



MEASUREMENT REPORT

FCC PART 2 & 22 & 24 & 27 & 90

FCC ID: XMR2021EC25AFDL

Application: Quectel Wireless Solutions Co., Ltd

Application Type: Certification

Product: LTE Module

Model No.: EC25-AFDL, EC25-AFDL MINIPCIE

Brand Name: Quectel

FCC Rule Part(s): Part 2, Part 22 (H), 24 (E), 27, 90 (R)

Test Procedure(s): ANSI C63.26: 2015

Test Date: December 08 ~ 28, 2021

Reviewed By:

Sunny Sun

Approved By:

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2112RSU017-U1	Rev. 01	Initial Report	01-13-2022	Valid

Note: This application for certification is leveraging the data reuse procedures from KDB 484596 based on reference FCC ID: XMR201808EC25AF to cover variant FCC ID: XMR2021EC25AFDL

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1. GENERAL INFORMATION

1.1. Applicant

Quectel Wireless Solutions Co., Ltd

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District,
Shanghai, China 200233

1.2. Manufacturer

Quectel Wireless Solutions Co., Ltd

Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District,
Shanghai, China 200233

1.3. Testing Facility

☒	Test Site – MRT Suzhou Laboratory				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
☒	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐ R-20025	☐ G-20034	☐ C-20020	☐ T-20020
		☐ R-20141	☐ G-20134	☐ C-20103	☐ T-20104
☐	Test Site – MRT Shenzhen Laboratory				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
☐	FCC: CN1284		ISED: CN0105		
	Test Site – MRT Taiwan Laboratory				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
☐	TAF: L3261-190725				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	LTE Module
Model No.	EC25-AFDL, EC25-AFDL MINIPCI-E
Brand Name	Quectel
IMEI	Conducted Measurement: 863368050002846 Radiated Measurement: 863368050002507
E-UTRA Specification	
Single Band	Band 2, 4, 5, 12, 13, 14, 66, 71
Modulation	Uplink up to 16QAM
Note: The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.	

1.5. Radio Specification under Test

FDD T _x Frequency Range:	Band 2: 1850 ~ 1910 MHz; Band 4: 1710 ~ 1755 MHz Band 5: 824 ~ 849 MHz; Band 12: 699 ~ 716 MHz Band 13: 777 ~ 787 MHz; Band 14: 788 ~ 798 MHz Band 66: 1710 ~ 1780 MHz; Band 71: 663 ~ 698 MHz
FDD R _x Frequency Range:	Band 2: 1930 ~ 1990 MHz; Band 4: 2110 ~ 2155 MHz Band 5: 869 ~ 894 MHz; Band 12: 729 ~ 746 MHz Band 13: 746 ~ 756 MHz; Band 14: 758 ~ 768 MHz Band 66: 2110 ~ 2200 MHz; Band 71: 617 ~ 652 MHz

1.6. Description of Available Antennas

Technology	Frequency Range (MHz)	Antenna Type	Max Peak Gain (dBi)
LTE Band 2	1850 ~ 1910	PIFA	1.59
LTE Band 4	1710 ~ 1755		2.00
LTE Band 5	824 ~ 849		2.53
LTE Band 12	699 ~ 716		3.95
LTE Band 13	777 ~ 787		4.45
LTE Band 14	788 ~ 798		4.45
LTE Band 66	1710 ~ 1780		2.00
LTE Band 71	663 ~ 698		1.66
Note: The representative antenna provides the by manufacturer to calculate the ERP or EIRP.			

1.7. Test Methodology

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27, Part 90
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r01: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01: Determining ERP and EIRP

1.8. Device Capabilities

This device contains the following capabilities:

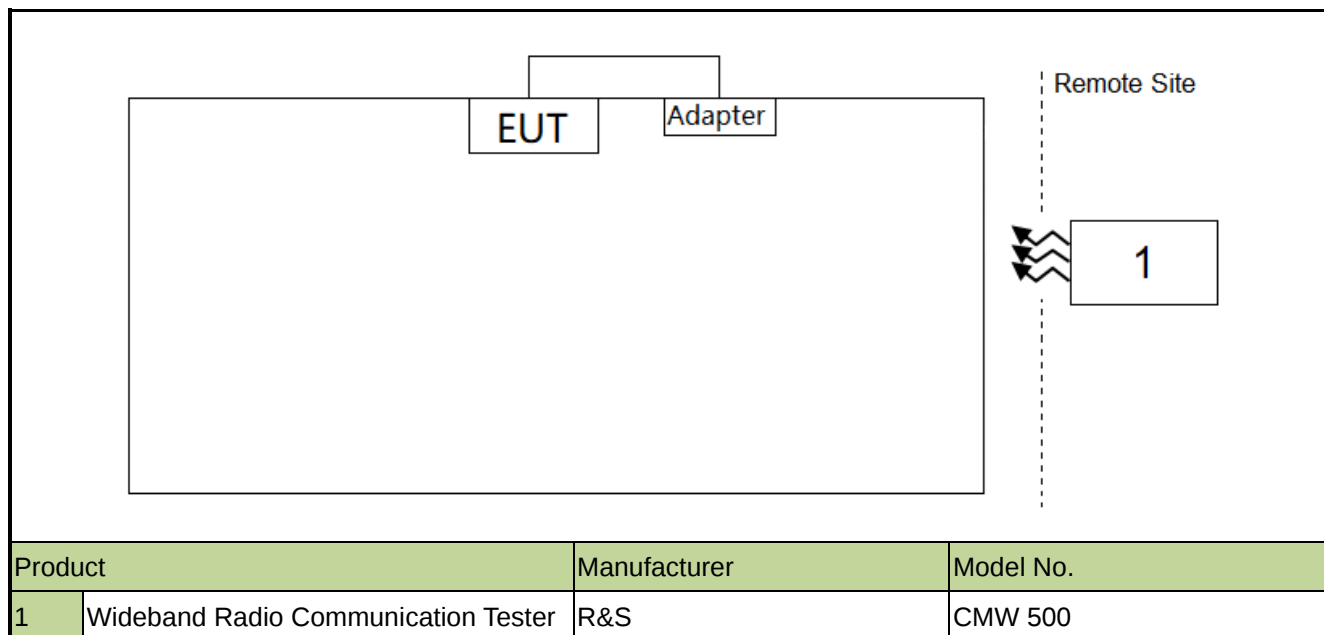
Working on LTE Band 2, 4, 5, 12, 13, 14, 66, 71.

LTE Band 66 (1710 ~ 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 ~ 1755 MHz). Therefore, test data provided in this report covers Band 4 as well as Band 66.

1.9. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

1.10. Configuration of Tested System



1.11. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20% ~ 75%RH

2. TEST EQUIPMENT CALIBRATION DATE

Instrument Name	Manufacturer	Model No.	Asset No.	Cali. Interval	Cal. Due Date	Test Site
Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2022/12/1	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2022/12/1	WZ-AC2
Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2022/11/12	WZ-AC2
Loop Antenna	Schwarzbeck	FMZB 1519	MRTSUE06025	1 year	2022/10/28	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2022/10/21	WZ-AC2
Horn Antenna	ETS	3117	MRTSUE06257	1 year	2022/9/25	WZ-AC2
Preamplifier	EMCI	EMC051845SE	MRTSUE06987	1 year	2022/9/9	WZ-AC2
Thermohygrometer	Yuhuaze	HTC-2	MRTSUE06178	1 year	2022/8/10	WZ-AC2
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2022/6/24	WZ-AC2
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2022/5/24	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2022/4/29	WZ-AC2
Preamplifier	EMCI	EMC184045SE	MRTSUE06640	1 year	2022/1/14	WZ-AC2
Shielding Room	HUAMING	WZ-SR6	MRTSUE06443	/	/	WZ-SR6
Signal Analyzer	Keysight	N9020B	MRTSUE06583	1 year	2022/10/10	WZ-SR6
Radio Communication Analyzer	Anritsu	MT8821C	MRTSUE06960	1 year	2022/7/1	WZ-SR6
Radio Communication Test Station	Anritsu	MT8000A	MRTSUE06961	1 year	2022/7/1	WZ-SR6
5G Wireless Test Platform	Keysight	E7515B	MRTSUE06942	1 year	2022/3/29	WZ-SR6
Thermohygrometer	testo	608-H1	MRTSUE06362	1 year	2022/2/25	WZ-SR6
Signal Generator	Keysight	N5173B	MRTSUE06606	1 year	2022/11/29	WZ-SR6

Software	Version	Function
EMI Software	V3	EMI Test Software

3. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Radiated Spurious Emissions
Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): Horizontal: 9kHz ~ 300MHz: 5.04dB 300MHz ~ 1GHz: 4.95dB 1GHz ~ 40GHz: 6.40dB Vertical: 9kHz ~ 300MHz: 5.24dB 300MHz ~ 1GHz: 6.03dB 1GHz ~ 40GHz: 6.40dB
Conducted Spurious Emissions
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 0.78dB
Output Power
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.13dB

4. TEST RESULT

4.1. Summary

FCC Part Section(s)	Test Description	Test Condition	Test Result	Reference
22.913(a)(5)	Equivalent Radiated Power (Band 5)	Conducted	Pass	Section 4.1
27.50(b)(9); 27.50(c)(9)	Equivalent Radiated Power (Band 12, 13)			
27.50(c)(10)	Equivalent Radiated Power (Band 71)			
24.232(c); 27.50(h)(2)	Equivalent Isotropic Radiated Power (Band 2)			
27.50(d)(4); 27.50(j)(3) 27.50(k)(3)	Equivalent Isotropic Radiated Power (Band 4/66)			
90.542(a)(7)	Equivalent Radiated Power (Band 14)			
2.1051, 22.917(a) 24.238(a), 27.53(c), (g), (h) 90.543(e)(3)	Spurious Emission		Pass	Section 4.2
2.1053, 22.917(a) 24.238(a), 27.53(c), (g), (h) 90.543(e)(3)	Spurious Emission	Radiated	Pass	Section 4.3

Notes:

- 1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 2) All supported modulation types were evaluated. The worst-case emission of modulation was selected. Therefore, Conducted Spurious Emission, Radiated Spurious Emission were presented the worst-case in the test report.

4.2. Equivalent Isotropically Radiated Power Measurement

4.2.1. Test Limit

Band 2:

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

Band 5:

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

Band 12, 13

Control stations and mobile stations transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 30 watts ERP.

Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP.

Band 14:

Control stations and mobile stations transmitting in the 758-768 MHz band and the 788-798 MHz band are limited to 30 watts ERP.

Band 4/66:

Fixed, mobile stations operating in the 1710-1755 MHz band and mobile in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

Band 71

Fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

4.2.2. Test Procedure

ANSI C63.26-2015 - Section 5.2

4.2.3. Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

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

where

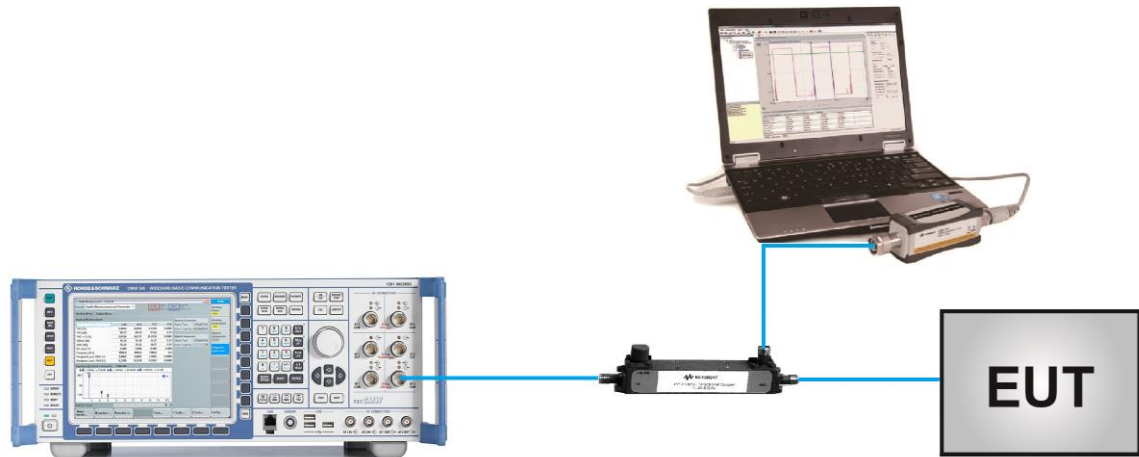
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively
(expressed in the same units as P_{Meas} , e.g., dBm or dBW)

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)

$\text{ERP} = \text{EIRP} - 2.15$

4.2.4. Test Setup



4.2.5. Test Result

Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 2		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
QPSK							
26047	1850.70	1.4	1	0	22.55	24.14	< 33.01
26365	1882.50				22.18	23.77	< 33.01
26683	1914.30				22.44	24.03	< 33.01
26047	1850.70	1.4	1	2	22.56	24.15	< 33.01
26365	1882.50				22.45	24.04	< 33.01
26683	1914.30				22.51	24.10	< 33.01
26047	1850.70	1.4	1	6	22.57	24.16	< 33.01
26365	1882.50				22.34	23.93	< 33.01
26683	1914.30				22.63	24.22	< 33.01
26047	1850.70	1.4	6	0	21.67	23.26	< 33.01
26365	1882.50				21.53	23.12	< 33.01
26683	1914.30				21.73	23.32	< 33.01
26055	1851.50	3	1	0	22.64	24.23	< 33.01
26365	1882.50				22.33	23.92	< 33.01
26675	1913.50				22.87	24.46	< 33.01
26055	1851.50	3	1	7	22.64	24.23	< 33.01
26365	1882.50				22.43	24.02	< 33.01
26675	1913.50				22.58	24.17	< 33.01
26055	1851.50	3	1	14	22.75	24.34	< 33.01
26365	1882.50				22.42	24.01	< 33.01
26675	1913.50				22.50	24.09	< 33.01
26055	1851.50	3	15	0	21.62	23.21	< 33.01
26365	1882.50				21.52	23.11	< 33.01
26675	1913.50				21.64	23.23	< 33.01
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
QPSK							
26065	1852.50	5	1	0	22.58	24.17	< 33.01
26365	1882.50				22.47	24.06	< 33.01
26665	1912.50				22.44	24.03	< 33.01
26065	1852.50	5	1	12	22.54	24.13	< 33.01
26365	1882.50				22.43	24.02	< 33.01
26665	1912.50				22.55	24.14	< 33.01
26065	1852.50	5	1	24	22.64	24.23	< 33.01
26365	1882.50				22.53	24.12	< 33.01
26665	1912.50				22.53	24.12	< 33.01
26065	1852.50	5	25	0	21.73	23.32	< 33.01
26365	1882.50				21.55	23.14	< 33.01
26665	1912.50				21.63	23.22	< 33.01
16390	1855.00	10	1	0	22.46	24.05	< 33.01
26365	1882.50				22.47	24.06	< 33.01
26640	1910.00				22.43	24.02	< 33.01
16390	1855.00	10	1	24	22.79	24.38	< 33.01
26365	1882.50				22.66	24.25	< 33.01
26640	1910.00				22.73	24.32	< 33.01
16390	1855.00	10	1	49	22.53	24.12	< 33.01
26365	1882.50				22.33	23.92	< 33.01
26640	1910.00				22.59	24.18	< 33.01
16390	1855.00	10	50	0	21.79	23.38	< 33.01
26365	1882.50				21.63	23.22	< 33.01
26640	1910.00				21.64	23.23	< 33.01
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
QPSK							
26115	1857.50	15	1	0	22.59	24.18	< 33.01
26365	1882.50				22.45	24.04	< 33.01
26615	1907.50				22.45	24.04	< 33.01
26115	1857.50	15	1	37	22.77	24.36	< 33.01
26365	1882.50				22.84	24.43	< 33.01
26615	1907.50				22.83	24.42	< 33.01
26115	1857.50	15	1	74	22.89	24.48	< 33.01
26365	1882.50				22.60	24.19	< 33.01
26615	1907.50				22.79	24.38	< 33.01
26115	1857.50	15	75	0	21.82	23.41	< 33.01
26365	1882.50				21.57	23.16	< 33.01
26615	1907.50				21.71	23.30	< 33.01
26140	1860.00	20	1	0	22.56	24.15	< 33.01
26365	1882.50				22.64	24.23	< 33.01
26590	1905.00				22.52	24.11	< 33.01
26140	1860.00	20	1	49	22.70	24.29	< 33.01
26365	1882.50				22.55	24.14	< 33.01
26590	1905.00				22.86	24.45	< 33.01
26140	1860.00	20	1	99	22.68	24.27	< 33.01
26365	1882.50				22.70	24.29	< 33.01
26590	1905.00				22.58	24.17	< 33.01
26140	1860.00	20	100	0	21.75	23.34	< 33.01
26365	1882.50				21.58	23.17	< 33.01
26590	1905.00				21.73	23.32	< 33.01
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
16QAM							
26047	1850.70	1.4	1	0	21.13	22.72	< 33.01
26365	1882.50				20.74	22.33	< 33.01
26683	1914.30				21.12	22.71	< 33.01
26047	1850.70	1.4	1	2	21.27	22.86	< 33.01
26365	1882.50				21.42	23.01	< 33.01
26683	1914.30				21.22	22.81	< 33.01
26047	1850.70	1.4	1	6	21.31	22.90	< 33.01
26365	1882.50				21.07	22.66	< 33.01
26683	1914.30				21.01	22.60	< 33.01
26047	1850.70	1.4	6	0	20.91	22.50	< 33.01
26365	1882.50				20.78	22.37	< 33.01
26683	1914.30				20.87	22.46	< 33.01
26055	1851.50	3	1	0	21.42	23.01	< 33.01
26365	1882.50				21.18	22.77	< 33.01
26675	1913.50				21.26	22.85	< 33.01
26055	1851.50	3	1	7	21.35	22.94	< 33.01
26365	1882.50				21.36	22.95	< 33.01
26675	1913.50				21.49	23.08	< 33.01
26055	1851.50	3	1	14	21.43	23.02	< 33.01
26365	1882.50				21.16	22.75	< 33.01
26675	1913.50				21.32	22.91	< 33.01
26055	1851.50	3	15	0	20.85	22.44	< 33.01
26365	1882.50				20.47	22.06	< 33.01
26675	1913.50				20.69	22.28	< 33.01
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
16QAM							
26065	1852.50	5	1	0	21.39	22.98	< 33.01
26365	1882.50				21.19	22.78	< 33.01
26665	1912.50				21.41	23.00	< 33.01
26065	1852.50	5	1	12	21.28	22.87	< 33.01
26365	1882.50				20.89	22.48	< 33.01
26665	1912.50				20.95	22.54	< 33.01
26065	1852.50	5	1	24	21.21	22.80	< 33.01
26365	1882.50				21.10	22.69	< 33.01
26665	1912.50				20.96	22.55	< 33.01
26065	1852.50	5	25	0	20.69	22.28	< 33.01
26365	1882.50				20.61	22.20	< 33.01
26665	1912.50				20.73	22.32	< 33.01
16390	1855.00	10	1	0	21.34	22.93	< 33.01
26365	1882.50				21.14	22.73	< 33.01
26640	1910.00				21.24	22.83	< 33.01
16390	1855.00	10	1	24	21.19	22.78	< 33.01
26365	1882.50				21.33	22.92	< 33.01
26640	1910.00				21.35	22.94	< 33.01
16390	1855.00	10	1	49	21.02	22.61	< 33.01
26365	1882.50				21.07	22.66	< 33.01
26640	1910.00				21.23	22.82	< 33.01
16390	1855.00	10	50	0	20.85	22.44	< 33.01
26365	1882.50				20.69	22.28	< 33.01
26640	1910.00				20.73	22.32	< 33.01
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
16QAM							
26115	1857.50	15	1	0	21.41	23.00	< 33.01
26365	1882.50				21.26	22.85	< 33.01
26615	1907.50				21.05	22.64	< 33.01
26115	1857.50	15	1	37	21.87	23.46	< 33.01
26365	1882.50				21.69	23.28	< 33.01
26615	1907.50				21.31	22.90	< 33.01
26115	1857.50	15	1	74	21.40	22.99	< 33.01
26365	1882.50				21.37	22.96	< 33.01
26615	1907.50				21.40	22.99	< 33.01
26115	1857.50	15	75	0	20.86	22.45	< 33.01
26365	1882.50				20.76	22.35	< 33.01
26615	1907.50				20.83	22.42	< 33.01
26140	1860.00	20	1	0	21.16	22.75	< 33.01
26365	1882.50				21.06	22.65	< 33.01
26590	1905.00				21.19	22.78	< 33.01
26140	1860.00	20	1	49	21.05	22.64	< 33.01
26365	1882.50				21.49	23.08	< 33.01
26590	1905.00				20.96	22.55	< 33.01
26140	1860.00	20	1	99	21.14	22.73	< 33.01
26365	1882.50				21.26	22.85	< 33.01
26590	1905.00				21.18	22.77	< 33.01
26140	1860.00	20	100	0	20.69	22.28	< 33.01
26365	1882.50				20.65	22.24	< 33.01
26590	1905.00				20.61	22.20	< 33.01
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 4/66		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
QPSK							
131979	1710.70	1.4	1	0	22.40	24.40	< 30.00
132322	1745.00				22.70	24.70	< 30.00
132665	1779.30				22.39	24.39	< 30.00
131979	1710.70	1.4	1	2	22.60	24.60	< 30.00
132322	1745.00				22.73	24.73	< 30.00
132665	1779.30				22.49	24.49	< 30.00
131979	1710.70	1.4	1	6	22.56	24.56	< 30.00
132322	1745.00				22.48	24.48	< 30.00
132665	1779.30				22.41	24.41	< 30.00
131979	1710.70	1.4	6	0	21.84	23.84	< 30.00
132322	1745.00				21.86	23.86	< 30.00
132665	1779.30				21.64	23.64	< 30.00
131987	1711.50	3	1	0	22.79	24.79	< 30.00
132322	1745.00				22.82	24.82	< 30.00
132657	1778.50				22.94	24.94	< 30.00
131987	1711.50	3	1	7	22.85	24.85	< 30.00
132322	1745.00				22.88	24.88	< 30.00
132657	1778.50				22.66	24.66	< 30.00
131987	1711.50	3	1	14	22.53	24.53	< 30.00
132322	1745.00				22.76	24.76	< 30.00
132657	1778.50				22.43	24.43	< 30.00
131987	1711.50	3	15	0	21.73	23.73	< 30.00
132322	1745.00				21.80	23.80	< 30.00
132657	1778.50				21.61	23.61	< 30.00
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
QPSK							
131997	1712.50	5	1	0	22.77	24.77	< 30.00
132322	1745.00				22.89	24.89	< 30.00
132647	1777.50				22.80	24.80	< 30.00
131997	1712.50	5	1	12	22.67	24.67	< 30.00
132322	1745.00				22.81	24.81	< 30.00
132647	1777.50				22.81	24.81	< 30.00
131997	1712.50	5	1	24	22.54	24.54	< 30.00
132322	1745.00				22.89	24.89	< 30.00
132647	1777.50				22.58	24.58	< 30.00
131997	1712.50	5	25	0	21.75	23.75	< 30.00
132322	1745.00				21.87	23.87	< 30.00
132647	1777.50				21.75	23.75	< 30.00
132022	1715.00	10	1	0	22.86	24.86	< 30.00
132322	1745.00				22.72	24.72	< 30.00
132622	1775.00				22.65	24.65	< 30.00
132022	1715.00	10	1	24	22.67	24.67	< 30.00
132322	1745.00				23.02	25.02	< 30.00
132622	1775.00				22.99	24.99	< 30.00
132022	1715.00	10	1	49	22.57	24.57	< 30.00
132322	1745.00				22.64	24.64	< 30.00
132622	1775.00				22.49	24.49	< 30.00
132022	1715.00	10	50	0	21.77	23.77	< 30.00
132322	1745.00				21.98	23.98	< 30.00
132622	1775.00				21.90	23.90	< 30.00
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
QPSK							
132047	1717.50	15	1	0	22.84	24.84	< 30.00
132322	1745.00				22.74	24.74	< 30.00
132597	1772.50				22.68	24.68	< 30.00
132047	1717.50	15	1	37	22.87	24.87	< 30.00
132322	1745.00				23.02	25.02	< 30.00
132597	1772.50				22.94	24.94	< 30.00
132047	1717.50	15	1	74	22.57	24.57	< 30.00
132322	1745.00				22.85	24.85	< 30.00
132597	1772.50				22.65	24.65	< 30.00
132047	1717.50	15	75	0	21.78	23.78	< 30.00
132322	1745.00				22.02	24.02	< 30.00
132597	1772.50				21.95	23.95	< 30.00
132072	1720.00	20	1	0	22.98	24.98	< 30.00
132322	1745.00				22.82	24.82	< 30.00
132572	1770.00				22.66	24.66	< 30.00
132072	1720.00	20	1	49	22.82	24.82	< 30.00
132322	1745.00				23.22	25.22	< 30.00
132572	1770.00				22.99	24.99	< 30.00
132072	1720.00	20	1	99	23.01	25.01	< 30.00
132322	1745.00				22.86	24.86	< 30.00
132572	1770.00				22.63	24.63	< 30.00
132072	1720.00	20	100	0	21.80	23.80	< 30.00
132322	1745.00				22.02	24.02	< 30.00
132572	1770.00				21.95	23.95	< 30.00
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
16QAM							
131979	1710.70	1.4	1	0	21.48	23.48	< 30.00
132322	1745.00				21.49	23.49	< 30.00
132665	1779.30				21.52	23.52	< 30.00
131979	1710.70	1.4	1	2	21.68	23.68	< 30.00
132322	1745.00				21.91	23.91	< 30.00
132665	1779.30				21.42	23.42	< 30.00
131979	1710.70	1.4	1	6	21.57	23.57	< 30.00
132322	1745.00				21.64	23.64	< 30.00
132665	1779.30				21.17	23.17	< 30.00
131979	1710.70	1.4	6	0	20.66	22.66	< 30.00
132322	1745.00				20.82	22.82	< 30.00
132665	1779.30				20.65	22.65	< 30.00
131987	1711.50	3	1	0	21.34	23.34	< 30.00
132322	1745.00				21.62	23.62	< 30.00
132657	1778.50				21.41	23.41	< 30.00
131987	1711.50	3	1	7	21.77	23.77	< 30.00
132322	1745.00				21.81	23.81	< 30.00
132657	1778.50				21.42	23.42	< 30.00
131987	1711.50	3	1	14	21.49	23.49	< 30.00
132322	1745.00				21.57	23.57	< 30.00
132657	1778.50				21.20	23.20	< 30.00
131987	1711.50	3	15	0	20.78	22.78	< 30.00
132322	1745.00				20.98	22.98	< 30.00
132657	1778.50				20.75	22.75	< 30.00
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
16QAM							
131997	1712.50	5	1	0	21.23	23.23	< 30.00
132322	1745.00				21.53	23.53	< 30.00
132647	1777.50				21.50	23.50	< 30.00
131997	1712.50	5	1	12	21.39	23.39	< 30.00
132322	1745.00				21.16	23.16	< 30.00
132647	1777.50				20.97	22.97	< 30.00
131997	1712.50	5	1	24	21.27	23.27	< 30.00
132322	1745.00				21.70	23.70	< 30.00
132647	1777.50				20.83	22.83	< 30.00
131997	1712.50	5	25	0	20.80	22.80	< 30.00
132322	1745.00				20.83	22.83	< 30.00
132647	1777.50				20.88	22.88	< 30.00
132022	1715.00	10	1	0	21.58	23.58	< 30.00
132322	1745.00				21.76	23.76	< 30.00
132622	1775.00				21.29	23.29	< 30.00
132022	1715.00	10	1	24	21.30	23.30	< 30.00
132322	1745.00				21.78	23.78	< 30.00
132622	1775.00				21.69	23.69	< 30.00
132022	1715.00	10	1	49	21.33	23.33	< 30.00
132322	1745.00				21.62	23.62	< 30.00
132622	1775.00				21.20	23.20	< 30.00
132022	1715.00	10	50	0	20.85	22.85	< 30.00
132322	1745.00				21.03	23.03	< 30.00
132622	1775.00				20.96	22.96	< 30.00
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	EIRP (dBm)	Limit (dBm)
16QAM							
132047	1717.50	15	1	0	21.58	23.58	< 30.00
132322	1745.00				21.41	23.41	< 30.00
132597	1772.50				21.38	23.38	< 30.00
132047	1717.50	15	1	37	21.48	23.48	< 30.00
132322	1745.00				22.21	24.21	< 30.00
132597	1772.50				21.83	23.83	< 30.00
132047	1717.50	15	1	74	21.37	23.37	< 30.00
132322	1745.00				21.62	23.62	< 30.00
132597	1772.50				21.55	23.55	< 30.00
132047	1717.50	15	75	0	20.84	22.84	< 30.00
132322	1745.00				21.08	23.08	< 30.00
132597	1772.50				20.92	22.92	< 30.00
132072	1720.00	20	1	0	21.50	23.50	< 30.00
132322	1745.00				21.26	23.26	< 30.00
132572	1770.00				21.14	23.14	< 30.00
132072	1720.00	20	1	49	21.19	23.19	< 30.00
132322	1745.00				21.43	23.43	< 30.00
132572	1770.00				21.51	23.51	< 30.00
132072	1720.00	20	1	99	21.30	23.30	< 30.00
132322	1745.00				21.80	23.80	< 30.00
132572	1770.00				21.55	23.55	< 30.00
132072	1720.00	20	100	0	20.83	22.83	< 30.00
132322	1745.00				21.10	23.10	< 30.00
132572	1770.00				20.92	22.92	< 30.00
Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)							

Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 5		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
26797	824.70	1.4	1	0	23.20	23.58	< 38.45
26915	836.50				23.00	23.38	< 38.45
27033	848.30				23.07	23.45	< 38.45
26797	824.70	1.4	1	2	23.22	23.60	< 38.45
26915	836.50				23.18	23.56	< 38.45
27033	848.30				23.04	23.42	< 38.45
26797	824.70	1.4	1	6	22.99	23.37	< 38.45
26915	836.50				23.03	23.41	< 38.45
27033	848.30				22.80	23.18	< 38.45
26797	824.70	1.4	6	0	22.22	22.60	< 38.45
26915	836.50				22.24	22.62	< 38.45
27033	848.30				22.23	22.61	< 38.45
26805	825.50	3	1	0	23.06	23.44	< 38.45
26915	836.50				23.07	23.45	< 38.45
27015	846.50				23.07	23.45	< 38.45
26805	825.50	3	1	7	23.18	23.56	< 38.45
26915	836.50				23.32	23.70	< 38.45
27015	846.50				23.17	23.55	< 38.45
26805	825.50	3	1	14	23.19	23.57	< 38.45
26915	836.50				23.37	23.75	< 38.45
27015	846.50				22.81	23.19	< 38.45
26805	825.50	3	15	0	22.18	22.56	< 38.45
26915	836.50				22.38	22.76	< 38.45
27015	846.50				22.19	22.57	< 38.45
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
26815	826.50	5	1	0	23.11	23.49	< 38.45
26915	836.50				22.98	23.36	< 38.45
27015	846.50				23.22	23.60	< 38.45
26815	826.50	5	1	12	23.09	23.47	< 38.45
26915	836.50				23.38	23.76	< 38.45
27015	846.50				23.15	23.53	< 38.45
26815	826.50	5	1	24	22.99	23.37	< 38.45
26915	836.50				23.37	23.75	< 38.45
27015	846.50				22.92	23.30	< 38.45
26815	826.50	5	25	0	22.22	22.60	< 38.45
26915	836.50				22.31	22.69	< 38.45
27015	846.50				22.15	22.53	< 38.45
26840	829.00	10	1	0	23.29	23.67	< 38.45
26915	836.50				22.98	23.36	< 38.45
26990	844.00				23.36	23.74	< 38.45
26840	829.00	10	1	24	22.98	23.36	< 38.45
26915	836.50				23.12	23.50	< 38.45
26990	844.00				23.19	23.57	< 38.45
26840	829.00	10	1	49	22.91	23.29	< 38.45
26915	836.50				23.09	23.47	< 38.45
26990	844.00				22.79	23.17	< 38.45
26840	829.00	10	50	0	22.31	22.69	< 38.45
26915	836.50				22.30	22.68	< 38.45
26990	844.00				22.30	22.68	< 38.45
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
26797	824.70	1.4	1	0	21.74	22.12	< 38.45
26915	836.50				21.84	22.22	< 38.45
27033	848.30				21.60	21.98	< 38.45
26797	824.70	1.4	1	2	21.93	22.31	< 38.45
26915	836.50				21.84	22.22	< 38.45
27033	848.30				21.64	22.02	< 38.45
26797	824.70	1.4	1	6	21.84	22.22	< 38.45
26915	836.50				21.78	22.16	< 38.45
27033	848.30				21.49	21.87	< 38.45
26797	824.70	1.4	6	0	21.35	21.73	< 38.45
26915	836.50				21.26	21.64	< 38.45
27033	848.30				21.58	21.96	< 38.45
26805	825.50	3	1	0	21.97	22.35	< 38.45
26915	836.50				21.99	22.37	< 38.45
27015	846.50				21.99	22.37	< 38.45
26805	825.50	3	1	7	22.10	22.48	< 38.45
26915	836.50				22.27	22.65	< 38.45
27015	846.50				22.14	22.52	< 38.45
26805	825.50	3	1	14	21.69	22.07	< 38.45
26915	836.50				21.96	22.34	< 38.45
27015	846.50				21.70	22.08	< 38.45
26805	825.50	3	15	0	21.19	21.57	< 38.45
26915	836.50				21.34	21.72	< 38.45
27015	846.50				21.53	21.91	< 38.45
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
26815	826.50	5	1	0	21.86	22.24	< 38.45
26915	836.50				21.94	22.32	< 38.45
27015	846.50				21.87	22.25	< 38.45
26815	826.50	5	1	12	21.71	22.09	< 38.45
26915	836.50				22.08	22.46	< 38.45
27015	846.50				21.65	22.03	< 38.45
26815	826.50	5	1	24	21.38	21.76	< 38.45
26915	836.50				21.45	21.83	< 38.45
27015	846.50				21.29	21.67	< 38.45
26815	826.50	5	25	0	21.15	21.53	< 38.45
26915	836.50				21.27	21.65	< 38.45
27015	846.50				21.15	21.53	< 38.45
26840	829.00	10	1	0	21.90	22.28	< 38.45
26915	836.50				21.58	21.96	< 38.45
26990	844.00				21.71	22.09	< 38.45
26840	829.00	10	1	24	21.77	22.15	< 38.45
26915	836.50				21.98	22.36	< 38.45
26990	844.00				22.00	22.38	< 38.45
26840	829.00	10	1	49	21.50	21.88	< 38.45
26915	836.50				21.80	22.18	< 38.45
26990	844.00				21.67	22.05	< 38.45
26840	829.00	10	50	0	21.37	21.75	< 38.45
26915	836.50				21.38	21.76	< 38.45
26990	844.00				21.29	21.67	< 38.45
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 12		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
23017	699.7	1.4	1	0	22.35	24.15	< 33.01
23095	707.5				22.66	24.46	< 33.01
23173	715.3				22.36	24.16	< 33.01
23017	699.7	1.4	1	2	22.66	24.46	< 33.01
23095	707.5				22.64	24.44	< 33.01
23173	715.3				22.69	24.49	< 33.01
23017	699.7	1.4	1	6	22.73	24.53	< 33.01
23095	707.5				22.70	24.50	< 33.01
23173	715.3				22.56	24.36	< 33.01
23017	699.7	1.4	6	0	21.59	23.39	< 33.01
23095	707.5				21.68	23.48	< 33.01
23173	715.3				21.76	23.56	< 33.01
23025	700.5	3	1	0	22.84	24.64	< 33.01
23095	707.5				23.00	24.80	< 33.01
23165	714.5				22.63	24.43	< 33.01
23025	700.5	3	1	7	23.02	24.82	< 33.01
23095	707.5				22.76	24.56	< 33.01
23165	714.5				22.72	24.52	< 33.01
23025	700.5	3	1	14	22.64	24.44	< 33.01
23095	707.5				22.93	24.73	< 33.01
23165	714.5				22.67	24.47	< 33.01
23025	700.5	3	15	0	21.82	23.62	< 33.01
23095	707.5				21.76	23.56	< 33.01
23165	714.5				21.70	23.50	< 33.01
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
23035	701.5	5	1	0	22.53	24.33	< 33.01
23095	707.5				22.60	24.40	< 33.01
23155	713.5				22.78	24.58	< 33.01
23035	701.5	5	1	12	22.82	24.62	< 33.01
23095	707.5				22.75	24.55	< 33.01
23155	713.5				22.84	24.64	< 33.01
23035	701.5	5	1	24	22.74	24.54	< 33.01
23095	707.5				22.71	24.51	< 33.01
23155	713.5				22.73	24.53	< 33.01
23035	701.5	5	25	0	21.83	23.63	< 33.01
23095	707.5				21.82	23.62	< 33.01
23155	713.5				21.65	23.45	< 33.01
23060	704.0	10	1	0	22.56	24.36	< 33.01
23095	707.5				22.87	24.67	< 33.01
23130	711.0				22.68	24.48	< 33.01
23060	704.0	10	1	24	22.83	24.63	< 33.01
23095	707.5				22.82	24.62	< 33.01
23130	711.0				22.66	24.46	< 33.01
23060	704.0	10	1	49	22.70	24.50	< 33.01
23095	707.5				22.73	24.53	< 33.01
23130	711.0				22.56	24.36	< 33.01
23060	704.0	10	50	0	21.72	23.52	< 33.01
23095	707.5				21.78	23.58	< 33.01
23130	711.0				21.83	23.63	< 33.01
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
23017	699.7	1.4	1	0	21.61	23.41	< 33.01
23095	707.5				21.45	23.25	< 33.01
23173	715.3				21.53	23.33	< 33.01
23017	699.7	1.4	1	2	21.12	22.92	< 33.01
23095	707.5				21.65	23.45	< 33.01
23173	715.3				21.41	23.21	< 33.01
23017	699.7	1.4	1	6	20.94	22.74	< 33.01
23095	707.5				21.77	23.57	< 33.01
23173	715.3				21.42	23.22	< 33.01
23017	699.7	1.4	6	0	20.78	22.58	< 33.01
23095	707.5				20.73	22.53	< 33.01
23173	715.3				21.00	22.80	< 33.01
23025	700.5	3	1	0	21.40	23.20	< 33.01
23095	707.5				21.48	23.28	< 33.01
23165	714.5				21.48	23.28	< 33.01
23025	700.5	3	1	7	21.82	23.62	< 33.01
23095	707.5				21.87	23.67	< 33.01
23165	714.5				21.84	23.64	< 33.01
23025	700.5	3	1	14	21.60	23.40	< 33.01
23095	707.5				21.35	23.15	< 33.01
23165	714.5				21.51	23.31	< 33.01
23025	700.5	3	15	0	20.88	22.68	< 33.01
23095	707.5				20.81	22.61	< 33.01
23165	714.5				20.81	22.61	< 33.01
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
23035	701.5	5	1	0	21.43	23.23	< 33.01
23095	707.5				21.41	23.21	< 33.01
23155	713.5				21.46	23.26	< 33.01
23035	701.5	5	1	12	21.22	23.02	< 33.01
23095	707.5				21.17	22.97	< 33.01
23155	713.5				21.12	22.92	< 33.01
23035	701.5	5	1	24	21.56	23.36	< 33.01
23095	707.5				21.46	23.26	< 33.01
23155	713.5				21.57	23.37	< 33.01
23035	701.5	5	25	0	20.81	22.61	< 33.01
23095	707.5				20.89	22.69	< 33.01
23155	713.5				20.86	22.66	< 33.01
23060	704.0	10	1	0	21.17	22.97	< 33.01
23095	707.5				21.44	23.24	< 33.01
23130	711.0				21.57	23.37	< 33.01
23060	704.0	10	1	24	21.35	23.15	< 33.01
23095	707.5				21.50	23.30	< 33.01
23130	711.0				21.58	23.38	< 33.01
23060	704.0	10	1	49	21.17	22.97	< 33.01
23095	707.5				21.54	23.34	< 33.01
23130	711.0				21.41	23.21	< 33.01
23060	704.0	10	50	0	20.78	22.58	< 33.01
23095	707.5				20.94	22.74	< 33.01
23130	711.0				20.84	22.64	< 33.01
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 13		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
23205	779.5	5	1	0	23.00	25.30	< 33.01
23230	782.0				23.19	25.49	< 33.01
23255	784.5				23.13	25.43	< 33.01
23205	779.5	5	1	12	23.16	25.46	< 33.01
23230	782.0				23.07	25.37	< 33.01
23255	784.5				23.11	25.41	< 33.01
23205	779.5	5	1	24	23.08	25.38	< 33.01
23230	782.0				23.05	25.35	< 33.01
23255	784.5				23.17	25.47	< 33.01
23205	779.5	5	25	0	22.30	24.60	< 33.01
23230	782.0				22.19	24.49	< 33.01
23255	784.5				22.11	24.41	< 33.01
23230	782.0	10	1	0	23.00	25.30	< 33.01
23230	782.0		1	24	23.07	25.37	< 33.01
23230	782.0		1	49	22.89	25.19	< 33.01
23230	782.0		50	0	23.07	25.37	< 33.01
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
23205	779.5	5	1	0	21.91	24.21	< 33.01
23230	782.0				21.91	24.21	< 33.01
23255	784.5				21.40	23.70	< 33.01
23205	779.5	5	1	12	21.61	23.91	< 33.01
23230	782.0				21.83	24.13	< 33.01
23255	784.5				21.29	23.59	< 33.01
23205	779.5	5	1	24	21.40	23.70	< 33.01
23230	782.0				21.53	23.83	< 33.01
23255	784.5				21.56	23.86	< 33.01
23205	779.5	5	25	0	21.11	23.41	< 33.01
23230	782.0				21.04	23.34	< 33.01
23255	784.5				21.12	23.42	< 33.01
23230	782.0	10	1	0	21.91	24.21	< 33.01
23230	782.0		1	24	21.75	24.05	< 33.01
23230	782.0		1	49	21.90	24.20	< 33.01
23230	782.0		50	0	21.99	24.29	< 33.01
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/27
Test Band	LTE Band 14		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
5305	760.5	5	1	0	22.63	24.93	< 44.77
5330	763.0				22.73	25.03	< 44.77
5355	765.5				22.84	25.14	< 44.77
5305	760.5	5	1	12	23.12	25.42	< 44.77
5330	763.0				22.85	25.15	< 44.77
5355	765.5				22.90	25.20	< 44.77
5305	760.5	5	1	24	22.74	25.04	< 44.77
5330	763.0				22.72	25.02	< 44.77
5355	765.5				22.71	25.01	< 44.77
5305	760.5	5	25	0	21.65	23.95	< 44.77
5330	763.0				21.71	24.01	< 44.77
5355	765.5				21.67	23.97	< 44.77
5330	763.0	10	1	0	22.74	25.04	< 44.77
5330	763.0			24	22.81	25.11	< 44.77
5330	763.0			49	22.71	25.01	< 44.77
5330	763.0	10	50	0	21.67	23.97	< 44.77
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
5305	760.5	5	1	0	21.56	23.86	< 44.77
5330	763.0				21.37	23.67	< 44.77
5355	765.5				21.76	24.06	< 44.77
5305	760.5	5	1	12	21.52	23.82	< 44.77
5330	763.0				21.59	23.89	< 44.77
5355	765.5				21.52	23.82	< 44.77
5305	760.5	5	1	24	21.71	24.01	< 44.77
5330	763.0				21.69	23.99	< 44.77
5355	765.5				21.26	23.56	< 44.77
5305	760.5	5	25	0	20.63	22.93	< 44.77
5330	763.0				20.66	22.96	< 44.77
5355	765.5				20.60	22.90	< 44.77
5330	763.0	10	1	0	21.23	23.53	< 44.77
5330	763.0			24	21.64	23.94	< 44.77
5330	763.0			49	21.31	23.61	< 44.77
5330	763.0	10	50	0	20.71	23.01	< 44.77
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 71		

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
133147	665.5	5	1	0	22.61	22.12	< 34.77
133297	680.5				22.40	21.91	< 34.77
133447	695.5				22.52	22.03	< 34.77
133147	665.5	5	1	12	22.58	22.09	< 34.77
133297	680.5				22.36	21.87	< 34.77
133447	695.5				22.41	21.92	< 34.77
133147	665.5	5	1	24	22.54	22.05	< 34.77
133297	680.5				22.10	21.61	< 34.77
133447	695.5				22.27	21.78	< 34.77
133147	665.5	5	25	0	21.62	21.13	< 34.77
133297	680.5				21.55	21.06	< 34.77
133447	695.5				21.47	20.98	< 34.77
133172	668.0	10	1	0	22.30	21.81	< 34.77
133297	680.5				22.24	21.75	< 34.77
133422	693.0				22.24	21.75	< 34.77
133172	668.0	10	1	24	22.48	21.99	< 34.77
133297	680.5				22.48	21.99	< 34.77
133422	693.0				22.37	21.88	< 34.77
133172	668.0	10	1	49	22.35	21.86	< 34.77
133297	680.5				22.28	21.79	< 34.77
133422	693.0				22.25	21.76	< 34.77
133172	668.0	10	50	0	21.53	21.04	< 34.77
133297	680.5				21.39	20.90	< 34.77
133422	693.0				21.52	21.03	< 34.77
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
QPSK							
133197	670.5	15	1	0	22.47	21.98	< 34.77
133297	680.5				22.47	21.98	< 34.77
133397	690.5				22.52	22.03	< 34.77
133197	670.5	15	1	37	22.61	22.12	< 34.77
133297	680.5				22.50	22.01	< 34.77
133397	690.5				22.58	22.09	< 34.77
133197	670.5	15	1	74	22.48	21.99	< 34.77
133297	680.5				22.66	22.17	< 34.77
133397	690.5				22.40	21.91	< 34.77
133197	670.5	15	75	0	21.57	21.08	< 34.77
133297	680.5				21.43	20.94	< 34.77
133397	690.5				21.51	21.02	< 34.77
133222	673.0	20	1	0	22.35	21.86	< 34.77
133322	683.0				22.34	21.85	< 34.77
133372	688.0				22.24	21.75	< 34.77
133222	673.0	20	1	49	22.66	22.17	< 34.77
133322	683.0				22.63	22.14	< 34.77
133372	688.0				22.79	22.30	< 34.77
133222	673.0	20	1	99	22.34	21.85	< 34.77
133322	683.0				22.39	21.90	< 34.77
133372	688.0				22.35	21.86	< 34.77
133222	673.0	20	100	0	21.60	21.11	< 34.77
133322	683.0				21.49	21.00	< 34.77
133372	688.0				21.50	21.01	< 34.77
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
133147	665.5	5	1	0	21.25	20.76	< 34.77
133297	680.5				21.07	20.58	< 34.77
133447	695.5				21.15	20.66	< 34.77
133147	665.5	5	1	12	21.13	20.64	< 34.77
133297	680.5				20.86	20.37	< 34.77
133447	695.5				20.65	20.16	< 34.77
133147	665.5	5	1	24	21.14	20.65	< 34.77
133297	680.5				21.17	20.68	< 34.77
133447	695.5				21.28	20.79	< 34.77
133147	665.5	5	25	0	20.71	20.22	< 34.77
133297	680.5				20.35	19.86	< 34.77
133447	695.5				20.41	19.92	< 34.77
133172	668.0	10	1	0	21.16	20.67	< 34.77
133297	680.5				21.00	20.51	< 34.77
133422	693.0				20.94	20.45	< 34.77
133172	668.0	10	1	24	21.37	20.88	< 34.77
133297	680.5				21.31	20.82	< 34.77
133422	693.0				21.07	20.58	< 34.77
133172	668.0	10	1	49	20.98	20.49	< 34.77
133297	680.5				21.10	20.61	< 34.77
133422	693.0				20.88	20.39	< 34.77
133172	668.0	10	50	0	20.45	19.96	< 34.77
133297	680.5				20.52	20.03	< 34.77
133422	693.0				20.54	20.05	< 34.77
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

Channel No.	Frequency (MHz)	Channel Bandwidth (MHz)	RB Size	RB Offset	Output Power (dBm)	ERP (dBm)	Limit (dBm)
16QAM							
133197	670.5	15	1	0	21.27	20.78	< 34.77
133297	680.5				21.23	20.74	< 34.77
133397	690.5				21.23	20.74	< 34.77
133197	670.5	15	1	37	21.70	21.21	< 34.77
133297	680.5				21.58	21.09	< 34.77
133397	690.5				21.91	21.42	< 34.77
133197	670.5	15	1	74	20.89	20.40	< 34.77
133297	680.5				21.22	20.73	< 34.77
133397	690.5				21.25	20.76	< 34.77
133197	670.5	15	75	0	20.65	20.16	< 34.77
133297	680.5				20.48	19.99	< 34.77
133397	690.5				20.49	20.00	< 34.77
133222	673.0	20	1	0	21.10	20.61	< 34.77
133322	683.0				21.07	20.58	< 34.77
133372	688.0				20.68	20.19	< 34.77
133222	673.0	20	1	49	21.52	21.03	< 34.77
133322	683.0				20.70	20.21	< 34.77
133372	688.0				21.48	20.99	< 34.77
133222	673.0	20	1	99	21.16	20.67	< 34.77
133322	683.0				21.51	21.02	< 34.77
133372	688.0				20.99	20.50	< 34.77
133222	673.0	20	100	0	20.65	20.16	< 34.77
133322	683.0				20.44	19.95	< 34.77
133372	688.0				20.53	20.04	< 34.77
Note: The ERP (dBm) = Output Power (dBm) + Antenna Gain (dBi) - 2.15							

4.3. Conducted Spurious Emission Measurement

4.3.1. Test Limit

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. All out of band emissions are measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies. All data rates were investigated to determine the worst-case configuration. All modes of operation were investigated and the worst-case configuration results are reported in this section.

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.

4.3.2. Test Procedure

ANSI C63.26-2015 - Section 5.7

4.3.3. Test Setting

1. Set the analyzer frequency to low, mid, high channel.
2. RBW = 1MHz
3. VBW $\geq 3 \times$ RBW
4. Sweep time = auto
5. Detector = power averaging (rms)
6. Set sweep trigger to "free run."
7. User gate triggered such that the analyzer only sweeps when the device is transmitting at full power.
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple.

To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.

4.3.4. Test Setup



4.3.5. Test Result

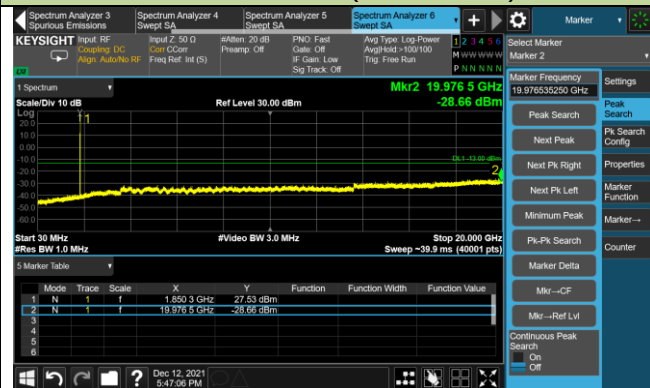
Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 2_1RB_QPSK		

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
26047	1850.7	1.4	30 ~ 20000	-28.66	≤ -13.00	Pass
26365	1882.5	1.4	30 ~ 20000	-26.47	≤ -13.00	Pass
26683	1914.3	1.4	30 ~ 20000	-26.41	≤ -13.00	Pass
26055	1851.5	3	30 ~ 20000	-27.06	≤ -13.00	Pass
26365	1882.5	3	30 ~ 20000	-26.80	≤ -13.00	Pass
26675	1913.5	3	30 ~ 20000	-26.26	≤ -13.00	Pass
26065	1852.5	5	30 ~ 20000	-26.88	≤ -13.00	Pass
26365	1882.5	5	30 ~ 20000	-26.66	≤ -13.00	Pass
26665	1912.5	5	30 ~ 20000	-26.70	≤ -13.00	Pass
16390	1855.0	10	30 ~ 20000	-26.87	≤ -13.00	Pass
26365	1882.5	10	30 ~ 20000	-27.21	≤ -13.00	Pass
26640	1910.0	10	30 ~ 20000	-26.63	≤ -13.00	Pass
26115	1857.5	15	30 ~ 20000	-25.60	≤ -13.00	Pass
26365	1882.5	15	30 ~ 20000	-26.39	≤ -13.00	Pass
26615	1907.5	15	30 ~ 20000	-26.67	≤ -13.00	Pass
26140	1860.0	20	30 ~ 20000	-26.91	≤ -13.00	Pass
26365	1882.5	20	30 ~ 20000	-26.04	≤ -13.00	Pass
26590	1905.0	20	30 ~ 20000	-26.00	≤ -13.00	Pass

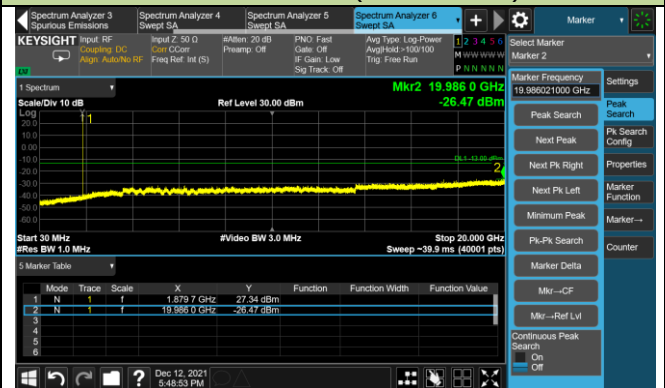
Note: Spurious emissions within 9kHz ~ 30MHz were found more than 20dB below limit line.

1.4MHz Channel Bandwidth

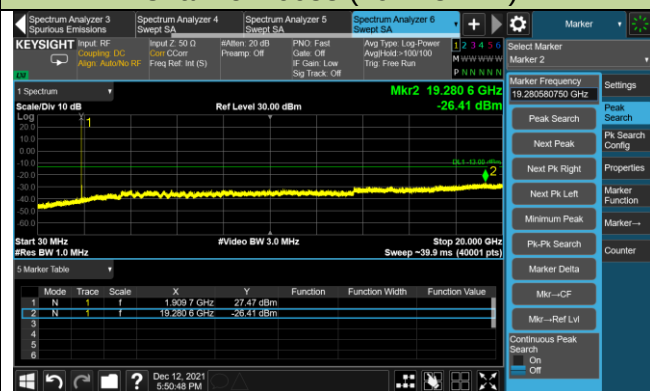
Channel 26047 (1850.7MHz)



Channel 26365 (1882.5MHz)

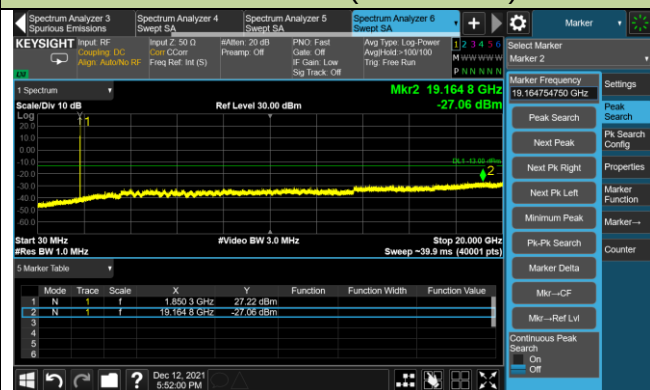


Channel 26683 (1914.3MHz)

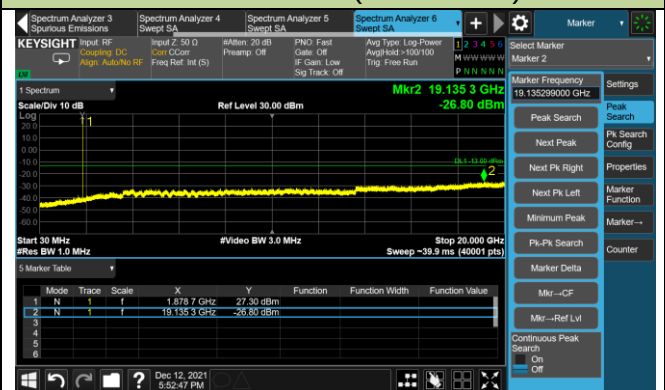


3MHz Channel Bandwidth

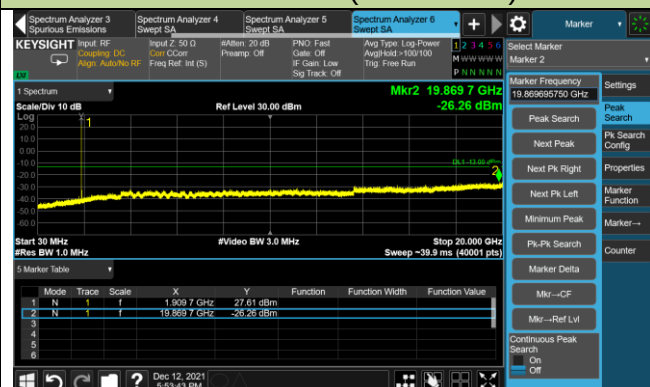
Channel 26055 (1851.5MHz)



Channel 26365 (1882.5MHz)

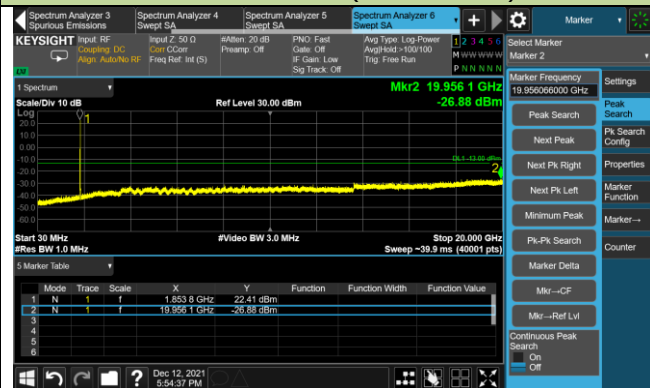


Channel 26675 (1913.5MHz)

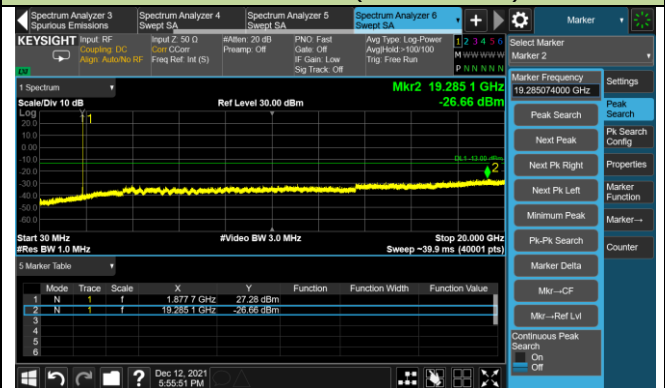


5MHz Channel Bandwidth

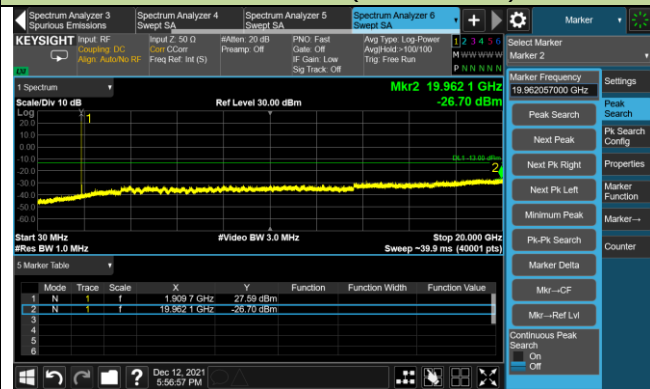
Channel 26065 (1852.5MHz)



Channel 26365 (1882.5MHz)

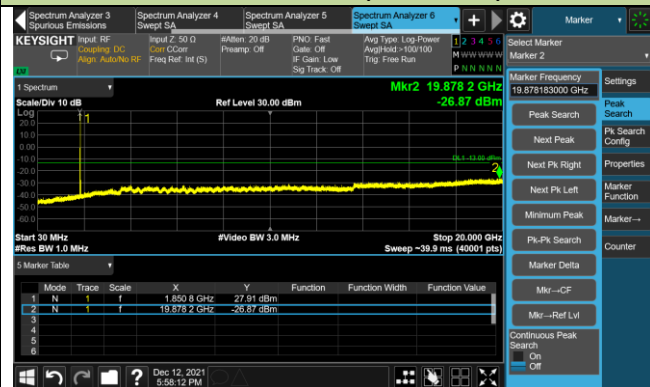


Channel 26665 (1912.5MHz)

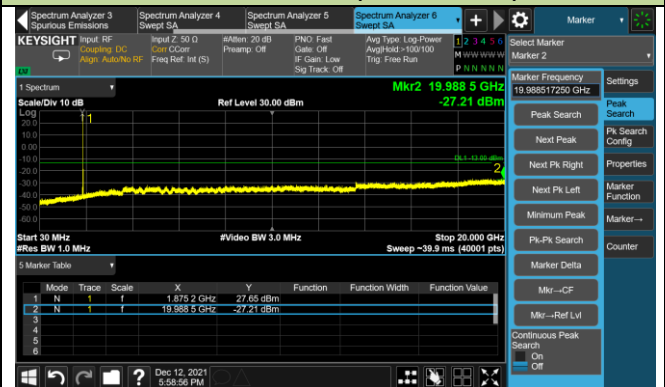


10MHz Channel Bandwidth

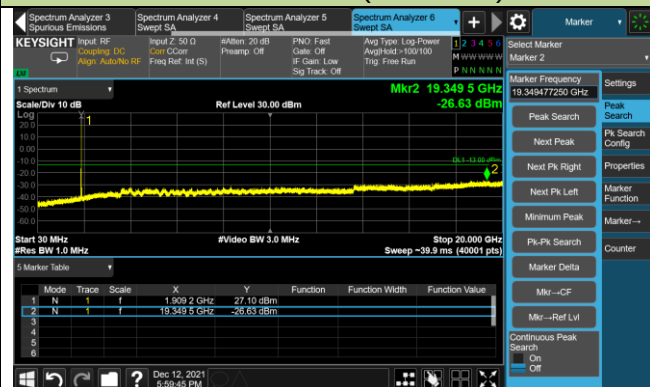
Channel 16390 (1855MHz)



Channel 26365 (1882.5MHz)

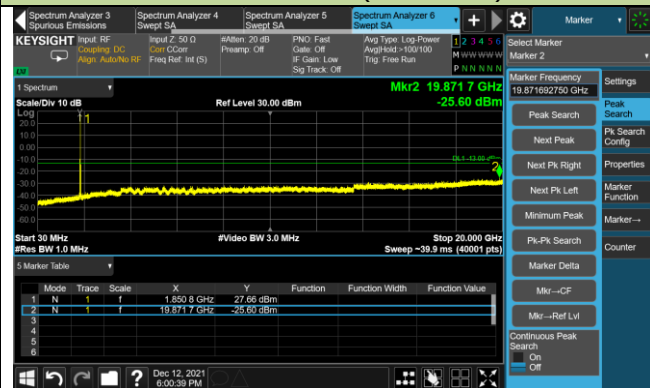


Channel 26640 (1910MHz)

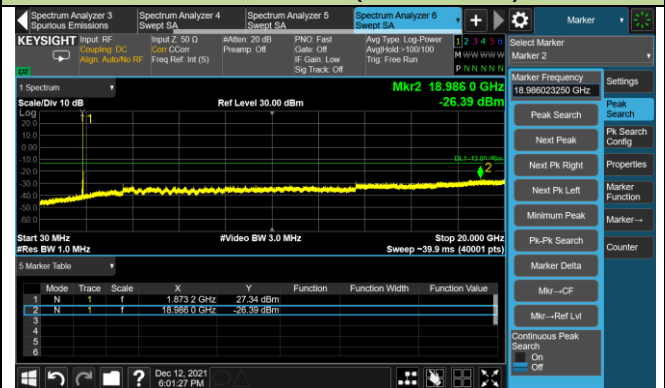


15MHz Channel Bandwidth

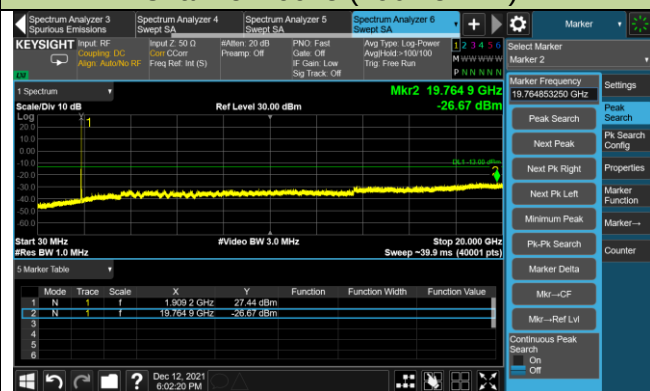
Channel 26115 (1857MHz)



Channel 26365 (1882.5MHz)

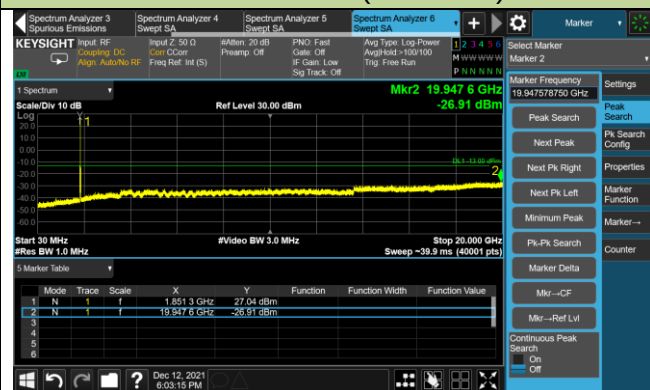


Channel 26615 (1907.5MHz)

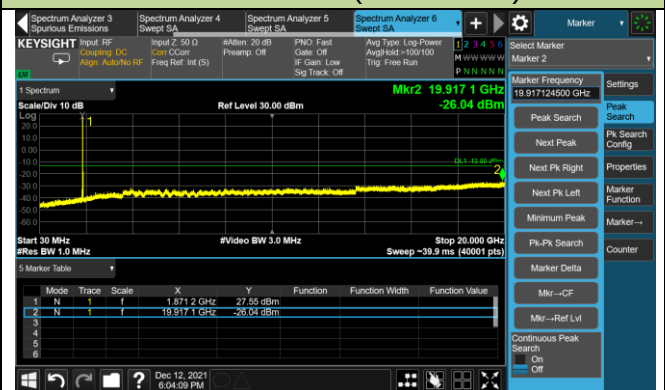


20MHz Channel Bandwidth

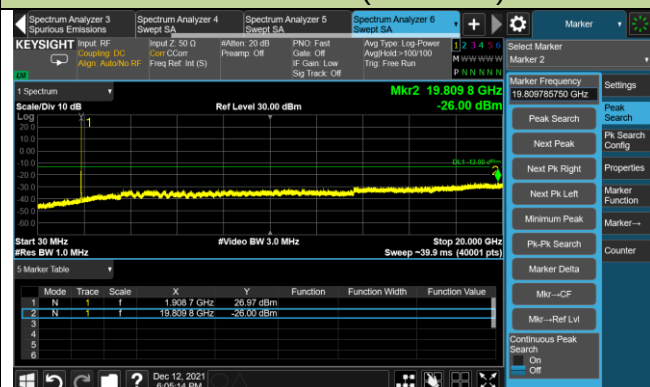
Channel 26140 (1860MHz)



Channel 26365 (1882.5MHz)



Channel 26590 (1905MHz)



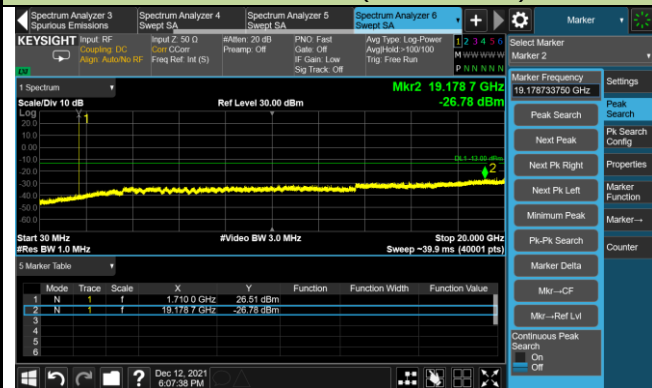
Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 4/66_1RB_QPSK		

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
131979	1710.7	1.4	30 ~ 20000	-26.78	≤ -13.00	Pass
132322	1745.0	1.4	30 ~ 20000	-27.20	≤ -13.00	Pass
132665	1779.3	1.4	30 ~ 20000	-26.70	≤ -13.00	Pass
131987	1711.5	3	30 ~ 20000	-26.87	≤ -13.00	Pass
132322	1745.0	3	30 ~ 20000	-26.16	≤ -13.00	Pass
132657	1778.5	3	30 ~ 20000	-26.77	≤ -13.00	Pass
131997	1712.5	5	30 ~ 20000	-26.65	≤ -13.00	Pass
132322	1745.0	5	30 ~ 20000	-26.22	≤ -13.00	Pass
132647	1777.5	5	30 ~ 20000	-26.39	≤ -13.00	Pass
132022	1715.0	10	30 ~ 20000	-26.87	≤ -13.00	Pass
132322	1745.0	10	30 ~ 20000	-25.38	≤ -13.00	Pass
132622	1775.0	10	30 ~ 20000	-25.69	≤ -13.00	Pass
132047	1717.5	15	30 ~ 20000	-26.77	≤ -13.00	Pass
132322	1745.0	15	30 ~ 20000	-26.52	≤ -13.00	Pass
132597	1772.5	15	30 ~ 20000	-26.83	≤ -13.00	Pass
132072	1720.0	20	30 ~ 20000	-26.08	≤ -13.00	Pass
132322	1745.0	20	30 ~ 20000	-26.10	≤ -13.00	Pass
132572	1770.0	20	30 ~ 20000	-26.25	≤ -13.00	Pass

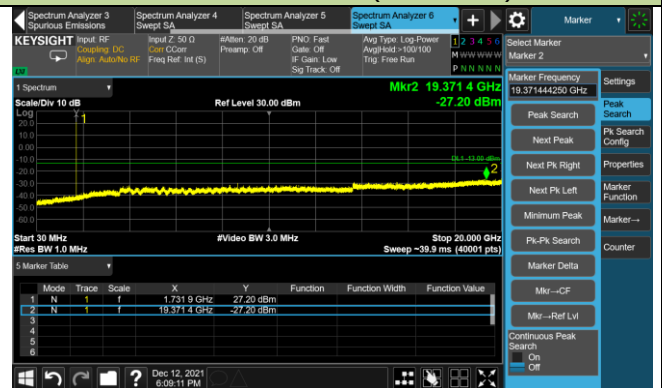
Note: Spurious emissions within 9kHz ~ 30MHz were found more than 20dB below limit line.

1.4MHz Channel Bandwidth

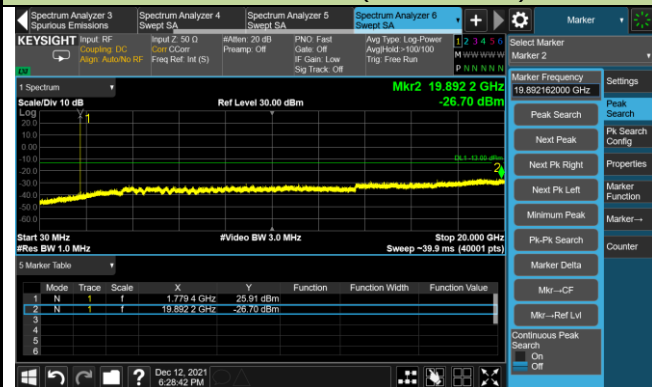
Channel 131979 (1710.7MHz)



Channel 132322 (1745MHz)

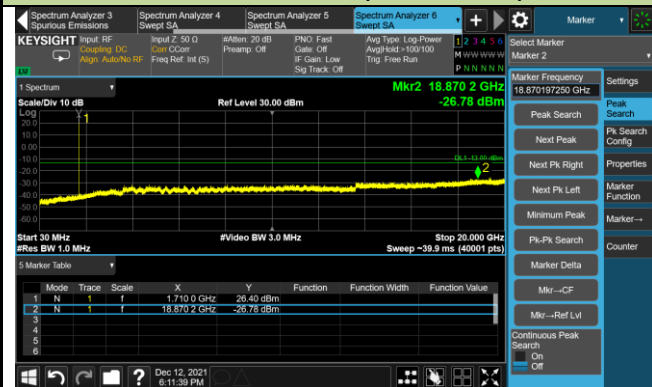


Channel 132665 (1779.3MHz)

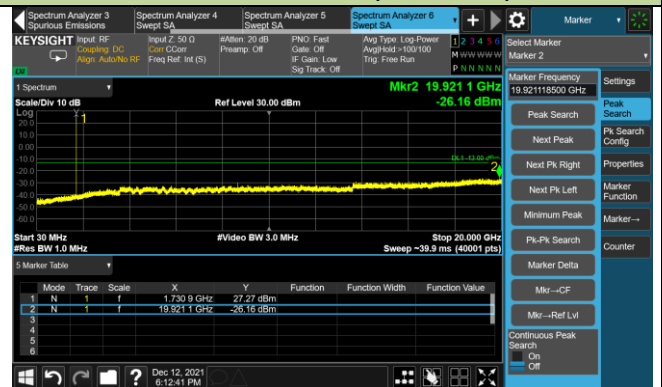


3MHz Channel Bandwidth

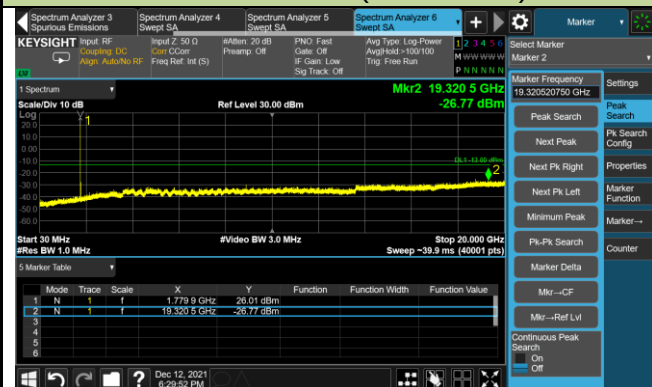
Channel 131987 (1711.5MHz)



Channel 132322 (1745MHz)

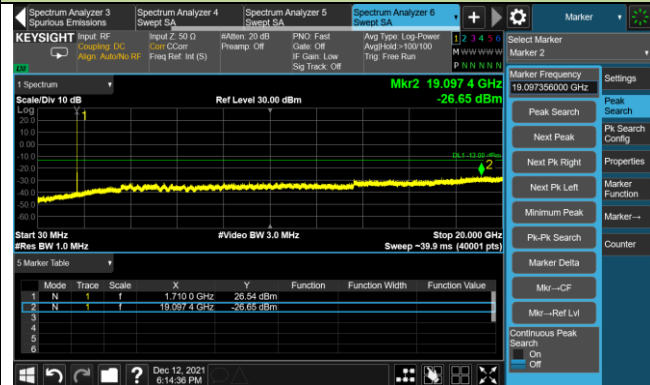


Channel 132657 (1778.5MHz)



5MHz Channel Bandwidth

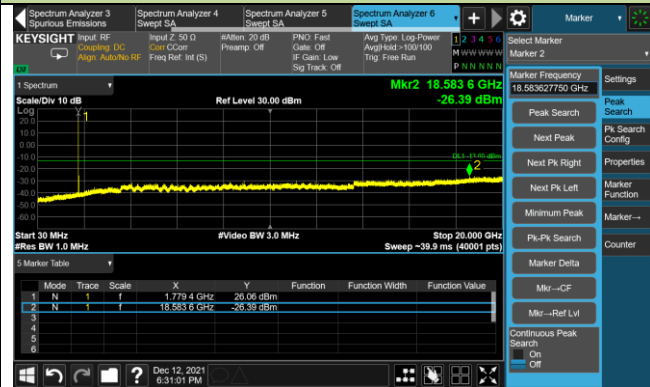
Channel 131997 (1712.5MHz)



Channel 132322 (1745MHz)

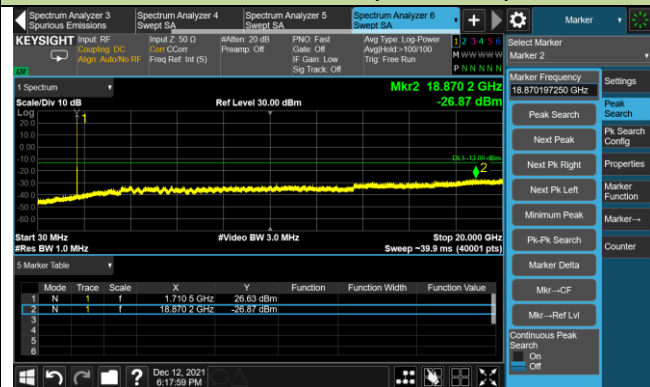


Channel 132647 (1777.5MHz)



10MHz Channel Bandwidth

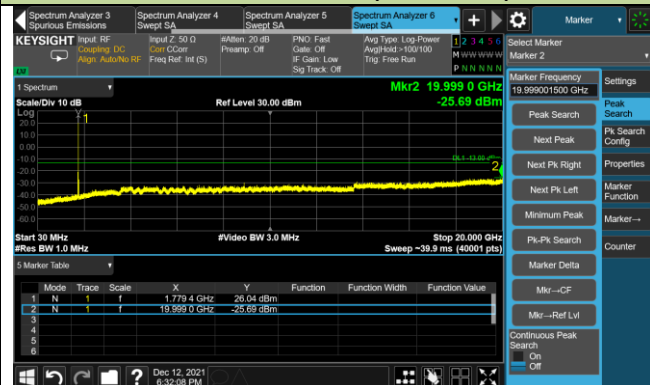
Channel 132022 (1715MHz)



Channel 132322 (1745MHz)

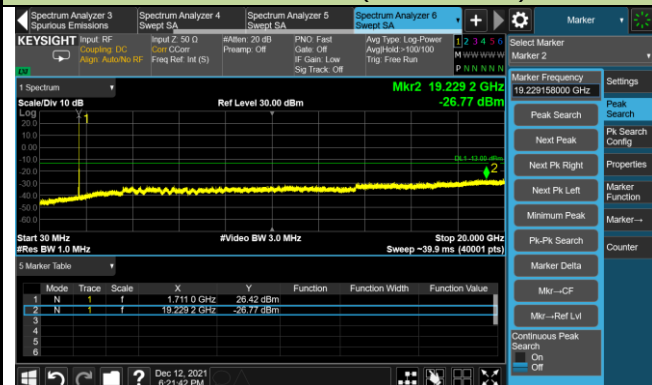


Channel 132622 (1775MHz)



15MHz Channel Bandwidth

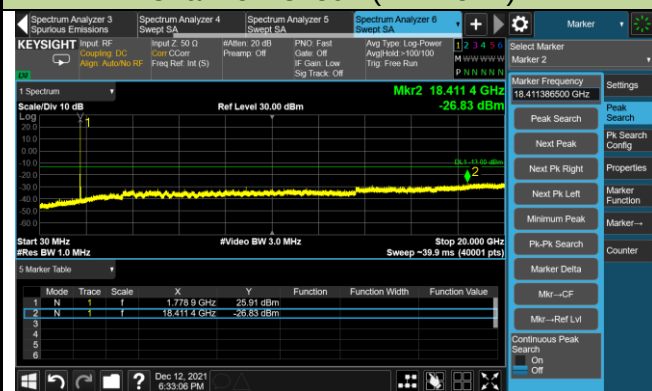
Channel 132047 (1717.5MHz)



Channel 132322 (1745MHz)

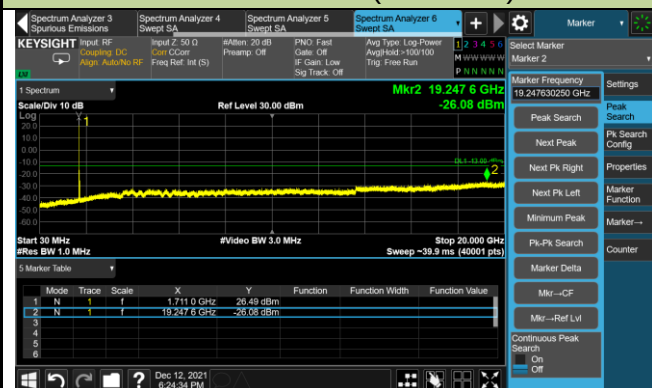


Channel 132597 (1772.5Hz)

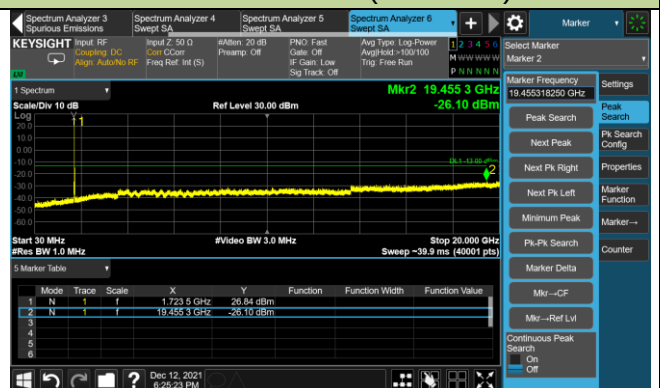


20MHz Channel Bandwidth

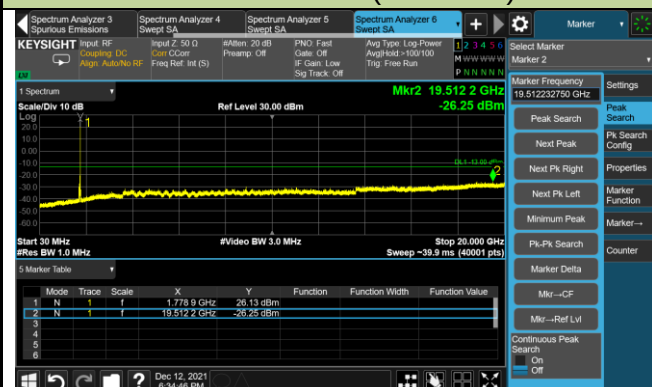
Channel 132072 (1720MHz)



Channel 132322 (1745MHz)



Channel 132572 (1770MHz)



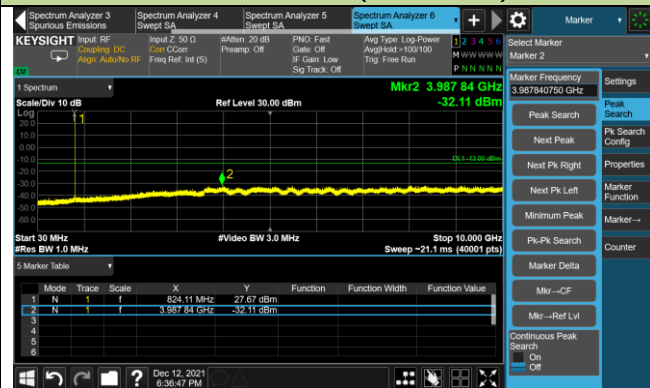
Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 5_1RB_QPSK		

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
26797	824.7	1.4	30 ~ 10000	-32.11	≤ -13.00	Pass
26915	836.5	1.4	30 ~ 10000	-31.51	≤ -13.00	Pass
27033	848.3	1.4	30 ~ 10000	-32.19	≤ -13.00	Pass
26805	825.5	3	30 ~ 10000	-32.59	≤ -13.00	Pass
26915	836.5	3	30 ~ 10000	-31.88	≤ -13.00	Pass
27025	847.5	3	30 ~ 10000	-30.74	≤ -13.00	Pass
26815	826.5	5	30 ~ 10000	-32.58	≤ -13.00	Pass
26915	836.5	5	30 ~ 10000	-31.81	≤ -13.00	Pass
27015	846.5	5	30 ~ 10000	-31.76	≤ -13.00	Pass
26840	829.0	10	30 ~ 10000	-32.00	≤ -13.00	Pass
26915	836.5	10	30 ~ 10000	-32.07	≤ -13.00	Pass
26990	844.0	10	30 ~ 10000	-31.89	≤ -13.00	Pass

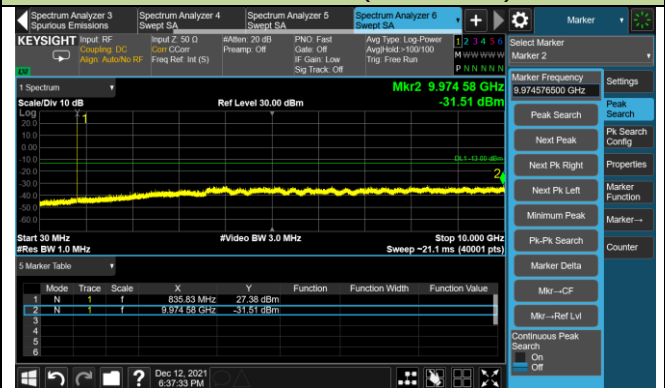
Note: Spurious emissions within 9kHz ~ 30MHz were found more than 20dB below limit line.

1.4MHz Channel Bandwidth

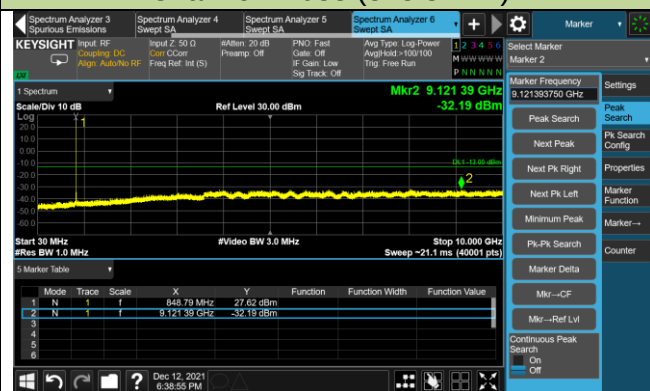
Channel 26697 (814.7MHz)



Channel 25865 (831.5MHz)

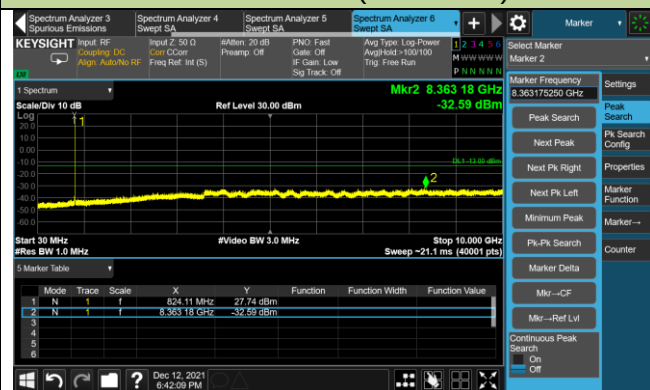


Channel 27033 (848.3MHz)

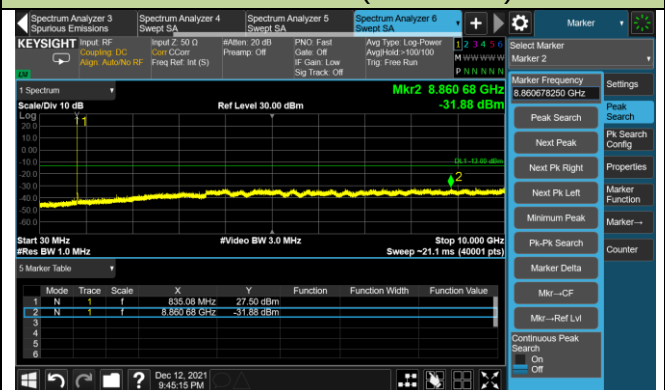


3MHz Channel Bandwidth

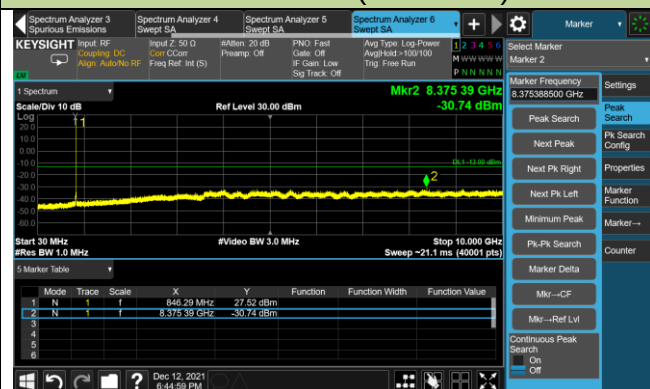
Channel 26705 (815.5MHz)



Channel 26865 (831.5MHz)

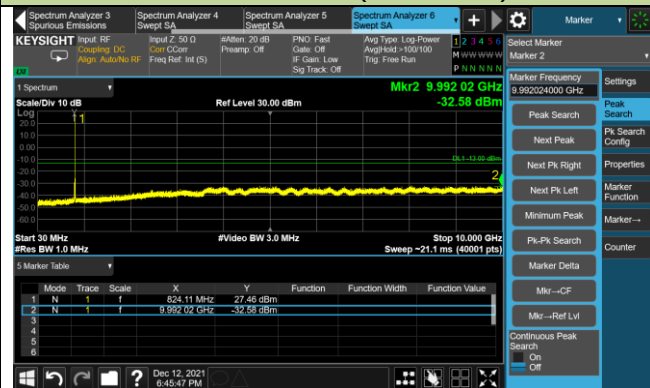


Channel 27025 (847.5MHz)

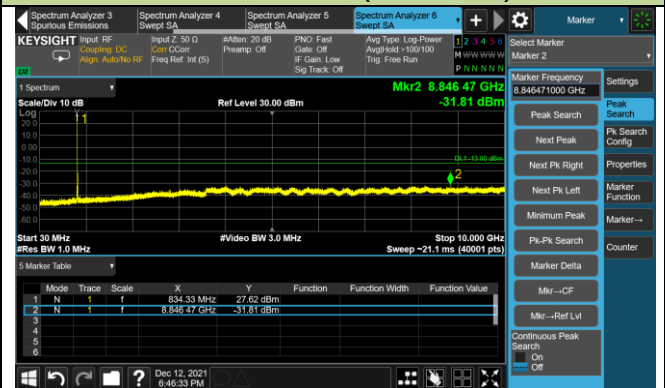


5MHz Channel Bandwidth

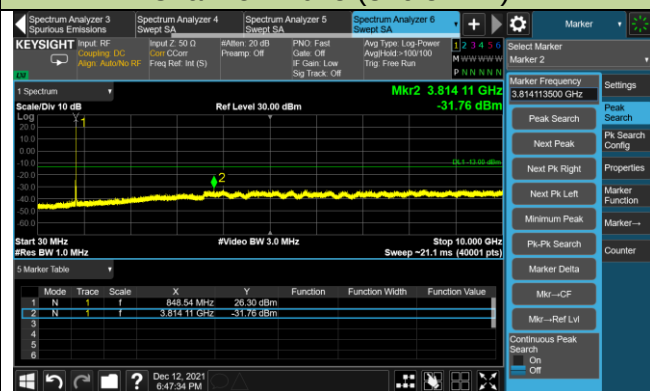
Channel 26715 (816.5MHz)



Channel 26865 (831.5MHz)

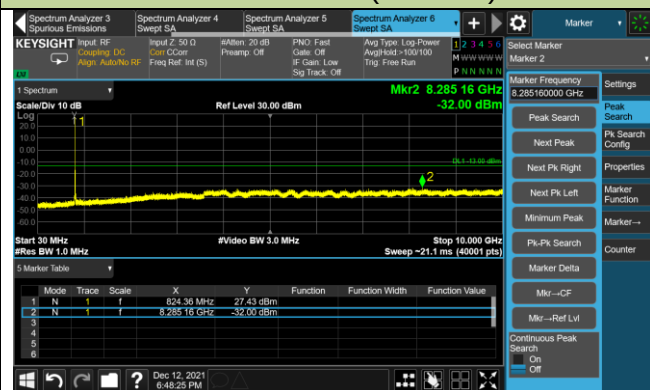


Channel 27015 (846.5MHz)

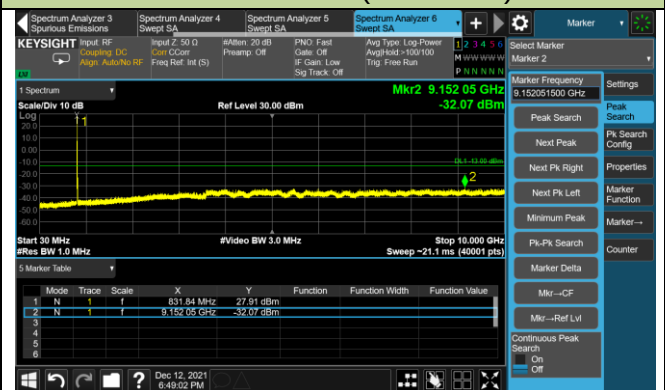


10MHz Channel Bandwidth

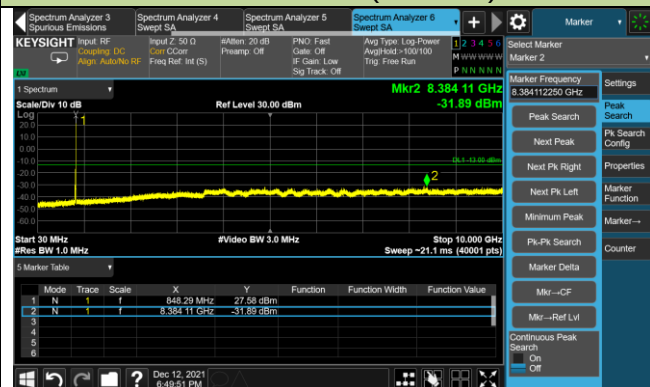
Channel 26740 (819MHz)



Channel 26865 (831.5MHz)



Channel 26990 (844MHz)



Product	LTE Module	Test Site	WZ-SR6
Test Engineer	Eric Xu	Test Date	2021/12/10 ~ 2021/12/15
Test Band	LTE Band 12_1RB_QPSK		

Channel	Frequency (MHz)	Channel Bandwidth (MHz)	Frequency Range (MHz)	Max Spurious Emissions (dBm)	Limit (dBm)	Result
23017	699.7	1.4	30 ~ 10000	-31.48	≤ -13.00	Pass
23095	707.5	1.4	30 ~ 10000	-31.90	≤ -13.00	Pass
23173	715.3	1.4	30 ~ 10000	-32.18	≤ -13.00	Pass
23025	700.5	3	30 ~ 10000	-32.02	≤ -13.00	Pass
23095	707.5	3	30 ~ 10000	-32.22	≤ -13.00	Pass
23165	714.5	3	30 ~ 10000	-32.13	≤ -13.00	Pass
23035	701.5	5	30 ~ 10000	-32.15	≤ -13.00	Pass
23095	707.5	5	30 ~ 10000	-32.23	≤ -13.00	Pass
23155	713.5	5	30 ~ 10000	-31.12	≤ -13.00	Pass
23060	704.0	10	30 ~ 10000	-32.21	≤ -13.00	Pass
23095	707.5	10	30 ~ 10000	-32.88	≤ -13.00	Pass
23130	711.0	10	30 ~ 10000	-31.66	≤ -13.00	Pass

Note: Spurious emissions within 9kHz ~ 30MHz were found more than 20dB below limit line.