20	3.2725	25	0.030	2.5
	20	4.4275	12	0.014	2.5
				Result:	Pass

Note: Except above test items, others please refer to Appendix-00E.

4.9 Antenna Port Test Data and Results for LTE Band 12

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	4.12	4.69	4.36	13
	RB100#0	4.18	4.67	4.78	
16QAM	RB1#0	5.10	5.1	5.08	
	RB100#0	5.89	5.07	5.15	

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	3.85	699.557	699.00	715.475	716.00
	-20	3.85	699.547	699.00	715.476	716.00
	-10	3.85	699.564	699.00	715.492	716.00
	0	3.85	699.550	699.00	715.485	716.00
	10	3.85	699.552	699.00	715.483	716.00
	20	3.85	699.575	699.00	715.475	716.00
	30	3.85	699.556	699.00	715.503	716.00
	40	3.85	699.559	699.00	715.491	716.00
	50	3.85	699.564	699.00	715.477	716.00
Frequency Stability vs. Voltage	20	3.27	699.549	699.00	715.485	716.00
	20	4.43	699.569	699.00	715.501	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	3.85	699.551	699.00	715.489	716.00
	-20	3.85	699.548	699.00	715.491	716.00
	-10	3.85	699.554	699.00	715.492	716.00
	0	3.85	699.551	699.00	715.482	716.00
	10	3.85	699.570	699.00	715.485	716.00
	20	3.85	699.575	699.00	715.475	716.00
	30	3.85	699.564	699.00	715.476	716.00
	40	3.85	699.568	699.00	715.492	716.00
	50	3.85	699.549	699.00	715.490	716.00
Frequency Stability vs. Voltage	20	3.27	699.566	699.00	715.478	716.00
	20	4.43	699.569	699.00	715.485	716.00
					Result:	Pass

Note: Except above test items, others please refer to Appendix-00E.

4.10 Antenna Port Test Data and Results for LTE Band 17

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXXN-6010D	21R6010D0912386	N/A	N/A

* **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

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	4.61	4.07	4.52	13
	RB100#0	4.60	4.34	4.27	
16QAM	RB1#0	5.26	5.3	5.61	
	RB100#0	5.54	5.34	5.31	

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	3.85	704.478	704.00	715.491	716.00
	-20	3.85	704.482	704.00	715.495	716.00
	-10	3.85	704.474	704.00	715.485	716.00
	0	3.85	704.475	704.00	715.504	716.00
	10	3.85	704.483	704.00	715.487	716.00
	20	3.85	704.500	704.00	715.475	716.00
	30	3.85	704.495	704.00	715.491	716.00
	40	3.85	704.479	704.00	715.492	716.00
	50	3.85	704.493	704.00	715.479	716.00
Frequency Stability vs. Voltage	20	3.27	704.477	704.00	715.486	716.00
	20	4.43	704.483	704.00	715.488	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	3.85	704.495	704.00	715.499	716.00
	-20	3.85	704.500	704.00	715.479	716.00
	-10	3.85	704.479	704.00	715.491	716.00
	0	3.85	704.484	704.00	715.486	716.00
	10	3.85	704.481	704.00	715.503	716.00
	20	3.85	704.500	704.00	715.475	716.00
	30	3.85	704.487	704.00	715.490	716.00
	40	3.85	704.480	704.00	715.484	716.00
	50	3.85	704.490	704.00	715.504	716.00
Frequency Stability vs. Voltage	20	3.27	704.487	704.00	715.479	716.00
	20	4.43	704.492	704.00	715.482	716.00
					Result:	Pass

Note: Except above test items, others please refer to Appendix-00E.

4.11 Antenna Port Test Data and Results for LTE Band 41

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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	2557.5	2605	2652.5
10MHz	2560	2605	2650
15MHz	2562.5	2605	2647.5
20MHz	2565	2605	2645

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	7.90	7.45	7.04	13
	RB100#0	7.97	7.66	7.35	
16QAM	RB1#0	8.53	8.8	8.47	
	RB100#0	7.94	8.33	8.39	

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	3.85	2556.037	2555.00	2653.974	2655
	-20	3.85	2556.023	2555.00	2653.961	2655
	-10	3.85	2556.045	2555.00	2653.953	2655
	0	3.85	2556.021	2555.00	2653.950	2655
	10	3.85	2556.043	2555.00	2653.960	2655
	20	3.85	2556.050	2555.00	2653.950	2655
	30	3.85	2556.029	2555.00	2653.955	2655
	40	3.85	2556.046	2555.00	2653.954	2655
	50	3.85	2556.030	2555.00	2653.968	2655
Frequency Stability vs. Voltage	20	3.27	2556.044	2555.00	2653.966	2655
	20	4.43	2556.028	2555.00	2653.976	2655
					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	3.85	2556.033	2555.00	2653.968	2655
	-20	3.85	2556.043	2555.00	2653.958	2655
	-10	3.85	2556.035	2555.00	2653.968	2655
	0	3.85	2556.041	2555.00	2653.972	2655
	10	3.85	2556.022	2555.00	2653.958	2655
	20	3.85	2556.050	2555.00	2653.950	2655
	30	3.85	2556.040	2555.00	2653.974	2655
	40	3.85	2556.029	2555.00	2653.955	2655
	50	3.85	2556.050	2555.00	2653.962	2655
Frequency Stability vs. Voltage	20	3.27	2556.026	2555.00	2653.962	2655
	20	4.43	2556.034	2555.00	2653.974	2655
					Result:	Pass

Note: Except above test items, others please refer to Appendix-00E.

4.12 Antenna Port Test Data and Results for LTE Band 66

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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	1745	1779.3
3MHz	1711.5	1745	1778.5
5MHz	1712.5	1745	1777.5
10MHz	1715	1745	1775
15MHz	1717.5	1745	1772.5
20MHz	1720	1745	1770

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	4.20	4.24	4.94	13
	RB100#0	4.65	5.00	4.32	
16QAM	RB1#0	5.75	5.9	5.66	
	RB100#0	5.10	5.92	5.53	

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	3.85	1711.030	1710.00	1779.061	1780
	-20	3.85	1711.027	1710.00	1779.076	1780
	-10	3.85	1711.029	1710.00	1779.073	1780
	0	3.85	1711.028	1710.00	1779.070	1780
	10	3.85	1711.039	1710.00	1779.071	1780
	20	3.85	1711.050	1710.00	1779.050	1780
	30	3.85	1711.043	1710.00	1779.062	1780
	40	3.85	1711.022	1710.00	1779.070	1780
	50	3.85	1711.049	1710.00	1779.064	1780
Frequency Stability vs. Voltage	20	3.27	1711.036	1710.00	1779.061	1780
	20	4.43	1711.046	1710.00	1779.060	1780
					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	3.85	1711.023	1710.00	1779.055	1780
	-20	3.85	1711.039	1710.00	1779.052	1780
	-10	3.85	1711.047	1710.00	1779.068	1780
	0	3.85	1711.047	1710.00	1779.051	1780
	10	3.85	1711.049	1710.00	1779.070	1780
	20	3.85	1711.050	1710.00	1779.050	1780
	30	3.85	1711.022	1710.00	1779.058	1780
	40	3.85	1711.044	1710.00	1779.070	1780
	50	3.85	1711.042	1710.00	1779.069	1780
Frequency Stability vs. Voltage	20	3.27	1711.047	1710.00	1779.072	1780
	20	4.43	1711.022	1710.00	1779.058	1780
					Result:	Pass

Note: Except above test items, others please refer to Appendix-00E.

4.13 Antenna Port Test Data and Results for LTE Band 71

Serial Number:	2FUQ-1	Test Date:	2024/1/9-2024/1/31
Test Site:	RF	Test Mode:	Transmitting
Tester:	Arthur Su	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	23.5-24.5	Relative Humidity: (%)	52-56	ATM Pressure: (kPa)	101.3-101.5
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101943	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	100147	2023/3/31	2024/3/30
R&S	Spectrum Analyzer	FSU26	200256	2023/3/31	2024/3/30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
eastsheep	Coaxial Attenuator	2W-SMA-JK-18G	21060301	Each time	N/A
Unknown	Coaxial tee connector	Unknown	2204004	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	143458	2023/3/31	2024/3/30
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2023/3/31	2024/3/30
UNI-T	Multimeter	UT39A+	C210582554	2023/9/28	2024/9/27
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	N/A	N/A

* 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	665.5	680.5	695.5
10MHz	668	680.5	693
15MHz	670.5	680.5	690.5
20MHz	673	680.5	688

Peak-to-average Ratio (PAR)					
Modulation	RB	Low channel (dB)	Middle channel (dB)	High channel (dB)	Limit (dB)
QPSK	RB1#0	4.73	4.52	4.83	13
	RB100#0	4.75	4.11	4.85	
16QAM	RB1#0	5.65	5.2	5.78	
	RB100#0	5.28	5.35	5.10	

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	3.85	664.076	663.00	697.014	698.00
	-20	3.85	664.091	663.00	697.013	698.00
	-10	3.85	664.088	663.00	697.015	698.00
	0	3.85	664.092	663.00	697.024	698.00
	10	3.85	664.081	663.00	697.011	698.00
	20	3.85	664.100	663.00	697.000	698.00
	30	3.85	664.084	663.00	697.001	698.00
	40	3.85	664.096	663.00	697.001	698.00
	50	3.85	664.071	663.00	697.013	698.00
Frequency Stability vs. Voltage	20	3.27	664.092	663.00	697.015	698.00
	20	4.43	664.083	663.00	697.000	698.00
					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	3.85	664.088	663.00	696.966	698.00
	-20	3.85	664.074	663.00	696.965	698.00
	-10	3.85	664.072	663.00	696.969	698.00
	0	3.85	664.085	663.00	696.957	698.00
	10	3.85	664.099	663.00	696.972	698.00
	20	3.85	664.100	663.00	696.950	698.00
	30	3.85	664.083	663.00	696.975	698.00
	40	3.85	664.076	663.00	696.966	698.00
	50	3.85	664.076	663.00	696.977	698.00
Frequency Stability vs. Voltage	20	3.27	664.099	663.00	696.969	698.00
	20	4.43	664.090	663.00	696.961	698.00
					Result:	Pass

Note: Except above test items, others please refer to Appendix-00E.

4.14 Radiated Spurious Emissions

Serial Number:	2FUQ-2	Test Date:	2024/1/3~2024/1/6
Test Site:	966-2,966-1	Test Mode:	Transmitting
Tester:	Carl Xue, Mack Huang	Test Result:	Pass

Environmental Conditions:

Temperature: (°C)	25~25.8	Relative Humidity: (%)	41~62	ATM Pressure: (kPa)	101.4
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Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2023/12/1	2026/11/30
R&S	EMI Test Receiver	ESR3	102724	2023/3/31	2024/3/30
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2023/7/16	2024/7/15
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2023/7/16	2024/7/15
Sonoma	Amplifier	310N	186165	2023/7/16	2024/7/15
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2023/7/16	2024/7/15
AH	Double Ridge Guide Horn Antenna	SAS-571	1394	2023/2/22	2026/2/21
R&S	Spectrum Analyzer	FSV40	101591	2023/3/31	2024/3/30
MICRO-COAX	Coaxial Cable	UFA210A-1-1200-70U300	217423-008	2023/8/6	2024/8/5
MICRO-COAX	Coaxial Cable	UFA210A-1-2362-300300	235780-001	2023/8/6	2024/8/5
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2023/11/8	2024/11/7
AH	Double Ridge Guide Horn Antenna	SAS-571	1396	2021/10/18	2024/10/17
MICRO-COAX	Coaxial Cable	UFA210B-0-0720-300300	99G1448	2023/7/16	2024/7/15
Agilent	Signal Generator	E8247C	MY43321352	2023/11/17	2024/11/16
PASTERNAK	Horn Antenna	PE9852/2F-20	112002	2021/2/5	2024/2/4
PASTERNAK	Horn Antenna	PE9852/2F-20	112001	2021/2/5	2024/2/4
Quinstar	Preamplifier	QLW-18405536-JO	15964001005	2023/9/15	2024/9/14
PASTERNAK	Horn Antenna	PE9850/2F-20	072001	2021/2/5	2024/2/4
PASTERNAK	Horn Antenna	PE9850/2F-20	072002	2021/2/5	2024/2/4
MICRO-COAX	Coaxial Cable	UFB142A-1-2362-200200	235772-001	2023/8/6	2024/8/5

* **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 Data:

Please refer to the below table.

After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

Cellular Band (30MHz-10GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:			824.2	MHz				
726.80	H	21.16	-51.62	0.00	0.52	-52.14	-13.00	39.14
684.78	V	20.93	-49.27	0.00	0.53	-49.80	-13.00	36.80
1648.400	H	35.78	-68.55	8.68	0.80	-60.67	-13.00	47.67
1648.400	V	36.01	-68.40	8.68	0.80	-60.52	-13.00	47.52
2472.600	H	37.44	-63.34	9.38	1.00	-54.96	-13.00	41.96
2472.600	V	36.68	-64.05	9.38	1.00	-55.67	-13.00	42.67
3296.800	H	42.10	-54.58	10.32	1.15	-45.41	-13.00	32.41
3296.800	V	40.23	-56.21	10.32	1.15	-47.04	-13.00	34.04
Frequency:			836.6	MHz				
672.89	H	20.94	-52.53	0.00	0.50	-53.03	-13.00	40.03
709.20	V	20.81	-48.91	0.00	0.52	-49.43	-13.00	36.43
1673.200	H	36.14	-68.17	8.71	0.85	-60.31	-13.00	47.31
1673.200	V	35.63	-68.78	8.71	0.85	-60.92	-13.00	47.92
2509.800	H	37.88	-62.73	9.42	1.01	-54.32	-13.00	41.32
2509.800	V	38.49	-62.13	9.42	1.01	-53.72	-13.00	40.72
3346.400	H	41.36	-55.81	10.34	1.16	-46.63	-13.00	33.63
3346.400	V	40.08	-56.95	10.34	1.16	-47.77	-13.00	34.77
Frequency:			848.8	MHz				
694.60	H	20.79	-52.56	0.00	0.55	-53.11	-13.00	40.11
668.20	V	20.86	-49.64	0.00	0.50	-50.14	-13.00	37.14
1697.600	H	35.64	-68.65	8.74	0.90	-60.81	-13.00	47.81
1697.600	V	35.77	-68.65	8.74	0.90	-60.81	-13.00	47.81
2546.400	H	38.14	-62.19	9.47	1.01	-53.73	-13.00	40.73
2546.400	V	39.20	-61.08	9.47	1.01	-52.62	-13.00	39.62
3395.200	H	42.16	-55.53	10.36	1.19	-46.36	-13.00	33.36
3395.200	V	42.01	-55.65	10.36	1.19	-46.48	-13.00	33.48

PCS Band (30MHz-20GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM 1900 Frequency:1850.2MHz								
154.81	H	52.39	-59.39	0.00	0.23	-59.62	-13.00	46.62
158.66	V	45.81	-62.52	0.00	0.23	-62.75	-13.00	49.75
3700.400	H	40.12	-57.20	10.60	1.25	-47.85	-13.00	34.85
3700.400	V	38.45	-58.85	10.60	1.25	-49.50	-13.00	36.50
5550.600	H	35.11	-58.15	11.44	1.49	-48.20	-13.00	35.20
5550.600	V	35.26	-57.84	11.44	1.49	-47.89	-13.00	34.89
GSM 1900 Frequency:1880MHz								
158.51	H	51.95	-59.70	0.00	0.23	-59.93	-13.00	46.93
156.45	V	45.53	-62.76	0.00	0.23	-62.99	-13.00	49.99
3760.000	H	42.03	-54.38	10.66	1.24	-44.96	-13.00	31.96
3760.000	V	40.25	-56.04	10.66	1.24	-46.62	-13.00	33.62
5640.000	H	35.69	-57.76	11.33	1.54	-47.97	-13.00	34.97
5640.000	V	36.07	-57.26	11.33	1.54	-47.47	-13.00	34.47
GSM 1900 Frequency:1909.8MHz								
155.90	H	52.71	-59.03	0.00	0.23	-59.26	-13.00	46.26
158.10	V	45.94	-62.38	0.00	0.23	-62.61	-13.00	49.61
3819.600	H	41.77	-54.09	10.72	1.29	-44.66	-13.00	31.66
3819.600	V	39.64	-56.08	10.72	1.29	-46.65	-13.00	33.65
5729.400	H	35.53	-57.95	11.22	1.59	-48.32	-13.00	35.32
5729.400	V	35.24	-58.12	11.22	1.59	-48.49	-13.00	35.49

WCDMA Band 2(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band II, Frequency:1852.4 MHz								
157.55	H	52.31	-59.38	0.00	0.23	-59.61	-13.00	46.61
157.01	V	45.36	-62.94	0.00	0.23	-63.17	-13.00	50.17
3704.800	H	44.08	-53.18	10.60	1.25	-43.83	-13.00	30.83
3704.800	V	44.42	-52.81	10.60	1.25	-43.46	-13.00	30.46
5557.200	H	35.46	-57.82	11.43	1.49	-47.88	-13.00	34.88
5557.200	V	36.01	-57.12	11.43	1.49	-47.18	-13.00	34.18
WCDMA Band II, Frequency:1880 MHz								
155.36	H	51.86	-59.90	0.00	0.23	-60.13	-13.00	47.13
159.77	V	45.78	-62.57	0.00	0.23	-62.80	-13.00	49.80
3760.000	H	42.81	-53.60	10.66	1.24	-44.18	-13.00	31.18
3760.000	V	42.85	-53.44	10.66	1.24	-44.02	-13.00	31.02
5640.000	H	35.39	-58.06	11.33	1.54	-48.27	-13.00	35.27
5640.000	V	36.47	-56.86	11.33	1.54	-47.07	-13.00	34.07
WCDMA Band II, Frequency:1907.6MHz								
156.64	H	52.01	-59.71	0.00	0.23	-59.94	-13.00	46.94
158.66	V	45.47	-62.86	0.00	0.23	-63.09	-13.00	50.09
3815.200	H	43.52	-52.33	10.72	1.29	-42.90	-13.00	29.90
3815.200	V	44.10	-51.59	10.72	1.29	-42.16	-13.00	29.16
5722.800	H	35.78	-57.71	11.23	1.58	-48.06	-13.00	35.06
5722.800	V	36.58	-56.77	11.23	1.58	-47.12	-13.00	34.12

WCDMA Band 4(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
Frequency:			1712.4	MHz				
154.82	H	52.22	-59.56	0.00	0.23	-59.79	-13.00	46.79
161.46	V	45.81	-62.64	0.00	0.24	-62.88	-13.00	49.88
3424.800	H	35.41	-62.36	10.37	1.17	-53.16	-13.00	40.16
3424.800	V	36.28	-61.46	10.37	1.17	-52.26	-13.00	39.26
5137.200	H	35.22	-58.40	11.28	1.46	-48.58	-13.00	35.58
5137.200	V	35.78	-57.72	11.28	1.46	-47.90	-13.00	34.90
Frequency:			1732.6	MHz				
156.45	H	51.92	-59.80	0.00	0.23	-60.03	-13.00	47.03
159.21	V	45.41	-62.93	0.00	0.23	-63.16	-13.00	50.16
3465.200	H	36.12	-61.69	10.39	1.15	-52.45	-13.00	39.45
3465.200	V	35.74	-62.03	10.39	1.15	-52.79	-13.00	39.79
5197.800	H	36.23	-57.90	11.32	1.44	-48.02	-13.00	35.02
5197.800	V	36.01	-57.97	11.32	1.44	-48.09	-13.00	35.09
Frequency:			1752.6	MHz				
159.22	H	52.58	-59.05	0.00	0.23	-59.28	-13.00	46.28
155.90	V	45.50	-62.78	0.00	0.23	-63.01	-13.00	50.01
3505.200	H	35.55	-62.28	10.41	1.18	-53.05	-13.00	40.05
3505.200	V	35.26	-62.51	10.41	1.18	-53.28	-13.00	40.28
5257.800	H	36.14	-57.59	11.35	1.47	-47.71	-13.00	34.71
5257.800	V	35.69	-57.82	11.35	1.47	-47.94	-13.00	34.94

WCDMA Band 5(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band 5 Frequency:826.4 MHz								
706.72	H	20.82	-52.36	0.00	0.54	-52.90	-13.00	39.90
714.18	V	20.88	-48.73	0.00	0.50	-49.23	-13.00	36.23
1652.800	H	36.01	-68.32	8.68	0.81	-60.45	-13.00	47.45
1652.800	V	35.46	-68.95	8.68	0.81	-61.08	-13.00	48.08
2479.200	H	40.23	-60.53	9.39	1.01	-52.15	-13.00	39.15
2479.200	V	37.14	-63.59	9.39	1.01	-55.21	-13.00	42.21
3305.600	H	42.99	-53.74	10.32	1.15	-44.57	-13.00	31.57
3305.600	V	40.65	-55.85	10.32	1.15	-46.68	-13.00	33.68
WCDMA Band 5 Frequency:836.6MHz								
692.02	H	21.07	-52.29	0.00	0.54	-52.83	-13.00	39.83
704.25	V	20.84	-48.99	0.00	0.55	-49.54	-13.00	36.54
1673.200	H	35.14	-69.17	8.71	0.85	-61.31	-13.00	48.31
1673.200	V	35.23	-69.18	8.71	0.85	-61.32	-13.00	48.32
2509.800	H	36.78	-63.83	9.42	1.01	-55.42	-13.00	42.42
2509.800	V	37.99	-62.63	9.42	1.01	-54.22	-13.00	41.22
3346.400	H	45.02	-52.15	10.34	1.16	-42.97	-13.00	29.97
3346.400	V	42.43	-54.60	10.34	1.16	-45.42	-13.00	32.42
WCDMA Band 5 Frequency:846.6MHz								
701.93	H	20.91	-52.37	0.00	0.55	-52.92	-13.00	39.92
694.45	V	20.76	-49.26	0.00	0.55	-49.81	-13.00	36.81
1693.200	H	35.46	-68.84	8.73	0.89	-61.00	-13.00	48.00
1693.200	V	36.01	-68.41	8.73	0.89	-60.57	-13.00	47.57
2539.800	H	37.41	-62.97	9.46	1.01	-54.52	-13.00	41.52
2539.800	V	36.88	-63.46	9.46	1.01	-55.01	-13.00	42.01
3386.400	H	43.55	-54.04	10.35	1.18	-44.87	-13.00	31.87
3386.400	V	40.06	-57.48	10.35	1.18	-48.31	-13.00	35.31

LTE Bands:

(Note: The test is performed in 1RB mode.)

(The Worst modulation and bandwidth were below)

LTE Band 2(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 1.4MHz, Frequency:1850.7 MHz								
154.52	H	52.86	-58.93	0.00	0.23	-59.16	-13.00	46.16
159.78	V	45.54	-62.81	0.00	0.23	-63.04	-13.00	50.04
3701.400	H	42.45	-54.86	10.60	1.25	-45.51	-13.00	32.51
3701.400	V	44.10	-53.19	10.60	1.25	-43.84	-13.00	30.84
5552.100	H	36.28	-56.99	11.44	1.49	-47.04	-13.00	34.04
5552.100	V	36.43	-56.67	11.44	1.49	-46.72	-13.00	33.72
QPSK, 1.4MHz, Frequency:1880 MHz								
159.27	H	52.81	-58.82	0.00	0.23	-59.05	-13.00	46.05
161.72	V	45.79	-62.68	0.00	0.24	-62.92	-13.00	49.92
3760.000	H	44.28	-52.13	10.66	1.24	-42.71	-13.00	29.71
3760.000	V	44.83	-51.46	10.66	1.24	-42.04	-13.00	29.04
5640.000	H	36.02	-57.43	11.33	1.54	-47.64	-13.00	34.64
5640.000	V	35.16	-58.17	11.33	1.54	-48.38	-13.00	35.38
QPSK, 1.4MHz, Frequency:1909.3 MHz								
165.52	H	52.75	-59.10	0.00	0.24	-59.34	-13.00	46.34
158.11	V	46.02	-62.30	0.00	0.23	-62.53	-13.00	49.53
3818.600	H	40.87	-54.99	10.72	1.29	-45.56	-13.00	32.56
3818.600	V	43.54	-52.17	10.72	1.29	-42.74	-13.00	29.74
5727.900	H	35.84	-57.64	11.23	1.59	-48.00	-13.00	35.00
5727.900	V	36.01	-57.35	11.23	1.59	-47.71	-13.00	34.71

LTE Band 4(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency: 1710.7 MHz								
154.32	H	52.42	-59.38	0.00	0.23	-59.61	-13.00	46.61
162.59	V	45.30	-63.24	0.00	0.24	-63.48	-13.00	50.48
3421.400	H	38.50	-59.26	10.37	1.17	-50.06	-13.00	37.06
3421.400	V	37.82	-59.91	10.37	1.17	-50.71	-13.00	37.71
5132.100	H	37.46	-56.11	11.28	1.47	-46.30	-13.00	33.30
5132.100	V	35.44	-58.02	11.28	1.47	-48.21	-13.00	35.21
1.4MHz QPSK, Frequency: 1732.5 MHz								
156.64	H	52.83	-58.89	0.00	0.23	-59.12	-13.00	46.12
158.66	V	45.71	-62.62	0.00	0.23	-62.85	-13.00	49.85
3465.000	H	39.01	-58.80	10.39	1.15	-49.56	-13.00	36.56
3465.000	V	36.44	-61.33	10.39	1.15	-52.09	-13.00	39.09
5197.500	H	37.15	-56.98	11.32	1.44	-47.10	-13.00	34.10
5197.500	V	35.62	-58.36	11.32	1.44	-48.48	-13.00	35.48
1.4MHz QPSK, Frequency: 1754.3 MHz								
158.15	H	52.21	-59.45	0.00	0.23	-59.68	-13.00	46.68
154.81	V	45.40	-62.86	0.00	0.23	-63.09	-13.00	50.09
3508.600	H	36.45	-61.37	10.41	1.19	-52.15	-13.00	39.15
3508.600	V	37.88	-59.88	10.41	1.19	-50.66	-13.00	37.66
5262.900	H	35.49	-58.21	11.36	1.47	-48.32	-13.00	35.32
5262.900	V	36.03	-57.44	11.36	1.47	-47.55	-13.00	34.55

LTE Band 5(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 1.4MHz, Frequency: 824.7 MHz								
706.88	H	20.79	-52.39	0.00	0.54	-52.93	-13.00	39.93
721.72	V	20.83	-48.62	0.00	0.50	-49.12	-13.00	36.12
1649.400	H	35.44	-68.89	8.68	0.80	-61.01	-13.00	48.01
1649.400	V	34.88	-69.53	8.68	0.80	-61.65	-13.00	48.65
2474.100	H	35.67	-65.11	9.38	1.00	-56.73	-13.00	43.73
2474.100	V	35.04	-65.69	9.38	1.00	-57.31	-13.00	44.31
3298.800	H	46.38	-50.30	10.32	1.15	-41.13	-13.00	28.13
3298.800	V	43.72	-52.72	10.32	1.15	-43.55	-13.00	30.55
QPSK, 1.4MHz, Frequency: 836.5 MHz								
673.05	H	20.80	-52.67	0.00	0.50	-53.17	-13.00	40.17
687.18	V	21.14	-49.01	0.00	0.53	-49.54	-13.00	36.54
1673.000	H	36.01	-68.30	8.71	0.85	-60.44	-13.00	47.44
1673.000	V	35.44	-68.97	8.71	0.85	-61.11	-13.00	48.11
2509.500	H	35.22	-65.39	9.42	1.01	-56.98	-13.00	43.98
2509.500	V	35.23	-65.39	9.42	1.01	-56.98	-13.00	43.98
3346.000	H	48.83	-48.33	10.34	1.16	-39.15	-13.00	26.15
3346.000	V	43.86	-53.16	10.34	1.16	-43.98	-13.00	30.98
QPSK, 1.4MHz, Frequency: 848.3 MHz								
595.38	H	20.92	-53.03	0.00	0.51	-53.54	-13.00	40.54
633.95	V	20.95	-50.17	0.00	0.51	-50.68	-13.00	37.68
1696.600	H	36.11	-68.18	8.74	0.89	-60.33	-13.00	47.33
1696.600	V	35.22	-69.20	8.74	0.89	-61.35	-13.00	48.35
2544.900	H	35.74	-64.60	9.47	1.01	-56.14	-13.00	43.14
2544.900	V	35.31	-64.99	9.47	1.01	-56.53	-13.00	43.53
3393.200	H	53.03	-44.64	10.36	1.19	-35.47	-13.00	22.47
3393.200	V	47.84	-49.79	10.36	1.19	-40.62	-13.00	27.62

LTE Band 12(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 1.4MHz, Frequency: 699.7 MHz								
524.84	H	20.61	-54.73	0.00	0.42	-55.15	-13.00	42.15
545.46	V	20.68	-50.97	0.00	0.47	-51.44	-13.00	38.44
1399.400	H	36.25	-67.45	8.22	0.71	-59.94	-13.00	46.94
1399.400	V	35.17	-68.58	8.22	0.71	-61.07	-13.00	48.07
2099.100	H	39.59	-62.29	9.16	0.91	-54.04	-13.00	41.04
2099.100	V	42.06	-59.77	9.16	0.91	-51.52	-13.00	38.52
2798.800	H	35.22	-64.71	9.88	1.04	-55.87	-13.00	42.87
2798.800	V	35.03	-64.77	9.88	1.04	-55.93	-13.00	42.93
QPSK, 1.4MHz, Frequency:707.5 MHz								
373.33	H	20.70	-57.58	0.00	0.37	-57.95	-13.00	44.95
440.53	V	20.64	-53.30	0.00	0.42	-53.72	-13.00	40.72
1415.000	H	35.07	-68.60	8.26	0.72	-61.06	-13.00	48.06
1415.000	V	35.46	-68.26	8.26	0.72	-60.72	-13.00	47.72
2122.500	H	36.12	-65.87	9.17	0.92	-57.62	-13.00	44.62
2122.500	V	38.79	-63.18	9.17	0.92	-54.93	-13.00	41.93
2830.000	H	36.11	-63.69	9.93	1.06	-54.82	-13.00	41.82
2830.000	V	35.32	-64.41	9.93	1.06	-55.54	-13.00	42.54
QPSK, 1.4MHz, Frequency: 715.3 MHz								
419.43	H	20.55	-56.92	0.00	0.39	-57.31	-13.00	44.31
570.88	V	20.61	-51.08	0.00	0.46	-51.54	-13.00	38.54
1430.600	H	36.44	-67.19	8.31	0.73	-59.61	-13.00	46.61
1430.600	V	41.30	-62.39	8.31	0.73	-54.81	-13.00	41.81
2145.900	H	36.01	-66.09	9.19	0.93	-57.83	-13.00	44.83
2145.900	V	38.44	-63.67	9.19	0.93	-55.41	-13.00	42.41
2861.200	H	35.42	-64.23	9.98	1.07	-55.32	-13.00	42.32
2861.200	V	35.39	-64.28	9.98	1.07	-55.37	-13.00	42.37

LTE Band 17(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, 5MHz, Frequency: 706.5 MHz								
459.32	H	20.54	-56.12	0.00	0.41	-56.53	-13.00	43.53
541.52	V	20.67	-50.97	0.00	0.46	-51.43	-13.00	38.43
1413.000	H	36.14	-67.53	8.26	0.72	-59.99	-13.00	46.99
1413.000	V	35.58	-68.14	8.26	0.72	-60.60	-13.00	47.60
2119.500	H	35.26	-66.71	9.17	0.92	-58.46	-13.00	45.46
2119.500	V	34.99	-66.96	9.17	0.92	-58.71	-13.00	45.71
2826.000	H	35.34	-64.47	9.92	1.06	-55.61	-13.00	42.61
2826.000	V	35.24	-64.50	9.92	1.06	-55.64	-13.00	42.64
QPSK, 5MHz, Frequency: 710 MHz								
558.87	H	20.58	-54.09	0.00	0.47	-54.56	-13.00	41.56
482.41	V	20.72	-51.56	0.00	0.42	-51.98	-13.00	38.98
1420.000	H	36.45	-67.21	8.28	0.73	-59.66	-13.00	46.66
1420.000	V	35.22	-68.49	8.28	0.73	-60.94	-13.00	47.94
2130.000	H	35.01	-67.01	9.18	0.92	-58.75	-13.00	45.75
2130.000	V	36.34	-65.67	9.18	0.92	-57.41	-13.00	44.41
2840.000	H	35.79	-63.96	9.94	1.06	-55.08	-13.00	42.08
2840.000	V	35.45	-64.26	9.94	1.06	-55.38	-13.00	42.38
QPSK, 5MHz, Frequency: 713.5 MHz								
494.38	H	20.75	-55.19	0.00	0.45	-55.64	-13.00	42.64
584.91	V	20.59	-51.12	0.00	0.46	-51.58	-13.00	38.58
1427.000	H	35.14	-68.50	8.30	0.73	-60.93	-13.00	47.93
1427.000	V	35.39	-68.30	8.30	0.73	-60.73	-13.00	47.73
2140.500	H	34.77	-67.30	9.18	0.93	-59.05	-13.00	46.05
2140.500	V	35.69	-66.39	9.18	0.93	-58.14	-13.00	45.14
2854.000	H	36.02	-63.67	9.97	1.07	-54.77	-13.00	41.77
2854.000	V	35.54	-64.14	9.97	1.07	-55.24	-13.00	42.24

LTE Band 41 (30MHz-27GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency:			2537.5	MHz				
153.19	H	52.31	-59.53	0.00	0.23	-59.76	-25.00	34.76
157.55	V	45.27	-63.04	0.00	0.23	-63.27	-25.00	38.27
5115.000	H	37.12	-56.31	11.27	1.51	-46.55	-25.00	21.55
5115.000	V	35.46	-57.87	11.27	1.51	-48.11	-25.00	23.11
7672.500	H	36.02	-53.49	10.87	2.03	-44.65	-25.00	19.65
7672.500	V	35.11	-55.08	10.87	2.03	-46.24	-25.00	21.24
5MHz QPSK, Frequency:			2595	MHz				
155.36	H	52.63	-59.13	0.00	0.23	-59.36	-25.00	34.36
154.27	V	45.39	-62.86	0.00	0.23	-63.09	-25.00	38.09
5210.000	H	36.87	-57.21	11.33	1.45	-47.33	-25.00	22.33
5210.000	V	35.24	-58.68	11.33	1.45	-48.80	-25.00	23.80
7815.000	H	35.36	-54.04	10.84	1.99	-45.19	-25.00	20.19
7815.000	V	35.10	-54.69	10.84	1.99	-45.84	-25.00	20.84
5MHz QPSK, Frequency:			2652.5	MHz				
158.66	H	52.12	-59.53	0.00	0.23	-59.76	-25.00	34.76
158.10	V	45.36	-62.96	0.00	0.23	-63.19	-25.00	38.19
5305.000	H	37.14	-56.30	11.38	1.46	-46.38	-25.00	21.38
5305.000	V	35.64	-57.54	11.38	1.46	-47.62	-25.00	22.62
7957.500	H	35.69	-52.73	10.81	2.09	-44.01	-25.00	19.01
7957.500	V	36.01	-52.86	10.81	2.09	-44.14	-25.00	19.14

LTE Band 66(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
1.4MHz QPSK, Frequency:			1710.7	MHz				
157.55	H	52.33	-59.36	0.00	0.23	-59.59	-13.00	46.59
159.70	V	45.59	-62.75	0.00	0.23	-62.98	-13.00	49.98
3421.400	H	36.12	-61.64	10.37	1.17	-52.44	-13.00	39.44
3421.400	V	35.55	-62.18	10.37	1.17	-52.98	-13.00	39.98
5132.100	H	35.23	-58.34	11.28	1.47	-48.53	-13.00	35.53
5132.100	V	35.19	-58.27	11.28	1.47	-48.46	-13.00	35.46
1.4MHz QPSK, Frequency:			1745	MHz				
161.46	H	52.57	-59.09	0.00	0.24	-59.33	-13.00	46.33
155.90	V	45.21	-63.07	0.00	0.23	-63.30	-13.00	50.30
3490.000	H	35.46	-62.38	10.40	1.17	-53.15	-13.00	40.15
3490.000	V	34.88	-62.90	10.40	1.17	-53.67	-13.00	40.67
5235.000	H	36.02	-57.88	11.34	1.46	-48.00	-13.00	35.00
5235.000	V	35.53	-58.18	11.34	1.46	-48.30	-13.00	35.30
1.4MHz QPSK, Frequency:			1779.3	MHz				
156.42	H	52.20	-59.53	0.00	0.23	-59.76	-13.00	46.76
157.52	V	45.80	-62.51	0.00	0.23	-62.74	-13.00	49.74
3558.600	H	35.66	-62.01	10.46	1.22	-52.77	-13.00	39.77
3558.600	V	35.41	-62.16	10.46	1.22	-52.92	-13.00	39.92
5337.900	H	36.32	-57.15	11.40	1.47	-47.22	-13.00	34.22
5337.900	V	35.96	-57.37	11.40	1.47	-47.44	-13.00	34.44

LTE Band 71 (30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
5MHz QPSK, Frequency: 665.5 MHz								
499.54	H	20.48	-55.36	0.00	0.45	-55.81	-13.00	42.81
584.91	V	20.51	-51.20	0.00	0.46	-51.66	-13.00	38.66
1331.000	H	35.42	-67.61	8.03	0.76	-60.34	-13.00	47.34
1331.000	V	35.63	-67.73	8.03	0.76	-60.46	-13.00	47.46
1996.500	H	36.27	-65.89	9.10	0.89	-57.68	-13.00	44.68
1996.500	V	35.16	-66.38	9.10	0.89	-58.17	-13.00	45.17
2662.000	H	35.84	-64.12	9.66	1.06	-55.52	-13.00	42.52
2662.000	V	36.02	-63.86	9.66	1.06	-55.26	-13.00	42.26
5MHz QPSK, Frequency: 680.5 MHz								
467.38	H	20.52	-55.98	0.00	0.42	-56.40	-13.00	43.40
443.51	V	20.60	-53.22	0.00	0.43	-53.65	-13.00	40.65
1361.000	H	36.12	-67.21	8.11	0.77	-59.87	-13.00	46.87
1361.000	V	35.74	-67.79	8.11	0.77	-60.45	-13.00	47.45
2041.500	H	35.66	-66.37	9.12	0.91	-58.16	-13.00	45.16
2041.500	V	36.23	-65.41	9.12	0.91	-57.20	-13.00	44.20
2722.000	H	35.85	-64.12	9.76	1.05	-55.41	-13.00	42.41
2722.000	V	35.91	-64.00	9.76	1.05	-55.29	-13.00	42.29
5MHz QPSK, Frequency: 695.5 MHz								
217.77	H	20.63	-60.52	0.00	0.27	-60.79	-13.00	47.79
512.01	V	20.66	-50.94	0.00	0.45	-51.39	-13.00	38.39
1391.000	H	35.78	-67.84	8.19	0.72	-60.37	-13.00	47.37
1391.000	V	36.02	-67.68	8.19	0.72	-60.21	-13.00	47.21
2086.500	H	35.44	-66.47	9.15	0.91	-58.23	-13.00	45.23
2086.500	V	36.23	-65.56	9.15	0.91	-57.32	-13.00	44.32
2782.000	H	35.06	-64.88	9.85	1.05	-56.08	-13.00	43.08
2782.000	V	35.12	-64.71	9.85	1.05	-55.91	-13.00	42.91

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = Substituted Level - Cable loss + Antenna Gain
- 3) Margin = Limit-Absolute Level

5. EUT PHOTOGRAPHS

Please refer to the attachment CR231278723-EXP EUT EXTERNAL PHOTOGRAPHS and CR231278723-INP EUT INTERNAL PHOTOGRAPHS

6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231278723-00E-TSP TEST SETUP PHOTOGRAPHS.

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