



TEST REPORT

Applicant: Sun Cupid Technology (HK) Ltd.

Address: 16/F,CEO Tower,77 Wing Hong Street,Cheung Sha Wan,Kowloon,Hong Kong.

FCC ID: 2ADINN5502L

Product Name: LTE Mobile Phone

Standard(s): 47 CFR Part 2 47 CFR Part 27 ANSI C63.26-2015 KDB 971168 D01 Power Meas License Digital Systems v03r01

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

Report Number: CR221262498-00B

Date Of Issue: 2023/1/6

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Test Facility

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

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

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

Declarations

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

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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CONTENTS

TEST FACILITY	.2
DECLARATIONS	.2
DOCUMENT REVISION HISTORY	.4
1. GENERAL INFORMATION	.5
1.1 PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	.5
1.2 DESCRIPTION OF TEST CONFIGURATION	.6
 1.2.2 Support Equipment List and Details 1.2.3 Support Cable List and Details 1.2.4 Block Diagram of Test Setup 1.3 MEASUREMENT UNCERTAINTY 	7 7
2. SUMMARY OF TEST RESULTS 1	10
3. REQUIREMENTS AND TEST PROCEDURES 1	1
3.1 Applicable Standard For Part 27: 3.1.1 RF Output Power 3.1.2 Spurious Emissions 3.1.3 Frequency stability 3.2 Test Method: 3.2.1 RF Output Power Test Setup Block: 3.2.2 Occupied Bandwidth Test Setup Block: 3.2.3 Spurious emissions at antenna terminals Test Setup Block: 3.2.4 Out of band emission Test Setup Block: 3.2.5 Frequency stability. Test Setup Block: 3.2.6 Field strength of spurious radiation. 2 2 3.2.6 Field strength of spurious radiation.	11 11 13 14 14 14 14 15 15 16 16 16 17 17 18 18 19
4. Test DATA AND RESULTS	
4.2 RADIATED SPURIOUS EMISSIONS	

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR221262498-00B	Original Report	2023/1/6

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

General:

EUT Name:	LTE Mobile Phone
EUT Model:	N5502L
Multiple Models:	A10L
Operation Bands and modes:	LTE: Band 71
Modulation Type:	QPSK, 16QAM
Software Version:	N5502L-AMB71-SGO-MV01602-01
Rated Input Voltage:	DC 3.8V from battery or DC 5V from adapter
Serial Number:	1W7M-1
EUT Received Date:	2022/12/23
EUT Received Status:	Good
Note: The Multiple models are electric	cally identical with the test model. Please refer to the declaration letter for
more detail, which was provided by m	anufacturer.

Purpose▲:

This is Class II permissive Change for Software update to add LTE Band 71, no other change was made, which was provided by manufacturer. Please refer to the original report for other bands.

Operation Voltage(V_{DC}) ▲:

Lowest:3.6Normal:3.8Highest:4.3	35
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Antenna Information▲:

Antenna Manufacturer	Antenna Type	Operation Bands	Antenna Frequency Range (MHz)	Antenna Gain (Gī) (dBi)	Lc (dB)	
Shenzhen 3Good Wireless Communication Co.,LTD.	FPC	LTE B71	663-698	-2.79	0.2	
Note: Lc= Signal A	Note: Lc= Signal Attenuation in the connecting cable between the transmitter and antenna, in dB.					

Accessory Information:

Accessory Description	Manufacturer	Model
Adapter	NUU	HJ-0501000E1-US

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

EUT Operation Mod	e: The system was configured for testing in each operation mode.
Equipment Modification	s: No
EUT Exercise Softwar	e: No

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

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	Cha	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".

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
			3	>5	≤ 1
			5	>6	≤1
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	10	>6	≤1
			15	>8	≤1
			20	>10	≤ 1
NO.04	66222	41	5	>6	≤1
NS_04	0.0.2.2.2	41	10, 15, 20	See Table 6.2.4-4	
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
NS_07	6.6.3.3.2	13	10	Table 6.2.4-2	10010 0.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS 09	6.6.3.3.4	21	10, 15	> 40	<u>\$1</u>
				> 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'	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
NS_32					

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

1.2.2 Support Equipment List and Details

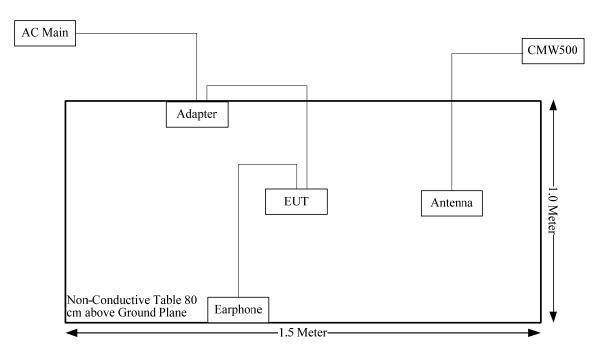
Manufacturer	Description	Model	Serial Number
R&S	Wideband Radio Communication Tester	CMW500	149218
Unknown	ANTENNA	Unknown	Unknown

1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	То
USB Cable	Yes	No	1.0	Adaper	EUT
Earphone Cable	No	No	1.15	EUT	Earphone

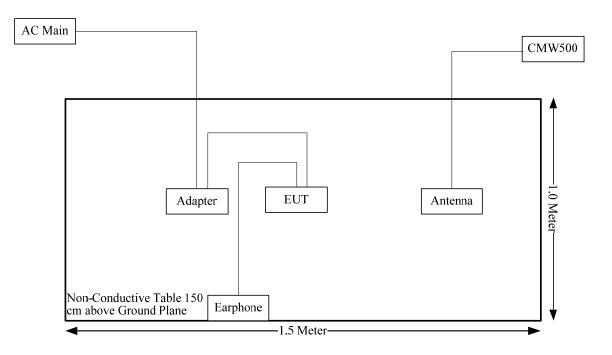
1.2.4 Block Diagram of Test Setup

Radiation Test below 1GHz:



Report No.: CR221262498-00B

Radiation Test Above 1GHz:



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	$\pm 5\%$
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB,200M~1GHz: 5.61 dB,1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions, conducted	±1.26 dB
Temperature	±1℃
Humidity	$\pm 5\%$
DC and low frequency voltages	$\pm 0.4\%$
Duty Cycle	1%
RF Frequency	$\pm 0.082 \times 10^{-6}$

2. SUMMARY OF TEST RESULTS

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

3. REQUIREMENTS AND TEST PROCEDURES

3.1 Applicable Standard For Part 27:

3.1.1 RF Output Power

FCC §27.50

(a)(3) Mobile and portable stations.

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

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

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

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

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

(c)(10) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

(h) The following power limits shall apply in the BRS and EBS:(2)Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

3.1.2 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 log₁₀ (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 that $43 + 10 \log (P) dB$ on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

3.1.3 Frequency stability

FCC §27.54

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

3.2 Test Method:

3.2.1 RF Output Power

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:

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

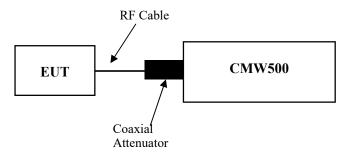
where:

 $\label{eq:ERP} \mbox{ ERP = effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);}$

- 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.

3.2.2 Occupied Bandwidth

According to CFR Part 2.1049, 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 $1.5 \times OBW$ is sufficient).

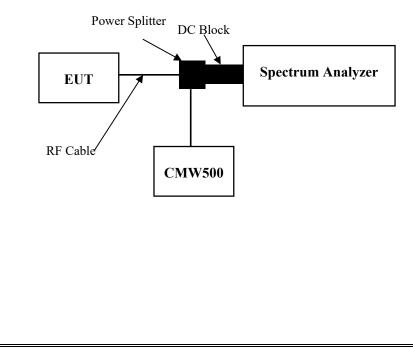
b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set \ge 3 × RBW.

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.

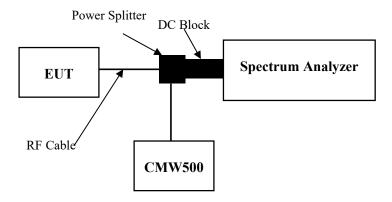
f) The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).



3.2.3 Spurious emissions at antenna terminals

According to CFR Part 2.1051, 27.53, ANSI C63.26-2015 Section 5.7.4, KDB 971168 D01 Power Meas License Digital Systems v03r01:

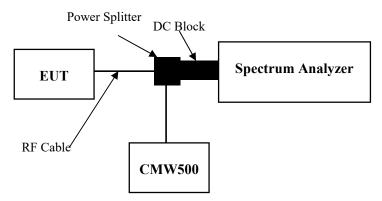
the applicable rule part specifies the reference bandwidth for measuring unwanted emission levels (typically, 100 kHz if the authorized frequency band/block is at or below 1 GHz and 1 MHz if the authorized frequency band/block is above 1 GHz),8 effectively depicting the unwanted emission limit in terms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



3.2.4 Out of band emission

According to CFR Part 2.1051, 27.53, 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.



3.2.5 Frequency stability

According to CFR Part 2.1055, 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.

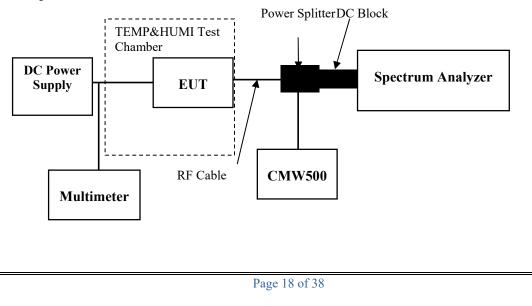
The operating carrier frequency shall be set up in accordance with the manufacturer's published operation and instruction manual prior to the commencement of these tests. No adjustment of any frequency determining circuit element shall be made subsequent to this initial set-up. Frequency stability is 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 $\pm 15\%$ 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.



3.2.6 Field strength of spurious radiation

According to CFR Part 2.1053, 27.53, ANSI C63.26-2015 Section 5.5.3:

Test setup:

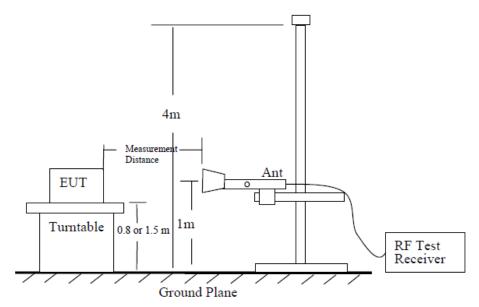
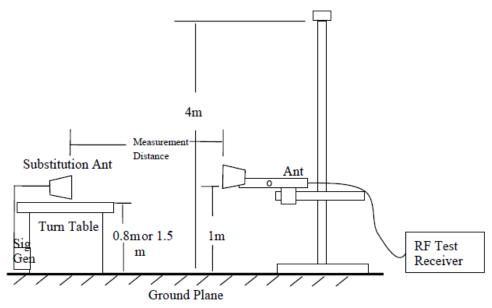
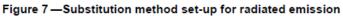


Figure 6—Test site-up for radiated ERP and/or EIRP measurements





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:
 - 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.
 - Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
 - 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.
 - 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)]:
 - Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
 - 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).
 - Record the output power level of the signal generator when equivalence is achieved in step 2).
- 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:

Pe = Ps(dBm) - cable loss (dB) + antenna gain (dBd)

where

- Pe = equivalent emission power in dBm
- Ps = source (signal generator) power in dBm

NOTE-dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

- j) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: gain (dBd) = gain (dBi) - 2.15 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 LTE Band 71

Serial Number:	1W7M-1	Test Date:	2022-12-30
Test Site:	RF	Test Mode:	Transmitting
Tester:	George Chen	Test Result:	Pass

Environment	al Conditions:				
Temperature: (°C)	21.6	Relative Humidity: (%)	38	ATM Pressure: (kPa)	101.6

Test Equipme	nt List and Details:				
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2022/7/15	2023/7/14
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A
YINSAIGE	Coaxial Cable	SS402	SJ0100001	Each time	N/A
Mini-Circuits	DC Block	BLK-18-S+	1554403	Each time	N/A
Weinschel	Power Splitter	1515	RA914	Each time	N/A
R&S	Wideband Radio Communication Tester	CMW500	149218	2022/4/6	2023/4/5
BACL	TEMP&HUMI Test Chamber	BTH-150-40	30174	2022/9/29	2023/9/28
UNI-T	Multimeter	UT39A+	C210582554	N/A	N/A
ZHAOXIN	DC Power Supply	RXN-6010D	21R6010D0912386	2022/7/15	2023/7/14

* 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	Bandwidth (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					

Test Data:

FCC§2.1046;§	27.50(c) (10)					
RF Output Po	wer:					
Test	Resource	Conducte	d Average Out	put Power(dBm)	Maximum	
Bandwidth & Modulation	Block & RB offset	Lowest Channel	Middle Channel	Highest Channel	ERP (dBm)	ERP Limit (dBm)
	RB1#0	22.06	21.93	21.96		
	RB1#13	22.09	22.07	22.07	-	
SMU- ODSV	RB1#24	22	21.96	22.01	16.05	2477
5MHz QPSK	RB15#0	21.04	21.05	21.07	16.95	34.77
	RB15#10	20.98	20.99	21.02	-	
-	RB25#0	20.96	21	21.02	-	
	RB1#0	21	20.96	20.94		
	RB1#13	21.1	21.06	21.04	-	
5MH2 160AM	RB1#24	21.02	20.96	21.01	15.06	24 77
5MHz 16QAM	RB15#0	20.09	20.07	20.01	15.96	34.77
	RB15#10	20.07	19.95	19.94	-	
	RB25#0	20.03	20.03	19.97		
	RB1#0	22.07	22.06	22.04		
	RB1#25	22.29	22.24	22.23	-	
10MHz QPSK	RB1#49	22.21	22.13	22.16	17 15	24.77
	RB25#0	21.17	21.13	21.09	17.15	34.77
	RB25#25	21.26	21.07	21.04		
	RB50#0	21.16	21.07	21.09		
	RB1#0	21.11	20.96	20.97		
-	RB1#25	21.35	21.12	21.17		
10101 1/0414	RB1#49	21.23	21.06	21.09	16.21	34.77
10MHz 16QAM	RB25#0	20.2	20.2	20.08	10.21	
-	RB25#25	20.34	20.09	20.09		
	RB50#0	20.2	20.05	20.01		
	RB1#0	22.02	21.96	22.37		
	RB1#38	22.25	22.11	22.12		
15MIL-ODSK	RB1#74	22.11	22.11	22.12	17.00	24 77
15MHz QPSK	RB36#0	21.19	21.05	21.06	17.23	34.77
	RB36#39	21.29	21.13	21.16	-	
ĺ	RB75#0	21.23	21.1	21.16		
	RB1#0	21.01	21.44	21.42		
	RB1#38	21.26	21.58	21.61		
15MHz 160 AM	RB1#74	21.17	21.58	21.63	16.49	24 77
15MHz 16QAM	RB36#0	20.21	20.1	20.05	10.49	34.77
	RB36#39	20.36	20.1	20.11	1	
	RB75#0	20.27	20.04	20.06	1	
20MIL-ODOV	RB1#0	21.86	21.76	22.28	17.50	24.55
20MHz QPSK	RB1#50	22.41	22.21	22.7	17.56	34.77

Page 22 of 38

Report No.: CR221262498-00B

	RB1#99	21.95	21.93	21.97		
	RB50#0	21.14	20.95	21.14		
	RB50#50	21.17	21.11	21.2		
	RB100#0	21.13	21.06	21.15		
	RB1#0	20.94	21.23	20.85		
	RB1#50	21.47	21.65	21.45		
20MHz 16QAM	RB1#99	21.08	21.42	21.1	16.51	34.77
20MHZ 16QAM	RB50#0	20.15	19.96	20.05	10.51	54.77
	RB50#50	20.16	20.05	20.08		
	RB100#0	20.16	19.99	20.09		

Note:

ERP= Conducted Power(dBm) - $L_C(dB) + G_T(dBd)$

GT(dBd)=GT(dBi)-2.15

Note: ERP=Conducted Power(dBm) - Cable loss(dB) + Antenna Gain(dBd)

Result: Pass

Peak-to-avera	ge Ratio(PAR)					
Test	Resource	Pea	ak-to-average F	Ratio(dB)		
Bandwidth & Modulation	Block & RB offset	Lowest Channel	Middle Channel	Highest Channel	Limit (dB)	
20MIL- ODSV	RB1#0	4.78	5.57	5.1	13	
20MHz QPSK	RB100#0	4.09	4.32	4.12	13	
20MHz	RB1#0	5.33	6.64	6.17	13	
16QAM	RB100#0	5.71	5.8	5.71	13	
				Result:	Pass	

FCC §2.1049, §27.53:Occupied Bandwidth								
Operation	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)				
Mode	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel		
5MHz QPSK	4.531	4.531	4.511	5.2	5.62	5.16		
5MHz 16QAM	4.511	4.551	4.551	5.14	5.22	5.22		
10MHz QPSK	8.982	8.982	8.942	10	10.12	9.96		
10MHz 16QAM	9.022	8.942	8.942	10.04	9.84	9.84		
15MHz QPSK	13.593	13.653	13.473	15.3	19.26	15.12		
15MHz 16QAM	13.593	13.593	13.533	15.12	17.28	15.06		
20MHz QPSK	18.044	17.964	17.964	19.92	20.24	19.68		
20MHz 16QAM	17.964 18.044 18.044			19.68	20.16	20		
Note: The test pl	lots please refer to t	he Plots of Occu	pied Bandwidth					

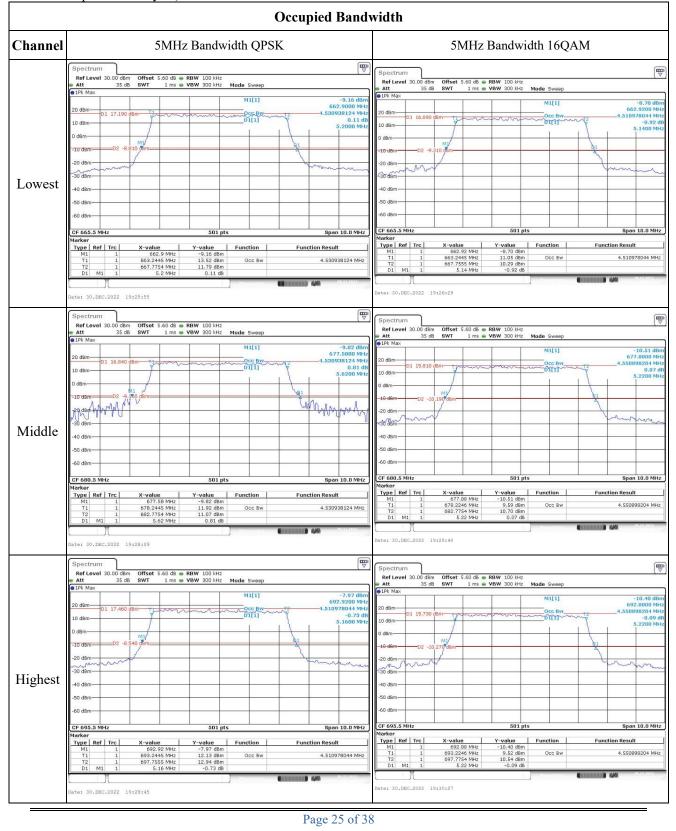
FCC §2.1051, §27.53:Spurious Emissions at Antenna TerminalResult:Pass, Please refer to the test plots of Spurious Emissions at Antenna Terminal.

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

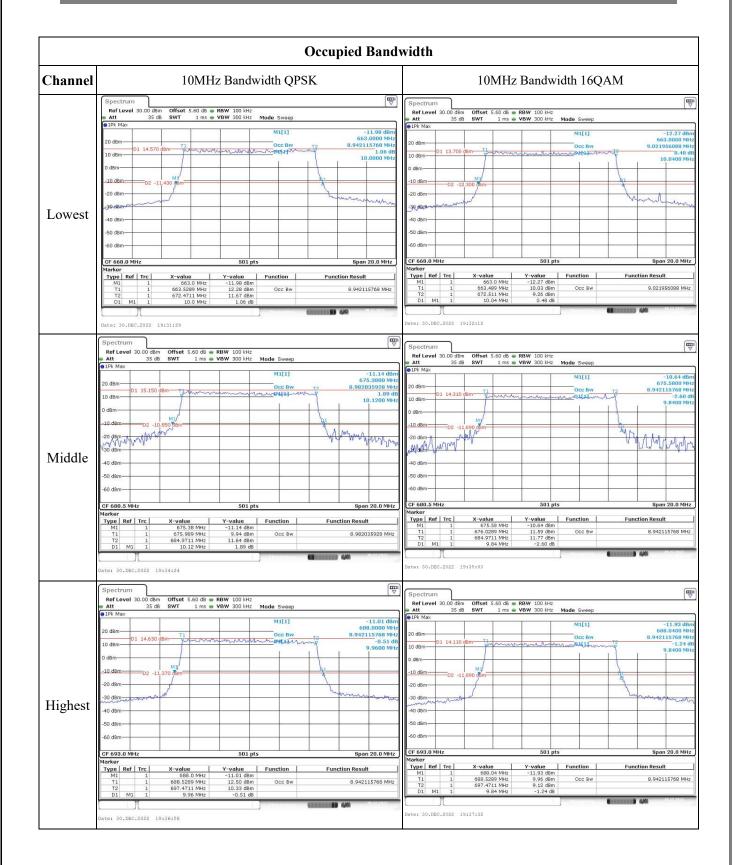
FCC §2.1055,	§27.54: Freque	ncy Stability						
Test Mode:	20M QPSK	Test Channel:	Test Channel: Lowest for Lower Edge, Highest for Upper Edge					
Test Item	Temperature	Voltage		ver Edge MHz)	Upper (MI	0		
	(°C)	(VDC)	Result	Limit	Result	Limit		
	-30	3.8	663.908	663.00	697.028	698.00		
Frequency	-20	3.8	663.927	663.00	697.054	698.00		
	-10	3.8	663.975	663.00	697.096	698.00		
	0	3.8	663.998	663.00	697.041	698.00		
Stability vs.	10	3.8	663.943	663.00	697.076	698.00		
Temperature	20	3.8	663.978	663.00	697.022	698.00		
	30	3.8	663.917	663.00	697.095	698.00		
	40	3.8	663.918	663.00	697.038	698.00		
	50	3.8	663.967	663.00	697.074	698.00		
Frequency	20	3.6	663.901	663.00	697.067	698.00		
Stability vs. Voltage	20	4.35	663.974	663.00	697.065	698.00		
					Result:	Pass		

Test Mode:	20M 16QAM	Test Channel: 1	Test Channel: Lowest for Lower Edge, Highest for Upper Edge					
Test Item	Temperature(°C)	Voltage(V _{DC})		wer Edge (MHz)	Upper Edge (MHz)			
			Result	Limit	Result	Limit		
	-30	3.8	664.042	663.00	697.030	698.00		
	-20	3.8	664.079	663.00	697.045	698.00		
	-10	3.8	664.002	663.00	697.064	698.00		
Frequency	0	3.8	664.046	663.00	697.079	698.00		
Stability vs.	10	3.8	664.071	663.00	697.020	698.00		
Temperature	20	3.8	664.058	663.00	697.022	698.00		
	30	3.8	664.016	663.00	697.026	698.00		
	40	3.8	664.020	663.00	697.039	698.00		
	50	3.8	664.019	663.00	697.099	698.00		
Frequency	20	3.6	664.017	663.00	697.073	698.00		
Stability vs. Voltage	20	4.35	664.022	663.00	697.023	698.00		
		11		1	Result:	Pass		

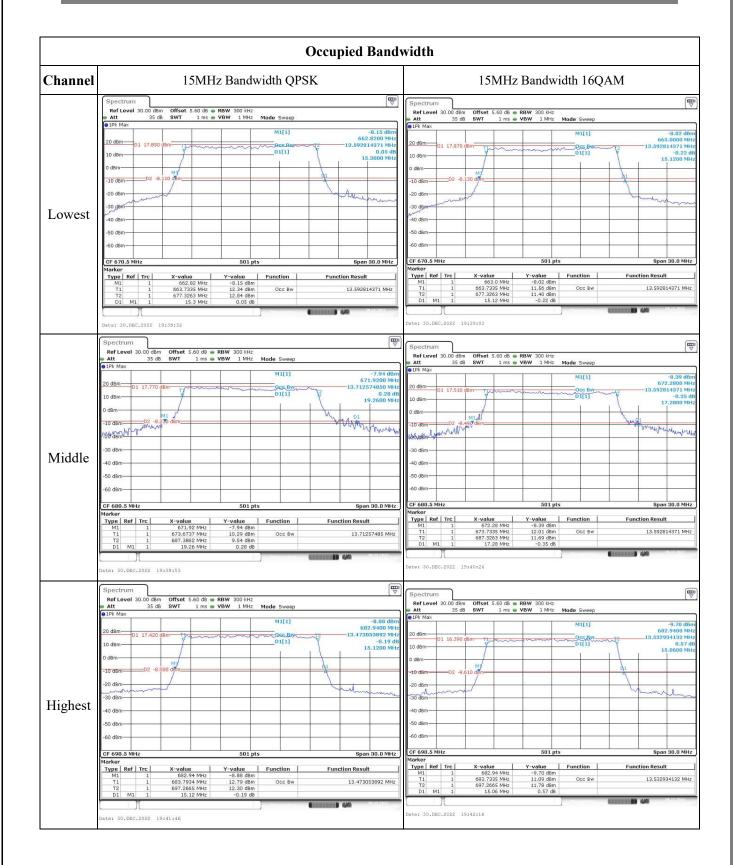
Test Plots(Note: The 5.6dB is the Insertion loss of the RF cable, Power Splitter and DC Block, which was offset into the Spectrum Analyzer):

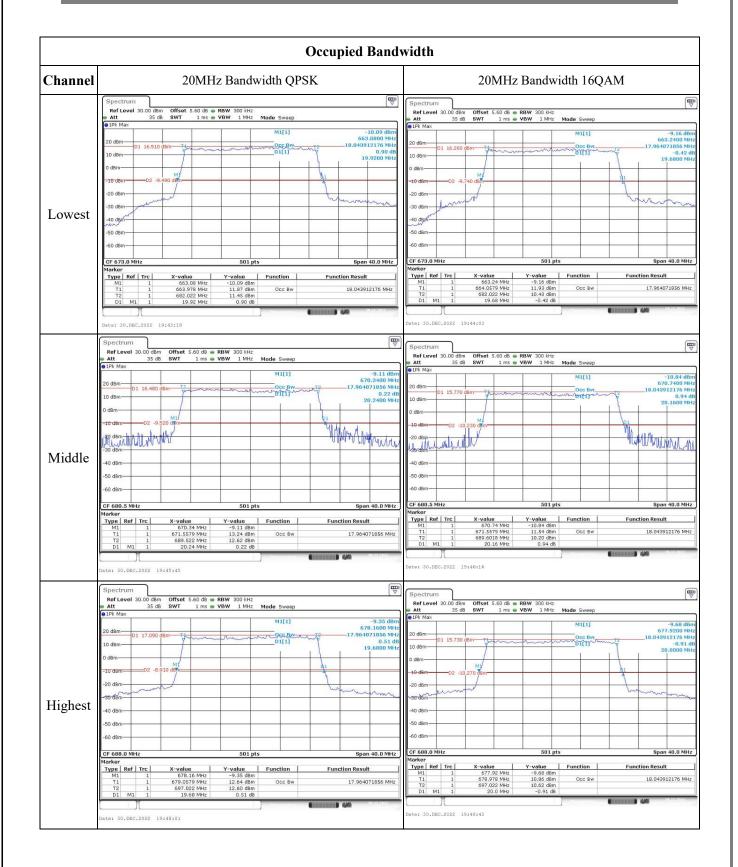


Report No.: CR221262498-00B



Page 26 of 38





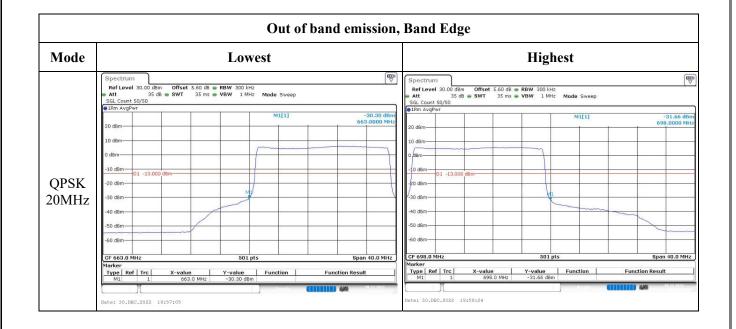
			Spurious	s Emis	sions at A	ntenna	1 Ter	minal				
Channel				51	MHz Ban	lwidth	QPS	K				
	Att 35 dB SW1	et 5.60 dB - RBW 10 9.7 ms - VBW 30	00 kHz 10 kHz Mode Sweep			Spectru Ref Lev	el 10.00 dBr 30 d	n Offset 5.60 dB e 8 SWT 36 ms e	RBW 1 MHz VBW 3 MHz	Mode Sweep		
	91Pk Max		M1[1]		-45.60 dBn	1Pk Max				M1[1]		-36.21 dBm
	20 dBm	_			894.50 MH:	0 dBm						5.8050 GHz
	10 dBm			-	~	-10 dBm-	01 -13.000) dBm	_			
	0 dBm					-20 dBm—			-			
	-10 dBm01 -13.000 dBm			_		-30 dBm				M1		
Lowest	-20 dBm					-40,dBm-	1000 March 1000	and the second s		man menter the	mannantimeter	m
Lowest	-30 dBm					-50 dBm						
	-40 dBm				Ma ma ante	-60 dBm						
	w90rd8m-	and a contraction of the	Construction of the	Contraction of Contraction		-70 dBm						
	-60 dBm					-80 dBm						
	Start 30.0 MHz Marker		501 pts		Stop 1.0 GHz	Start 1.0 Marker			501 p	10. De 10.		Stop 10.0 GHz
	Type Ref Trc X-v	alue Y-val 894.5 MHz -45.1	ue Function	Fun	ction Result	Type R M1	tef Trc	X-value 5.805 GHz	Y-value -36.21 dBm	Function	Function Re	sult
	<u>с л</u>		and the examples	Contractor B	1.690	[All a sufficiency of	8 196	10.12.2022
	Date: 30.DEC.2022 19:59:31						DEC.2022 2	0100104				
	Ref Level 30.00 dBm Offs	set 5.60 dB 🖷 RBW 1	.00 kHz			Spectru						
	■ Att 35 dB SW ● 1Pk Max	T 9.7 ms 🖶 VBW 3	800 kHz Mode Sweep			Ref Lev Att IPk Max	el 10.00 dBn 30 dB		VBW 1 MHz	Mode Sweep		
	20 dBm		M1[1]		-24.67 di 691.20 M	tz				M1[1]		-36.38 dBm 5.8410 GHz
	10 dBm			1		0 dBm						
	0 dBm					-10 dBm	D1 -13.000) dBm				
	-10 dBm-					-20 dBm						
	-20 dBm-01 -13.000 dBm-					-30 dBm-				MI when may,		
Middle	-30 dBm			1 t			aprovent	www.and		· · · · · · · · · · · · · · · · · · ·	and a second	and a north
	-40 dBm		1	N.		-60 dBm-						
	~50 damadaadaa	March and	wannenwand	announ	mound	-70 dBm						
	-60 dBm					80 dBm						
	Start 30.0 MHz				Stop 1.0 G	Start 1.0	GHz		501 p	its	s	Stop 10.0 GHz
	Marker	value Y-va	501 pts	E.	inction Result	Marker Type R		X-value	Y-value	Function	Function Re	
	M1 1	691.2 MHz -24	.67 dBm	Fa	B 446	M1	1	5.841 GHz	-36.38 dBm	1		10.12.2022
	Date: 30.DEC.2022 20:01:5	4				Date: 30.1	DEC.2022 2	0:02:20				
		2			6	-						
		set 5.60 dB 🖷 RBW 🗄				Spectru	el 10.00 dBr	n Offset 5.60 dB 🖷	PRW 1 MHz			
	● Att 35 dB SW ● 1Pk Max	T 9.7 ms 👄 VBW 3	300 kHz Mode Sweep			Att IPk Max	30 d		VBW 3 MHz	Mode Sweep		
	20 dBm		M1[1]		-46.34 di 908.00 M	tz				M1[1]		-37.12 dBm 6.8830 GHz
	10 dBm					-10 dBm-						
	0 dBm					-20 dBm-	D1 -13.000) d8m				
	-10 dBm-01 12 000 dBm-					-30 dBm-						
	-20 dBm-					-40 dBm-	in the way	and the second	-	minungh	hundrennen	man
Highest	-30 dBm			1								
	-40 dBm				M1	-60 dBm-						
	~56 dBm#www.mindex.as		men en man	al hours	monumenter	-70 dBm	-		+			_
	-60 dBm	_				80 dBm—	-		-			_
					Stop 1.0 Gł	Start 1.0	GHz		501 p	ots	5	Stop 10.0 GHz
	Start 30.0 MHz		501 pts									
	Marker Type Ref Trc X-v	value Y-va	501 pts	Fu	inction Result	Marker Type R	tef Trc	X-value	Y-value	Function	Function Re	sult
	Marker	value Y-va 908.0 MHz -46				Marker		X-value 6.883 GHz	Y-value -37.12 dBm	Function	Function Re	sult

	Spurious Emissions at An	tenna Terminal			
Channel	10MHz Band	width QPSK			
	Spectrum (□□□) Ref Level 30.00 dBm Offset 5.60 dB ● RBW 100 kHz Att 35 dB SWT 9.7 ms ● VBW 300 kHz	Ref Level 10.00 d8m Offset 5.60 d8 RBW 1 MHz Image: Comparison of the comparison			
	● JPk Max M1[1] -46.49 dBm	1Pk Max			
	20 dBm 813.20 MHz	0 dBm			
	10 dBm	-10 dBm			
	0 dam	-20 dBm			
	-10 dBm	-30 dBm			
	-20 dBm	10 dam			
Lowest	-30 dBm	-50 dBm			
	-30 ddm	-50 dBm-			
	a survey and a survey a	-70 dbm-			
	-56 39m - Patrice Add Design production and and and and and and and and and an				
	-60 dBm-	-80 dBm-			
	Start 30.0 MHz 501 pts Stop 1.0 GHz Marker	Start 1.0 GHz 501 pts Stop 10.0 GHz Marker			
	Type Ref Trc X-value Y-value Function Function Result M1 1 813.2 MHz -46.49 dBm -	Type Ref Trc X-value Y-value Function Function Result M1 1 5.895 GHz -37.13 dBm -37.13 dBm -37.13 dBm			
		14.122.222			
	Date: 30.DEC.2022 20:05:20	Date: 30.DEC.2022 20:05:50			
	Spectrum 🕎	Spectrum 🕎			
	Ref Level 30.00 dBm Offset 5.60 dB RBW 100 kHz Att 35 dB SWT 9.7 ms VBW 300 kHz Mode Sweep	Ref Level 10.00 dBm Offset 5.60 dB RBW 1 MHz			
	1Pk Max 1Pk Max 10 11 133.43 dBm	Att 30 d8 SWT 36 ms VBW 3 MHz Mode Sweep IPk Max			
	20 dBm	0 dBm 0 dBm0 dBm			
	10 dBm	-10 dBm			
	0 dBm	-20 dBm			
	-10 dBm-				
	01 -13.000 dBm-				
Middle	-20 dBm	40 dBm			
Wilduic	-30 d8m	-50 dBm			
	-40 dBm-	-60 dBm-			
	CO 484 and the frame of the stand and the st	-70 dBm			
	-60 dBm-	-80 dBm			
	Start 30.0 MHz 501 pts Stop 1.0 GHz	Start 1.0 GHz 501 pts Stop 10.0 GHz Marker			
	Marker Type Ref Trc X-value Y-value Function Function Result	Type Ref Trc X-value Y-value Function Function Result M1 1 6.524 GHz -37.03 dBm -37.03 dBm -37.03 dBm			
	M1 1 704.7 MHz -33.43 dBm				
	Date: 30.DEC.2022 20:07:20	Date: 30.DEC.2022 20:07:54			
	Spectrum mm Rof Level 30.00 dBm Offset 5.60 dB ⊕ RBW 100 kHz	Spectrum RefLevel 10.00 dBm Offset 5.60 dB RBW 1 MHz			
	Att 35 dB SWT 9.7 ms VBW 300 kHz Mode Sweep IPk Max	Att 30 dB SWT 36 ms • VBW 3 MHz Mode Sweep IPK Max			
	20 dBm 1111 799.60 MHz	M1[1] -36.28 dBm 6.7040 GHz			
	N N N N N N N N N N N N N N N N N N N	0 d8m-			
	10 dBm-	-10 dBm-01 -13.000 dBm			
	0 dBm	-20 dBm-			
	-10 dBm	-30 dBm			
TT' 1 ·	-20 dBm	40 dBm			
Highest	-30 dBm	-50 dBm			
	-40 dBm	-60 d8m-			
	358 dBh - and we have a strate and a second marked and a second marked and a second and a second and a second a	-70 dBm-			
	-60 dBm	-80 dBm-			
	Start 30.0 MHz 501 pts Stop 1.0 GHz	Start 1.0 GHz 501 pts Stop 10.0 GHz			
	Marker	Marker Type Ref Trc X-value Y-value Function Function Result			
	M1 1 799.6 MHz -46.42 dBm	M1 1 6.704 GHz -36.28 dBm			
		Date: 30.DEC.2022 20:10:03			
	Date: 30.DEC.2022 20:09:29				

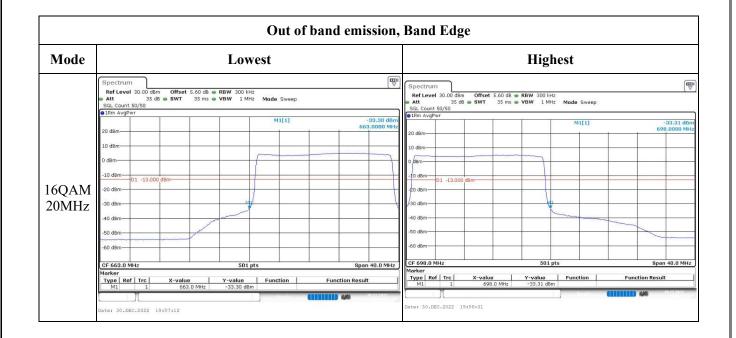
	Spurious Emissions at An	tenna Terminal
Channel	15MHz Band	width QPSK
	Spectrum Image: Spectrum </th <th>Spectrum Image: Constraint of the state of</th>	Spectrum Image: Constraint of the state of
	e 19k Max M1[1]46.26 dBm 805.40 MHz	1Pk Max M1[1] -36.92 dBm
	20 dBm	0 dBm
	10 dBm // //	-10 dBm 01 -13.000 dBm
	-10 dBm	-20 dBm-
	-10 dem 01 -13.000 dBm	-30 dBm
Lowest	-30 dBm-	-40 dBm
	-40 d8m	-60 dBm
	15018710442000 - and and many warden and here an	-70 dBm
	-60 dBm-	-80 dBm
	Start 30.0 MHz 501 pts Stop 1.0 GHz	Start 1.0 GHz 501 pts Stop 10.0 GHz
	Marker Type Ref Trc X-value Y-value Function Function Result	Marker Type Ref Trc X-value Y-value Function Function Result
	M1 1 805.4 MHz -46.26 dBm	M1 1 5.823 GHz -36.92 dBm
	Date: 30.DEC.2022 20:11:02	Date: 30.DEC.2022 20:11:36
	Spectrum 🕎	Spectrum 🕎
	Ref Level 30.00 dBm Offset 5.60 dB RBW 100 kHz ■ Att 35 dB SWT 9.7 ms ■ VBW 300 kHz Mode Sweep	Ref Level 10.00 dBm Offset 5.60 dB RBW 1 MHz
	1Pk Max M1[1] -46.23 dBm	Att 30 dB SWT 36 ms VBW 3 MHz Mode Sweep PPk Max
	20 dBm-952.60 MHz	0 d8m
	10 dBm	-10 d8m 01 -13.000 d8m
	0 dBm	-20 dBm
	-10 dBm-01 -13.000 dBm	-30 dBm
	-20 dBm	-40 dBm
Middle	-30 d8m	-50 dBm
	-40 dBm	-60 dBm
	usedemination and the second and the second of the second	-70 dBm-
	-60 dBm-	-80 dBm-
	Start 30.0 MHz 501 pts Stop 1.0 GHz Marker	Start 1.0 GHz 501 pts Stop 10.0 GHz Marker
	Type Ref Trc X-value Y-value Function Function Result M1 1 952.6 MHz ~46.23 dBm	Type Ref Trc X-value Y-value Function Function Result M1 1 6.973 GHz -37.19 dBm
	Date: 30.DEC.2022 20:13:08	Date: 30.DEC.2022 20:13:46
	Spectrum 🕎	Spectrum 🕎
	RefLevel 30.00 dBm Offset 5.60 dB ⊕ RBW 100 kHz ■ Att 35 dB SWT 9.7 ms ⊕ VBW 300 kHz Mode Sweep ● 11% Max	Ref Level 10.00 dBm Offset 5.60 dB RBW 1 MHz Att 30 dB SWT 36 ms VBW 3 MHz Mode Sweep
	● IPK Max M1[1] -46.92 dBm 588.60 MHz	
	20 dBm-	0 d8m
	10 dBm-	-10 dBm-01 -13.000 dBm-
	0 dBm	-20 dBm-
	-10 dBm-01 -13.000 dBm-	-30 dBm MI
Highest	-20 dBm	- Color
inglicst	-30 dBm	-50 d8m
	-40 dsm - Mil market plane and a southand and a southand and a southand and a southand a	-50 dbm
	-60 dBm-	-90 dbm
	Start 30.0 MHz 501 pts Stop 1.0 GHz Marker	Start 1.0 GHz 501 pts Stop 10.0 GHz Marker Type Ref Trc X-value Y-value Function Function Result
	Type Ref Trc X-value Y-value Function Function Result M1 1 588.6 MHz ~46.92 dBm	M1 1 6.632 GHz -37.02 dBm
		Date: 30.DEC.2022 20:15:41
	Date: 30.DEC.2022 20:15:08	

	Spurious Emissions at An	tenna Terminal
Channel	20MHz Band	width QPSK
	Spectrum Image: Spectrum </th <th>Spectrum Important Ref Level 10.00 dBm Offset 5.60 dB ■ RBW 1 MHz ● Att 30 dB SWT 36 ms VBW 3 MHz Mode Sweep</th>	Spectrum Important Ref Level 10.00 dBm Offset 5.60 dB ■ RBW 1 MHz ● Att 30 dB SWT 36 ms VBW 3 MHz Mode Sweep
	1Pk Max M1[1]46.68 dBm 621.50 MHz	HPK Max M1[1]36.80 dBm 6.6600 GHz 6.6600 GHz
	20 dBm	-10 d8m
	0 d8m	-20 d8m
	-10 d8m 01 -13.000 d8m	-30 dBm
Lowest	-20 dBm	40 dBm
Lowest	-40 dBm	-50 d8m
	v50-demander particular march march and march and march march	-70 dBm-
	-60 dBm	-80 dBm-
	Start 30.0 MHz Stop 1.0 GHz Marker 301 pts	Start 1.0 GHz 501 pts Stop 10.0 GHz Marker
	Type Ref Trc X-value Y-value Function Function Result M1 1 621.5 MHz -46.68 dBm	Type Ref Trc X-value Y-value Function Function Result M1 1 6.668 GHz -36.80 dBm -
		Date: 30.DEC.2022 20:17:11
	Date: 30.DEC.2022 20:16:48	
	RefLevel 30.00 dBm Offset 5.60 dB RBW 100 kHz Att 35 dB SWT 9.7 ms VBW 300 kHz	Spectrum mm RefLevel 10.00 dbm Offset 5.60 db = RBW 1 MHz w Att 30 db SWT 36 ms ■ VBW 3 MHz
	1Pk Max 1Pk Max 10 1	Att 30 dB SWT 36 ms • VBW 3 MHz Mode Sweep IPk Max N1[1] -36.28 dBm
	20 dBm 664.10 MHz	0 dBm
	10 dBm	-10 dBm
	-10 dBm	-20 dBm
	01 -13.000 dBm	40 dBm
Middle	-30 dBm	-50 dBm-
	-40 d8m	-60 dBm-
	1959 wgbm an anna 1966 a sharan an anna 1967 war a sharan a	-70 dBm-
	-60 dBm	Start 1.0 GHz 501 pts Stop 10.0 GHz
	Start 30.0 MHz 501 pts Stop 1.0 GHz Marker	Marker Type Ref Trc X-value Y-value Function Function Result
	M1 1 664.1 MHz -26.75 dBm	M1 1 6.991 GHz -36.28 dBm
	Date: 30.DEC.2022 20:19:45	Date: 30.DEC.2022 20:20:15
	Spectrum 🕅	Spectrum 🕎
	RefLevel 30.00 dBm Offset 5.60 dB ← RBW 100 kHz Att 35 dB SWT 9.7 ms ← VBW 300 kHz Mode Sweep ● 1Pk Max	RefLevel 10.00 dBm Offset 5.60 dB RBW 1 MHz Att 30 dB SWT 36 ms VBW 3 MHz Mode Sweep
	20 dBm	●1Pk Max M1[1] -36.76 dBm 5.0230 GHz
	10 dBm	-10 dkm
	0 d8m	-20 d8m
	-10 dBm-01 -13.000 dBm-	-30 dBm
Highest	-20 d8m	How we have the second se
Highest	-40 d8m	-50 d8m
	40 dam Mil	-00 08m
	-60 dBm	-80 dBm-
	Start 30.0 MHz 501 pts Stop 1.0 GHz	Start 1.0 GHz 501 pts Stop 10.0 GHz Marker
	Morker Type Ref Trc X-value Y-value Function Function Result M1 1 846.0 MHz ~46.61 dBm Function Function Function	Morker Type Ref Trc X-value Y-value Function Function Result M1 1 5.823 GHz -36.76 dBm
	Date: 30.DEC.2022 20:21:56	Date: 30.DEC.2022 20:22:18

Mode	Lowest			Highest									
	Spectrum (Spectrun	n						ſ	
	Ref Level 30.00 dBm Offset 5.60 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep				Ref Level	1 30.00 dBm 35 dB	Offset 5.60 dB SWT 35 ms	 RBW 100 VBW 300 	Hz Hz Mode	Sweep			
	SGL Count 50/50 IRm AvgPwr		M1[1]		-21.71 dBm	SGL Count							
	20 dBm		m1[1]	6	53.0000 MHz	20 dBm			_	N	11[1]		-23.66 dB 698.0000 M
	10 dBm	_				10 dBm							
	0 dBm					0 dBm							
ODCV	-10 dBm	Ma				-00 dBm	01 -13.000 d	i8m					-
QPSK 5MHz	-20 dBm				6	-20 dBm							
JMHZ	-40 dBm				_	-40 dBm						man and and and and and and and and and a	
	-50 dBm					-50 dBm			-	-			Theme
	-60 dBm					-60 dBm			-				_
	CF 663.0 MHz Marker	501 p	ts	Spa	in 10.0 MHz	CF 698.0 M Marker	ИНZ		50:	L pts			Span 10.0 MH
	Type Ref Trc X-v	alue Y-value 663.0 MHz -21.71 dBm	Function	Function Resu	ilt	Type Re M1	f Trc	X-value 698.0 MHz	Y-value -23.66 d	Bm Fund	ction	Function R	esult
			, nesdv 🛛		30.02002		_](BC.2022 19:	.80.40					10.12.2022
	Date: 30.DEC.2022 19:51:35	10				Date: 50.01	50.2022 19.						
	Ref Level 30.00 dBm Offs	et 5.60 dB 👄 RBW 100 kH	·			Spectrun Ref Level		Offset 5.60 dB	RBW 100	Hz			[
	Att 35 dB SW1 SGL Count 50/50 IRm AvgPwr	7 35 ms 🖶 VBW 300 kH	Mode Sweep			GL Count	35 dB 50/50	e SWT 35 ms			Sweep		
	20 dBm		M1[1]	. 6	-29.30 dBm 62.9600 MHz	⊜1Rm AvgP	wr			N	11[1]		-30.88 di 698.0000 M
	10 dBm					20 dBm							
	0 dBm					0 dBm-							
	-10 dBm-01 -13.000 dBm-					-30 dBm	D1 -13.000 d	iAm					_
QPSK	-20 dBm-	Mb,				-20 dBm			+				-
10MHz	-30 dBm					-30 dBm				han	Li.		
	-40 dBm					-40 dBm						month	~
	-60 dBm					-60 dBm			_				han
	CF 663.0 MHz	501 p	ts	Sp	an 20.0 MHz	CF 698.0 N	ИНz		50:	L pts			Span 20.0 MH
	Marker Type Ref Trc X-va	lue Y-value	Function	Function Res	ult	Marker Type Re M1	f Trc	X-value 698.0 MHz	Y-value -30.88 d	Fund Bm	ction	Function R	esult
	M1 1 6	52.96 MHz -29.30 dBm	Ready.	449			X						36.42.2922
	Date: 30.DEC.2022 19:53:28					Date: 30.DE	BC.2022 19:	:54:42					
	Spectrum					Spectrun	n						ſ
	Ref Level 30.00 dBm Offs Att 35 dB SW1 SGL Count 50/50	et 5.50 dB - RBW 300 KH: 7 35 ms - VBW 1 MH:	z Mode Sweep			Ref Level Att SGL Count	35 dB	Offset 5.60 dB SWT 35 ms			Sweep		
	●1Rm AvgPwr		M1[1]		-26.83 dBm	● 1Rm AvgP		1	-	N	11[1]		-29.17 d
	20 dBm			6	63.0000 MHz	20 dBm			-				698.0000 N
	10 dBm		/			10 dBm-							_
	0 dBm					0 dBm							
QPSK	-10 dBm 01 -13.000 dBm					-10 dBm	D1 -13.000 d	18m					
5MHz	-30 dBm	M2				-30 dBm			-	1			
<i>v</i>	-40 dBm					-40 dBm						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	_
	-50 dBm					-50 dBm							-
	-60 dBm					-60 dBm							
	CF 663.0 MHz Marker	501 p			an 30.0 MHz	CF 698.0 M Marker		W uslu-		i pts	ation		Span 30.0 Mi
	Type Ref Trc X-va	ilue Y-value 563.0 MHz -26.83 dBm	Function	Function Res	ult	Type Re M1	f Trc	X-value 698.0 MHz	Y-value -29.17 d	Bm		Function R	esuit
					1180-1592	U. I	11						



Mode	Lowest	Highest				
	Spectrum (Spectrum T				
	RefLevel 30.00 dBm Offset 5.60 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep	Ref Level 30.00 dBm Offset 5.60 dB RBW 100 kHz Att 35 dB SWT 35 ms YBW 300 kHz Mode Sween				
	SGL Count 50/50 IRm AvgPwr	SGL Count 50/50 IRm AvgPwr				
	20 dBm	20 dBm				
	10 dBm-	10 d8m				
	0 d8m					
1 (0 +) (-10 dBm-01 -13.000 dBm	-10 dBm 01 -13.000 dBm				
16QAM	-20 dBm	/20 dBm-				
5MHz	-30 dBm	-30 d8m-				
	-50 dBm	-50 dBm				
	-60 dBm	-60 d8m				
	CF 663.0 MHz 501 pts Span 10.0 MHz	CF 698.0 MHz 501 pts Span 10.0 MHz				
	Marker Type Ref Trc X-value Y-value Function Function Result	Marker Type Ref Trc X-value Y-value Function Function Result M1 1 698.0 MHz -23.99 dbm X-value Function Function Result				
	M1 1 663.0 MHz -23.14 dBm					
	Date: 30.DEC.2022 19:51:41	Date: 30.DEC.2022 19:52:55				
	Spectrum 🕎	Spectrum				
	RefLevel 30.00 dm Offset 5.60 dB RBW 100 kHz Att 35 dB SWT 35 ms VBW 300 kHz Mode Sweep SGL Count 50/50 SGL Sum 35 ms VBW 300 kHz Mode Sweep	RefLevel 30.00 dBm Offset 5.60 dB				
	Rrm AvgPwr M1[1] -30.89 dBm	SGL Count 50/50 ●1Rm AvgPvr M1[1] -32.82 d8i				
	20 dBm 663.0000 MHz	20 d8m - 698.0000 MF				
	10 d8m	10 dBm-				
	0 dBm	0 dBm				
160 A M	-10 dBm-01 -13.000 dBm-	-30 dBm 01 -13.000 dBm				
16QAM 10MHz	-20 d8m-	-30 dBm				
TOMHZ	-40 dBm	-40 dBm				
	-50 d8m	-50 dBm				
	500 dBm	-60 d8m				
	CF 663.0 MHz 501 pts Span 20.0 MHz	CF 698.0 MHz 501 pts Span 20.0 MH; Marker				
	Marker Type Ref Trc X-value Y-value Function Function Result M1 1 663.0 MHz -30.09 dBm -30.09 dBm	Type Ref Trc X-value Y-value Function Function Result M1 1 698.0 MHz -32.82 dBm -32.82 dBm -32.82 dBm				
	Date: 30.DEC.2022 19:53:35	Date: 30.DBC.2022 19:54:49				
	Spectrum 🕎	Spectrum				
	Ref Level 30.00 dbm Offset 5.60 db RBW 300 kHz Att 35 dB SWT 35 ms VBW 1 MHz Mode Sweep SGL Count 50/50 1 MHz Mode Sweep	RefLevel 30.00 dBm Offset 5.60 dB				
	IRm AvgPwr M1[1] -29.22 dBm	SGL Count 50/50				
	20 dBm	20 dBm				
	10 dBm	10 dBm				
	0 dBm	o jasm.				
160 A M	-10 dBm 01 -13.000 dBm	-10 dBm 01 -13.000 dBm 01 -13.000 dBm				
l6QAM 15MHz	-20 dam	20 d8m				
JUINZ	-40 d8m	-40 dBm				
	-50 d8m	-50 dBm				
	-60 d8m	-60 dBm				
	GF 663.0 MHz 501 pts Span 30.0 MHz	CF 698.0 MHz 501 pts Span 30.0 MHz Marker				
	Morker Yope Ref Trc X-value Y-value Function Function Result M1 1 663.0 MHz -29.22 dBm	Marker Type Ref Trc X-value Y-value Function Function Result M1 1 698.0 MHz -29.74 dBm				
	M1 1 663.0 MHz -29.22 dBm					



4.2 Radiated Spurious Emissions

Serial Number:	1W7M-1	Test Date:	2022/12/29~2022/12/30
Test Site:	966-1.966-2	Test Mode:	Transmitting
Tester:	Mack Huang, Carl Xue	Test Result:	Pass

Environmental Conditions:									
Temperature: (°C)	21.9~23	Relative Humidity: (%)	40~50	ATM Pressure: (kPa)	102.1~102.4				

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-5	2020/10/19	2023/10/18
R&S	EMI Test Receiver	ESR3	102724	2022/07/15	2023/07/14
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0470-02	2022/07/17	2023/07/16
TIMES MICROWAVE	Coaxial Cable	LMR-600-UltraFlex	C-0780-01	2022/07/17	2023/07/16
EMCO	Adjustable Dipole Antenna	3121C	9109-756	N/A	N/A
MICRO-COAX	Coaxial Cable	UFA210B-0-0720- 300300	99G1448	2022/07/17	2023/07/16
ETS-Lindgren	Horn Antenna	3115	9912-5985	2020/10/13	2023/10/12
R&S	Spectrum Analyzer	FSV40	101591	2022/07/15	2023/07/14
MICRO-COAX	Coaxial Cable	UFA210A-1-1200- 70U300	217423-008	2022/08/07	2023/08/06
MICRO-COAX	Coaxial Cable	UFA210A-1-2362- 300300	235780-001	2022/08/07	2023/08/06
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2022/11/09	2023/11/08
АН	Double Ridge Guide Horn Antenna	SAS-571	1396	2021/10/18	2024/10/17
MICRO-COAX	Coaxial Cable	UFA210B-0-0720- 300300	99G1448	2022/07/17	2023/07/16
Agilent	Signal Generator	E8247C	MY43321352	2022/04/01	2023/03/31

* 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 and plots.

Note: The device can be mounted in multiple orientations, test was performed with X,Y, Z Axis according to C63.26 figure 5, the worst orientation was photographed and it's data was recorded.

LTE Band	71:										
		Receiver Reading (dBµV)	Su	bstituted Met	hod	Absolute					
Frequency (MHz)	Polar (H/V)		Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	Level (dBm)	Limit (dBm)	Margin (dB)			
	QPSK, Frequency: 665.5 MHz										
1331.000	Н	35.46	-67.57	8.03	0.76	-60.30	-13.00	47.30			
1331.000	V	34.68	-68.68	8.03	0.76	-61.41	-13.00	48.41			
1996.500	Н	35.74	-66.42	9.10	0.89	-58.21	-13.00	45.21			
1996.500	V	35.21	-66.33	9.10	0.89	-58.12	-13.00	45.12			
2662.000	Н	36.08	-63.88	9.66	1.06	-55.28	-13.00	42.28			
2662.000	V	36.00	-63.88	9.66	1.06	-55.28	-13.00	42.28			
618.58	Н	21.50	-52.26	0.00	0.49	-52.75	-13.00	39.75			
521.01	V	20.98	-50.63	0.00	0.41	-51.04	-13.00	38.04			
			QPSK, I	Frequency:680	0.5 MHz						
1361.000	Н	40.14	-63.19	8.11	0.77	-55.85	-13.00	42.85			
1361.000	V	38.12	-65.41	8.11	0.77	-58.07	-13.00	45.07			
2041.500	Н	36.50	-65.53	9.12	0.91	-57.32	-13.00	44.32			
2041.500	V	37.51	-64.13	9.12	0.91	-55.92	-13.00	42.92			
2722.000	Н	36.11	-63.86	9.76	1.05	-55.15	-13.00	42.15			
2722.000	V	35.46	-64.45	9.76	1.05	-55.74	-13.00	42.74			
636.31	Н	21.05	-52.61	0.00	0.52	-53.13	-13.00	40.13			
627.45	V	20.81	-50.42	0.00	0.48	-50.90	-13.00	37.90			
			QPSK, I	Frequency: 695	5.5 MHz						
1391.000	Н	37.21	-66.41	8.19	0.72	-58.94	-13.00	45.94			
1391.000	V	35.26	-68.44	8.19	0.72	-60.97	-13.00	47.97			
2086.500	Н	36.41	-65.50	9.15	0.91	-57.26	-13.00	44.26			
2086.500	V	35.20	-66.59	9.15	0.91	-58.35	-13.00	45.35			
2782.000	Н	35.39	-64.55	9.85	1.05	-55.75	-13.00	42.75			
2782.000	V	36.01	-63.82	9.85	1.05	-55.02	-13.00	42.02			
766.12	Н	21.25	-50.73	0.00	0.53	-51.26	-13.00	38.26			
627.46	V	20.87	-50.36	0.00	0.48	-50.84	-13.00	37.84			

LTE Bands:

(The Worst modulation and bandwidth was below)

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

==== END OF REPORT =====