

# FCC Radio Test Report

## FCC ID: HFSQTA-LI7CS

**Report No.** : BTL-FCCP-3-2107T083A  
**Equipment** : Notebook Computer  
**Model Name** : NL72LTE, NL72CT-LTE, LI7, LI7XXXXXXXXXX, NL7XXXXXXXXXX(The "X" Can be 0-9,A-Z, a-z ,- or blank for the marketing purpose)  
**Brand Name** : Quanta, CTL  
**Applicant** : Quanta Computer Inc.  
**Address** : No. 188, Wenhua 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan  
  
**Radio Function** : WCDMA Band IV + LTE Band 4, 12, 13, 66  
  
**FCC Rule Part(s)** : 47 CFR FCC Part 27 Subpart F  
 47 CFR FCC Part 27 Subpart L  
 47 CFR FCC Part 27 Subpart H  
 47 CFR FCC Part 2  
  
**Measurement Procedure(s)** : ANSI/TIA/EIA-603-E-2016  
 KDB 971168 D01 Power Meas License Digital Systems v03r01  
  
**Date of Receipt** : 2021/9/11  
**Date of Test** : 2021/9/11 ~ 2021/10/4  
**Issued Date** : 2021/11/1

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

**Prepared by**

  
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**Declaration**

**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

**BTL's** reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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**BTL's** laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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**REVISION HISTORY**

Report No.	Version	Description	Issued Date
BTL-FCCP-3-2107T083A	R00	Original Report.	2021/10/13
BTL-FCCP-3-2107T083A	R01	Revised report to address TCB's comments.	2021/10/22
BTL-FCCP-3-2107T083A	R02	Added one brand name.	2021/11/1

## 1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

FCC Clause No	Description	Test Result	Judgement	Remark
15.207	AC Power Line Conducted Emissions	APPENDIX A	Pass	-----
2.1046 27.50(b)(10) 27.50(c)(10) 27.50(d)(4)	RF Power Output	APPENDIX B	Pass	-----
2.1049	Occupied Bandwidth	APPENDIX C	Pass	-----
2.1051 27.53(h) 27.53(g) 27.53(c)(2)(4)	Conducted Spurious Emissions	APPENDIX D	Pass	-----
2.1053 27.53(f) 27.53(g) 27.53(h)	Radiated Spurious Emissions	APPENDIX E	Pass	-----
2.1053 27.53(f) 27.53(g) 27.53(h)	Band Edge Measurements	APPENDIX F	Pass	-----
-	Peak To Average Ratio	APPENDIX G	Pass	Record Only
2.1055 27.54	Frequency Stability	APPENDIX H	Pass	-----

**NOTE:**

- (1) "N/A" denotes test is not applicable in this Test Report.
- (2) The report format version is TP.1.1.1.

### 1.1 TEST FACILITY

The test facilities used to collect the test data in this report:

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

The test sites and facilities are covered under FCC RN: 674415 and DN: TW0659.

- C05       CB08       CB11       CB15       CB16  
 SR05

### 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k = 2$ , providing a level of confidence of approximately **95 %**.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2  $U_{cispr}$  requirement.

#### A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C05	CISPR	150 kHz ~ 30MHz	3.44

#### B. Radiated Spurious Emissions test :

Test Site	Measurement Frequency Range	U,(dB)
CB15	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

#### NOTE:

Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

### 1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	24 °C, 51 %	AC 120V	Tim Lian
RF Power Output & ERP	24.6 °C, 67 % 22~25 °C, 52~54 %	AC 120V	Paul Shen Vincent Lee
Occupied Bandwidth	24.6 °C, 67 %	AC 120V	Paul Shen
Conducted Spurious Emissions	24.6 °C, 67 %	AC 120V	Paul Shen
Radiated Spurious Emissions	22~25 °C, 52~54 %	AC 120V	Vincent Lee
Band Edge	24.6 °C, 67 %	AC 120V	Paul Shen
Peak to Average Ratio	24.6 °C, 67 %	AC 120V	Paul Shen
Frequency Stability	Normal and Extreme		Paul Shen

## 2 GENERAL INFORMATION

### 2.1 DESCRIPTION OF EUT

Equipment	Notebook Computer		
Model Name	NL72LTE, NL72CT-LTE, LI7, LI7XXXXXXXXXX, NL7XXXXXXXXXX(The "X" Can be 0-9,A-Z, a-z ,- or blank for the marketing purpose)		
Brand Name	Quanta, CTL		
Model Difference	Brand Name	Model Name	
	Quanta	LI7, LI7XXXXXXXXXX (The "X" Can be 0-9,A-Z, a-z ,- or blank for the marketing purpose)	
	CTL	NL72LTE, NL72CT-LTE, NL7XXXXXXXXXX(The "X" Can be 0-9,A-Z, a-z ,- or blank for the marketing purpose)	
Different model distribute to different area.			
Power Source	DC voltage supplied from AC/DC Adapter.		
Power Adapter	LITEON / PA-1450-50		
Power Adapter Power Rating	I/P: 100-240V~1.3A 50/60Hz O/P: 5.0V---3.0A, 9.0V---3.0A, 12.0V---3.0A, 15.0V---3.0A, 20.0V---2.25A		
WWAN Module	Fibocom / NL668-AM		
WCDMA IEMI No.	<b>Call Setup Screen</b>		
	<b>Call Control</b>	<b>Active Cell Operating Mode</b>	<b>Call Params</b>
	Operating Mode	UE Information	Cell Power
	Active Cell	IMSI: 001012345678901 IMEI(SU): 867958050023747 (---) Power Class: 3	-25.00 dBm/3.84 MHz
	End Call	UE Expected Open Loop Transmit Power	Channel Type
	Paging Parameters	Initial PRACH TX Power: -60.00 dBm Initial DPCCCH TX Power: 18.45 dBm	12.2k RMC
	Handovers	Call Processing Status	Paging Service
	Clear UE Info	Current Service Type: RB Test Node IMI Status: IMSI Attached GMM State: Attached Current DPCC Offset: 0 chips	RB Test Node
		HSPA Information Rep EDCH Cat/Ext: 6/Unrep Last received E-TFCI: ---- Throughput: ---- kbps Acks Transmitted: ----	HSPA Parameters
		HSPA Information Cur UE HS-DSCH Cat: 24 Block Error Ratio: ---- % Throughput: ---- kbps Blocks Transmitted: ----	34,121 Preset Call Configs
	Background Active Cell Sys Type: UTRA FDD Connected	Channel (UARFCN) Params	
	1 of 6	intRef Offset	1 of 3
LTE IEMI No.	2021/09/22 13:33 Connected Phone-2 Phone-1 <Fundamental Measurement> Output Main Continuous --- LTE		
	Measuring (Spectrum) UE Power : 21.4 dBm		
	UE Report IMSI (DEC) 001010123456789 IMEI 867958050023740 UE Category 4 PDN Type IPv4v6 PCC RSRP ( ) RSRQ ( ) SCC-1 ( ) RSRP ( ) RSRQ ( ) SCC-2 ( ) RSRP ( ) RSRQ ( ) Neighbour Cell LTE Cell ID ( ) RSRP ( ) RSRQ ( ) W-CDMA/TD-SCDMA RAT Cell ID RSCP ( ) GSM Band ARFCN NCC BCC RXLEV ( )		UE Report Signaling Trace
	1 2 3		



Test Model	NL72LTE			
Sample Status	Engineering Sample			
Operation Frequency	Mode	Band	UL Frequency (MHz)	DL Frequency (MHz)
	WCDMA	IV	1710 ~ 1755	2110 ~ 2155
	LTE	4	1710 ~1755	2110 ~ 2155
	LTE	12	699 ~716	725 ~746
	LTE	13	777 ~ 787	746 ~ 756
LTE	66	1710 ~ 1780	2110 ~ 2200	
EUT Modification(s)	N/A			

**NOTE:**

(1) For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

(2) Channel List:

WCDMA Band IV				
Test Frequency ID	UARFCN	Frequency of Uplink (MHz)	UARFCN	Frequency of Downlink (MHz)
Low Range	1312	1712.4	1537	2112.4
Mid Range	1413	1732.6	1638	2132.6
High Range	1513	1752.6	1738	2152.6

LTE Band 4					
Test Frequency ID	Bandwidth (MHz)	N <sub>UL</sub>	Frequency of Uplink (MHz)	N <sub>DL</sub>	Frequency of Downlink (MHz)
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

LTE Band 12			
Test Frequency ID	Bandwidth (MHz)	EARFCN	Frequency (UL and DL) (MHz)
Low Range	1.4	23017	699.7
	3	23025	700.5
	5	23035	701.5
	10	23060	704.0
Mid Range	1.4/3/5/10	23095	707.5
High Range	1.4	23173	715.3
	3	23165	714.5
	5	23155	713.5
	10	23130	711.0

LTE Band 13			
Test Frequency ID	Bandwidth (MHz)	EARFCN	Frequency (UL and DL) (MHz)
Low Range	5	23205	779.5
Mid Range	5/10	23230	782.0
High Range	5	23255	784.5

LTE Band 66					
Test Frequency ID	Bandwidth (MHz)	N <sub>UL</sub>	Frequency of Uplink (MHz)	N <sub>DL</sub>	Frequency of Downlink (MHz)
Low Range	1.4	131979	1710.7	66443	2110.7
	3	131987	1711.5	66451	2111.5
	5	131997	1712.5	66461	2112.5
	10	132022	1715	66486	2115
	15	132047	1717.5	66511	2117.5
	20	132072	1720	66536	2120
Mid Range	1.4/3/5/10/15/20	132272	1740	66786	2145
High Range	1.4	132565	1769.3	67129	2179.3
	3	132557	1768.5	67121	2178.5
	5	132547	1767.5	67111	2177.5
	10	132522	1765	67086	2175
	15	132497	1762.5	67061	2172.5
	20	132472	1760	67036	2170

(3) Table for Filed Antenna:

Antenna	Manufacturer	Part Number	Type	Gain (dBi)	Note
Main	WNC	DQ6615GAU00 (81EAA615.GAU)	PIFA	0.93	WCDMA Band IV LTE Band 4
				-0.10	LTE Band 12
				-0.75	LTE Band 13
				0.93	LTE Band 66
Aux	WNC	DQ6615GVU00 (81EAA615.GAV)	PIFA	0.23	WCDMA Band IV LTE Band 4
				-0.85	LTE Band 12
				0.20	LTE Band 13
				0.23	LTE Band 66

**2.2 TEST MODES**

WCDMA BAND IV			
Test Item	Available Channel	Tested Channel	Mode
Output Power & EIRP	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Occupied Bandwidth	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Conducted Spurious Emissions	1312 to 1513	1413	WCDMA
Radiated Spurious Emissions	1312 to 1513	1413	WCDMA
Band Edge	1312 to 1513	1312, 1513	WCDMA,HSDPA, HSUPA
Peak to Average Ratio	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Frequency Stability	1312 to 1513	1413	WCDMA

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Occupied Bandwidth	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	15RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	50RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	75RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	100RB
Conducted Spurious Emissions	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB

LTE BAND 4					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB
Band Edge	19957 to 20393	19957, 20393	1.4MHz	QPSK	1RB/6RB
	19965 to 20385	19965, 20385	3MHz	QPSK	1RB/15RB
	19975 to 20375	19975, 20375	5MHz	QPSK	1RB/25RB
	20000 to 20350	20000, 20350	10MHz	QPSK	1RB/50RB
	20025 to 20325	20025, 20325	15MHz	QPSK	1RB/75RB
	20050 to 20300	20050, 20300	20MHz	QPSK	1RB/100RB
Peak To Average Ratio	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1RB
Frequency Stability	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19965 to 20385	20175	3MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20000 to 20350	20175	10MHz	QPSK	1RB
	20025 to 20325	20175	15MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB

LTE BAND 12					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Frequency Stability	23017 to 23173	23095	1.4MHz	QPSK	1 RB
	23025 to 23165	23095	3MHz	QPSK	1 RB
	23035 to 23155	23095	5MHz	QPSK	1 RB
	23060 to 23130	23095	10MHz	QPSK	1 RB
Occupied Bandwidth	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	6RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	15RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	25RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	50RB
Peak to Average Ratio	23017 to 23173	23017, 23095, 23173	1.4MHz	QPSK, 16QAM	1 RB
	23025 to 23165	23025, 23095, 23165	3MHz	QPSK, 16QAM	1 RB
	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1 RB
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1 RB
Band Edge	23017 to 23173	23017,23173	1.4MHz	QPSK	1RB/6RB
	23025 to 23165	23025,23165	3MHz	QPSK	1RB/15RB
	23035 to 23155	23035,23155	5MHz	QPSK	1RB/25RB
	23060 to 23130	23060,23130	10MHz	QPSK	1RB/50RB
Conducted Emission	23017 to 23173	23095	1.4MHz	QPSK	1 RB
	23035 to 23155	23095	5MHz	QPSK	1 RB
	23060 to 23130	23095	10MHz	QPSK	1 RB
Radiated Emission	23017 to 23173	23095	1.4MHz	QPSK	1 RB
	23017 to 23173	23095	5MHz	QPSK	1 RB
	23060 to 23130	23095	10MHz	QPSK	1 RB

LTE BAND 13					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	23230	23230	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Frequency Stability	23205 to 23255	23230	5MHz	QPSK	1 RB
	23230	23230	10MHz	QPSK	1 RB
Occupied Bandwidth	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	25RB
	23230	23230	10MHz	QPSK, 16QAM	50RB
Peak to Average Ratio	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB
	23230	23230	10MHz	QPSK, 16QAM	1 RB
Band Edge	23205 to 23255	23205, 23255	5MHz	QPSK	1RB/25RB
	23230	23230	10MHz	QPSK	1RB/50RB
Conducted Emission	23205 to 23255	23230	5MHz	QPSK	1 RB
	23230	23230	10MHz	QPSK	1 RB
Radiated Emission	23205 to 23255	23230	5MHz	QPSK	1 RB
	23230	23230	10MHz	QPSK	1 RB

LTE BAND 66					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Occupied Bandwidth	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	6RB
	131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	15RB
	131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	25RB
	132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	50RB
	132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	75 RB
	132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	100RB
Conducted Spurious Emissions	131979 to 132665	132322	1.4MHz	QPSK	1RB
	131987 to 132657	132322	3MHz	QPSK	1RB
	131997 to 132647	132322	5MHz	QPSK	1RB
	132022 to 132622	132322	10MHz	QPSK	1RB
	132047 to 132597	132322	15MHz	QPSK	1RB
	132072 to 132572	132322	20MHz	QPSK	1RB
Radiated Spurious Emissions	131997 to 132647	132322	5MHz	QPSK	1RB
	132072 to 132572	132322	20MHz	QPSK	1RB
Band Edge	131979 to 132665	131979, 132665	1.4MHz	QPSK	1RB/6RB
	131987 to 132657	131987, 132657	3MHz	QPSK	1RB/15RB
	131997 to 132647	131997, 132647	5MHz	QPSK	1RB/25RB
	132022 to 132622	132022, 132622	10MHz	QPSK	1RB/50RB
	132047 to 132597	132047, 132597	15MHz	QPSK	1RB/75RB
	132072 to 132572	132072, 132572	20MHz	QPSK	1RB/100RB

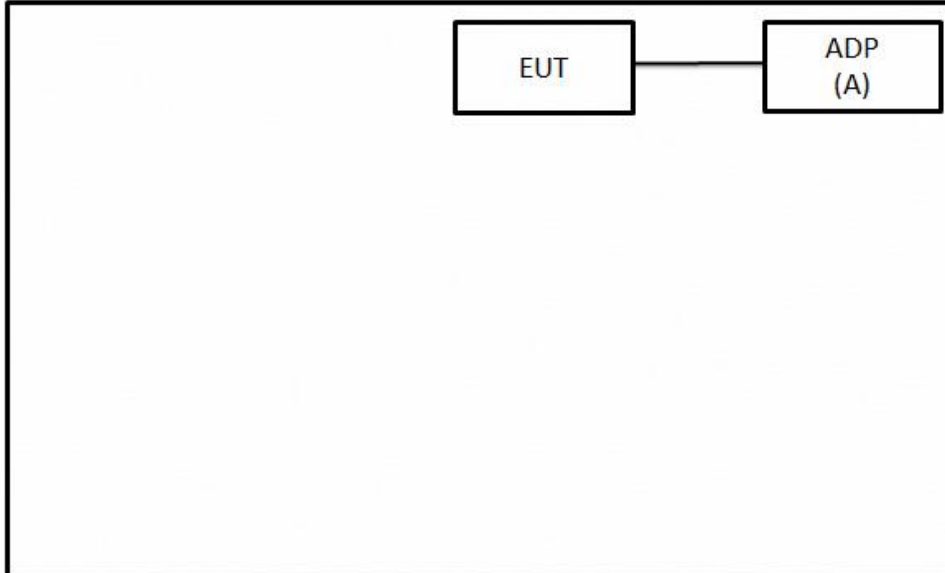


Peak to Average Ratio	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	1RB/25RB/50RB
	132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	1RB/36RB/75RB
	132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	1RB/50RB/100RB
Frequency Stability	131979 to 132665	132322	1.4MHz	QPSK	1RB
	131987 to 132657	132322	3MHz	QPSK	1RB
	131997 to 132647	132322	5MHz	QPSK	1RB
	132022 to 132622	132322	10MHz	QPSK	1RB
	132047 to 132597	132322	15MHz	QPSK	1RB
	132072 to 132572	132322	20MHz	QPSK	1RB

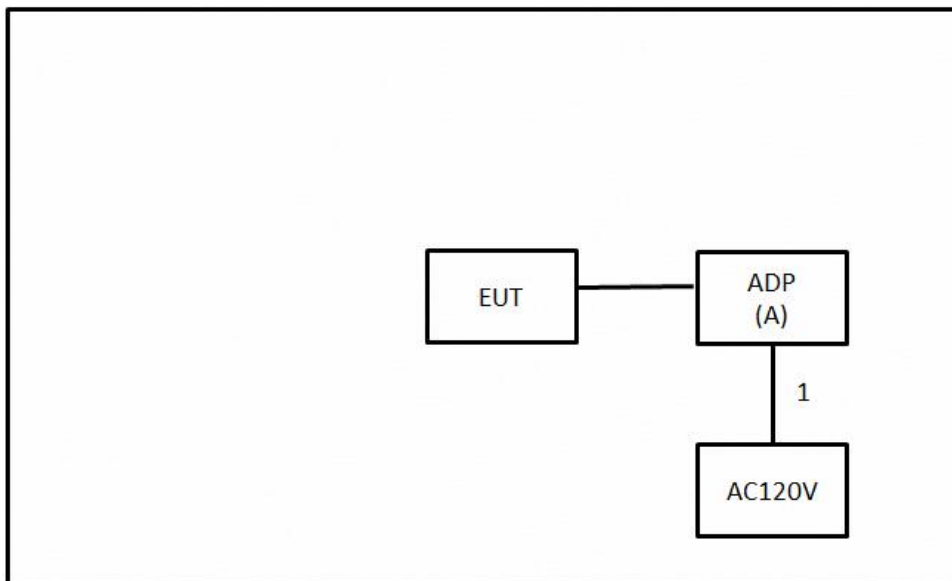
### 2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.

AC Power Line Conducted Emissions Test



Radiated Emissions



### 2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	Adapter	LITEON	PA-1450-50	N/A	Supplied by test requester

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	1m	Power Cord	Supplied by test requester

### 3 AC POWER LINE CONDUCTED EMISSIONS TEST

#### 3.1 LIMIT

Frequency (MHz)	Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.50 - 5.0	56	46
5.0 - 30.0	60	50

**NOTE:**

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following:  
 Measurement Value = Reading Level + Correct Factor  
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)  
 Margin Level = Measurement Value – Limit Value  
 Calculation example:

Reading Level		Correct Factor		Measurement Value
38.22	+	3.45	=	41.67

Measurement Value		Limit Value		Margin Level
41.67	-	60	=	-18.33

The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

#### 3.2 TEST PROCEDURE

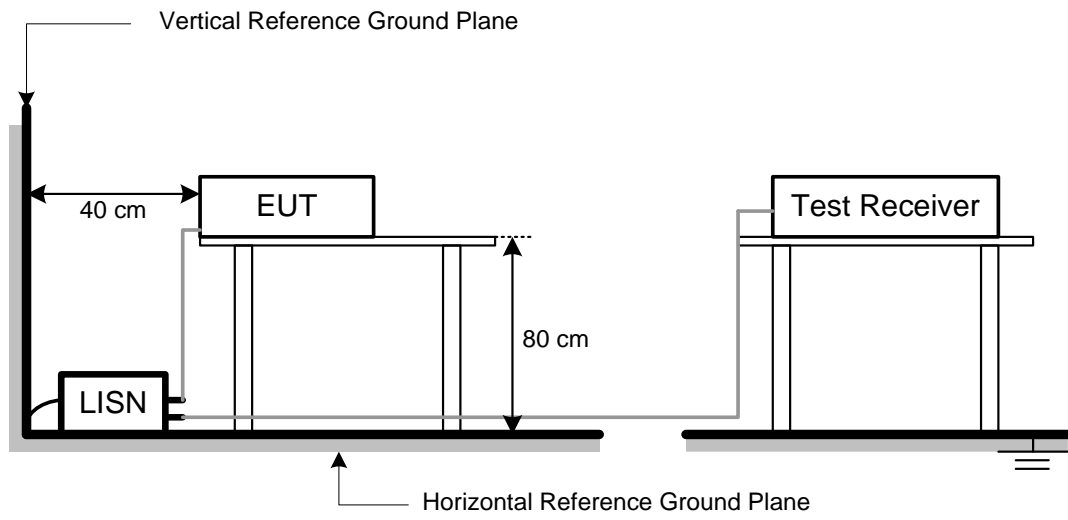
- a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).  
 All other support equipment were powered from an additional LISN(s).  
 The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle to keep the cable above 40 cm.
- c. Excess I/O cables that are not connected to a peripheral shall be bundled in the center.  
 The end of the cable will be terminated, using the correct terminating impedance.  
 The overall length shall not exceed 1 m.
- d. The LISN is spaced at least 80 cm from the nearest part of the EUT chassis.
- e. For the actual test configuration, please refer to the related Item - EUT TEST PHOTO.

**NOTE:**

- (1) In the results, each reading is marked as Peak, QP or AVG per the detector used.  
 BW=9 kHz (6 dB Bandwidth)
- (2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.

#### 3.3 DEVIATION FROM TEST STANDARD

No deviation.

**3.4 TEST SETUP****3.5 TEST RESULT**

Please refer to the APPENDIX A.

## 4 RF POWER OUTPUT TEST

### 4.1 LIMIT

Band	Limit
WCDMA IV LTE Band 4, 66	27.50(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.
LTE Band 12	27.50(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.
LTE Band 13	27.50(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.

**NOTE:**

(1) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level		Correct Factor		Measurement Value
-29.66	+	34.26	=	4.60

Measurement Value		Limit Value		Margin Level
4.60	-	38.45	=	-33.85

### 4.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.

**EIRP / ERP Power Measurement:**

EIRP = Conducted Power + Antenna gain.

ERP power = EIPR power - 2.15 dBi.

**Conducted Power Measurement:**

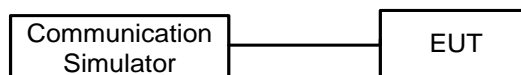
The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

### 4.3 DEVIATION FROM TEST STANDARD

No deviation.

### 4.4 TEST SETUP

**Conducted Power Measurement:**



### 4.5 TEST RESULT

Please refer to the APPENDIX B.

## 5 OCCUPIED BANDWIDTH MEASUREMENT

### 5.1 TEST PROCEDURE

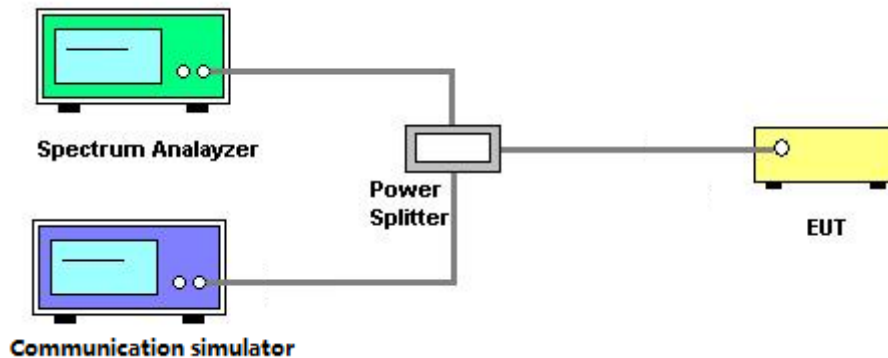
The testing follows FCC KDB 971168 v03r01 Section 4.

- The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.
- The EUT was connected to spectrum analyzer and system simulator via a power divider.
- $RBW = (1\% \sim 5\%) * EBW$   
 $VBW \geq 3 * RBW$ .
- Set spectrum analyzer with Peak detector.

### 5.2 DEVIATION FROM TEST STANDARD

No deviation.

### 5.3 TEST SETUP



### 5.4 TEST RESULT

Please refer to the APPENDIX C.

## 6 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

### 6.1 LIMIT

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. The emission limit equal to -13dBm. (Part 27 Subpart L & H)

### 6.2 TEST PROCEDURE

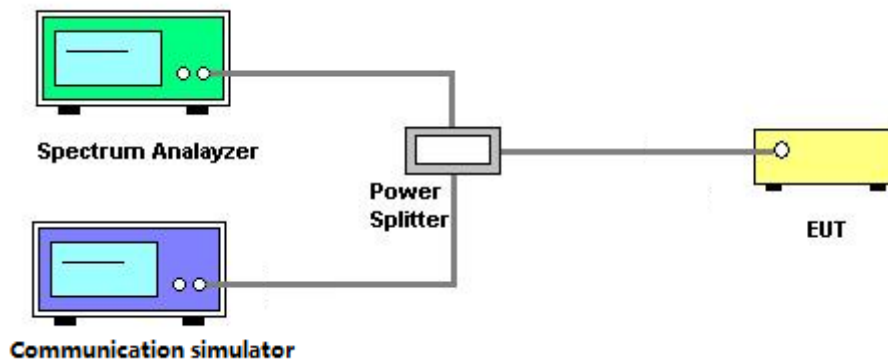
The testing follows FCC KDB 971168 v03r01 Section 6.

- The EUT was connected to spectrum analyzer and system simulator via a power divider.
- The band edges of low and high channels for the highest RF powers were measured. Set RBW  $\geq$  1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
- Set spectrum analyzer with Peak detector.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

### 6.3 DEVIATION FROM TEST STANDARD

No deviation.

### 6.4 TEST SETUP



### 6.5 TEST RESULT

Please refer to the APPENDIX D.

## 7 RADIATED SPURIOUS EMISSION TEST

### 7.1 LIMIT

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. The emission limit equal to -13dBm. (Part 27 Subpart L & H)

**NOTE:**

(2) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level		Correct Factor		Measurement Value
-50.43	+	-2.11	=	-52.54

Measurement Value		Limit Value		Margin Level
-52.54	-	-13	=	-39.54

### 7.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 6.2.

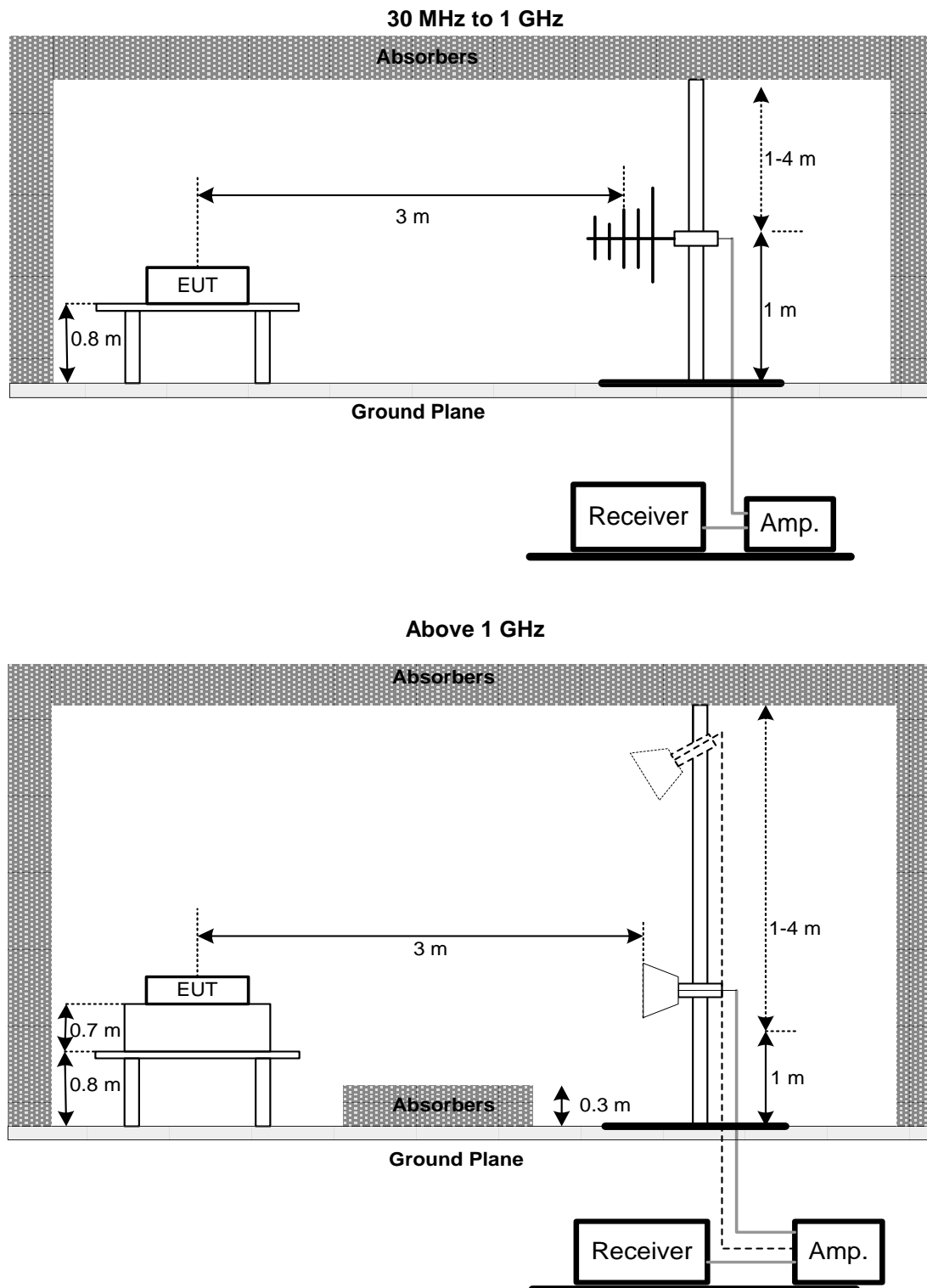
- e. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- f. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
- g. EIRP = Output power level of S.G - TX cable loss + Antenna gain of substitution horn.
- h. ERP can be calculated form EIRP by subtracting the gain of dipole,  $ERP = EIPR - 2.15\text{dBi}$ .  
The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

### 7.3 DEVIATION FROM TEST STANDARD

No deviation.



## 7.4 TEST SETUP



## 7.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

## 7.6 TEST RESULT

Please refer to the APPENDIX E

## 8 BAND EDGE MEASUREMENT

### 8.1 LIMIT

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. (Part 27 Subpart L & H)

### 8.2 TEST PROCEDURE

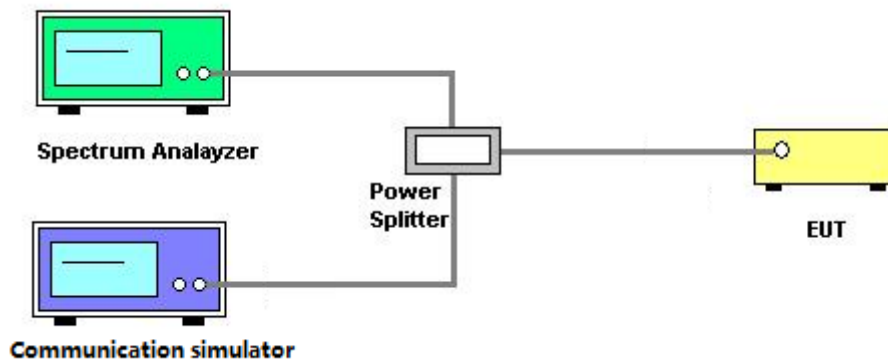
The testing follows FCC KDB 971168 v03r01 Section 6.

- a. All measurements were done at low and high operational frequency range.
- b. Record the max trace plot into the test report.

### 8.3 DEVIATION FROM TEST STANDARD

No deviation.

### 8.4 TEST SETUP



### 8.5 TEST RESULT

Please refer to the APPENDIX F.

## 9 PEAK TO AVERAGE RATIO MEASUREMENT

### 9.1 LIMIT

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.

### 9.2 TEST PROCEDURE

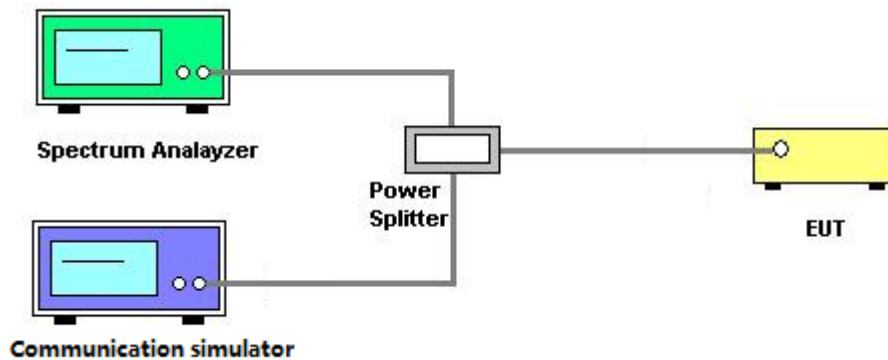
The testing follows FCC KDB 971168 v03r01 Section 5.7.

- Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth.
- Set the number of counts to a value that stabilizes the measured CCDF curve.
- Record the maximum PAPR level associated with a probability of 0.1%.

### 9.3 DEVIATION FROM TEST STANDARD

No deviation.

### 9.4 TEST SETUP



### 9.5 TEST RESULT

Please refer to the APPENDIX G.

## 10 FREQUENCY STABILITY MEASUREMENT

### 10.1 LIMIT

$\pm 1.5$  ppm is for base and fixed station.  $\pm 2.5$  ppm is for mobile station.

### 10.2 TEST PROCEDURE

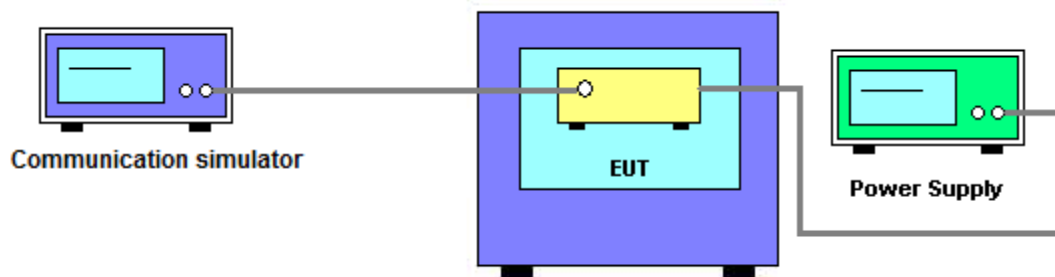
The testing follows FCC KDB 971168 v03r01 Section 9.

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
- The frequency error was recorded frequency error from the communication simulator.

### 10.3 DEVIATION FROM TEST STANDARD

No deviation.

### 10.4 TEST SETUP



### 10.5 TEST RESULT

Please refer to the APPENDIX H.

## 11 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101339	2021/3/10	2022/3/9
2	Test Cable	EMCI	EMCRG58-BM-B M-9000	210501	2021/5/3	2022/5/2
3	EMI Test Receiver	R&S	ESR 7	101433	2020/12/11	2021/12/10
4	Measurement Software	EZ	EZ EMC (Version NB-03A1-01)	N/A	N/A	N/A

RF Power Output						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/7/23	2022/7/22
2	Radio Communication Analyzer	Anritsu	MT8820C	6201381608	2021/1/7	2022/1/6

Radiated Spurious Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC02325B	980217	2021/4/8	2022/4/7
2	Preamplifier	EMCI	EMC012645B	980267	2021/4/8	2022/4/7
3	Test Cable	EMCI	EMC-SM-SM-1000	180809	2021/4/8	2022/4/7
4	Test Cable	EMCI	EMC104-SM-SM-3000	151205	2021/4/8	2022/4/7
5	Test Cable	EMCI	EMC-SM-SM-7000	180408	2021/4/8	2022/4/7
6	MXE EMI Receiver	Agilent	N9038A	MY554200087	2021/5/27	2022/5/26
7	Signal Analyzer	Agilent	N9010A	MY56480554	2021/8/25	2022/8/24
8	Horn Ant	SCHWARZBECK	BBHA 9120D	9120D-1342	2021/6/2	2022/6/1
9	Horn Ant	Schwarzbeck	BBHA 9170	BBHA 9170340	2021/7/9	2022/7/8
10	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	VULB 9168-352	2021/8/11	2022/8/10
11	5dB Attenuator	EMCI	EMCI-N-6-05	AT-N0625	2021/8/11	2022/8/10
12	Measurement Software	EZ	EZ EMC (Version NB-03A1-01)	N/A	N/A	N/A
13	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/7/23	2022/7/22
14	Radio Communication Analyzer (LTE)	Anritsu	MT8820C	6201381608	2021/1/7	2022/1/6

Frequency Stability Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/7/23	2022/7/22
2	Radio Communication Analyzer	Anritsu	MT8820C	6201381608	2021/1/7	2022/1/6
3	Thermal Chamber	HOLINK	H-T-1F-D	BA03101701	2021/6/28	2022/6/27

Others Conducted Measurement						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	8960 Series 10 Wireless Com Test Set	Agilent	E5515C	GB47390193	2021/7/23	2022/7/22
2	Radio Communication Analyzer	Anritsu	MT8820C	6201381608	2021/1/7	2022/1/6
3	Spectrum Analyzer	R&S	FSP40	100129	2021/6/8	2022/6/7
4	Spectrum Analyzer	Agilent	N9010A	MY54200240	2021/5/27	2022/5/26

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.  
All calibration period of equipment list is one year.

## **12 EUT TEST PHOTO**

Please refer to document Appendix No.: TP-2107T083A-FCCP-1 (APPENDIX-TEST PHOTOS).

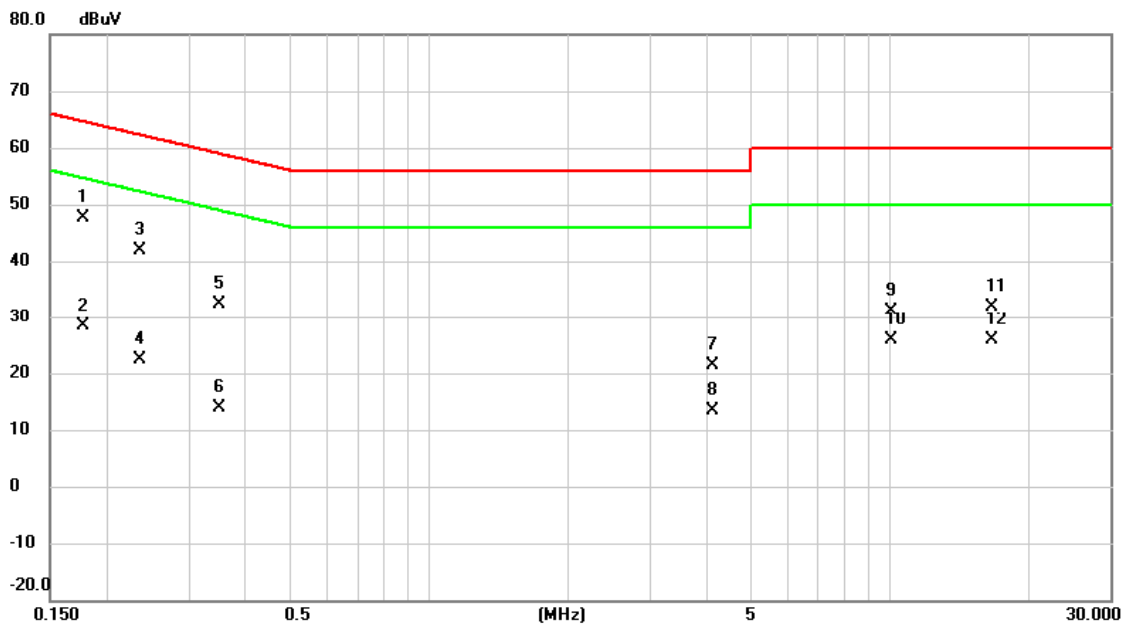
## **13 EUT PHOTOS**

Please refer to document Appendix No.: EP-2107T083A-1 (APPENDIX-EUT PHOTOS).

## **APPENDIX A AC POWER LINE CONDUCTED EMISSIONS**



Test Mode	Normal	Tested Date	2021/9/17
Test Frequency	-	Phase	Line

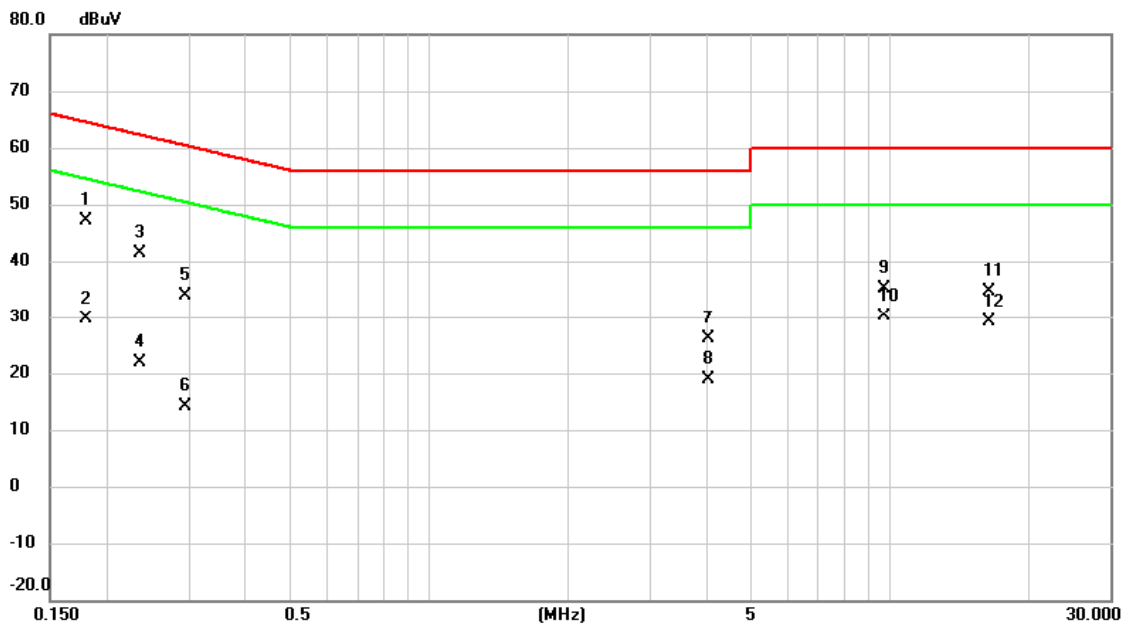


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	*	0.1770	38.01	9.72	47.73	64.63	-16.90	QP	
2		0.1770	18.75	9.72	28.47	54.63	-26.16	AVG	
3		0.2355	32.10	9.72	41.82	62.25	-20.43	QP	
4		0.2355	12.74	9.72	22.46	52.25	-29.79	AVG	
5		0.3525	22.74	9.72	32.46	58.90	-26.44	QP	
6		0.3525	4.22	9.72	13.94	48.90	-34.96	AVG	
7		4.0920	11.43	9.90	21.33	56.00	-34.67	QP	
8		4.0920	3.46	9.90	13.36	46.00	-32.64	AVG	
9		10.0433	21.11	10.11	31.22	60.00	-28.78	QP	
10		10.0433	15.77	10.11	25.88	50.00	-24.12	AVG	
11		16.5930	21.65	10.20	31.85	60.00	-28.15	QP	
12		16.5930	15.64	10.20	25.84	50.00	-24.16	AVG	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	Normal	Tested Date	2021/9/17
Test Frequency	-	Phase	Neutral

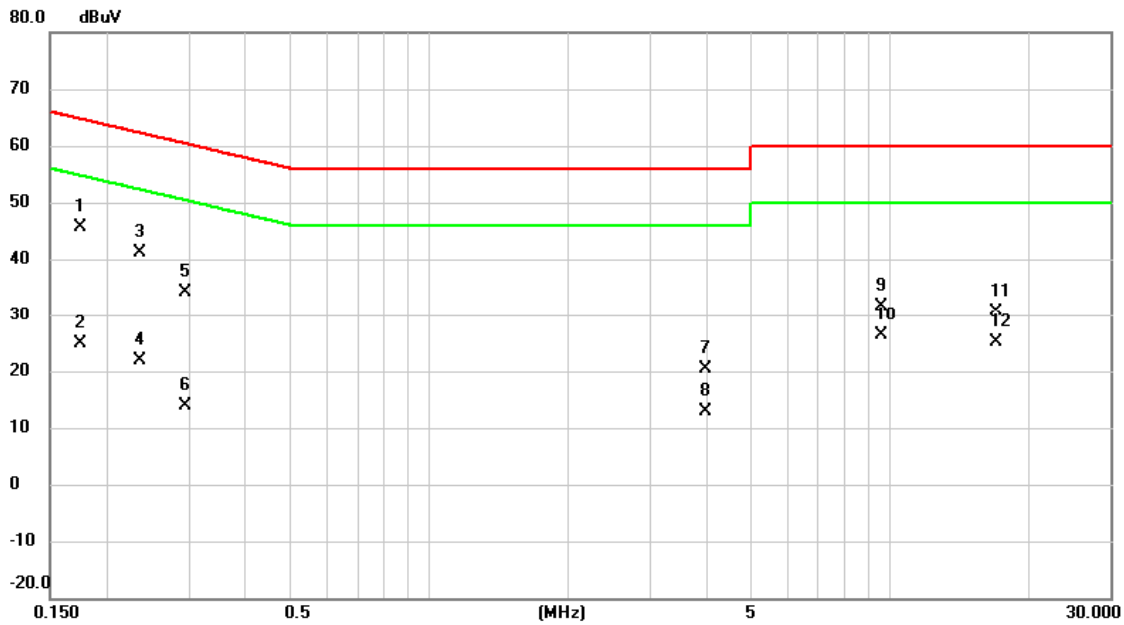


No.	Mk.	Freq. (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	*	0.1793	37.47	9.73	47.20	64.52	-17.32	QP	
2		0.1793	19.87	9.73	29.60	54.52	-24.92	AVG	
3		0.2355	31.62	9.72	41.34	62.25	-20.91	QP	
4		0.2355	12.19	9.72	21.91	52.25	-30.34	AVG	
5		0.2940	24.16	9.73	33.89	60.41	-26.52	QP	
6		0.2940	4.42	9.73	14.15	50.41	-36.26	AVG	
7		4.0155	16.13	9.91	26.04	56.00	-29.96	QP	
8		4.0155	8.86	9.91	18.77	46.00	-27.23	AVG	
9		9.7238	25.08	10.14	35.22	60.00	-24.78	QP	
10		9.7238	20.04	10.14	30.18	50.00	-19.82	AVG	
11		16.3568	24.47	10.28	34.75	60.00	-25.25	QP	
12		16.3568	18.96	10.28	29.24	50.00	-20.76	AVG	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	Idle	Tested Date	2021/9/17
Test Frequency	-	Phase	Line

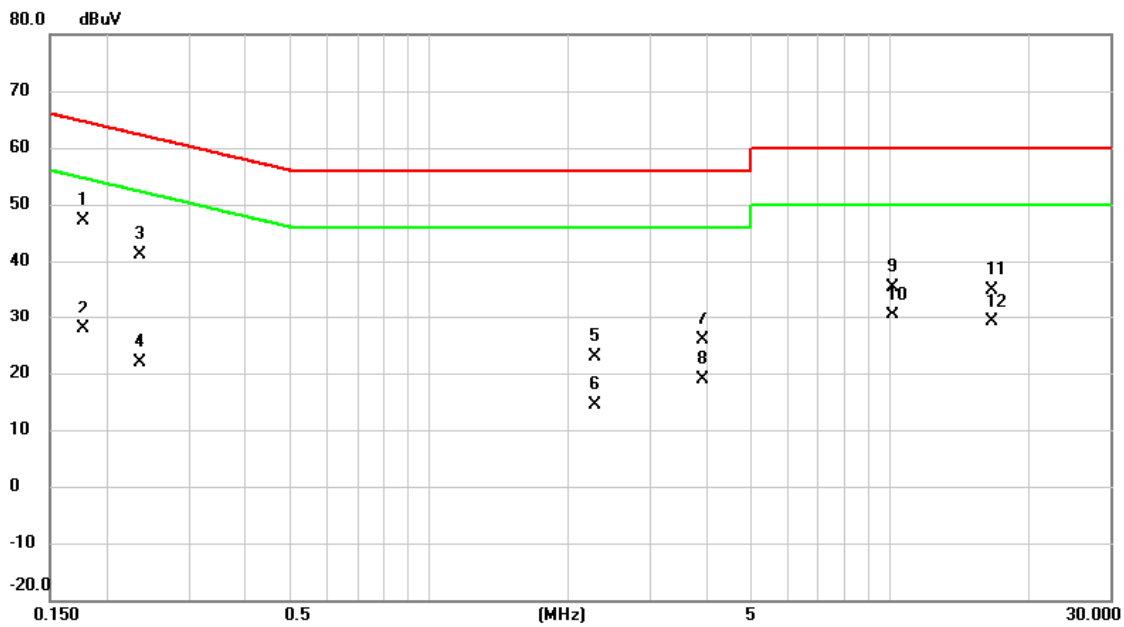


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1748	35.94	9.73	45.67	64.73	-19.06	QP	
2		0.1748	15.04	9.73	24.77	54.73	-29.96	AVG	
3		0.2355	31.32	9.72	41.04	62.25	-21.21	QP	
4		0.2355	12.15	9.72	21.87	52.25	-30.38	AVG	
5		0.2940	24.39	9.73	34.12	60.41	-26.29	QP	
6		0.2940	4.19	9.73	13.92	50.41	-36.49	AVG	
7		3.9525	10.61	9.89	20.50	56.00	-35.50	QP	
8		3.9525	2.87	9.89	12.76	46.00	-33.24	AVG	
9		9.6158	21.54	10.10	31.64	60.00	-28.36	QP	
10		9.6158	16.16	10.10	26.26	50.00	-23.74	AVG	
11		17.0160	20.52	10.20	30.72	60.00	-29.28	QP	
12		17.0160	14.89	10.20	25.09	50.00	-24.91	AVG	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	Idle	Tested Date	2021/9/17
Test Frequency	-	Phase	Neutral



No.	Mk.	Freq. (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measurement (dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	*	0.1770	37.46	9.73	47.19	64.63	-17.44	QP	
2		0.1770	18.13	9.73	27.86	54.63	-26.77	AVG	
3		0.2355	31.36	9.72	41.08	62.25	-21.17	QP	
4		0.2355	12.10	9.72	21.82	52.25	-30.43	AVG	
5		2.2853	13.11	9.79	22.90	56.00	-33.10	QP	
6		2.2853	4.60	9.79	14.39	46.00	-31.61	AVG	
7		3.9075	15.98	9.90	25.88	56.00	-30.12	QP	
8		3.9075	8.93	9.90	18.83	46.00	-27.17	AVG	
9		10.1625	25.35	10.15	35.50	60.00	-24.50	QP	
10		10.1625	20.18	10.15	30.33	50.00	-19.67	AVG	
11		16.5863	24.50	10.29	34.79	60.00	-25.21	QP	
12		16.5863	18.93	10.29	29.22	50.00	-20.78	AVG	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

## APPENDIX B RF POWER OUTPUT TEST

**Output Power (dBm):**

Band	Mode	UL/DL Channel No.	Frequency(MHz)	Average power(dBm)
WCDMA Band IV	Rel 99	1312/1537	1712.4	22.14
		1413/1638	1732.6	22.28
		1513/1738	1752.6	22.24

Band	Sub-test	UL/DL Channel No.	Average power(dBm)
HSDPA IV	1	1312/1537	22.02
		1413/1638	22.11
		1513/1738	22.12
	2	1312/1537	21.57
		1413/1638	21.66
		1513/1738	21.67
	3	1312/1537	21.12
		1413/1638	21.21
		1513/1738	21.22
	4	1312/1537	21.04
		1413/1638	21.14
		1513/1738	21.15

Band	Sub-test	UL/DL Channel No.	Average power(dBm)
HSUPA IV	1	1312/1537	22.07
		1413/1638	22.16
		1513/1738	22.17
	2	1312/1537	20.13
		1413/1638	20.22
		1513/1738	20.23
	3	1312/1537	21.19
		1413/1638	21.28
		1513/1738	21.29
	4	1312/1537	20.07
		1413/1638	20.16
		1513/1738	20.17
	5	1312/1537	21.98
		1413/1638	22.07
		1513/1738	22.08

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	
4	1.4	19957	1710.7	QPSK	1	0	0	21.91	
					1	3	0	21.62	
					1	5	0	21.89	
					3	0	0	21.91	
					3	1	0	21.62	
					3	3	0	21.89	
				16QAM	6	0	1	20.97	
					1	0	1	21.09	
					1	3	1	21.05	
					1	5	1	20.96	
					3	0	1	21.09	
					3	1	1	21.05	
		20175	1732.5	QPSK	1732.5	3	3	1	20.96
						6	0	2	20.06
						1	0	0	21.73
						1	3	0	21.92
						1	5	0	21.64
						3	0	0	21.73
				16QAM	3	1	0	21.92	
					3	3	0	21.64	
					6	0	1	20.79	
					1	0	1	20.91	
					1	3	1	20.87	
					1	5	1	20.71	
		20393	1754.3	QPSK	1754.3	3	0	1	20.91
						3	1	1	20.87
						3	3	1	20.71
						6	0	2	20.50
						1	0	0	21.63
						1	3	0	21.89
16QAM	1			5	0	21.77			
	3			0	0	21.63			
	3			1	0	21.89			
	3			3	0	21.77			
	6			0	1	20.69			
	1			0	1	20.81			
16QAM	1	3	1	20.77					
	1	5	1	20.84					
	3	0	1	20.81					
	3	1	1	20.77					
	3	3	1	20.84					
	6	0	2	20.60					

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)		
4	3	19965	1711.5	QPSK	1	0	0	21.96		
					1	8	0	21.67		
					1	14	0	21.94		
					8	0	1	21.07		
					8	4	1	20.71		
					8	7	1	21.12		
				15	0	1	21.02			
				16QAM	1	0	1	21.14		
					1	8	1	21.10		
					1	14	1	21.01		
					8	0	2	19.97		
					8	4	2	19.81		
					8	7	2	19.97		
				20175	1732.5	QPSK	1	0	0	21.78
							1	8	0	21.97
		1	14				0	21.69		
		8	0				1	20.89		
		8	4				1	21.01		
		8	7				1	20.87		
		15	0			1	20.84			
		16QAM	1			0	1	20.96		
			1			8	1	20.92		
			1			14	1	20.76		
			8			0	2	19.79		
			8			4	2	20.11		
			8			7	2	19.72		
		20385	1753.5			QPSK	1	0	0	21.68
							1	8	0	21.94
				1	14		0	21.82		
				8	0		1	20.79		
8	4			1	20.98					
8	7			1	21.00					
15	0			1	20.74					
16QAM	1			0	1	20.86				
	1			8	1	20.82				
	1			14	1	20.89				
	8			0	2	19.69				
	8			4	2	20.08				
	8			7	2	19.85				
15	0			2	19.83					



Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)		
4	5	19975	1712.5	QPSK	1	0	0	22.01		
					1	12	0	21.72		
					1	24	0	21.99		
					12	0	1	21.12		
					12	7	1	20.76		
					12	13	1	21.17		
				16QAM	25	0	1	21.07		
					1	0	1	21.19		
					1	12	1	21.15		
					1	24	1	21.06		
					12	0	2	20.02		
					12	7	2	19.86		
		20175	1732.5	QPSK	1732.5	QPSK	12	13	2	20.02
							12	7	2	19.86
							12	13	2	20.02
							25	0	2	20.16
							1	0	0	21.83
							1	12	0	22.02
				16QAM	1	24	0	21.74		
					12	0	1	20.94		
					12	7	1	21.06		
					12	13	1	20.92		
					25	0	1	20.89		
					1	0	1	21.01		
		20375	1752.5	QPSK	1752.5	QPSK	1	12	1	20.97
							1	24	1	20.81
							12	0	2	19.84
							12	7	2	20.16
							12	13	2	19.77
							25	0	2	19.98
16QAM	1			0	0	21.73				
	1			12	0	21.99				
	1			24	0	21.87				
	12			0	1	20.84				
	12			7	1	21.03				
	12			13	1	21.05				
20375	1752.5	QPSK	1752.5	QPSK	25	0	1	20.79		
					1	0	1	20.91		
					1	12	1	20.87		
					1	24	1	20.94		
					12	0	2	19.74		
					12	7	2	20.13		
		16QAM	12	13	2	19.90				
			25	0	2	19.88				

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
4	10	20000	1715.0	QPSK	1	0	0	22.06
					1	25	0	21.77
					1	49	0	22.04
					25	0	1	21.17
					25	12	1	20.81
					25	25	1	21.22
					50	0	1	21.12
				16QAM	1	0	1	21.24
					1	25	1	21.20
					1	49	1	21.11
					25	0	2	20.07
					25	12	2	19.91
					25	25	2	20.07
					50	0	2	20.21
		20175	1732.5	QPSK	1	0	0	21.88
					1	25	0	22.07
					1	49	0	21.79
					25	0	1	20.99
					25	12	1	21.11
					25	25	1	20.97
					50	0	1	20.94
				16QAM	1	0	1	21.06
					1	25	1	21.02
					1	49	1	20.86
					25	0	2	19.89
					25	12	2	20.21
					25	25	2	19.82
50	0				2	20.03		
20350	1750.0	QPSK	1	0	0	21.78		
			1	25	0	22.04		
			1	49	0	21.92		
			25	0	1	20.89		
			25	12	1	21.08		
			25	25	1	21.10		
			50	0	1	20.84		
		16QAM	1	0	1	20.96		
			1	25	1	20.92		
			1	49	1	20.99		
			25	0	2	19.79		
			25	12	2	20.18		
			25	25	2	19.95		
			50	0	2	19.93		

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
4	15	20025	1717.5	QPSK	1	0	0	22.11
					1	37	0	21.82
					1	74	0	22.09
					36	0	1	21.22
					36	20	1	20.86
					36	39	1	21.27
					75	0	1	21.17
				16QAM	1	0	1	21.29
					1	37	1	21.25
					1	74	1	21.16
					36	0	2	20.12
					36	20	2	19.96
					36	39	2	20.12
					75	0	2	20.26
		20175	1732.5	QPSK	1	0	0	21.93
					1	37	0	22.12
					1	74	0	21.84
					36	0	1	21.04
					36	20	1	21.16
					36	39	1	21.02
					75	0	1	20.99
				16QAM	1	0	1	21.11
					1	37	1	21.07
					1	74	1	20.91
					36	0	2	19.94
					36	20	2	20.26
					36	39	2	19.87
					75	0	2	20.08
		20325	1747.5	QPSK	1	0	0	21.83
					1	37	0	22.09
1	74				0	21.97		
36	0				1	20.94		
36	20				1	21.13		
36	39				1	21.15		
75	0				1	20.89		
16QAM	1			0	1	21.01		
	1			37	1	20.97		
	1			74	1	21.04		
	36			0	2	19.84		
	36			20	2	20.23		
	36			39	2	20.00		
	75			0	2	19.98		

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)		
4	20	20050	1720.0	QPSK	1	0	0	22.39		
					1	49	0	22.12		
					1	99	0	22.41		
					50	0	1	21.27		
					50	24	1	20.91		
					50	50	1	21.32		
				16QAM	100	0	1	21.22		
					1	0	1	21.34		
					1	49	1	21.30		
					1	99	1	21.21		
					50	0	2	20.17		
					50	24	2	20.01		
		20175	1732.5	QPSK	1732.5	QPSK	50	50	2	20.17
							100	0	2	20.31
							1	0	0	22.42
							1	49	0	22.39
							1	99	0	22.13
							50	0	1	21.09
				16QAM	50	24	1	21.21		
					50	50	1	21.07		
					100	0	1	21.04		
					1	0	1	21.16		
					1	49	1	21.12		
					1	99	1	20.96		
		20300	1745.0	QPSK	1745.0	QPSK	50	0	2	19.99
							50	24	2	20.31
							50	50	2	19.92
							100	0	2	20.13
							1	0	0	22.16
							1	49	0	22.39
16QAM	1			99	0	22.23				
	50			0	1	20.99				
	50			24	1	21.18				
	50			50	1	21.20				
	100			0	1	20.94				
	1			0	1	21.06				
16QAM	1	49	1	21.02						
	1	99	1	21.09						
	50	0	2	19.89						
	50	24	2	20.28						
	50	50	2	20.05						
	100	0	2	20.03						

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	
12	1.4	23017	699.7	QPSK	1	0	0	21.92	
					1	3	0	21.87	
					1	5	0	21.97	
					3	0	0	21.92	
					3	1	0	21.87	
					3	3	0	21.97	
				16QAM	6	0	1	20.98	
					1	0	1	21.10	
					1	3	1	21.06	
					1	5	1	21.04	
					3	0	1	21.10	
					3	1	1	21.06	
		23095	707.5	QPSK	707.5	3	3	1	21.04
						6	0	2	20.07
						1	0	0	21.71
						1	3	0	21.88
						1	5	0	21.79
						3	0	0	21.71
				16QAM	3	1	0	21.88	
					3	3	0	21.79	
					6	0	1	20.77	
					1	0	1	20.89	
					1	3	1	20.85	
					1	5	1	20.86	
		23173	715.3	QPSK	715.3	3	0	1	20.89
						3	1	1	20.85
						3	3	1	20.86
						6	0	2	20.50
						1	0	0	21.93
						1	3	0	21.81
16QAM	1			5	0	21.73			
	3			0	0	21.93			
	3			1	0	21.81			
	3			3	0	21.73			
	6			0	1	20.99			
	1			0	1	21.11			
					1	3	1	21.07	
					1	5	1	20.80	
					3	0	1	21.11	
					3	1	1	21.07	
					3	3	1	20.80	
					6	0	2	20.60	

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)		
12	3	23025	700.5	QPSK	1	0	0	21.97		
					1	8	0	21.92		
					1	14	0	22.02		
					8	0	1	21.08		
					8	4	1	20.96		
					8	7	1	21.20		
				16QAM	15	0	1	21.03		
					1	0	1	21.15		
					1	8	1	21.11		
					1	14	1	21.09		
					8	0	2	19.98		
					8	4	2	20.06		
		23095	707.5	QPSK	707.5	QPSK	8	7	2	20.05
							15	0	2	20.12
							1	0	0	21.76
							1	8	0	21.93
							1	14	0	21.84
							8	0	1	20.87
				16QAM	8	4	1	20.97		
					8	7	1	21.02		
					15	0	1	20.82		
					1	0	1	20.94		
					1	8	1	20.90		
					1	14	1	20.91		
		23165	714.5	QPSK	714.5	QPSK	8	0	2	19.77
							8	4	2	20.07
							8	7	2	19.87
							15	0	2	19.91
							1	0	0	21.98
							1	8	0	21.86
16QAM	1			14	0	21.78				
	8			0	1	21.09				
	8			4	1	20.90				
	8			7	1	20.96				
	15			0	1	21.04				
	1			0	1	21.16				
16QAM	1	8	1	21.12						
	1	14	1	20.85						
	8	0	2	19.99						
	8	4	2	20.00						
	8	7	2	19.81						
	15	0	2	20.13						

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
12	5	23035	701.5	QPSK	1	0	0	22.02
					1	12	0	21.97
					1	24	0	22.07
					12	0	1	21.13
					12	7	1	21.01
					12	13	1	21.25
					25	0	1	21.08
				16QAM	1	0	1	21.20
					1	12	1	21.16
					1	24	1	21.14
					12	0	2	20.03
					12	7	2	20.11
					12	13	2	20.10
					25	0	2	20.17
		23095	707.5	QPSK	1	0	0	21.81
					1	12	0	21.98
					1	24	0	21.89
					12	0	1	20.92
					12	7	1	21.02
					12	13	1	21.07
					25	0	1	20.87
				16QAM	1	0	1	20.99
					1	12	1	20.95
					1	24	1	20.96
					12	0	2	19.82
					12	7	2	20.12
					12	13	2	19.92
					25	0	2	19.96
		23155	713.5	QPSK	1	0	0	22.03
					1	12	0	21.91
1	24				0	21.83		
12	0				1	21.14		
12	7				1	20.95		
12	13				1	21.01		
25	0				1	21.09		
16QAM	1			0	1	21.21		
	1			12	1	21.17		
	1			24	1	20.90		
	12			0	2	20.04		
	12			7	2	20.05		
	12			13	2	19.86		
	25			0	2	20.18		

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)		
12	10	23060	704.0	QPSK	1	0	0	22.38		
					1	25	0	22.29		
					1	49	0	22.34		
					25	0	1	21.18		
					25	12	1	21.06		
					25	25	1	21.30		
				16QAM	50	0	1	21.13		
					1	0	1	21.25		
					1	25	1	21.21		
					1	49	1	21.19		
					25	0	2	20.08		
					25	12	2	20.16		
		23095	707.5	QPSK	707.5	QPSK	25	25	2	20.15
							50	0	2	20.22
							1	0	0	22.41
							1	25	0	22.34
							1	49	0	22.19
							25	0	1	20.97
				16QAM	25	12	1	21.07		
					25	25	1	21.12		
					50	0	1	20.92		
					1	0	1	21.04		
					1	25	1	21.00		
					1	49	1	21.01		
		23130	711.0	QPSK	711.0	QPSK	25	0	2	19.87
							25	12	2	20.17
							25	25	2	19.97
							50	0	2	20.01
							1	0	0	22.37
							1	25	0	22.24
16QAM	1			49	0	22.13				
	25			0	1	21.19				
	25			12	1	21.00				
	25			25	1	21.06				
	50			0	1	21.14				
	1			0	1	21.26				
16QAM	1	25	1	21.22						
	1	49	1	20.95						
	25	0	2	20.09						
	25	12	2	20.10						
	25	25	2	19.91						
	50	0	2	20.23						



Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
13	5	23205	779.5	QPSK	1	0	0	22.00
					1	12	0	21.84
					1	24	0	21.96
					12	0	1	21.11
					12	7	1	20.88
					12	13	1	21.14
					25	0	1	21.06
				16QAM	1	0	1	21.18
					1	12	1	21.14
					1	24	1	21.03
					12	0	2	20.01
					12	7	2	19.98
					12	13	2	19.99
					25	0	2	20.15
		23230	752.0	QPSK	1	0	0	22.00
					1	12	0	21.84
					1	24	0	21.96
					12	0	1	21.11
					12	7	1	20.88
					12	13	1	21.14
					25	0	1	21.06
				16QAM	1	0	1	21.18
					1	12	1	21.14
					1	24	1	21.03
					12	0	2	20.01
					12	7	2	19.98
					12	13	2	19.99
					25	0	2	20.15
		23255	784.5	QPSK	1	0	0	22.00
					1	12	0	21.84
1	24				0	21.96		
12	0				1	21.11		
12	7				1	20.88		
12	13				1	21.14		
25	0				1	21.06		
16QAM	1			0	1	21.18		
	1			12	1	21.14		
	1			24	1	21.03		
	12			0	2	20.01		
	12			7	2	19.98		
	12			13	2	19.99		
	25			0	2	20.15		

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
13	10	23230	782.0	QPSK	1	0	0	22.33
					1	25	0	22.14
					1	49	0	22.28
					25	0	1	21.14
					25	12	1	20.91
					25	25	1	21.17
					50	0	1	21.09
				16QAM	1	0	1	21.21
					1	25	1	21.17
					1	49	1	21.06
					25	0	2	20.04
					25	12	2	20.01
					25	25	2	20.02
					50	0	2	20.18

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	
66	1.4	131979	1710.7	QPSK	1	0	0	22.13	
					1	3	0	22.10	
					1	5	0	21.96	
					3	0	0	22.13	
					3	1	0	22.10	
					3	3	0	21.96	
				16QAM	6	0	1	21.19	
					1	0	1	21.31	
					1	3	1	21.27	
					1	5	1	21.03	
					3	0	1	21.31	
					3	1	1	21.27	
		132322	1745.0	QPSK	1745.0	3	3	1	21.03
						6	0	2	20.28
						1	0	0	21.94
						1	3	0	20.91
						1	5	0	20.87
						3	0	0	21.94
				16QAM	3	1	0	20.91	
					3	3	0	20.87	
					6	0	1	21.00	
					1	0	1	21.12	
					1	3	1	21.08	
					1	5	1	19.94	
		132665	1779.3	QPSK	1779.3	3	0	1	21.12
						3	1	1	21.08
						3	3	1	19.94
						6	0	2	20.50
						1	0	0	22.26
						1	3	0	22.18
16QAM	1			5	0	22.12			
	3			0	0	22.26			
	3			1	0	22.18			
	3			3	0	22.12			
	6			0	1	21.32			
	1			0	1	21.44			
					1	3	1	21.40	
					1	5	1	21.19	
					3	0	1	21.44	
					3	1	1	21.40	
					3	3	1	21.19	
					6	0	2	20.60	

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	
66	3	131987	1711.5	QPSK	1	0	0	22.18	
					1	8	0	22.15	
					1	14	0	22.01	
					8	0	1	21.29	
					8	4	1	21.19	
					8	7	1	21.19	
				16QAM	15	0	1	21.24	
					1	0	1	21.36	
					1	8	1	21.32	
					1	14	1	21.08	
					8	0	2	20.19	
					8	4	2	20.29	
		132322	1745.0	QPSK	1745.0	8	7	2	20.04
						8	0	2	20.33
						1	0	0	21.99
						1	8	0	20.96
						1	14	0	20.92
						8	0	1	21.10
				16QAM	8	4	1	20.00	
					8	7	1	20.10	
					15	0	1	21.05	
					1	0	1	21.17	
					1	8	1	21.13	
					1	14	1	19.99	
		132657	1778.5	QPSK	1778.5	8	0	2	20.00
						8	4	2	19.10
						8	7	2	18.95
						15	0	2	21.30
						1	0	0	22.31
						1	8	0	22.23
16QAM	1			14	0	22.17			
	8			0	1	21.42			
	8			4	1	21.27			
	8			7	1	21.35			
	15			0	1	21.37			
	1			0	1	21.49			
16QAM	1	8	1	21.45					
	1	14	1	21.24					
	8	0	2	20.32					
	8	4	2	20.37					
	8	7	2	20.20					
	15	0	2	21.10					

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
66	5	131997	1712.5	QPSK	1	0	0	22.23
					1	12	0	22.20
					1	24	0	22.06
					12	0	1	21.34
					12	7	1	21.24
					12	13	1	21.24
					25	0	1	21.29
				16QAM	1	0	1	21.41
					1	12	1	21.37
					1	24	1	21.13
					12	0	2	20.24
					12	7	2	20.34
					12	13	2	20.09
					25	0	2	20.38
		132322	1745.0	QPSK	1	0	0	22.04
					1	12	0	21.01
					1	24	0	20.97
					12	0	1	21.15
					12	7	1	20.05
					12	13	1	20.15
					25	0	1	21.10
				16QAM	1	0	1	21.22
					1	12	1	21.18
					1	24	1	20.04
					12	0	2	20.05
					12	7	2	19.15
					12	13	2	19.00
					25	0	2	20.19
		132647	1777.5	QPSK	1	0	0	22.36
					1	12	0	22.28
1	24				0	22.22		
12	0				1	21.47		
12	7				1	21.32		
12	13				1	21.40		
25	0				1	21.42		
16QAM	1			0	1	21.54		
	1			12	1	21.50		
	1			24	1	21.29		
	12			0	2	20.37		
	12			7	2	20.42		
	12			13	2	20.25		
	25			0	2	20.51		

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
66	10	132022	1715.0	QPSK	1	0	0	22.28
					1	25	0	22.25
					1	49	0	22.11
					25	0	1	21.39
					25	12	1	21.29
					25	25	1	21.29
					50	0	1	21.34
				16QAM	1	0	1	21.46
					1	25	1	21.42
					1	49	1	21.18
					25	0	2	20.29
					25	12	2	20.39
					25	25	2	20.14
					50	0	2	20.43
		132322	1745.0	QPSK	1	0	0	22.09
					1	25	0	21.06
					1	49	0	21.02
					25	0	1	21.20
					25	12	1	20.10
					25	25	1	20.20
					50	0	1	21.15
				16QAM	1	0	1	21.27
					1	25	1	21.23
					1	49	1	20.09
					25	0	2	20.10
					25	12	2	19.20
					25	25	2	19.05
					50	0	2	20.24
		132622	1775.0	QPSK	1	0	0	22.41
					1	25	0	22.33
1	49				0	22.27		
25	0				1	21.52		
25	12				1	21.37		
25	25				1	21.45		
50	0				1	21.47		
16QAM	1			0	1	21.59		
	1			25	1	21.55		
	1			49	1	21.34		
	25			0	2	20.42		
	25			12	2	20.47		
	25			25	2	20.30		
	50			0	2	20.56		

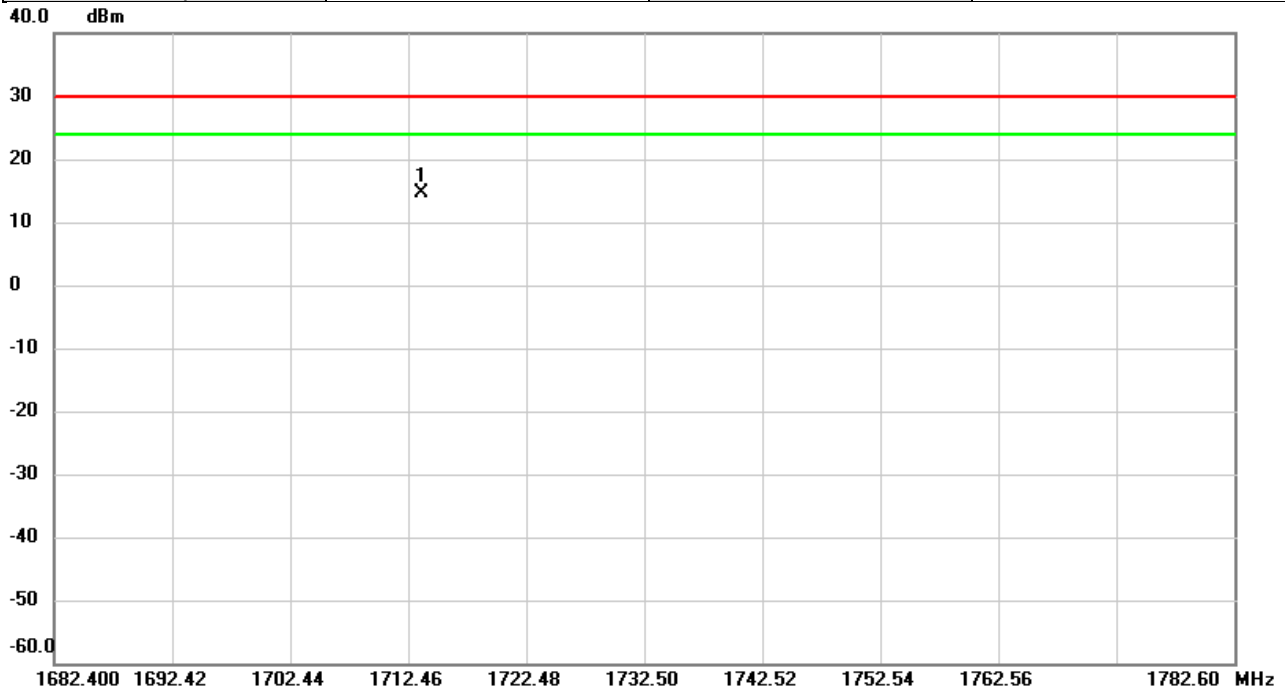
Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
66	15	132047	1717.5	QPSK	1	0	0	22.33
					1	37	0	22.30
					1	74	0	22.16
					36	0	1	21.44
					36	20	1	21.34
					36	39	1	21.34
					75	0	1	21.39
				16QAM	1	0	1	21.51
					1	37	1	21.47
					1	74	1	21.23
					36	0	2	20.34
					36	20	2	20.44
					36	39	2	20.19
					75	0	2	20.48
		132322	1745.0	QPSK	1	0	0	22.14
					1	37	0	21.11
					1	74	0	21.07
					36	0	1	21.25
					36	20	1	20.15
					36	39	1	20.25
					75	0	1	21.20
				16QAM	1	0	1	21.32
					1	37	1	21.28
					1	74	1	20.14
					36	0	2	20.15
					36	20	2	19.25
					36	39	2	19.10
					75	0	2	20.29
		132597	1772.5	QPSK	1	0	0	22.46
					1	37	0	22.38
1	74				0	22.32		
36	0				1	21.57		
36	20				1	21.42		
36	39				1	21.50		
75	0				1	21.52		
16QAM	1			0	1	21.64		
	1			37	1	21.60		
	1			74	1	21.39		
	36			0	2	20.47		
	36			20	2	20.52		
	36			39	2	20.35		
	75			0	2	20.61		

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)
66	20	132072	1720.0	QPSK	1	0	0	22.79
					1	49	0	22.73
					1	99	0	22.63
					50	0	1	21.49
					50	24	1	21.39
					50	50	1	21.39
					100	0	1	21.44
				16QAM	1	0	1	21.56
					1	49	1	21.52
					1	99	1	21.28
					50	0	2	20.39
					50	24	2	20.49
					50	50	2	20.24
					100	0	2	20.53
		132322	1745.0	QPSK	1	0	0	22.88
					1	49	0	22.72
					1	99	0	22.62
					50	0	1	21.30
					50	24	1	20.20
					50	50	1	20.30
					100	0	1	21.25
				16QAM	1	0	1	21.37
					1	49	1	21.33
					1	99	1	20.19
					50	0	2	20.20
					50	24	2	19.30
					50	50	2	19.15
					100	0	2	20.34
		132572	1770.0	QPSK	1	0	0	22.83
					1	49	0	22.76
1	99				0	22.64		
50	0				1	21.62		
50	24				1	21.47		
50	50				1	21.55		
100	0				1	21.57		
16QAM	1			0	1	21.69		
	1			49	1	21.65		
	1			99	1	21.44		
	50			0	2	20.52		
	50			24	2	20.57		
	50			50	2	20.40		
	100			0	2	20.66		



**ERP (dBm):**

Test Mode	WCDMA Band IV	Test Date	2021/9/17
Test Channel	CH1537	Polarization	Vertical
Temp	25°C	Hum.	52%

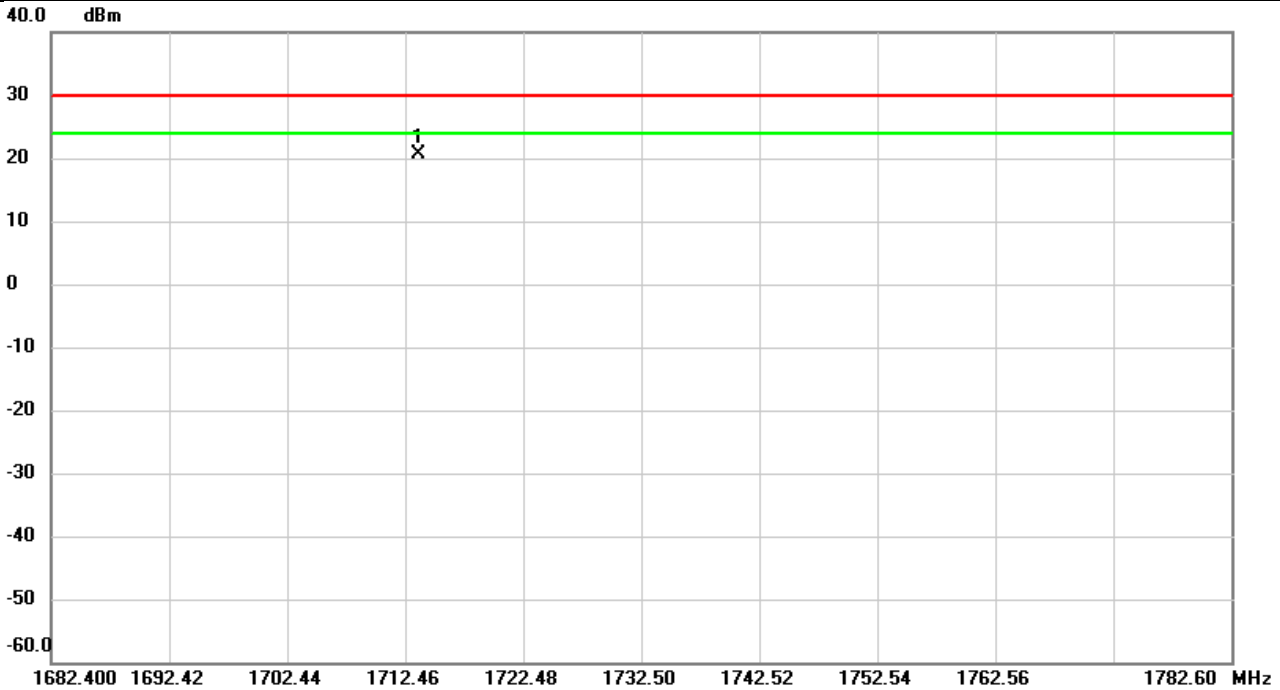


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1713.569	-24.39	39.13	14.74	30.00	-15.26	peak	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band IV	Test Date	2021/9/17
Test Channel	CH1537	Polarization	Horizontal
Temp	25°C	Hum.	52%



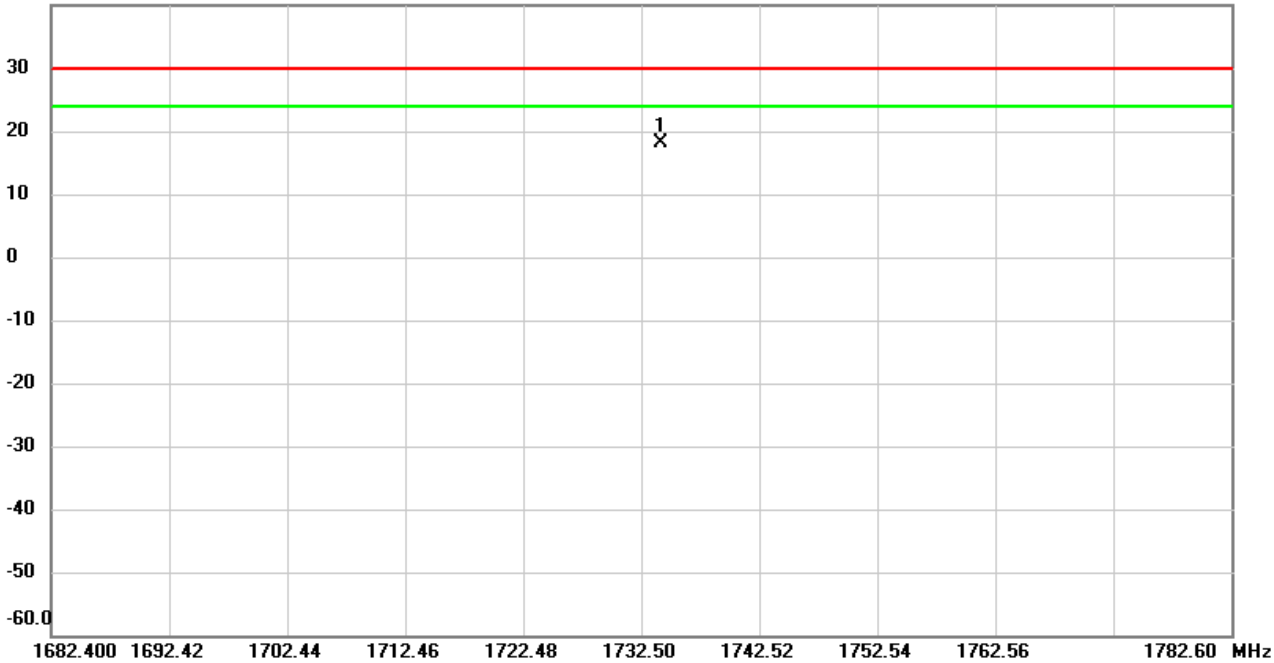
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1713.552	-19.35	39.87	20.52	30.00	-9.48	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band IV	Test Date	2021/9/17
Test Channel	CH1652	Polarization	Vertical
Temp	25°C	Hum.	52%

40.0 dBm

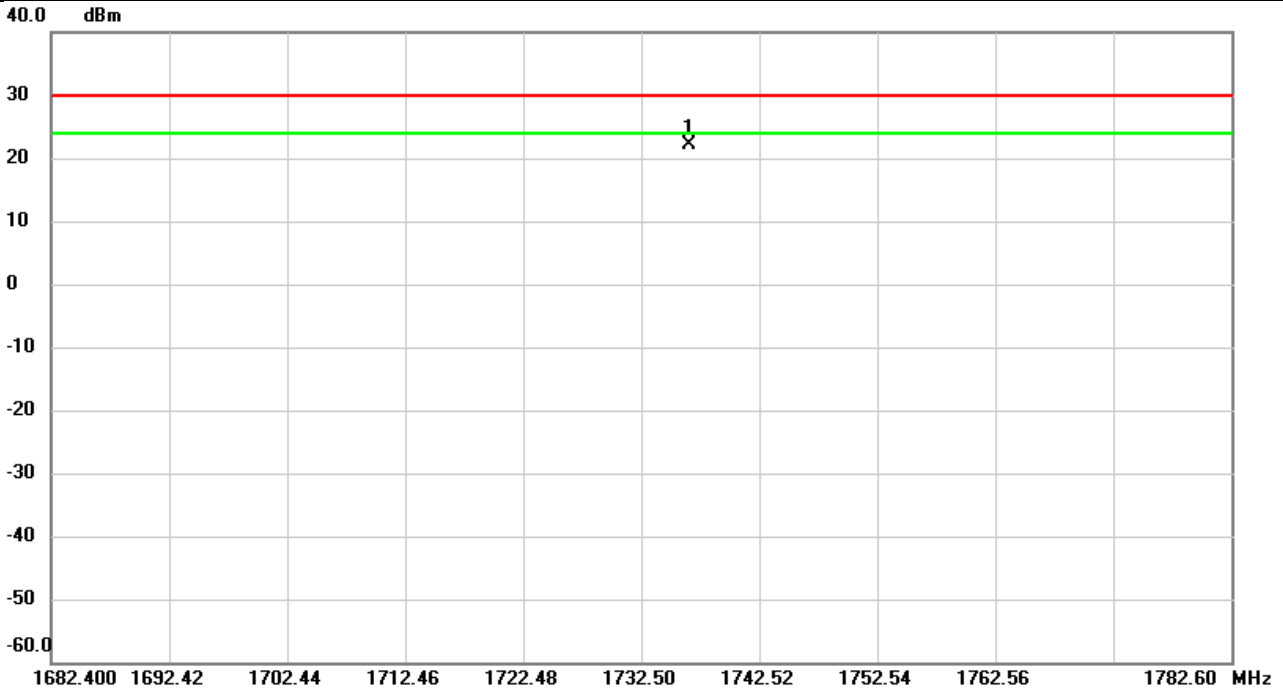


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1734.207	-21.02	39.21	18.19	30.00	-11.81	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band IV	Test Date	2021/9/17
Test Channel	CH1652	Polarization	Horizontal
Temp	25°C	Hum.	52%

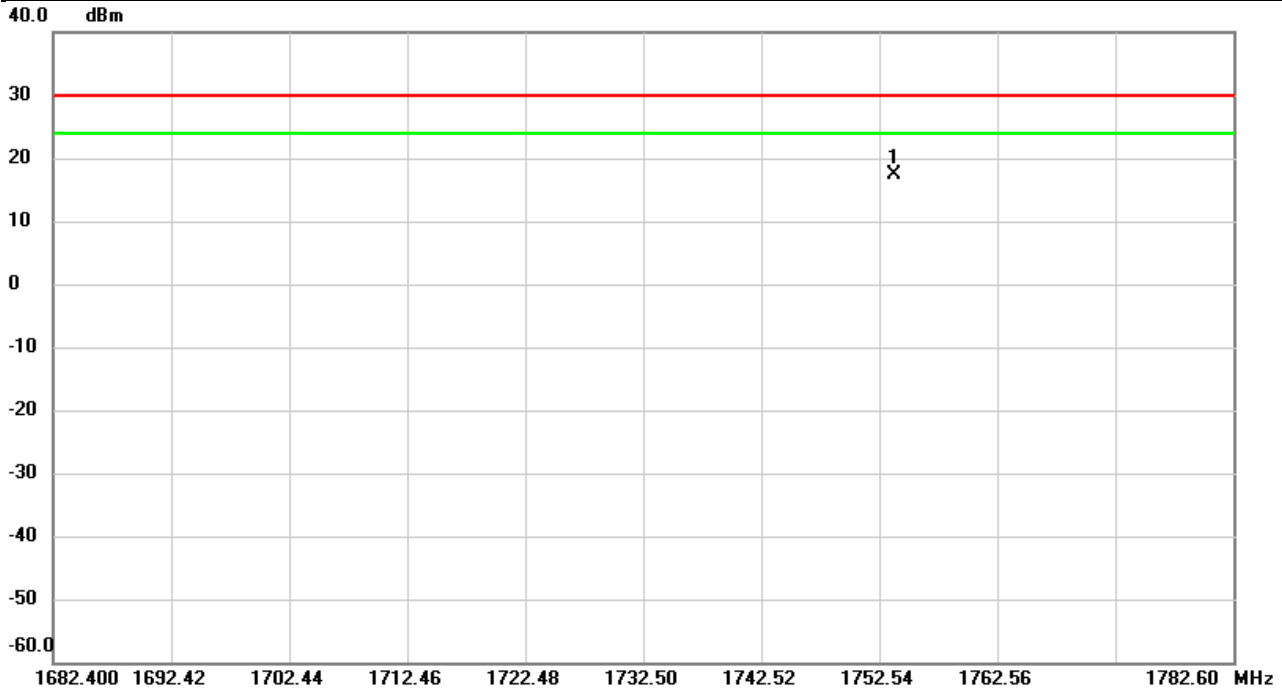


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1736.635	-17.90	39.99	22.09	30.00	-7.91	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band IV	Test Date	2021/9/17
Test Channel	CH1738	Polarization	Vertical
Temp	25°C	Hum.	52%

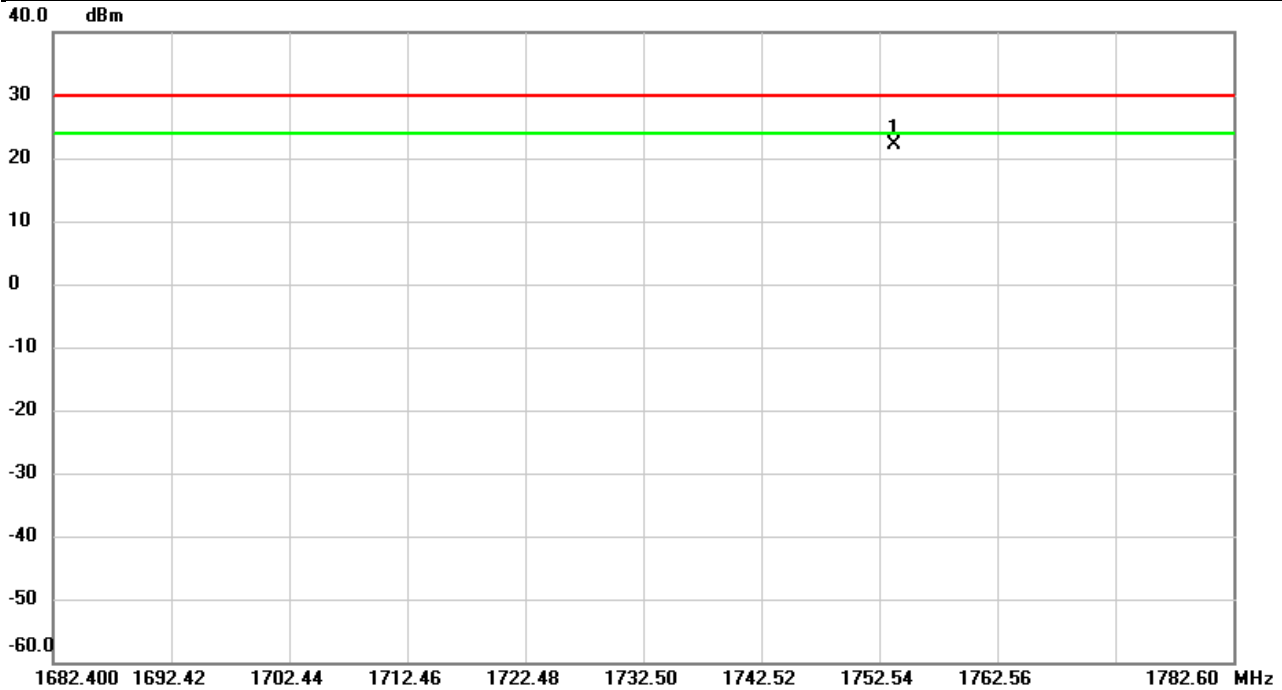


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1753.826	-22.02	39.29	17.27	30.00	-12.73	peak	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	WCDMA Band IV	Test Date	2021/9/17
Test Channel	CH1738	Polarization	Horizontal
Temp	25°C	Hum.	52%

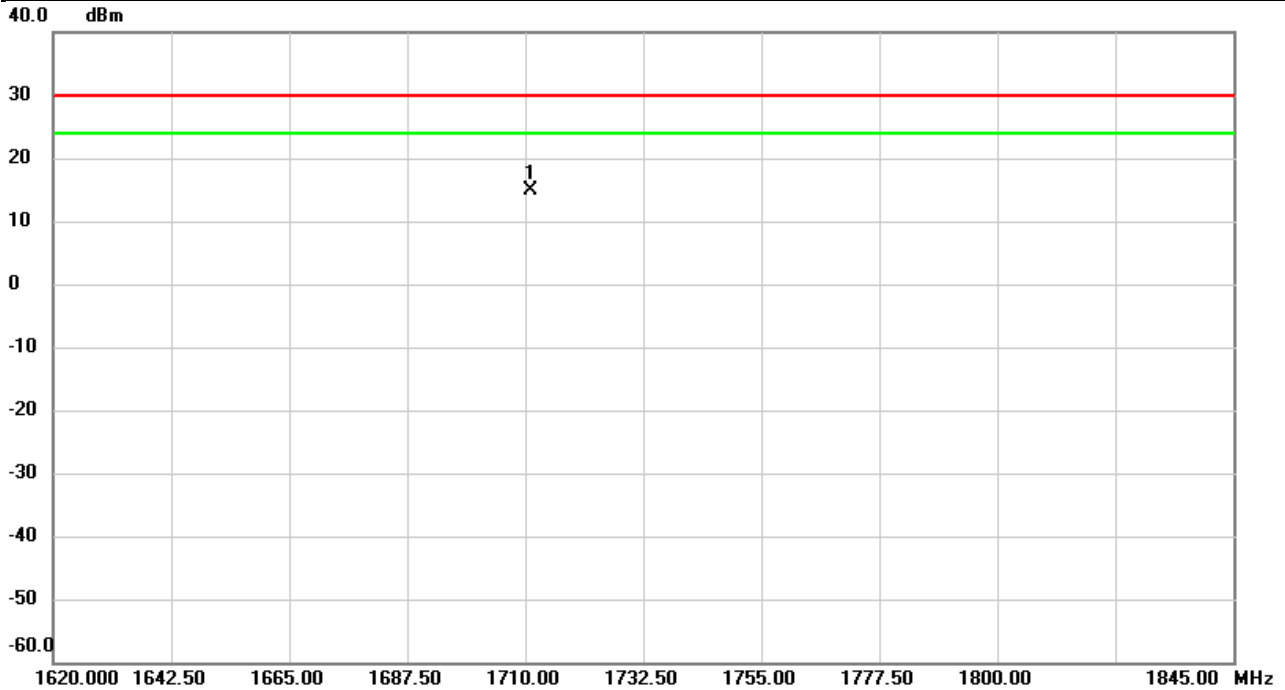


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1753.873	-17.89	40.08	22.19	30.00	-7.81	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 4	Test Date	2021/9/16
Test Channel	CH20050	Polarization	Vertical
Temp	22°C	Hum.	54%

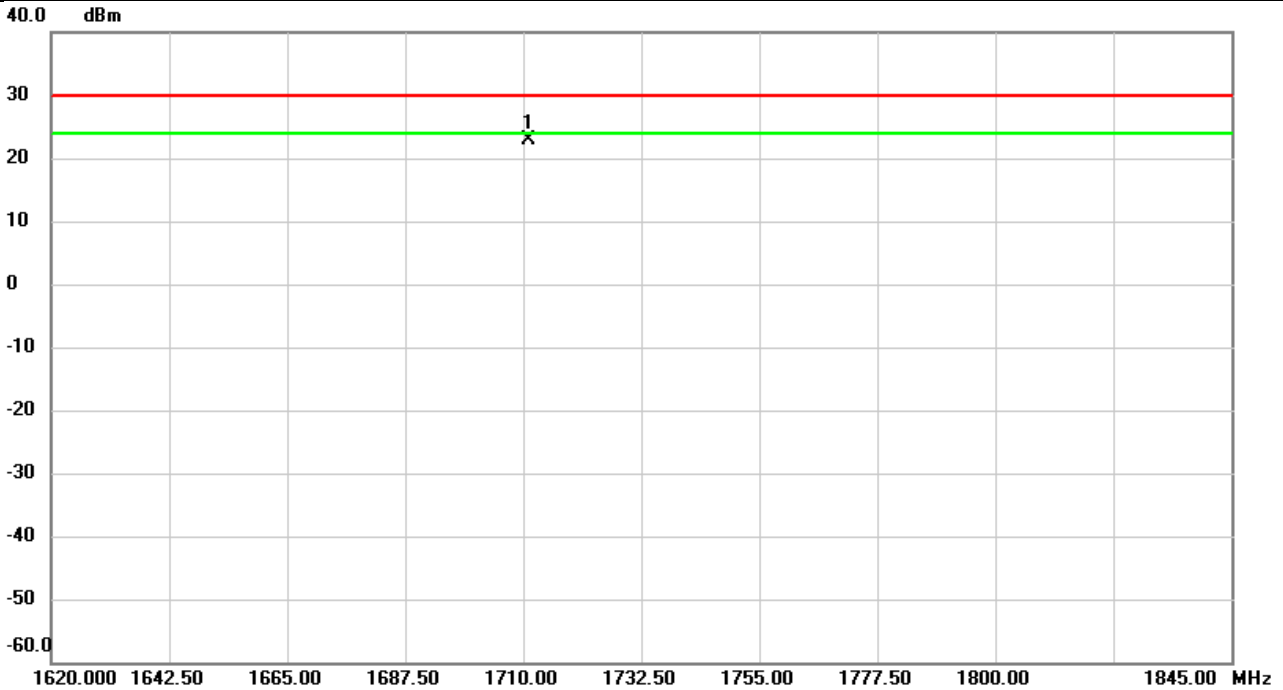


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1711.110	-24.21	39.12	14.91	30.00	-15.09	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 4	Test Date	2021/9/16
Test Channel	CH20050	Polarization	Horizontal
Temp	22°C	Hum.	54%



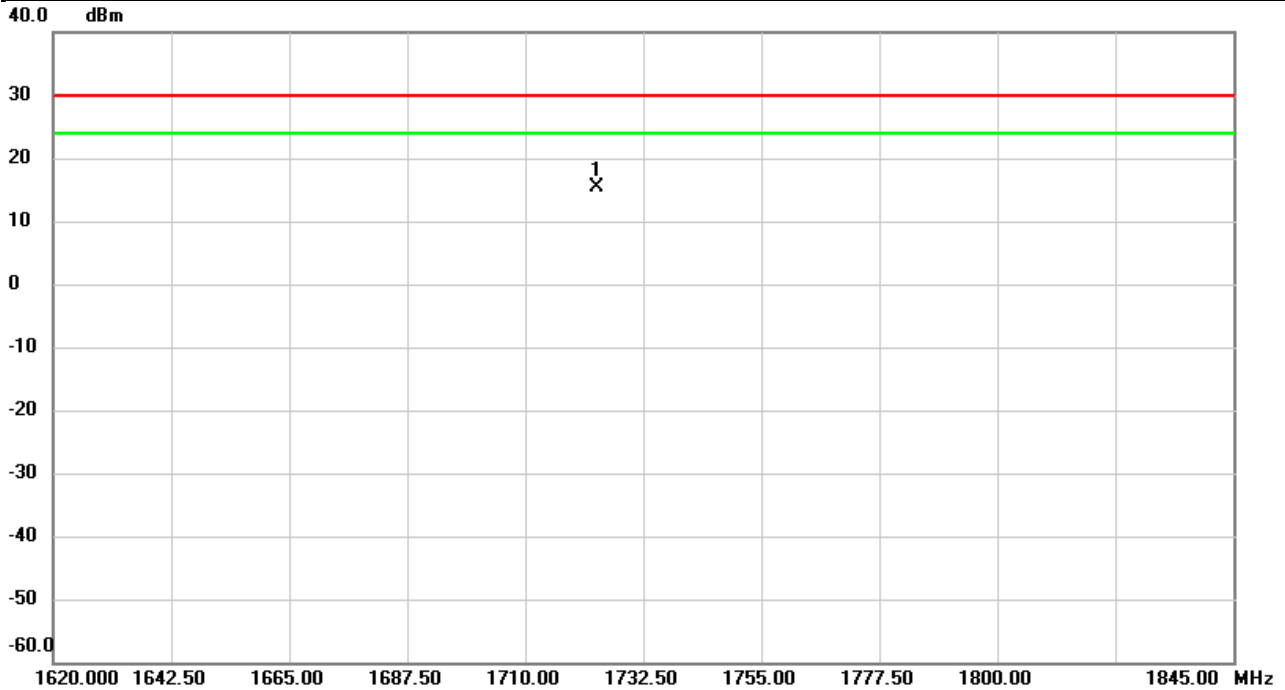
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1711.132	-17.03	39.86	22.83	30.00	-7.17	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



Test Mode	LTE Band 4	Test Date	2021/9/16
Test Channel	CH20175	Polarization	Vertical
Temp	22°C	Hum.	54%

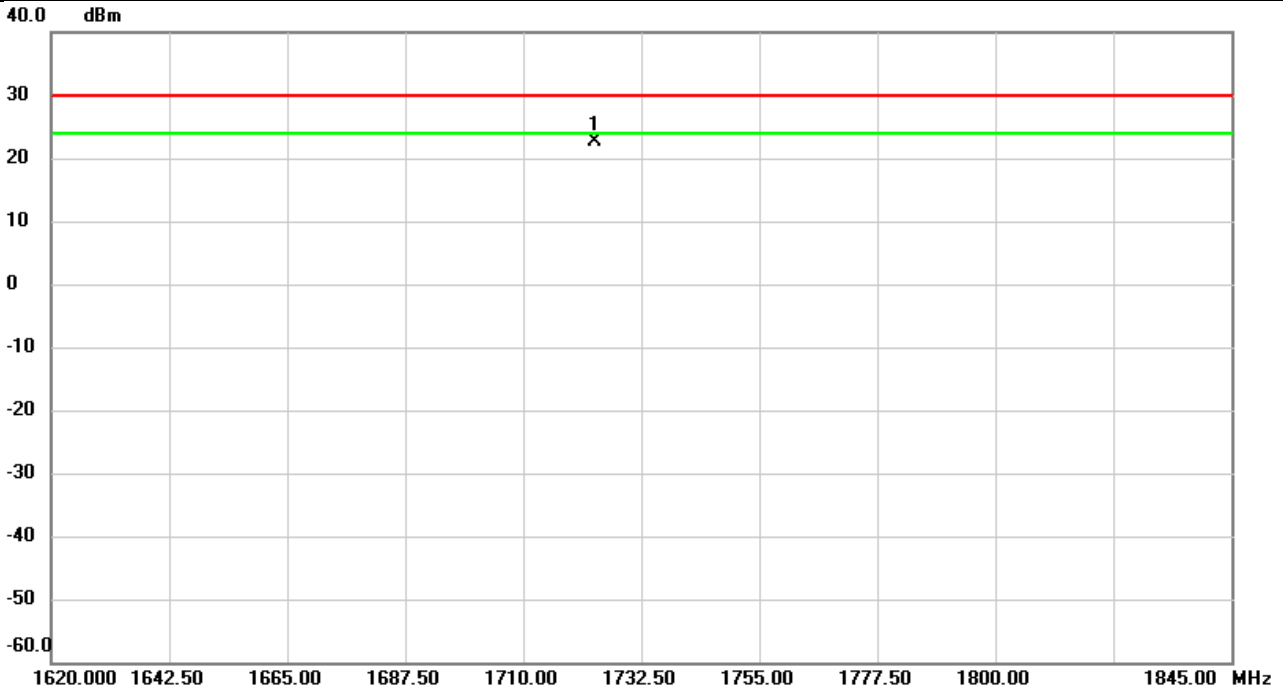


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1723.628	-23.82	39.17	15.35	30.00	-14.65	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 4	Test Date	2021/9/16
Test Channel	CH20175	Polarization	Horizontal
Temp	22°C	Hum.	54%

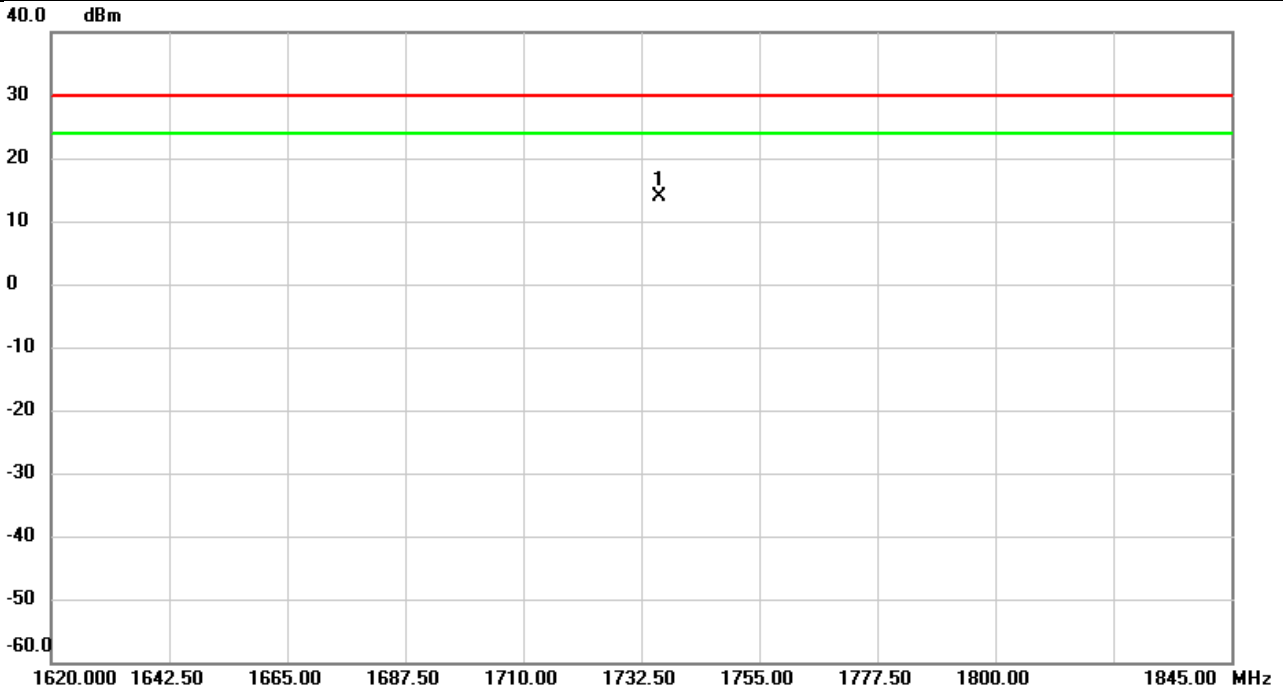


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1723.628	-17.34	39.92	22.58	30.00	-7.42	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 4	Test Date	2021/9/16
Test Channel	CH20300	Polarization	Vertical
Temp	22°C	Hum.	54%

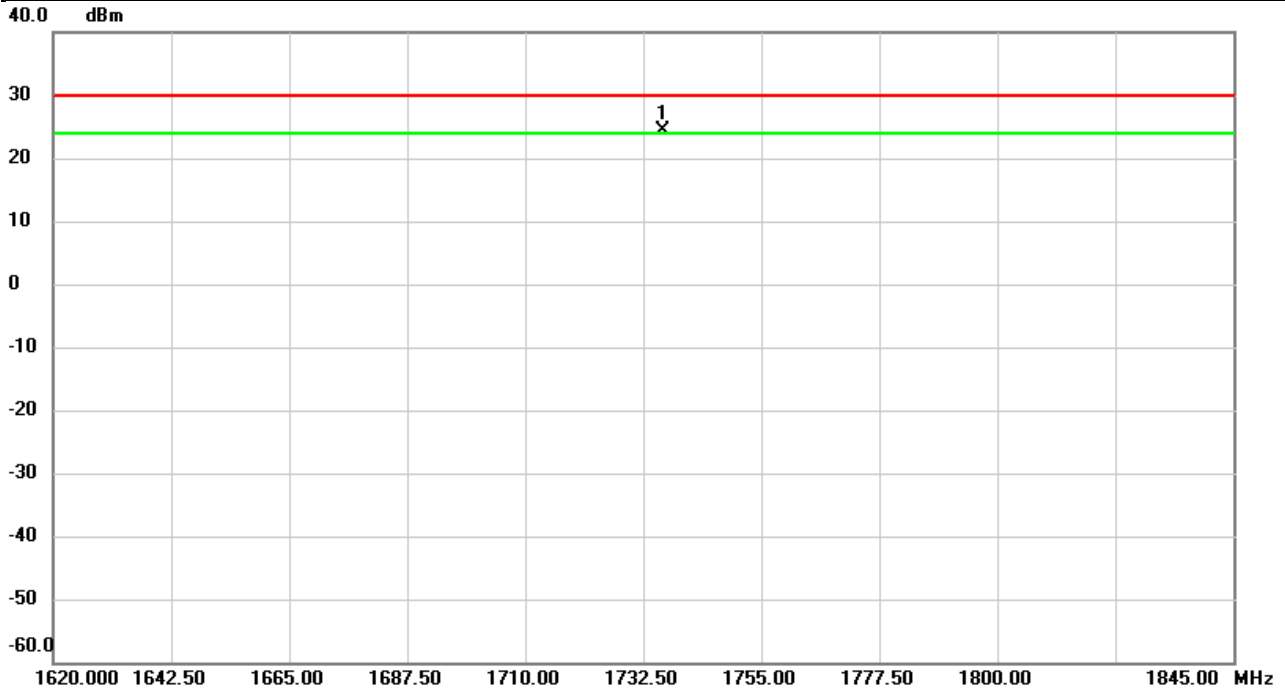


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1736.092	-25.35	39.22	13.87	30.00	-16.13	peak	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 4	Test Date	2021/9/16
Test Channel	CH20300	Polarization	Horizontal
Temp	22°C	Hum.	54%

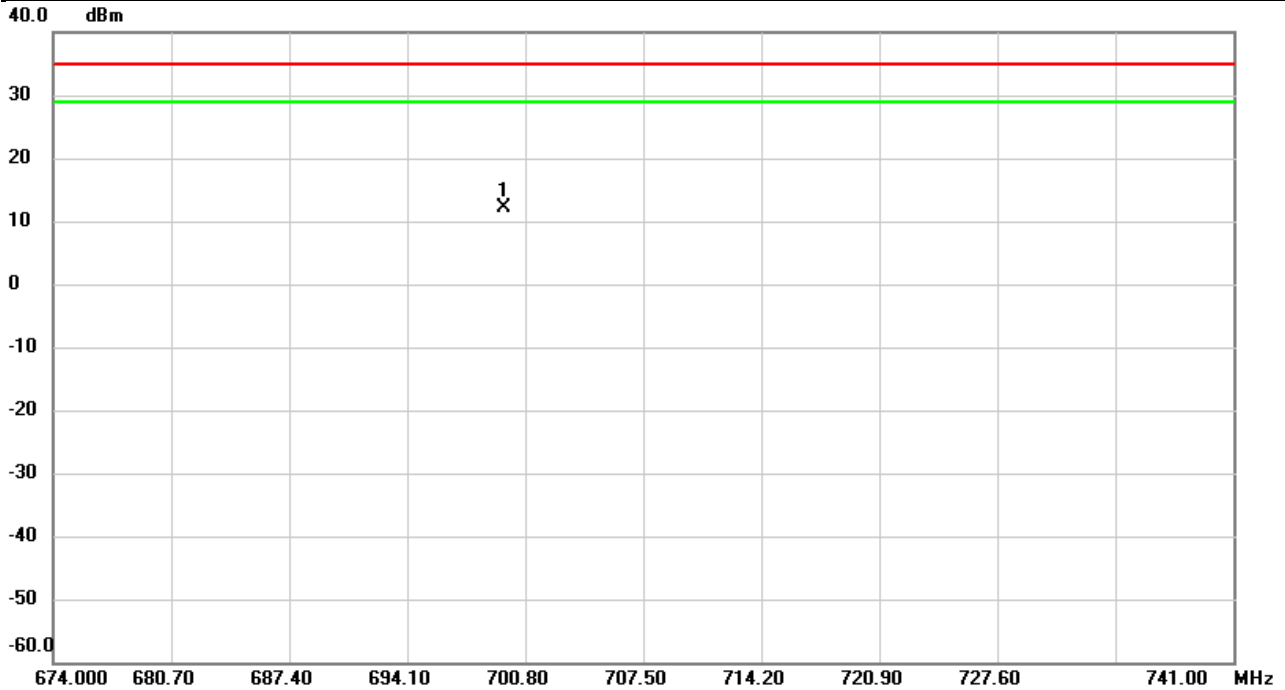


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	1736.115	-15.59	39.99	24.40	30.00	-5.60	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 12	Test Date	2021/9/17
Test Channel	CH23060	Polarization	Vertical
Temp	25°C	Hum.	52%

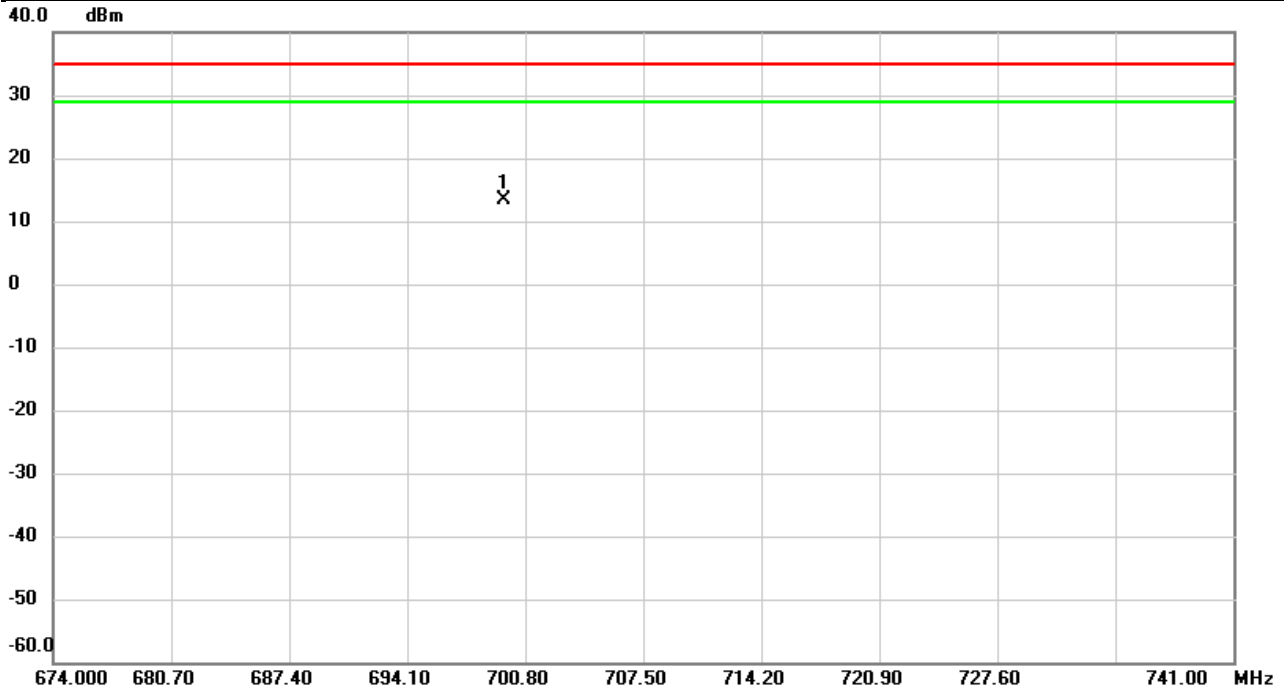


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	699.6120	-20.34	32.55	12.21	34.77	-22.56	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 12	Test Date	2021/9/17
Test Channel	CH23060	Polarization	Horizontal
Temp	25°C	Hum.	52%

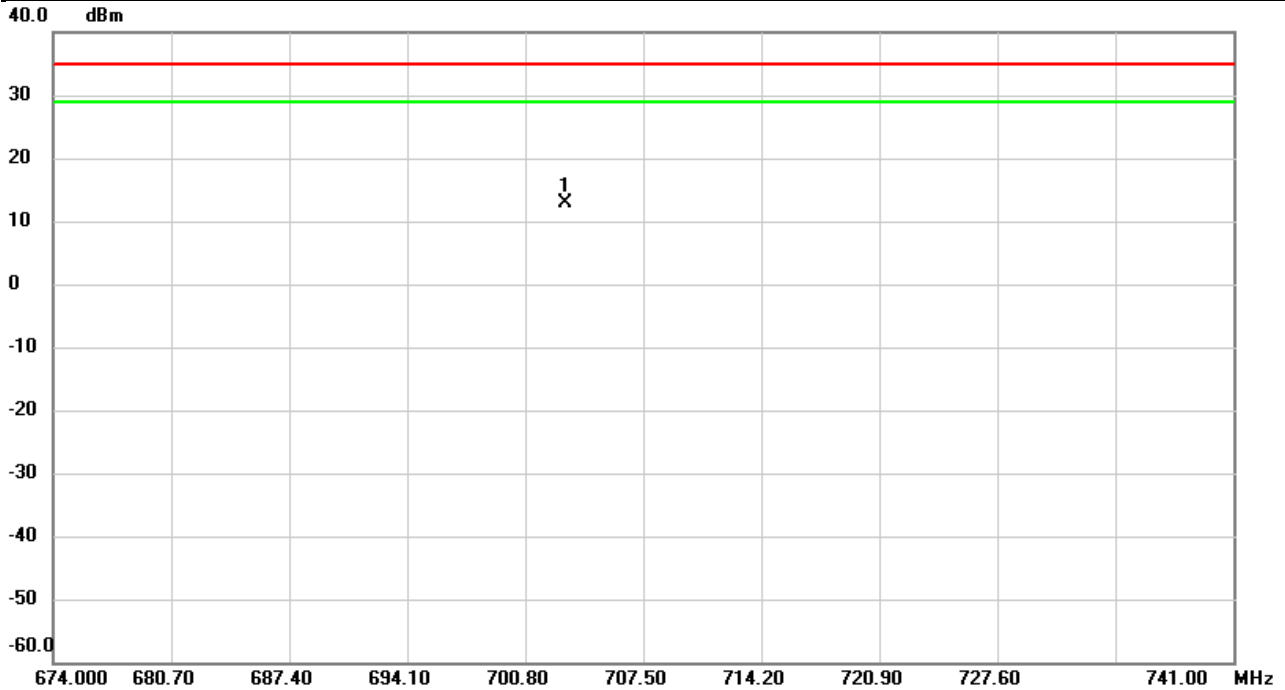


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	699.5940	-16.73	30.10	13.37	34.77	-21.40	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 12	Test Date	2021/9/17
Test Channel	CH23095	Polarization	Vertical
Temp	25°C	Hum.	52%

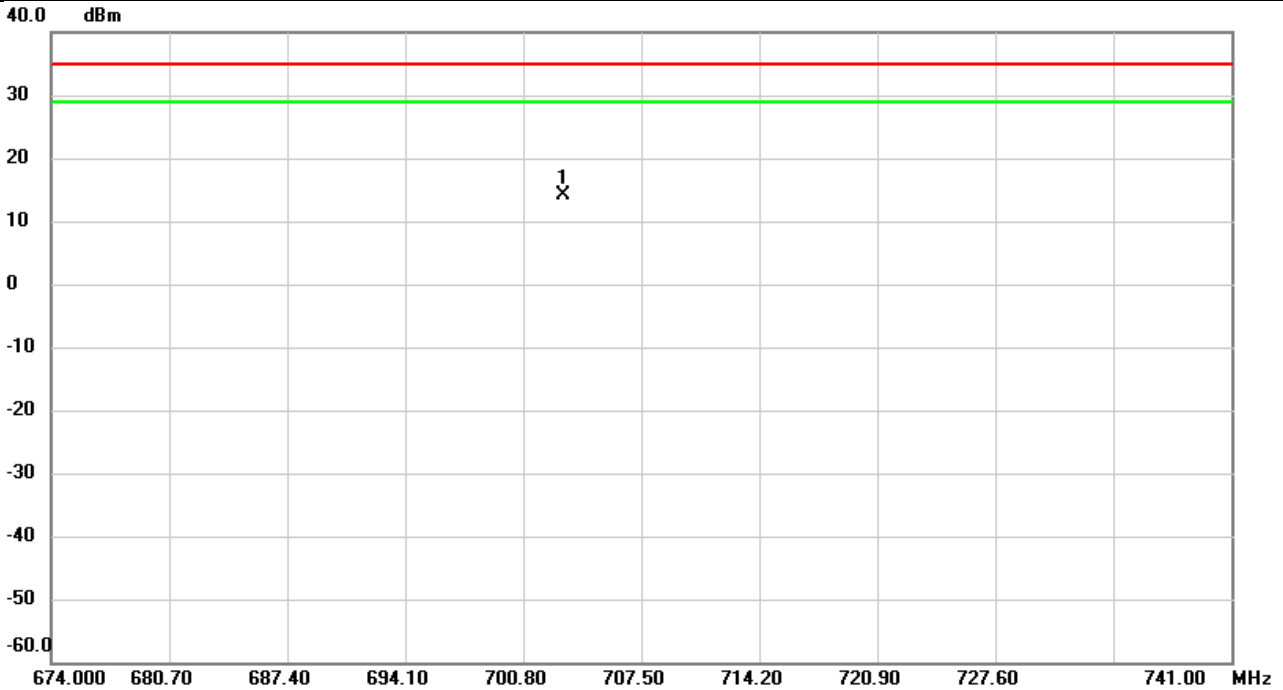


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	703.0780	-19.66	32.61	12.95	34.77	-21.82	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 12	Test Date	2021/9/17
Test Channel	CH23095	Polarization	Horizontal
Temp	25°C	Hum.	52%



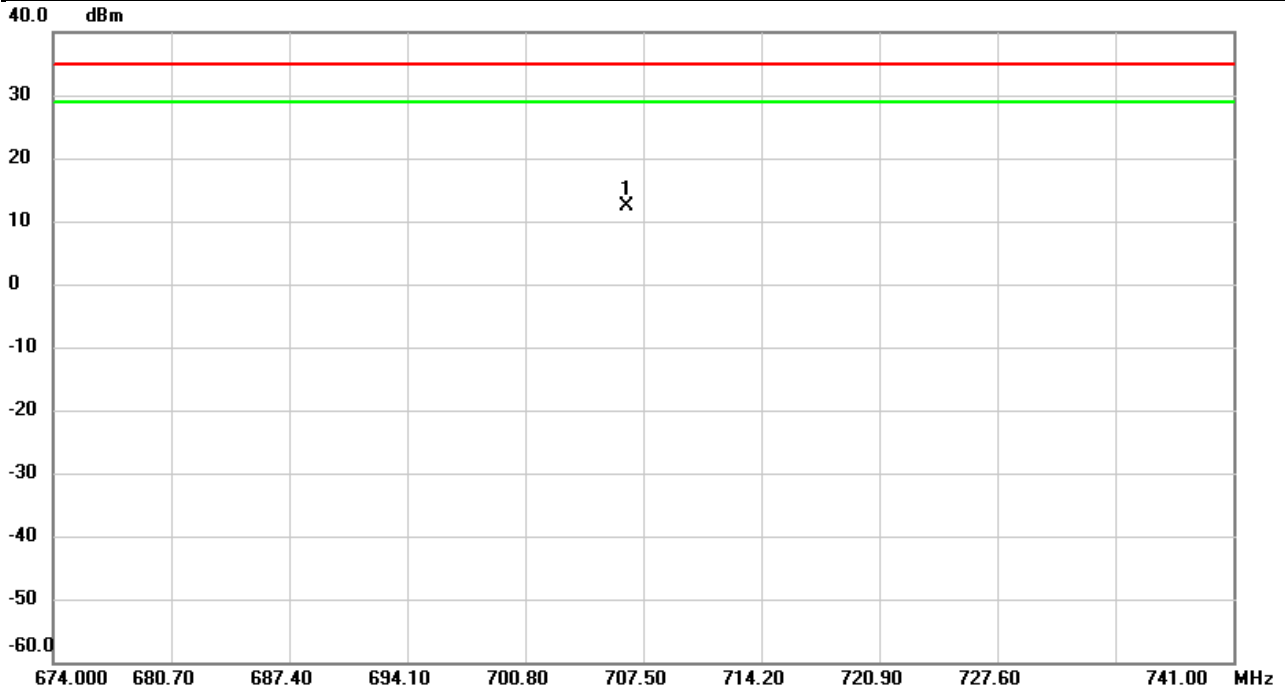
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	703.0512	-16.09	30.22	14.13	34.77	-20.64	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



Test Mode	LTE Band 12	Test Date	2021/9/17
Test Channel	CH23130	Polarization	Vertical
Temp	25°C	Hum.	52%

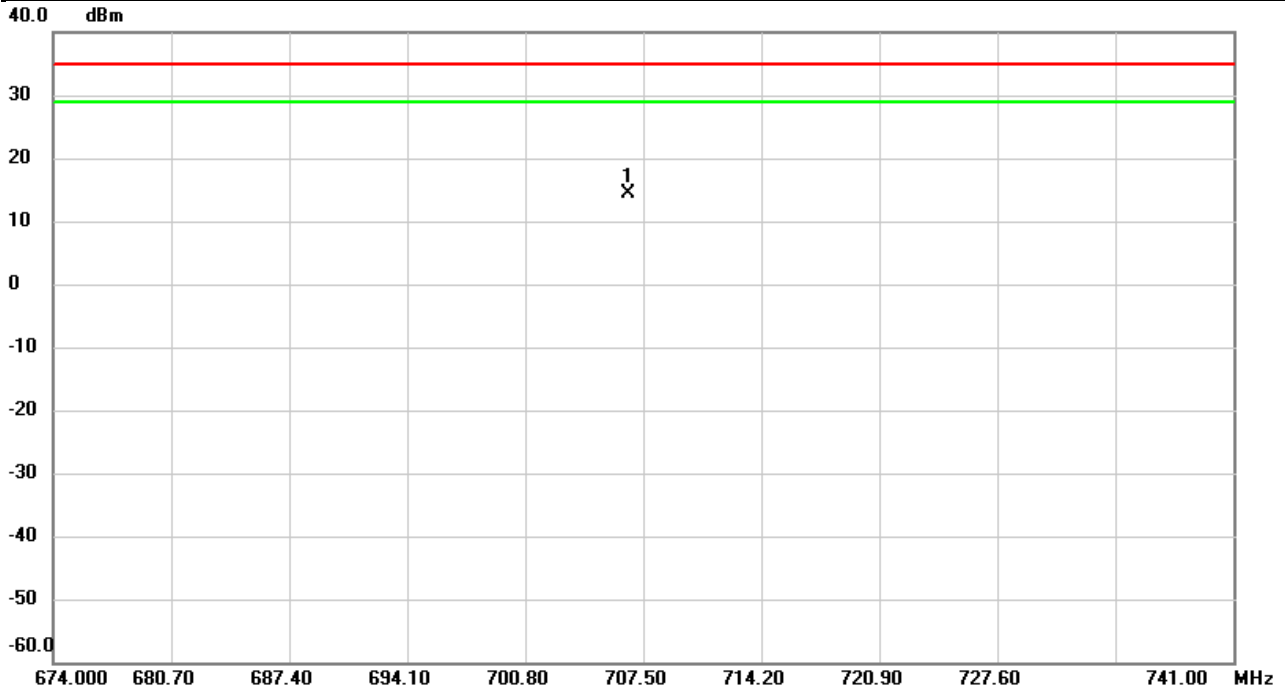


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	706.5508	-20.29	32.69	12.40	34.77	-22.37	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 12	Test Date	2021/9/17
Test Channel	CH23130	Polarization	Horizontal
Temp	25°C	Hum.	52%

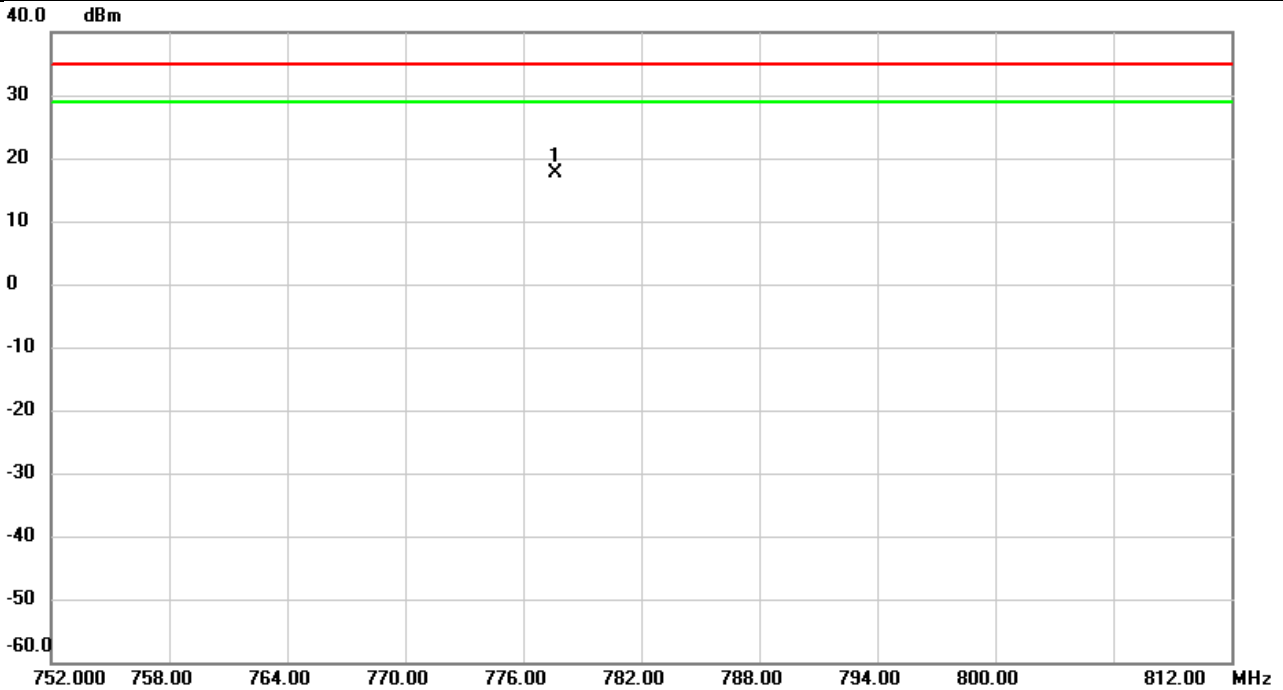


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	706.6178	-16.07	30.36	14.29	34.77	-20.48	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 13	Test Date	2021/9/17
Test Channel	CH23230	Polarization	Vertical
Temp	25°C	Hum.	52%

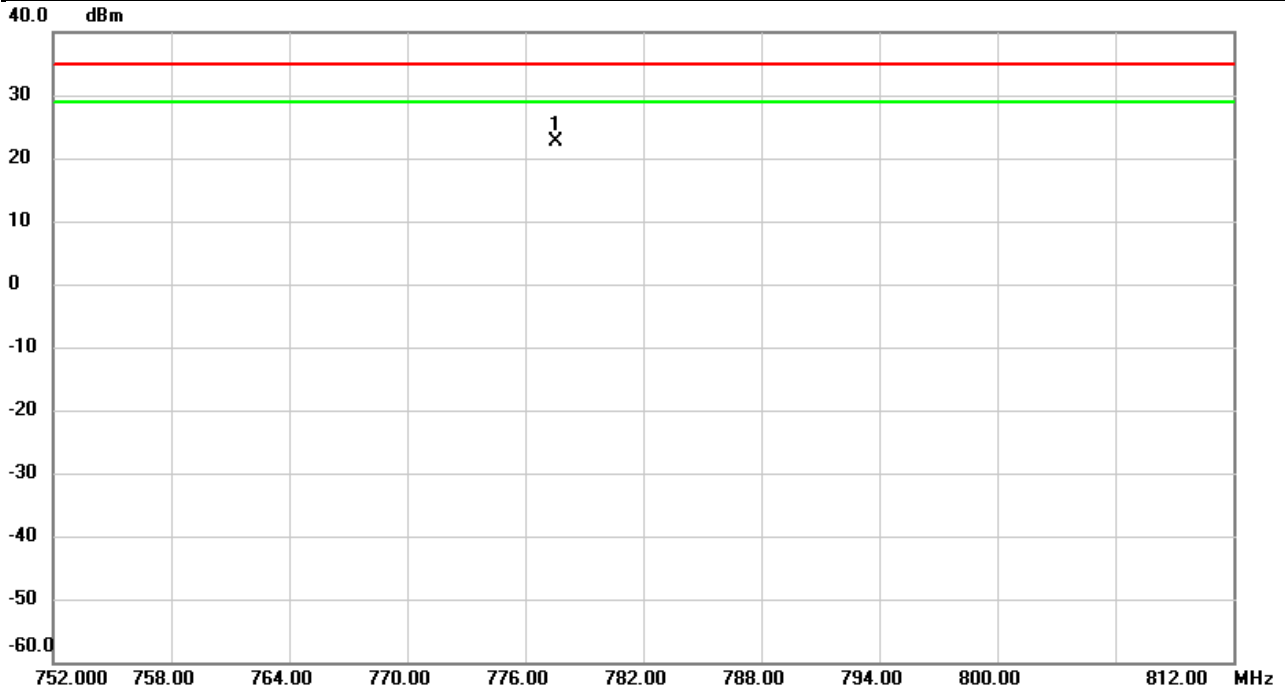


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	777.6060	-16.29	34.02	17.73	34.77	-17.04	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 13	Test Date	2021/9/17
Test Channel	CH23230	Polarization	Horizontal
Temp	25°C	Hum.	52%

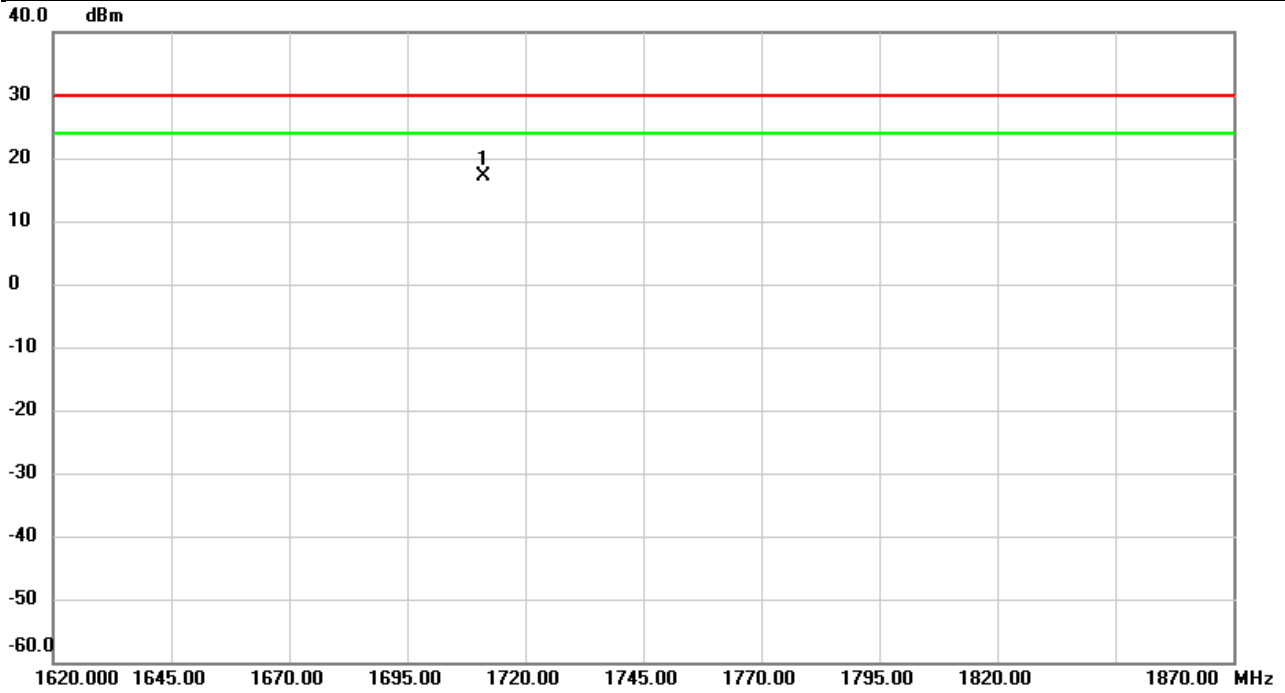


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	777.5760	-10.48	33.23	22.75	34.77	-12.02	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 66	Test Date	2021/9/16
Test Channel	CH132072	Polarization	Vertical
Temp	22°C	Hum.	54%

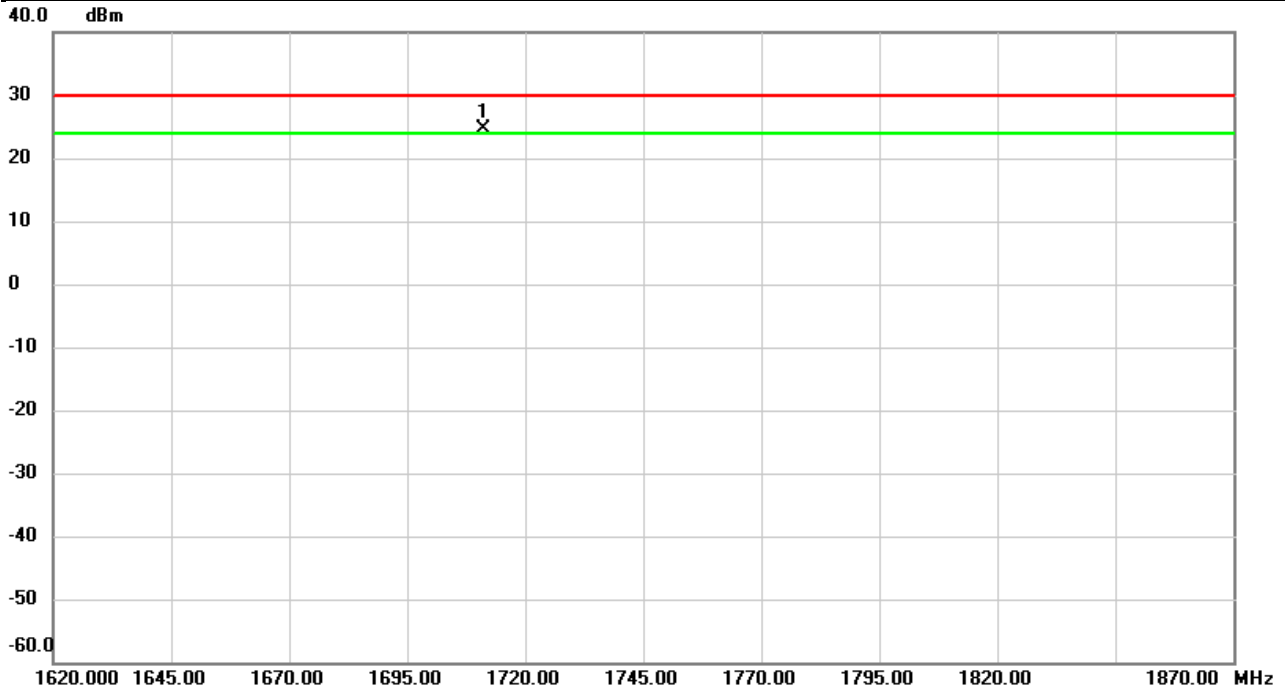


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1711.133	-22.04	39.12	17.08	30.00	-12.92	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 66	Test Date	2021/9/16
Test Channel	CH132072	Polarization	Horizontal
Temp	22°C	Hum.	54%

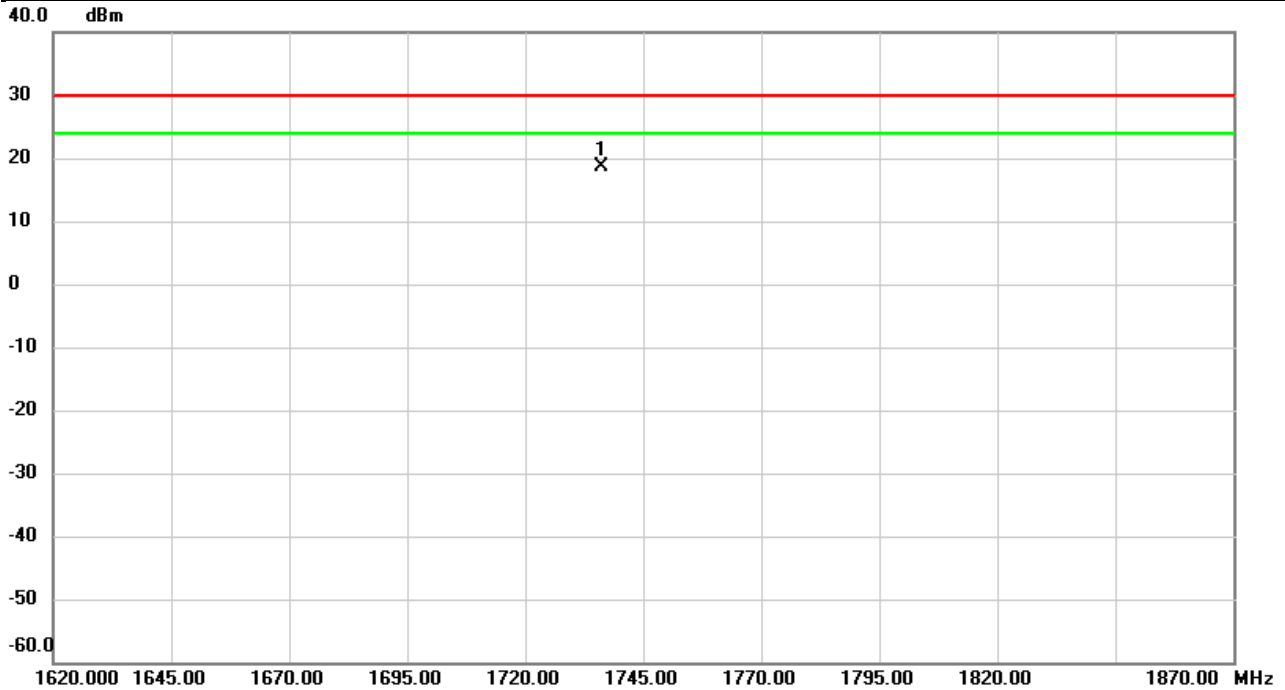


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1711.133	-15.31	39.86	24.55	30.00	-5.45	peak	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 66	Test Date	2021/9/16
Test Channel	CH132322	Polarization	Vertical
Temp	22°C	Hum.	54%

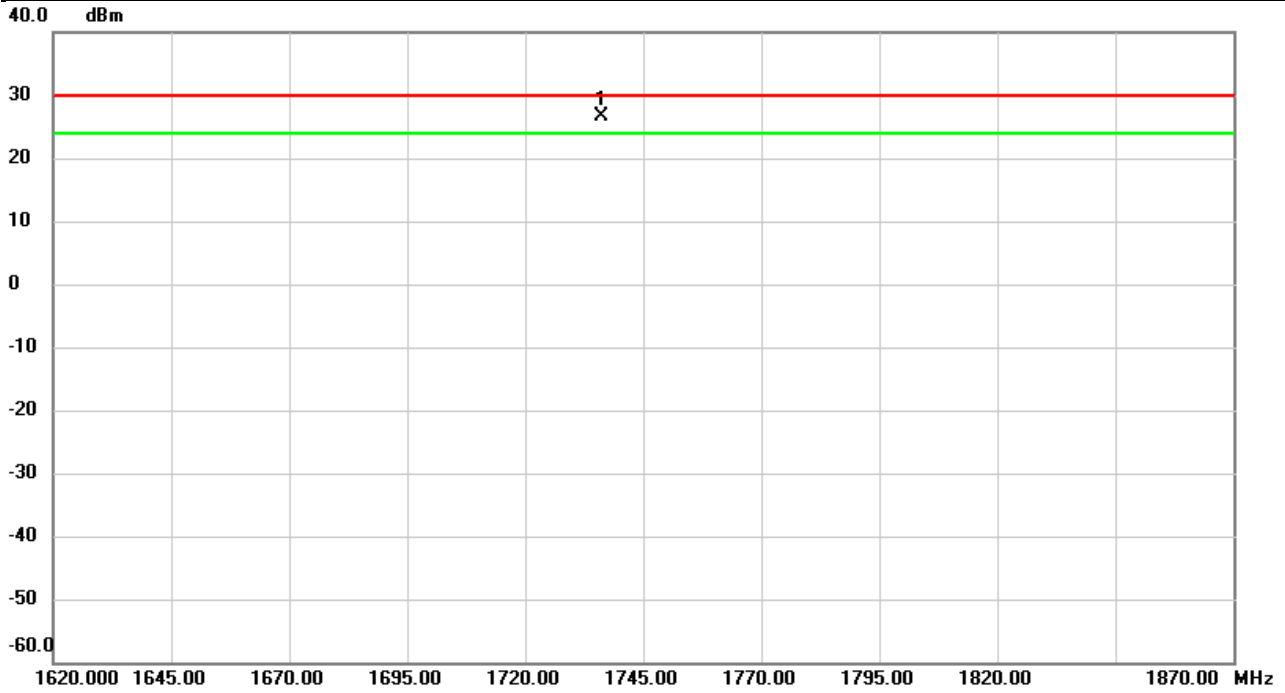


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1736.183	-20.54	39.22	18.68	30.00	-11.32	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 66	Test Date	2021/9/16
Test Channel	CH132322	Polarization	Horizontal
Temp	22°C	Hum.	54%



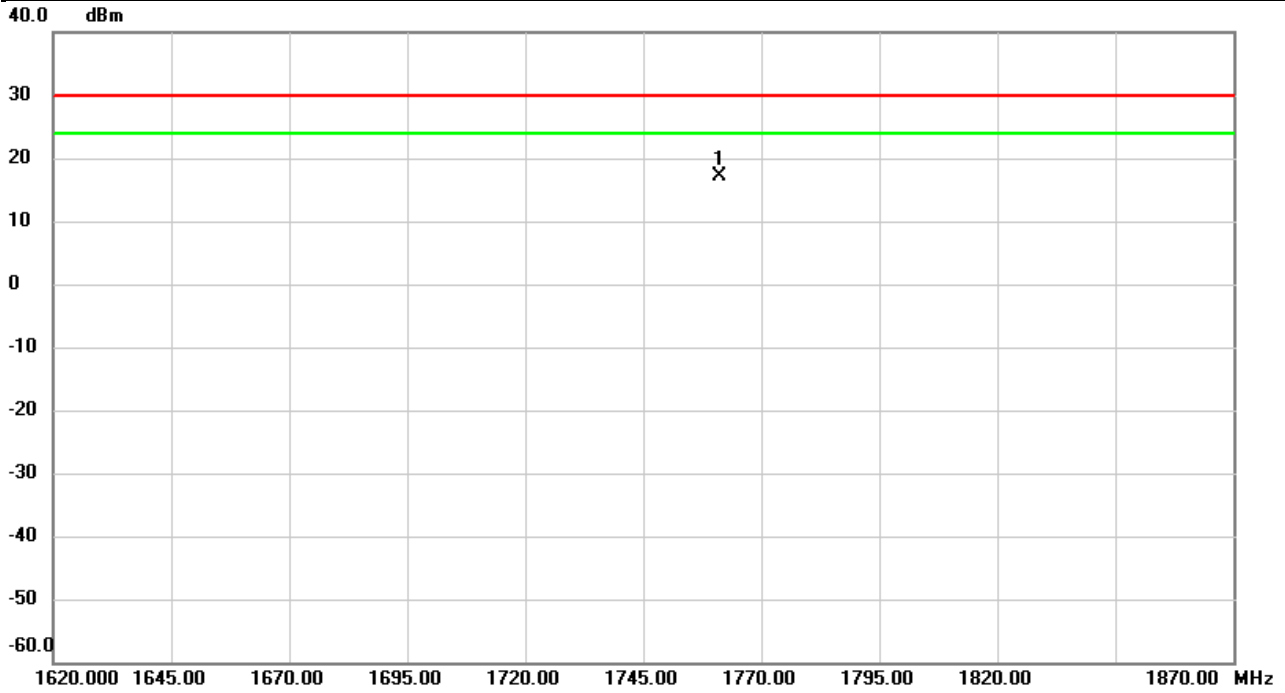
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1736.083	-13.40	39.99	26.59	30.00	-3.41	peak	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.



Test Mode	LTE Band 66	Test Date	2021/9/16
Test Channel	CH132572	Polarization	Vertical
Temp	22°C	Hum.	54%

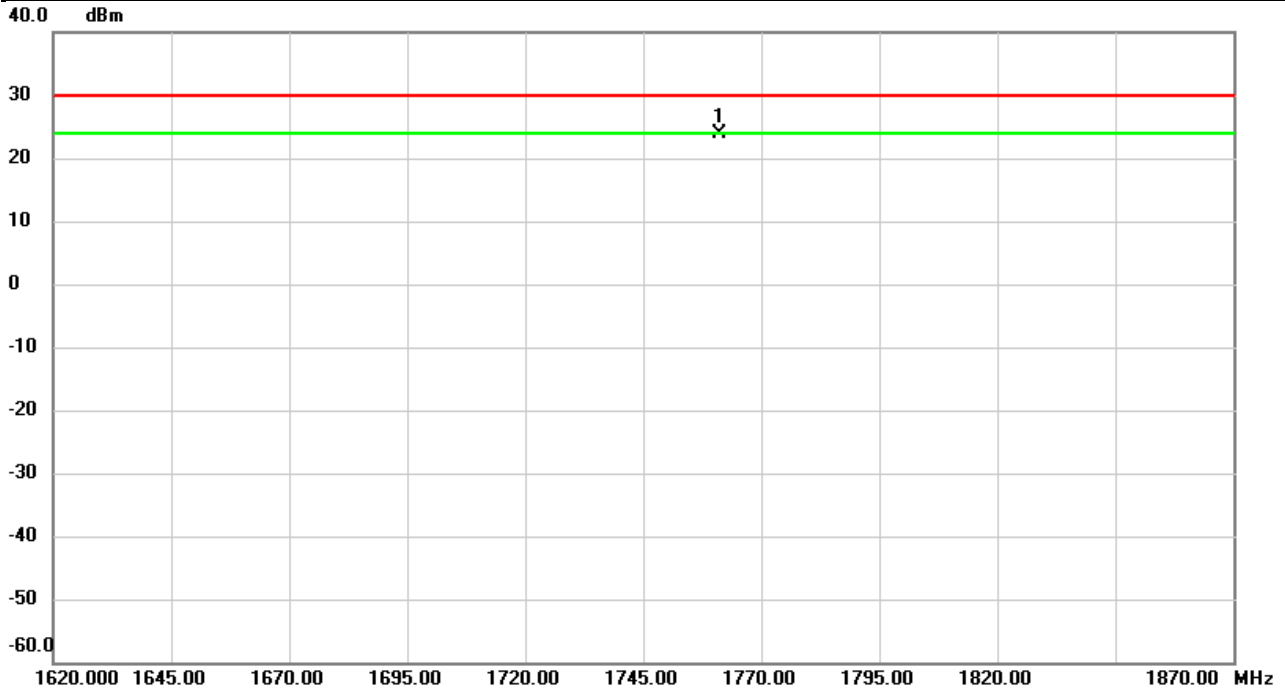


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1761.125	-22.20	39.32	17.12	30.00	-12.88	peak	

**REMARKS:**

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	LTE Band 66	Test Date	2021/9/16
Test Channel	CH132572	Polarization	Horizontal
Temp	22°C	Hum.	54%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	1761.108	-16.18	40.12	23.94	30.00	-6.06	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

## APPENDIX C OCCUPIED BANDWIDTH

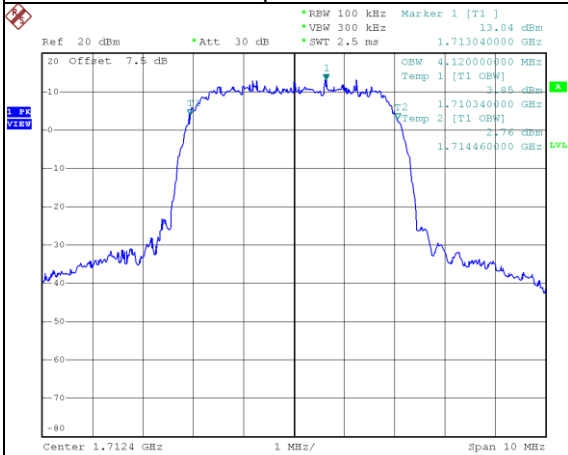
## WCDMA Band IV\_WCDMA

### QPSK

Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.12	1312	1712.4	4.70
1413	1732.6	4.12	1413	1732.6	4.70
1513	1752.6	4.14	1513	1752.6	4.74

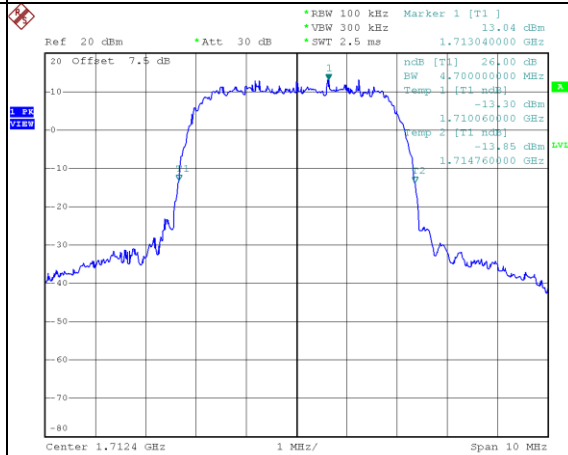
### Spectrum Plot

99% Occupied Bandwidth-1312



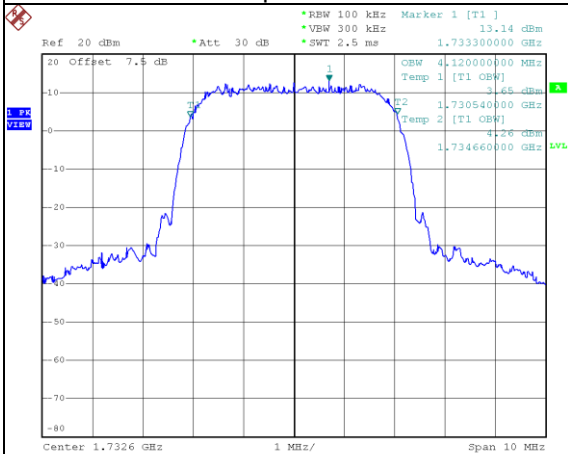
Date: 27.SEP.2021 15:59:01

26dB Bandwidth-1312



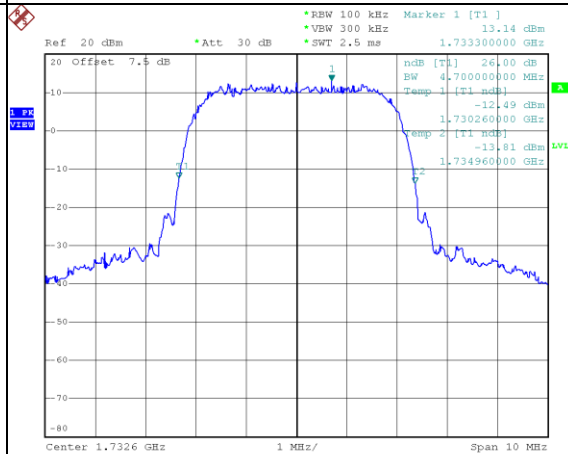
Date: 27.SEP.2021 15:59:23

99% Occupied Bandwidth-1413

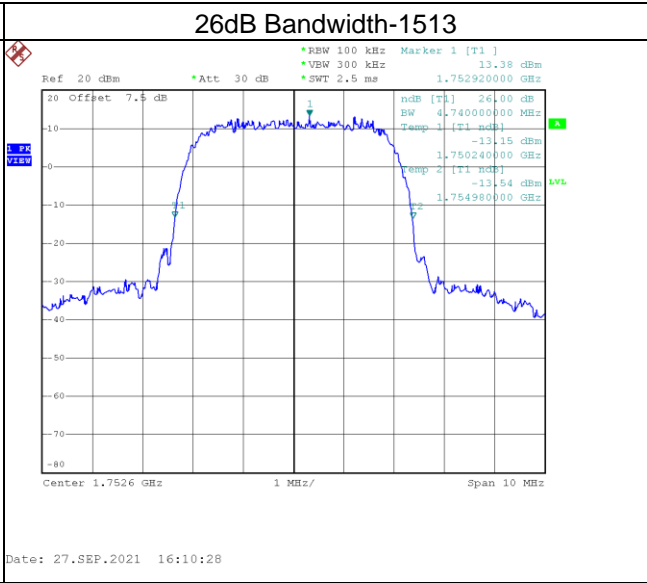
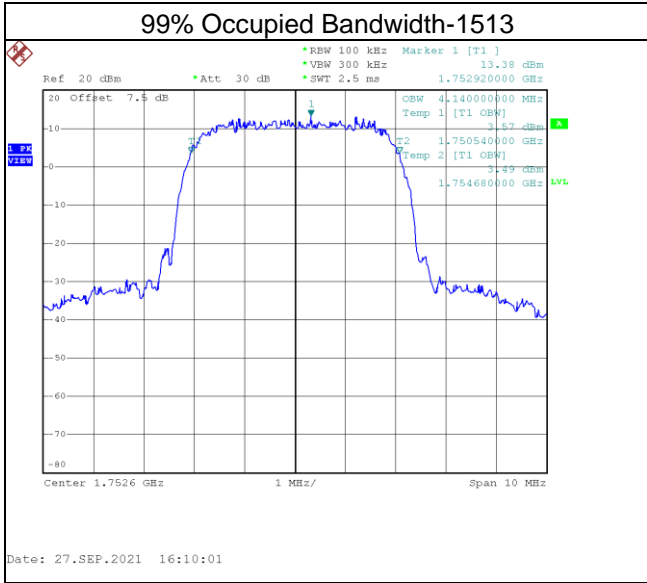


Date: 27.SEP.2021 16:08:21

26dB Bandwidth-1413

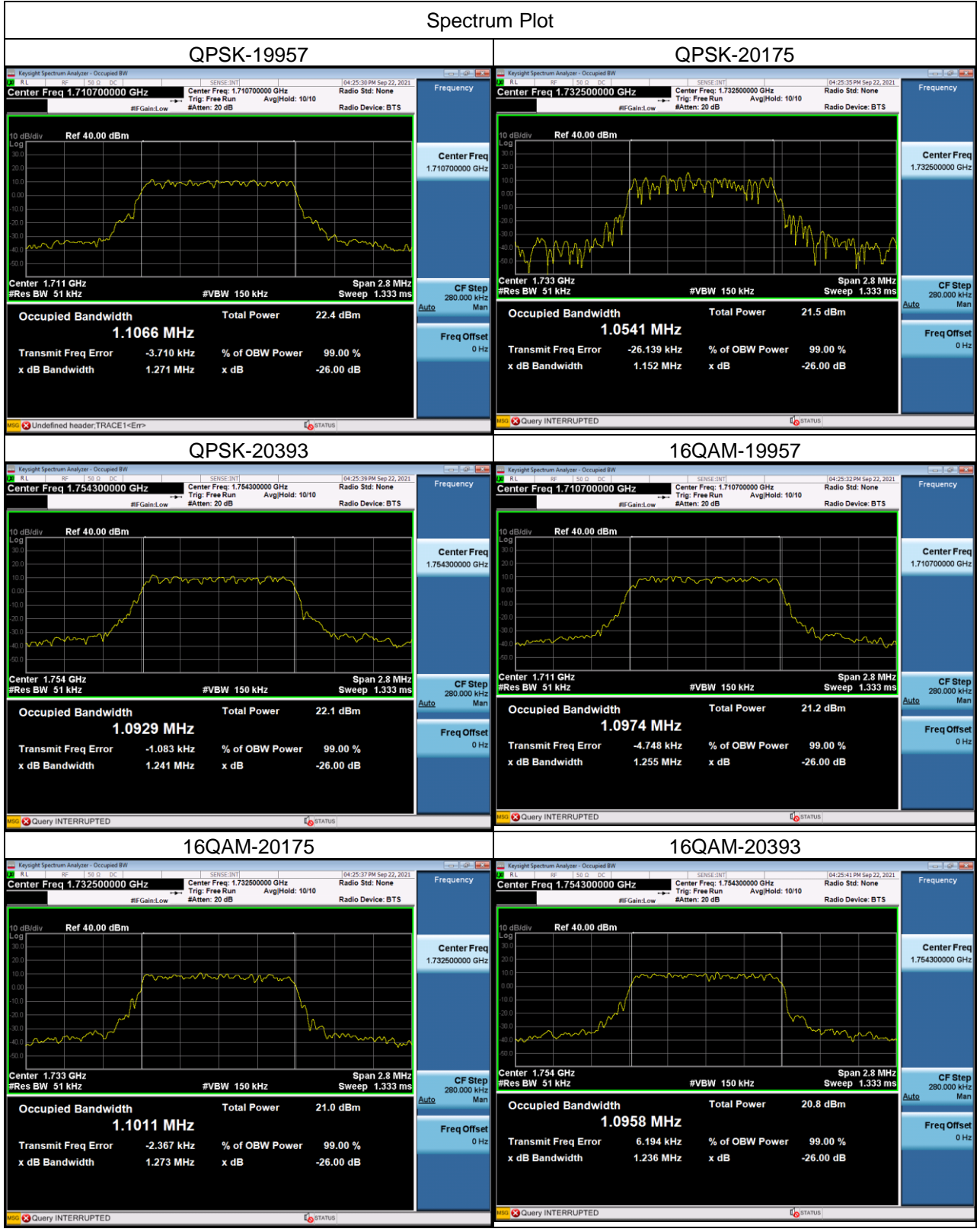


Date: 27.SEP.2021 16:08:57



LTE Band 4_1.4M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.1066	19957	1710.7	1.271
20175	1732.5	1.0541	20175	1732.5	1.152
20393	1754.3	1.0929	20393	1754.3	1.241
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.0974	19957	1710.7	1.255
20175	1732.5	1.1011	20175	1732.5	1.273
20393	1754.3	1.0958	20393	1754.3	1.236

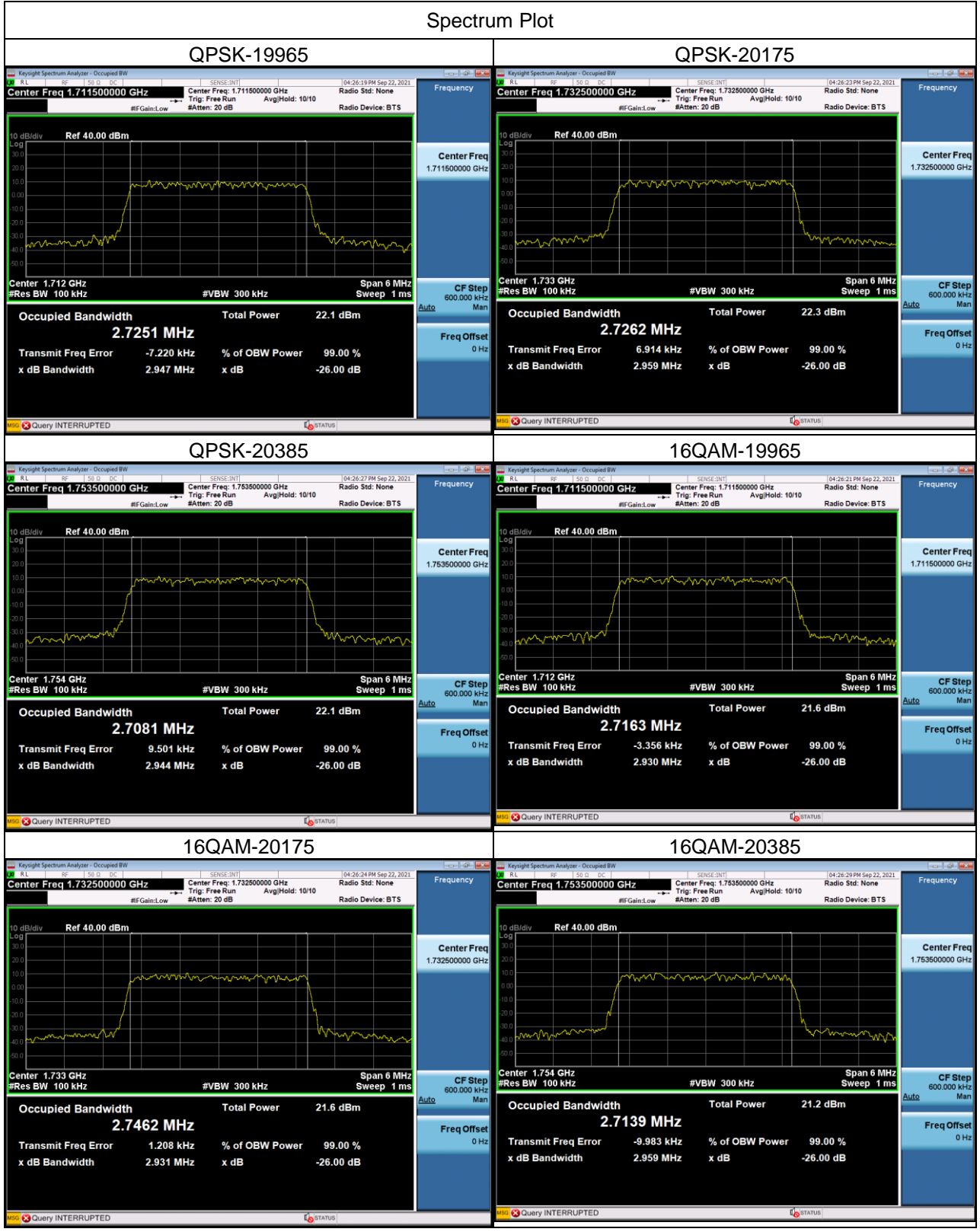
## Spectrum Plot



LTE Band 4_3M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.7251	19965	1711.5	2.947
20175	1732.5	2.7262	20175	1732.5	2.959
20385	1753.5	2.7081	20385	1753.5	2.944
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.7163	19965	1711.5	2.930
20175	1732.5	2.7462	20175	1732.5	2.931
20385	1753.5	2.7139	20385	1753.5	2.959

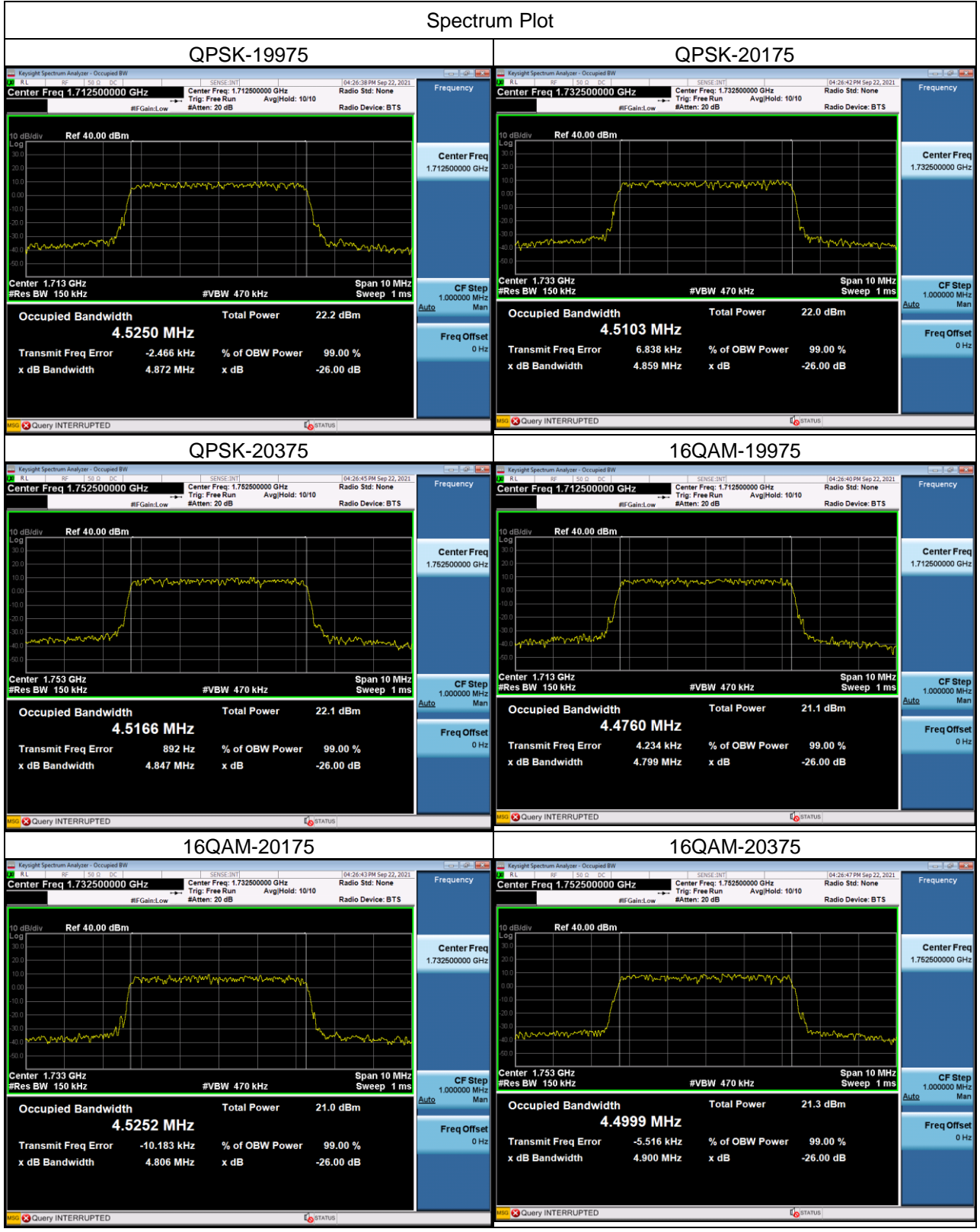


## Spectrum Plot



LTE Band 4_5M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.5250	19975	1712.5	4.872
20175	1732.5	4.5103	20175	1732.5	4.859
20375	1752.5	4.5166	20375	1752.5	4.847
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.4760	19975	1712.5	4.799
20175	1732.5	4.5252	20175	1732.5	4.806
20375	1752.5	4.4999	20375	1752.5	4.900

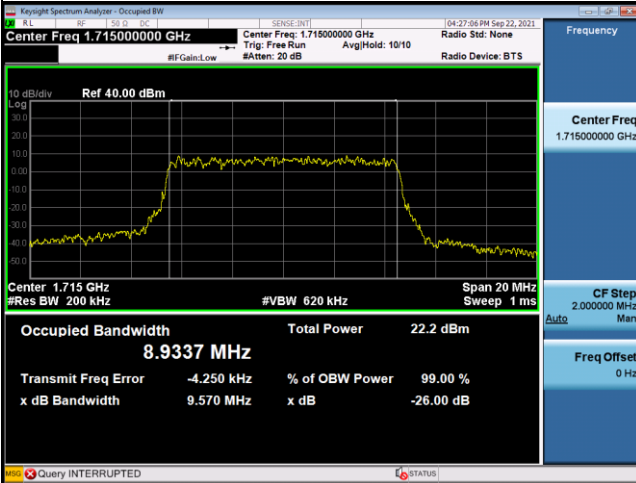
## Spectrum Plot



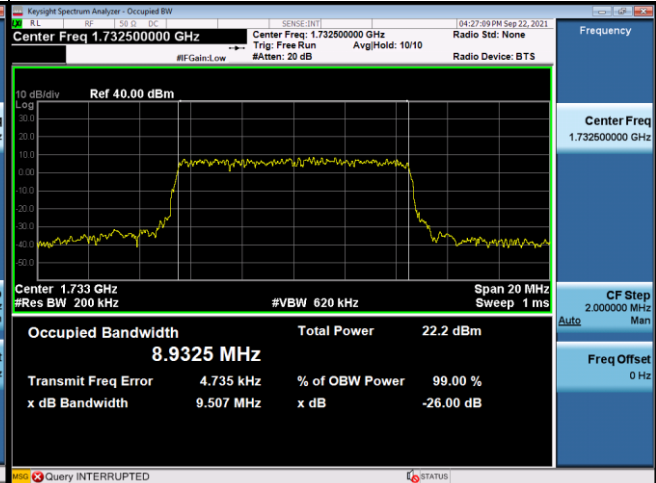
LTE Band 4_10M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	8.9337	20000	1715	9.570
20175	1732.5	8.9325	20175	1732.5	9.507
20350	1750	8.9289	20350	1750	9.445
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	8.9306	20000	1715	9.590
20175	1732.5	8.9283	20175	1732.5	9.442
20350	1750	8.9040	20350	1750	9.451

## Spectrum Plot

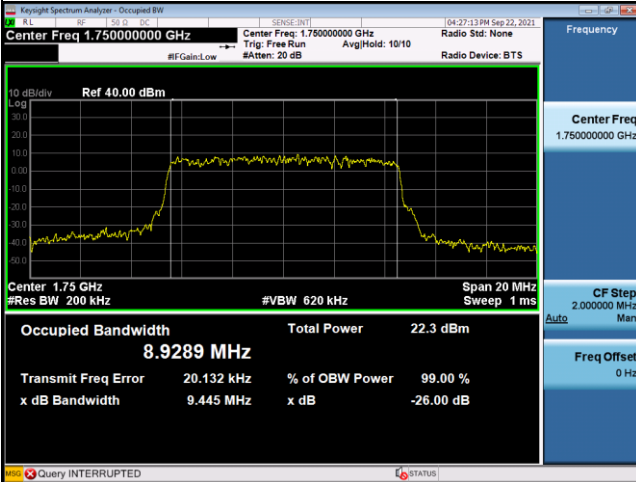
### QPSK-20000



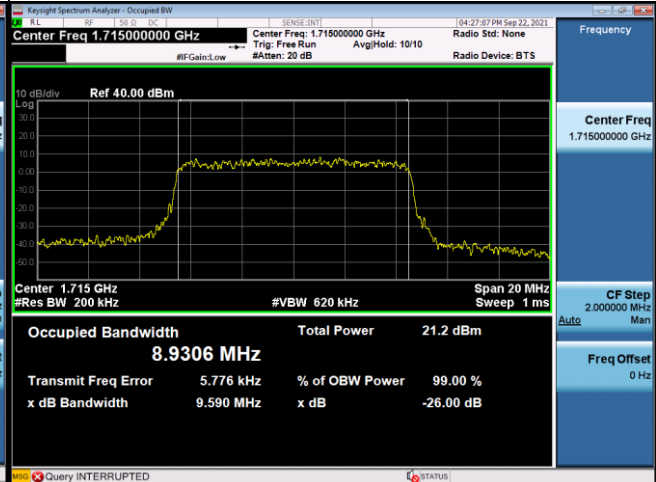
### QPSK-20175



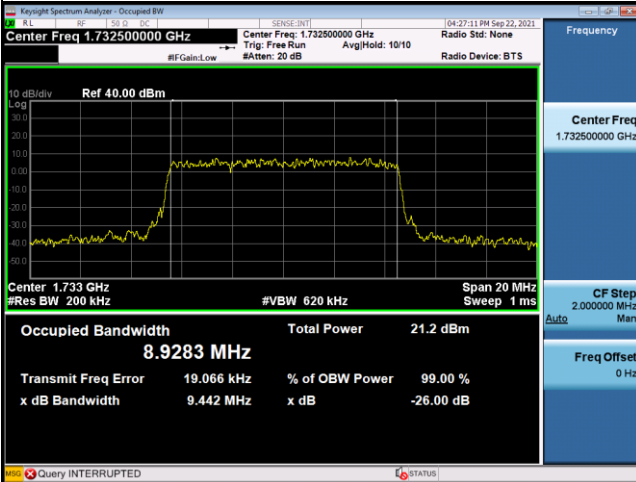
### QPSK-20350



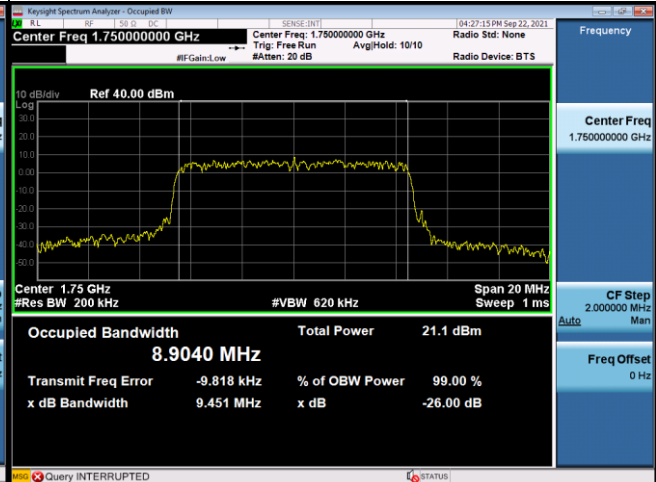
### 16QAM-20000



### 16QAM-20175

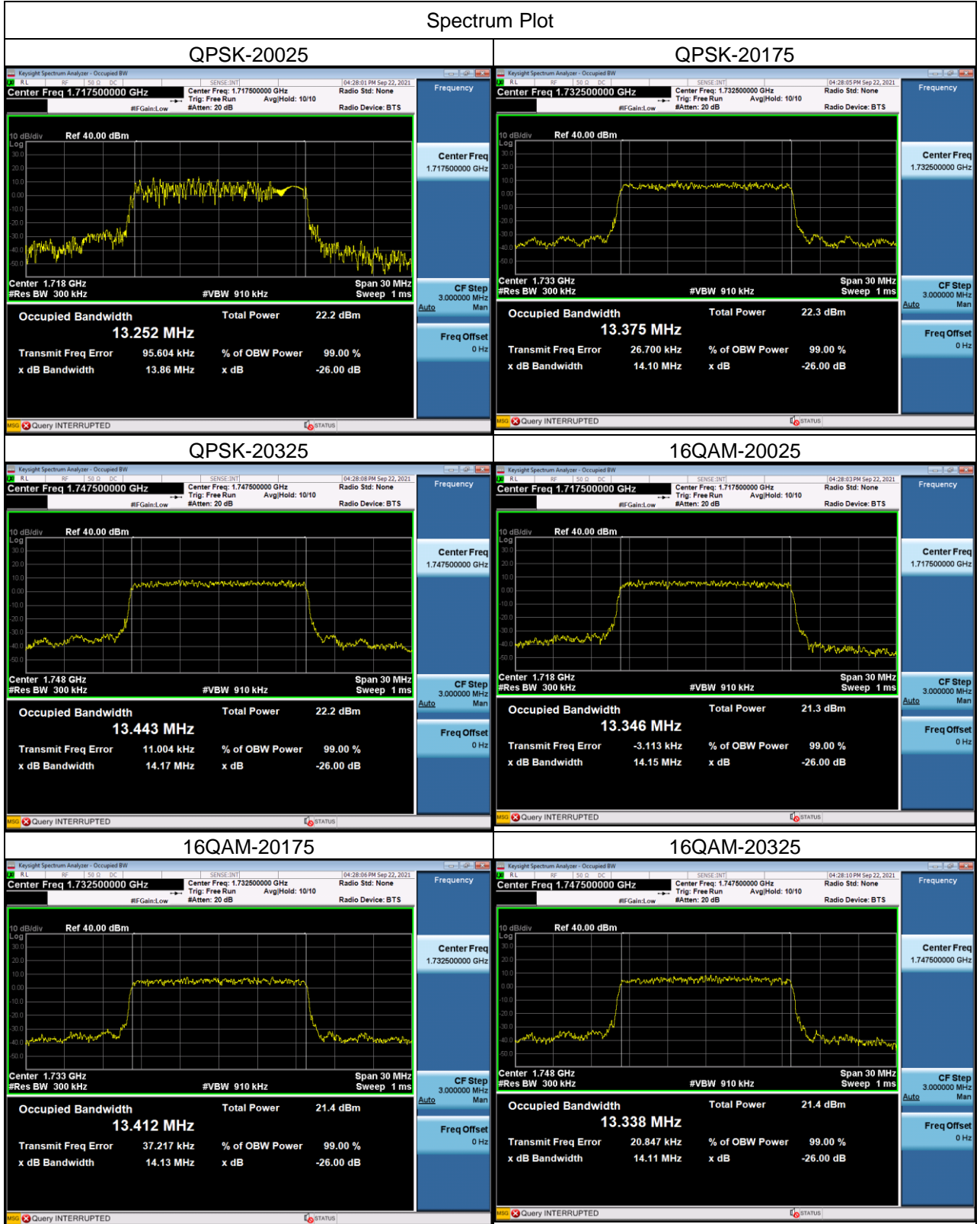


### 16QAM-20350



LTE Band 4_15M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	13.252	20025	1717.5	13.86
20175	1732.5	13.375	20175	1732.5	14.10
20325	1747.5	13.443	20325	1747.5	14.17
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	13.346	20025	1717.5	14.15
20175	1732.5	13.412	20175	1732.5	14.13
20325	1747.5	13.338	20325	1747.5	14.11

## Spectrum Plot

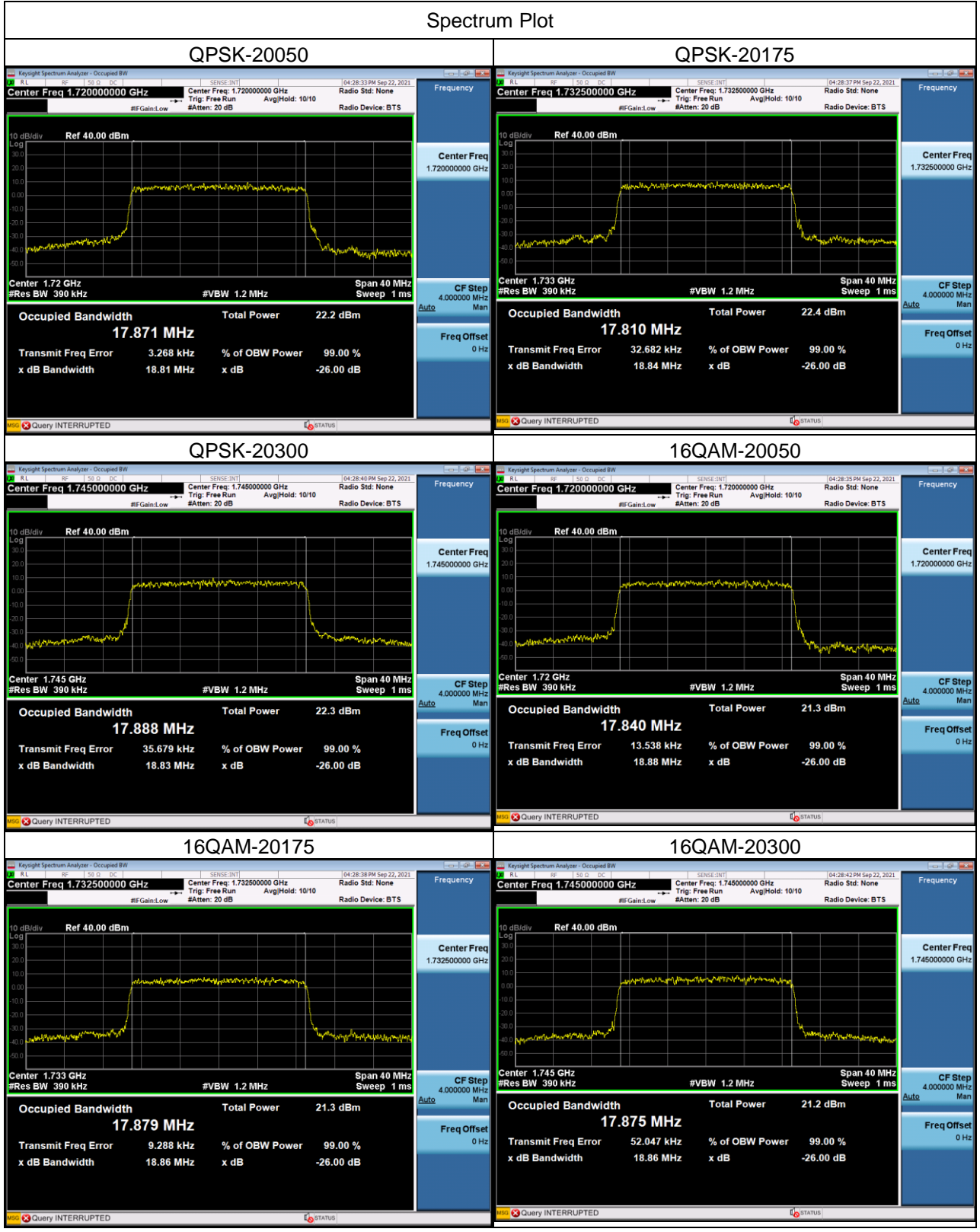




LTE Band 4_20M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	17.871	20050	1720	18.81
20175	1732.5	17.810	20175	1732.5	18.84
20300	1745	17.888	20300	1745	18.83
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	17.840	20050	1720	18.88
20175	1732.5	17.879	20175	1732.5	18.86
20300	1745	17.875	20300	1745	18.86



## Spectrum Plot



LTE Band 12_1.4M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23017	699.7	1.1220	23017	699.7	1.241
23095	707.5	1.1071	23095	707.5	1.268
23173	715.3	1.0973	23173	715.3	1.252
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
23017	699.7	1.0950	23017	699.7	1.248
23095	707.5	1.1058	23095	707.5	1.298
23173	715.3	1.1063	23173	715.3	1.233