

FCC Test Report

Applicant : Shenzhen Feima Robotics Technology Co.,Ltd.

Address : 13th Floor, Building A4, Nanshan Zhiyuan,
No. 1001 Xueyuan Avenue, Nanshan District,
Shenzhen, China

Product Name : Multi-fonctional Portable RTK Module

Report Date : Aug. 02, 2023

Shenzhen Anbotek Compliance Laboratory Limited



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TEST REPORT

Applicant : Shenzhen Feima Robotics Technology Co.,Ltd.
Manufacturer : Tianjin Feima Robotics Technology Co.,Ltd.
Product Name : Multi-fonctional Portable RTK Module
Model No. : S-RTK100A, RTK120GO
Trade Mark : N/A
Rating(s) : Input: 9~20V $\overline{=}$ 2A
Output: 9~20V $\overline{=}$ 2A

Test Standard(s) : FCC PART 2, FCC Part 22(H), FCC Part 24(E), FCC Part 27(C)

Test Method(s) : ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 22, FCC Part 24, FCC Part 27 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt

Jun. 12, 2023

Date of Test :

Jun. 12 ~ Jul. 04, 2023

Prepared by :

Tu Tu Hong

(TuTu Hong)

Approved & Authorized Signer :

Kingkong Jin

(Kingkong Jin)



Revision History

Report Version	Description	Issued Date
R00	Original Issue.(Note 1)	Aug. 02, 2023

Note 1:

The product contains a certified 4G module: XMR201903EG25G. The RF conducted measurement data will retain the original test results. only Radiated Spurious Emission were retested.



1. General Information

1.1.1. Client Information

Applicant	:	Shenzhen Feima Robotics Technology Co.,Ltd.
Address	:	13th Floor, Building A4, Nanshan Zhiyuan, No. 1001 Xueyuan Avenue, Nanshan District, Shenzhen, China
Manufacturer	:	Tianjin Feima Robotics Technology Co.,Ltd.
Address	:	Unit 1, Factory building A09, No1, Huandong Avenue 6, Tianjin Pilot Free Trade Zone (Airport Economic Zone), China
Factory	:	Tianjin Feima Robotics Technology Co.,Ltd.
Address	:	Unit 1, Factory building A09, No1, Huandong Avenue 6, Tianjin Pilot Free Trade Zone (Airport Economic Zone), China

1.2. Description of Device (EUT)

Product Name	:	Multi-functional Portable RTK Module
Model No.	:	S-RTK100A, RTK120GO (Note: All samples are the same except the model number & logo, so we prepare "S-RTK100A" for test only.)
Trade Mark	:	N/A
Test Power Supply	:	AC 120V, 60Hz
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A
RF Specification		
Support Band	:	<input checked="" type="checkbox"/> FDD Band 2 <input checked="" type="checkbox"/> FDD Band 4 <input checked="" type="checkbox"/> FDD Band 5 <input type="checkbox"/> FDD Band 7 <input type="checkbox"/> FDD Band 12 <input type="checkbox"/> FDD Band 13 <input type="checkbox"/> FDD Band 14 <input type="checkbox"/> FDD Band 17 <input type="checkbox"/> FDD Band 25 <input type="checkbox"/> FDD Band 26 <input type="checkbox"/> TDD Band 38 <input checked="" type="checkbox"/> TDD Band 41 <input type="checkbox"/> FDD Band 66 <input type="checkbox"/> FDD Band 71
Transmit Frequency	:	FDD Band 2: 1850.7 MHz – 1909.3 MHz FDD Band 4: 1710.7 MHz – 1754.3 MHz FDD Band 5: 824.7 MHz – 848.3 MHz TDD Band 41: 2498.5 MHz – 2687.5 MHz
Receive Frequency	:	FDD Band 2: 1930.7 MHz – 1989.3 MHz FDD Band 4: 2110.7 MHz – 2154.3 MHz FDD Band 5: 869.7 MHz – 893.3 MHz TDD Band 41: 2498.5 MHz – 2687.5 MHz
Modulation Type	:	QPSK, 16QAM



Power Class	:	Class 3
Antenna Type	:	FPC Antenna
Antenna Gain(Peak):		FDD Band 2: 2.23dBi (Provided by customer) FDD Band 4: 1.74dBi (Provided by customer) FDD Band 5: 3.72dBi (Provided by customer) TDD Band 41: 3.9dBi (Provided by customer)
Remark: 1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		



1.3. Auxiliary Equipment Used During Test

Description	Rating(s)
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1.4. Operation State

Test frequency list:

Band	Frequency (MHz)					
FDD Band 2	Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
	Low Range	1.4	18607	1850.7	607	1930.7
		3	18615	1851.5	615	1931.5
		5	18625	1852.5	625	1932.5
		10	18650	1855	650	1935
		15 ^[1]	18675	1857.5	675	1937.5
	20 ^[1]	18700	1860	700	1940	
	Mid Range	1.4/3/5/10/15 ^[1] /20 ^[1]	18900	1880	900	1960
	High Range	1.4	19193	1909.3	1193	1989.3
		3	19185	1908.5	1185	1988.5
		5	19175	1907.5	1175	1987.5
		10	19150	1905	1150	1985
		15 ^[1]	19125	1902.5	1125	1982.5
	20 ^[1]	19100	1900	1100	1980	
FDD Band 4	Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	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	
FDD Band 5	Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
	Low Range	1.4	20407	824.7	2407	869.7
		3	20415	825.5	2415	870.5
		5	20425	826.5	2425	871.5
		10 ^[1]	20450	829	2450	874
	Mid Range	1.4/3/5/10 ^[1]	20525	836.5	2525	881.5
	High Range	1.4	20643	848.3	2643	893.3
		3	20635	847.5	2635	892.5
		5	20625	846.5	2625	891.5
		10 ^[1]	20600	844	2600	889



TDD Band 41	Test Frequency ID	Bandwidth [MHz]	EARFCN	Frequency (UL and DL) [MHz]
	Low Range		5	39675
		10	39700	2501
		15	39725	2503.5
		20	39750	2506
Mid Range		5/10/15/20	40620	2593
High Range		5	41565	2687.5
		10	41540	2685
		15	41515	2682.5
		20	41490	2680



1.5. Environmental Conditions

Temperature range:	21-25°C
Humidity range:	40-75%
Pressure range:	86-106kPa



1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Preamplifier	SKET Electronic	LNPA-0118G-4 5	SKET-PA-002	Oct. 13, 2022	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 23, 2022	1 Year
3.	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	Oct. 16, 2022	3 Year
4.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	Oct. 23, 2022	3 Year
5.	Pre-amplifier	SONOMA	310N	186860	Oct. 23, 2022	1 Year
6.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
7.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 13, 2022	1 Year
8.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 13, 2022	1 Year
9.	DC Power Supply	LW	TPR-6420D	374470	Oct. 22, 2022	1 Year
10.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80B	N/A	Oct. 19, 2022	1 Year
11.	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	167336	Feb. 23, 2023	1 Year
12.	High-Pass Filter	CDKMV	ZHPF-BM1100 -4000-0730	B2015094550	Oct. 22, 2022	1 Year
13.	High-Pass Filter	CDKMV	ZHPF-M3.5 -18G-3834	1307006523	Oct. 22, 2022	1 Year



1.7. Measurement Uncertainty

Maximum measurement uncertainty

Parameter	Uncertainty
RF output power, conducted	±1,5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±1 °C
Humidity	±5 %
DC and low frequency voltages	±3 %
Time	±5 %
Confidence interval: 95%. Confidence factor:k=2	

1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518102



2. Summary of Test

2.1. Summary of test result

Description of Test	FCC Rules	Requirements	Result
Radiated Spurious Emission	Part 2.1053 Part 22.917 Part 24.238 Part 27.53(h) Part 27.53(m)	$\leq -13\text{dBm}$ (LTE Band 5) $\leq -13\text{dBm}$ (LTE Band 2) $\leq -13\text{dBm}$ (LTE Band 4) $\leq -25\text{dBm}$ (LTE Band 41)	Compliance

Note:

1. "N/A" is an abbreviation for Not Applicable.
2. Testing was performed by configuring EUT to maximum output power status, the declared output power class for different

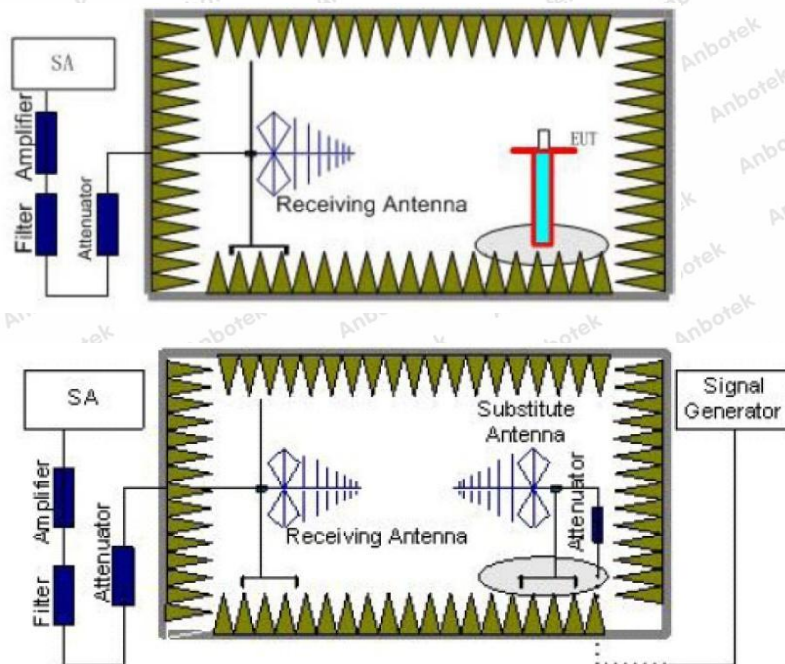


3. Radiated Spurious Emission

3.1. Test Standard and Limit

Applicable Standard:	Part 2.1053 Part 22.917 Part 24.238 Part 27.53(c)(f) Part 27.53(g) Part 27.53(h) Part 27.53(m)
Limit:	$\leq -13\text{dBm}$ (LTE Band 5) $\leq -13\text{dBm}$ (LTE Band 2) $\leq -13\text{dBm}$ (LTE Band 4) $\leq -25\text{dBm}$ (LTE Band 41) For LTE Band 13: (1) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB; (2) For operations in the 775-788 MHz, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz . The limit of emissions is equal to -40 dBm .

3.2. Test Setup



3.3. Test Procedure

1. Place the EUT in the center of the turntable.
 - a) For radiated emissions measurements performed at frequencies less than or equal to 1 GHz, the EUT shall be placed on a RF-transparent table at a nominal height of 80 cm above the reference ground plane
 - b) For radiated measurements performed at frequencies above 1 GHz, the EUT shall be placed on an RF transparent table at a nominal height of 1.5 m above the ground plane.
2. Unless the EUT uses an integral antenna, the EUT shall be terminated with a non-radiating transmitter load. In cases where the EUT uses an adjustable antenna, the antenna shall be adjusted through typical positions and lengths to maximize emissions levels.
3. The EUT shall be tested while operating on the frequency per manufacturer specification. Set the transmitter to operate in continuous transmit mode.
4. Receiver or Spectrum set as follow:
Below 1GHz, RBW=100kHz, VBW=300kHz, Detector=Peak, Sweep time=Auto
Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peck, Sweep time=Auto
5. Each emission under consideration shall be evaluated:
 - a) Raise and lower the measurement antenna from 1 m to 4 m, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
 - b) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
 - c) Return the turntable to the azimuth where the highest emission amplitude level was observed.
 - d) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
 - e) Record the measured emission amplitude level and frequency
6. Repeat step 5 for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
7. Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
8. Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
9. Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
10. For each emission that was detected and measured in the initial test
 - a) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.
 - b) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step 5 and step 6.
 - c) Record the output power level of the signal generator when equivalence is achieved in step b).
11. Repeat step 8 through step 10 with the measurement antenna oriented in the opposite polarization.



12. Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:

$$P_e = P_s(\text{dBm}) - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$

where

P_e = equivalent emission power in dBm

P_s = source (signal generator) power in dBm

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

13. Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from:

$$\text{gain (dBd)} = \text{gain (dBi)} - 2.15 \text{ dB.}$$

If necessary, the antenna gain can be calculated from calibrated antenna factor information

14. Provide the complete measurement results as a part of the test report.

3.4. Test Data

Pass

Please to see the following pages



LTE Band 2								
Bandwidth	Channel	Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
			Polarization	reading (dBm)	factor (dB)	Level (dBm)		
1.4MHz	Low	3701.40	Vertical	-48.73	13.21	-35.52	-13.00	PASS
		5552.10	V	-55.79	16.61	-39.18		
		7402.80	V	-58.33	18.03	-40.30		
		3701.40	Horizontal	-50.35	13.21	-37.14		
		5552.10	H	-57.31	16.61	-40.70		
		7402.80	H	-59.62	18.03	-41.59		
	Mid	3760.00	Vertical	-46.66	12.36	-34.30	-13.00	PASS
		5640.00	V	-55.07	17.03	-38.04		
		7520.00	V	-57.08	17.85	-39.23		
		3760.00	Horizontal	-48.02	12.36	-35.66		
		5640.00	H	-56.53	17.03	-39.50		
		7520.00	H	-58.30	17.85	-40.45		
	High	3818.60	Vertical	-45.01	12.78	-32.23	-13.00	PASS
		5727.90	V	-54.01	17.86	-36.15		
		7637.20	V	-56.00	18.56	-37.44		
3818.60		Horizontal	-47.71	12.78	-34.93			
5727.90		H	-56.68	17.86	-38.82			
7637.20		H	-58.43	18.56	-39.87			
3MHz	Low	3703.00	Vertical	-43.67	12.78	-30.89	-13.00	PASS
		5554.50	V	-49.05	16.69	-32.36		
		7406.00	V	-52.86	18.18	-34.68		
		3703.00	Horizontal	-44.43	12.78	-31.65		
		5554.50	H	-51.62	16.69	-34.93		
		7406.00	H	-56.02	18.18	-37.84		
	Mid	3760.00	Vertical	-39.97	12.79	-27.18	-13.00	PASS
		5640.00	V	-45.59	16.72	-28.87		
		7520.00	V	-49.09	18.22	-30.87		
		3760.00	Horizontal	-41.35	12.79	-28.56		
		5640.00	H	-49.49	16.72	-32.77		
		7520.00	H	-53.57	18.22	-35.35		
	High	3817.00	Vertical	-36.72	12.93	-23.79	-13.00	PASS
		5725.50	V	-43.42	17.01	-26.41		
		7634.00	V	-47.67	18.41	-29.26		
3817.00		Horizontal	-38.24	12.93	-25.31			



5MHz		5725.50	H	-47.31	17.01	-30.30				
		7634.00	H	-49.40	18.41	-30.99				
	Low		3705.00	Vertical	-33.40	13.25	-20.15	-13.00	PASS	
			5557.50	V	-37.47	16.59	-20.88			
			7410.00	V	-43.23	18.12	-25.11			
			Horizontal	3705.00		-41.33	13.25	-28.08	-13.00	PASS
				5557.50	H	-51.83	16.59	-35.24		
				7410.00	H	-51.54	18.12	-33.42		
	Mid		3760.00	Vertical	-34.24	12.31	-21.93	-13.00	PASS	
			5640.00	V	-41.33	17.14	-24.19			
			7520.00	V	-45.93	17.96	-27.97			
			Horizontal	3760.00		-44.51	12.31	-32.20	-13.00	PASS
				5640.00	H	-55.18	17.14	-38.04		
				7520.00	H	-53.52	17.96	-35.56		
	High		3815.00	Vertical	-39.19	12.77	-26.42	-13.00	PASS	
			5722.50	V	-45.21	17.82	-27.39			
			7630.00	V	-49.31	18.59	-30.72			
			Horizontal	3815.00		-48.19	12.77	-35.42	-13.00	PASS
5722.50				H	-58.85	17.82	-41.03			
7630.00				H	-56.42	18.59	-37.83			
10MHz	Low		3710.00	Vertical	-36.02	12.59	-23.43	-13.00	PASS	
			5565.00	V	-42.39	16.61	-25.78			
			7420.00	V	-47.13	18.35	-28.78			
			Horizontal	3710.00		-52.58	12.59	-39.99	-13.00	PASS
				5565.00	H	-60.76	16.61	-44.15		
				7420.00	H	-59.77	18.35	-41.42		
	Mid		3760.00	Vertical	-39.68	12.71	-26.97	-13.00	PASS	
			5640.00	V	-45.40	16.65	-28.75			
			7520.00	V	-50.62	18.27	-32.35			
			Horizontal	3760.00		-55.04	12.71	-42.33	-13.00	PASS
				5640.00	H	-64.28	16.65	-47.63		
				7520.00	H	-62.44	18.27	-44.17		
	High		3810.00	Vertical	-41.20	12.91	-28.29	-13.00	PASS	
			5715.00	V	-48.94	17.23	-31.71			
			7620.00	V	-54.37	18.59	-35.78			



		3810.00	Horizontal	-52.42	12.91	-39.51	-13.00	PASS
		5715.00	H	-63.22	17.23	-45.99		
		7620.00	H	-60.57	18.59	-41.98		

15MHz	Low	3715.00	Vertical	-39.10	13.21	-25.89	-13.00	PASS
		5572.50	V	-46.19	16.65	-29.54		
		7430.00	V	-51.75	18.29	-33.46		
		3715.00	Horizontal	-55.00	13.21	-41.79		
		5572.50	H	-64.78	16.65	-48.13		
		7430.00	H	-62.09	18.29	-43.80		
	Mid	3760.00	Vertical	-39.99	12.39	-27.60	-13.00	PASS
		5640.00	V	-48.33	17.18	-31.15		
		7520.00	V	-52.96	17.99	-34.97		
		3760.00	Horizontal	-52.02	12.39	-39.63		
		5640.00	H	-63.06	17.18	-45.88		
		7520.00	H	-60.52	17.99	-42.53		
	High	3805.00	Vertical	-38.68	12.86	-25.82	-13.00	PASS
		5707.50	V	-45.71	17.89	-27.82		
		7610.00	V	-50.35	18.69	-31.66		
		3805.00	Horizontal	-55.32	12.86	-42.46		
		5707.50	H	-68.36	17.89	-50.47		
		7610.00	H	-65.94	18.69	-47.25		
20MHz	Low	3720.00	Vertical	-41.20	12.57	-28.63	-13.00	PASS
		5580.00	V	-47.60	16.59	-31.01		
		7440.00	V	-52.74	18.67	-34.07		
		3720.00	Horizontal	-55.47	12.57	-42.90		
		5580.00	H	-67.48	16.59	-50.89		
		7440.00	H	-66.27	18.67	-47.60		
	Mid	3760.00	Vertical	-41.72	12.76	-28.96	-13.00	PASS
		5640.00	V	-48.01	16.69	-31.32		
		7520.00	V	-52.74	18.38	-34.36		
		3760.00	Horizontal	-55.95	12.76	-43.19		
		5640.00	H	-67.82	16.69	-51.13		
		7520.00	H	-66.20	18.38	-47.82		
High	3800.00	Vertical	-39.88	12.97	-26.91	-13.00	PASS	



		5700.00	V	-45.77	17.19	-28.58	-13.00	PASS
		7600.00	V	-50.66	18.28	-32.38		
		3800.00	Horizontal	-56.47	12.97	-43.50		
		5700.00	H	-68.61	17.19	-51.42		
		7600.00	H	-66.35	18.28	-48.07		

LTE Band 4								
Bandwidth	Channel	Frequency (MHz)	Spurious Emission			Limit (dBm)	Result	
			Polarization	reading (dBm)	factor (dB)			Level (dBm)
1.4MHz	Low	3421.40	Vertical	-45.65	12.89	-32.76	-13.00	PASS
		5132.10	V	-54.35	15.86	-38.49		
		6842.80	V	-56.24	18.92	-37.32		
		3421.40	Horizontal	-47.45	12.89	-34.56		
		5132.10	H	-56.04	15.86	-40.18		
		6842.80	H	-57.68	18.92	-38.76		
	Mid	3465.00	Vertical	-43.90	12.49	-31.41	-13.00	PASS
		5197.50	V	-52.93	15.71	-37.22		
		6930.00	V	-54.39	18.26	-36.13		
		3465.00	Horizontal	-45.40	12.49	-32.91		
		5197.50	H	-54.55	15.71	-38.84		
		6930.00	H	-55.75	18.26	-37.49		
	High	3508.60	Vertical	-42.11	13.01	-29.10	-13.00	PASS
		5262.90	V	-51.01	15.89	-35.12		
		7017.20	V	-52.81	18.67	-34.14		
		3508.60	Horizontal	-44.03	13.01	-31.02		
		5262.90	H	-52.93	15.89	-37.04		
		7017.20	H	-54.45	18.67	-35.78		
3MHz	Low	3423.00	Vertical	-44.73	12.74	-31.99	-13.00	PASS
		5134.50	V	-53.38	15.68	-37.70		
		6846.00	V	-55.28	18.59	-36.69		
		3423.00	Horizontal	-46.05	12.74	-33.31		
		5134.50	H	-56.35	15.68	-40.67		
		6846.00	H	-57.14	18.59	-38.55		
	Mid	3465.00	Vertical	-47.50	12.49	-35.01	-13.00	PASS
		5197.50	V	-56.61	15.89	-40.72		
		6930.00	V	-57.68	18.66	-39.02		



		3465.00	Horizontal	-51.59	12.49	-39.10	-13.00	PASS	
		5197.50	H	-60.64	15.89	-44.75			
		6930.00	H	-61.95	18.66	-43.29			
	High		3507.00	Vertical	-50.48	13.44	-37.04	-13.00	PASS
			5260.50	V	-58.46	15.89	-42.57		
			7014.00	V	-59.16	18.39	-40.77		
			3507.00	Horizontal	-55.34	13.44	-41.90	-13.00	PASS
			5260.50	H	-63.80	15.89	-47.91		
			7014.00	H	-63.98	18.39	-45.59		

5MHz	Low	3425.00	Vertical	-46.20	12.87	-33.33	-13.00	PASS	
		5137.50	V	-55.70	15.85	-39.85			
		6850.00	V	-56.01	18.93	-37.08			
		3425.00	Horizontal	-53.29	12.87	-40.42			
		5137.50	H	-65.15	15.85	-49.30			
		6850.00	H	-63.34	18.93	-44.41			
	Mid	3465.00	Vertical	-46.91	12.47	-34.44	-13.00	PASS	
		5197.50	V	-54.50	15.7	-38.80			
		6930.00	V	-56.35	18.29	-38.06			
		3465.00	Horizontal	-54.19	12.47	-41.72			
		5197.50	H	-63.94	15.7	-48.24			
		6930.00	H	-62.49	18.29	-44.20			
	High	3505.00	Vertical	-46.13	13.29	-32.84	-13.00	PASS	
		5257.50	V	-56.12	15.86	-40.26			
		7010.00	V	-55.30	18.63	-36.67			
		3505.00	Horizontal	-53.96	13.29	-40.67			
		5257.50	H	-63.12	15.86	-47.26			
		7010.00	H	-61.99	18.63	-43.36			
	10MHz	Low	3430.00	Vertical	-42.73	12.72	-30.01	-13.00	PASS
			5145.00	V	-57.60	15.61	-41.99		
			6860.00	V	-54.24	18.62	-35.62		
3430.00			Horizontal	-53.65	12.72	-40.93			
5145.00			H	-63.11	15.61	-47.50			
6860.00			H	-62.19	18.62	-43.57			
Mid		3465.00	Vertical	-42.61	12.41	-30.20	-13.00	PASS	



		5197.50	V	-58.09	15.92	-42.17		PASS
		6930.00	V	-54.78	18.63	-36.15		
		3465.00	Horizontal	-53.55	12.41	-41.14		
		5197.50	H	-63.59	15.92	-47.67		
		6930.00	H	-62.36	18.63	-43.73		
	High	3500.00	Vertical	-43.87	13.41	-30.46		PASS
		5250.00	V	-58.00	15.59	-42.41		
		7000.00	V	-54.69	18.31	-36.38		
		3500.00	Horizontal	-54.75	13.41	-41.34		
		5250.00	H	-63.45	15.59	-47.86		
7000.00	H	-62.20	18.31	-43.89				

15MHz	Low	3435.00	Vertical	-44.04	12.89	-31.15		PASS	
		5152.50	V	-57.57	15.86	-41.71			
		6870.00	V	-55.88	18.95	-36.93			
		3435.00	Horizontal	-51.97	12.89	-39.08			
		5152.50	H	-65.84	15.86	-49.98			
		6870.00	H	-58.91	18.95	-39.96			
	Mid	3465.00	Vertical	-47.33	12.49	-34.84		PASS	
		5197.50	V	-53.97	15.73	-38.24			
		6930.00	V	-58.50	18.31	-40.19			
		3465.00	Horizontal	-48.70	12.49	-36.21			
		5197.50	H	-68.04	15.73	-52.31			
		6930.00	H	-56.06	18.31	-37.75			
	High	3495.00	Vertical	-50.88	13.32	-37.56		PASS	
		5242.50	V	-51.65	15.88	-35.77			
		6990.00	V	-56.49	18.65	-37.84			
		3495.00	Horizontal	-47.00	13.32	-33.68			
		5242.50	H	-63.28	15.88	-47.40			
		6990.00	H	-55.17	18.65	-36.52			
	20MHz	Low	3440.00	Vertical	-46.41	12.74	-33.67		PASS
			5160.00	V	-50.53	15.65	-34.88		
6880.00			V	-55.73	18.64	-37.09			
3440.00			Horizontal	-49.00	12.74	-36.26			
5160.00			H	-65.09	15.65	-49.44			



	Mid	6880.00	H	-55.76	18.64	-37.12	-13.00	PASS
		3465.00	Vertical	-46.76	12.44	-34.32		
		5197.50	V	-51.12	15.93	-35.19		
		6930.00	V	-56.02	18.64	-37.38		
		3465.00	Horizontal	-49.11	12.44	-36.67		
		5197.50	H	-65.79	15.93	-49.86		
	6930.00	H	-59.93	18.64	-41.29	-13.00	PASS	
	High	3490.00	Vertical	-50.44	13.43			-37.01
		5235.00	V	-52.99	15.61			-37.38
		6980.00	V	-57.71	18.34			-39.37
		3490.00	Horizontal	-51.99	13.43			-38.56
		5235.00	H	-65.94	15.61			-50.33
6980.00		H	-61.34	18.34	-43.00			

LTE Band 5								
Bandwidth	Channel	Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
			Polarization	reading (dBm)	factor (dB)	Level (dBm)		
1.4MHz	Low	1649.40	Vertical	-42.85	7.29	-35.56	-13.00	PASS
		2474.10	V	-52.55	9.41	-43.14		
		3298.80	V	-56.35	12.69	-43.66		
		1649.40	Horizontal	-45.98	7.29	-38.69		
		2474.10	H	-56.24	9.41	-46.83		
		3298.80	H	-59.71	12.69	-47.02		
	Mid	1673.00	Vertical	-41.95	7.32	-34.63	-13.00	PASS
		2509.50	V	-51.66	9.39	-42.27		
		3346.00	V	-55.43	12.78	-42.65		
		1673.00	Horizontal	-45.06	7.32	-37.74		
		2509.50	H	-55.32	9.39	-45.93		
		3346.00	H	-58.96	12.78	-46.18		
	High	1696.60	Vertical	-40.90	7.33	-33.57	-13.00	PASS
		2544.90	V	-50.87	9.46	-41.41		
		3393.20	V	-54.54	12.71	-41.83		
		1696.60	Horizontal	-41.36	7.33	-34.03		
		2544.90	H	-50.42	9.46	-40.96		
		3393.20	H	-55.30	12.71	-42.59		



3MHz	Low	1651.00	Vertical	-39.00	7.36	-31.64	-13.00	PASS
		2476.50	V	-49.10	9.51	-39.59		
		3302.00	V	-53.01	12.72	-40.29		
		1651.00	Horizontal	-40.12	7.36	-32.76		
		2476.50	H	-49.28	9.51	-39.77		
		3302.00	H	-54.30	12.72	-41.58		
	Mid	1673.00	Vertical	-38.10	7.41	-30.69	-13.00	PASS
		2509.50	V	-48.21	9.52	-38.69		
		3346.00	V	-52.18	12.73	-39.45		
		1673.00	Horizontal	-38.47	7.41	-31.06		
		2509.50	H	-47.91	9.52	-38.39		
		3346.00	H	-53.00	12.73	-40.27		
	High	1695.00	Vertical	-36.12	7.52	-28.60	-13.00	PASS
		2542.50	V	-46.25	9.46	-36.79		
		3390.00	V	-50.45	12.81	-37.64		
		1695.00	Horizontal	-37.03	7.52	-29.51		
		2542.50	H	-46.39	9.46	-36.93		
		3390.00	H	-51.84	12.81	-39.03		

5MHz	Low	1653.00	Vertical	-32.34	7.61	-24.73	-13.00	PASS
		2479.50	V	-43.87	9.49	-34.38		
		3306.00	V	-47.32	12.86	-34.46		
		1653.00	Horizontal	-38.05	7.61	-30.44		
		2479.50	H	-47.30	9.49	-37.81		
		3306.00	H	-52.63	12.86	-39.77		
	Mid	1673.00	Vertical	-33.15	7.72	-25.43	-13.00	PASS
		2509.50	V	-44.57	9.53	-35.04		
		3346.00	V	-47.92	12.84	-35.08		
		1673.00	Horizontal	-38.31	7.72	-30.59		
		2509.50	H	-47.46	9.53	-37.93		
		3346.00	H	-52.73	12.84	-39.89		
	High	1693.00	Vertical	-34.08	7.79	-26.29	-13.00	PASS
		2539.50	V	-45.35	9.53	-35.82		
		3386.00	V	-48.71	12.89	-35.82		
		1693.00	Horizontal	-36.77	7.79	-28.98		
		2539.50	H	-45.95	9.53	-36.42		



		3386.00	H	-51.49	12.89	-38.60		
10MHz	Low	1658.00	Vertical	-33.01	7.81	-25.20	-13.00	PASS
		2487.00	V	-44.45	9.56	-34.89		
		3316.00	V	-47.94	12.91	-35.03		
		1658.00	Horizontal	-38.04	7.81	-30.23	-13.00	PASS
		2487.00	H	-47.15	9.56	-37.59		
		3316.00	H	-52.51	12.91	-39.60		
	Mid	1673.00	Vertical	-33.97	7.83	-26.14	-13.00	PASS
		2509.50	V	-45.36	9.59	-35.77		
		3346.00	V	-48.80	12.94	-35.86		
		1673.00	Horizontal	-38.25	7.83	-30.42	-13.00	PASS
		2509.50	H	-47.33	9.59	-37.74		
		3346.00	H	-52.69	12.94	-39.75		
	High	1688.00	Vertical	-34.26	7.89	-26.37	-13.00	PASS
		2532.00	V	-45.60	9.62	-35.98		
		3376.00	V	-49.02	12.96	-36.06		
		1688.00	Horizontal	-38.49	7.89	-30.60	-13.00	PASS
		2532.00	H	-47.53	9.62	-37.91		
		3376.00	H	-52.85	12.96	-39.89		

LTE Band 41								
Bandwidth	Channel	Frequency (MHz)	Spurious Emission				Limit (dBm)	Result
			Polarization	reading (dBm)	factor (dB)	Level (dBm)		
5MHz	Low	4997.00	Vertical	-55.09	15.64	-39.45	-25.00	PASS
		7495.50	V	-57.92	17.82	-40.10		
		9994.00	V	-61.07	23.83	-37.24		
		4997.00	Horizontal	-56.79	15.64	-41.15	-25.00	PASS
		7495.50	H	-59.52	17.82	-41.70		
		9994.00	H	-62.43	23.83	-38.60		
	Mid	5186.00	Vertical	-53.86	15.69	-38.17	-25.00	PASS
		7779.00	V	-56.86	17.96	-38.90		
		10372.00	V	-60.31	24.20	-36.11	-25.00	PASS
		5186.00	Horizontal	-55.28	15.69	-39.59		
7779.00	H	-58.4	17.96	-40.44				



High		10372.00	H	-61.6	24.20	-37.40	-25.00	PASS
		5375.00	Vertical	-51.95	15.96	-35.99		
		8062.50	V	-55.56	18.64	-36.92		
		10750.00	V	-58.51	24.29	-34.22		
		5375.00	Horizontal	-54.79	15.96	-38.83		
		8062.50	H	-58.36	18.64	-39.72		
		10750.00	H	-61.08	24.29	-36.79		
10MHz	Low	5002.00	Vertical	-50.23	15.65	-34.58	-25.00	PASS
		7503.00	V	-50.76	17.83	-32.93		
		10004.00	V	-55.16	23.85	-31.31		
		5002.00	Horizontal	-51.03	15.65	-35.38		
		7503.00	H	-53.46	17.83	-35.63		
		10004.00	H	-58.5	23.85	-34.65		
	Mid	5186.00	Vertical	-46.37	15.69	-30.68	-25.00	PASS
		7779.00	V	-47.21	17.96	-29.25		
		10372.00	V	-51.5	24.20	-27.30		
		5186.00	Horizontal	-47.82	15.69	-32.13		
		7779.00	H	-51.31	17.96	-33.35		
		10372.00	H	-56.24	24.20	-32.04		
	High	5370.00	Vertical	-42.91	15.80	-27.11	-25.00	PASS
		8055.00	V	-47.88	18.64	-29.24		
		10740.00	V	-51.5	24.29	-27.21		
		5370.00	Horizontal	-45.26	15.80	-29.46		
		8055.00	H	-49.96	18.64	-31.32		
		10740.00	H	-52.75	24.29	-28.46		

15MHz	Low	5007.00	Vertical	-46.42	15.67	-30.75	-25.00	PASS
		7510.50	V	-44.95	17.84	-27.11		
		10014.00	V	-50.79	23.85	-26.94		
		5007.00	Horizontal	-53.97	15.67	-38.30		
		7510.50	H	-58.66	17.84	-40.82		
		10014.00	H	-61.05	23.85	-37.20		
	Mid	5186.00	Vertical	-48.24	15.69	-32.55	-25.00	PASS
		7779.00	V	-50.69	17.96	-32.73		
		10372.00	V	-51.67	24.20	-27.47		
		5186.00	Horizontal	-52.16	15.69	-36.47		



	High	7779.00	H	-54.25	17.96	-36.29	-25.00	PASS
		10372.00	H	-58.49	24.20	-34.29		
		5365.00	Vertical	-42.88	15.51	-27.37		
		8047.50	V	-48.08	18.66	-29.42		
		10730.00	V	-51.67	24.30	-27.37		
		5365.00	Horizontal	-48.36	15.51	-32.85		
		8047.50	H	-53.13	18.66	-34.47		
10730.00	H	-55.15	24.30	-30.85	-25.00	PASS		
20MHz	Low	5012.00	Vertical	-43.27	15.67	-27.60	-25.00	PASS
		7518.00	V	-43.25	17.84	-25.41		
		10024.00	V	-50.33	23.86	-26.47		
		5012.00	Horizontal	-58.78	15.67	-43.11		
		7518.00	H	-61.95	17.84	-44.11		
		10024.00	H	-64.84	23.86	-40.98		
	Mid	5186.00	Vertical	-51.97	15.69	-36.28	-25.00	PASS
		7779.00	V	-53.81	17.96	-35.85		
		10372.00	V	-55.43	24.20	-31.23		
		5186.00	Horizontal	-54.62	15.69	-38.93		
		7779.00	H	-57.91	17.96	-39.95		
		10372.00	H	-61.39	24.20	-37.19		
	High	5360.00	Vertical	-44.74	15.98	-28.76	-25.00	PASS
		8040.00	V	-51.18	18.65	-32.53		
		10720.00	V	-55.32	24.34	-30.98		
		5360.00	Horizontal	-45.86	15.98	-29.88		
		8040.00	H	-51.39	18.65	-32.74		
		10720.00	H	-52.89	24.34	-28.55		



APPENDIX I -- TEST SETUP PHOTOGRAPH

Please refer to separated files Appendix I -- Test Setup Photograph

APPENDIX II -- EXTERNAL PHOTOGRAPH

Please refer to separated files Appendix II -- External Photograph

APPENDIX III -- INTERNAL PHOTOGRAPH

Please refer to separated files Appendix III -- Internal Photograph

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