

VARIANT FCC TEST REPORT

(PART 90)

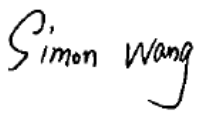
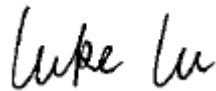
Applicant:	Borqs BeiJing Ltd.
Address:	Tower A, Building B23, Universal Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China

Manufacturer or Supplier	Borqs BeiJing Ltd.
Address	Tower A, Building B23, Universal Business Park, No. 10 Jiuxianqiao Road, Chaoyang District Beijing, 100015 China
Product	Ecoport AC LTE-LP
Brand Name	SkyCentrics
Model Name	US08Ba
Serial Model Name:	US08B
FCC ID	2ABDK-US08B
Date of tests	Jun. 25, 2023 ~ Jun. 29, 2023

The tests have been carried out according to the requirements of the following standard:

☒ FCC Part 90, Subpart R, S ☒ ANSI/TIA/EIA-603- D
☒ FCC Part 2 ☒ ANSI/TIA/EIA-603-E ☒ ANSI C63.26-2015

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Simon Wang Engineer / Mobile Department	Approved by Luke Lu Manager / Mobile Department
	
Date: Jun. 29, 2023	Date: Jun. 29, 2023

This report is governed by, and incorporates by reference, the Conditions of Testing as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. Statements of conformity are based on simple acceptance criteria without taking measurement uncertainty into account, unless otherwise requested in writing. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

RELEASE CONTROL RECORD	3
1 SUMMARY OF TEST RESULTS	4
1.1 MEASUREMENT UNCERTAINTY	5
1.2 TEST SITE AND INSTRUMENTS	6
2 GENERAL INFORMATION.....	7
2.1 GENERAL DESCRIPTION OF EUT	7
2.2 CONFIGURATION OF SYSTEM UNDER TEST	9
2.3 DESCRIPTION OF SUPPORT UNITS	10
2.4 DESCRIPTION OF TEST MODES.....	10
2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS	12
3 TEST TYPES AND RESULTS	13
3.1 OUTPUT POWER MEASUREMENT	13
3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT	13
3.1.2 TEST PROCEDURES	13
3.1.3 TEST SETUP	14
3.1.4 TEST RESULTS	15
3.2 RADIATED EMISSION MEASUREMENT	25
3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT	25
3.2.2 TEST PROCEDURES	25
3.2.3 DEVIATION FROM TEST STANDARD	25
3.2.4 TEST SETUP	26
3.2.5 TEST RESULTS	28
4 INFORMATION ON THE TESTING LABORATORIES	32
5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	33

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
W7L-230313W001RF04	Original release	Apr. 03, 2023
W7L-230608W001RF04	Based on the original product change HW&SW version and the location of some components (more details please refer to the discrepancy declaration). This report only verify and show power and RSE worse data, other data please refer to the original report.	Jun. 29, 2023

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 90 & Part 2		
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT
§2.1046 §90.635(b)	Conducted Output Power	See Note
§2.1055 §90.213	Frequency Stability	PASS
§2.1049 §90.209	Occupied Bandwidth	PASS
§2.1051 §90.691	Emission Masks	PASS
§2.1051 §90.691	Conducted Spurious Emissions	PASS
§2.1053 §90.691	Radiated Spurious Emissions	See Note

NOTE: please refer to the original report W7L-230313W001RF04

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	UNCERTAINTY
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions & Radiated Power (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted Output power	$\pm 2.06\text{dB}$

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
MXE EMI Receiver	KEYSIGHT	N9038A-544	MY54450026	Mar. 28,23	Mar. 27,24
EXA Signal Analyzer	KEYSIGHT	N9010A-544	MY54510355	May.14,23	May.13,24
Loop Antenna	Schwarzbeck	FMZB 1519B	00173	Sep.03,22	Sep.02,23
Bilog Antenna	ETS-LINDGRE N	3143B	00161965	Feb. 18,23	Feb. 17,24
Horn Antenna	ETS-LINDGRE N	3117	00168692	Feb. 18,23	Feb. 17,24
Horn Antenna (18GHz-40GHz)	N/A	QWH-SL-18-40-K- SG/QMS-00361	15433	Sep.04, 22	Sep.03, 23
Radio Communication Analyzer	ANRITSU	MT8820C	6201465426	Feb. 14,23	Feb. 13,24
Signal Pre-Amplifier	EMSI	EMC 9135	980249	May. 06,23	May. 05,24
Signal Pre-Amplifier	EMSI	EMC 012645B	980257	May.12,23	May.11,24
Signal Pre-Amplifier	EMSI	EMC 184045B	980259	Feb. 17,23	Feb.16,24
3m Semi-anechoic Chamber	ETS-LINDGRE N	9m*6m*6m	Euroshieldpn- CT0001143-121 6	May. 19,23	May. 18,26
Test Software	E3	V 9.160323	N/A	N/A	N/A
Test Software	JS1120	3.1.36	N/A	N/A	N/A
10dB Attenuator	JFW/USA	50HF-010-SMA	50HF-010-SMA	May. 06,23	May. 05,24
Power Meter	Anritsu	ML2495A	1506002	Feb. 14,23	Feb. 13,24
Power Sensor	Anritsu	MA2411B	1339352	Feb. 14,23	Feb. 13,24
Temperature Chamber	ESPEC	SH-242	93000855	May. 06,23	May. 05,24
MXG Analog Microvave Signal Generator	KEYSIGHT	N5183A	MY50143024	Feb. 14,23	Feb. 13,24
Base station R&S CMW500	Rohde&Schwa rz	CMW500	153085	May.12,23	May.11,26
DC Source	Kikusui/JP	PMX18-5A	N/A	Aug. 12,22	Aug. 11,23

- NOTE:**
1. The calibration interval of the above test instruments is 12 months or 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
 2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
 3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
 4. The FCC Site Registration No. is 525120; The Designation No. is CN1171.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Ecoport AC LTE-LP	
BRAND NAME	SkyCentrics	
MODEL NAME	US08Ba	
SERIAL MODEL NAME	US08B	
NOMINAL VOLTAGE	120V(adapter or host equipment) 3.0Vdc (Li-ion, battery)	
MODULATION TECHNOLOGY	LTE CAT-M1	QPSK, 16QAM
FREQUENCY RANGE	LTE Band 26 (Channel Bandwidth: 1.4MHz)	814.7MHz ~ 823.3MHz
	LTE Band 26 (Channel Bandwidth: 3MHz)	815.5MHz ~ 822.5MHz
	LTE Band 26 (Channel Bandwidth: 5MHz)	816.5MHz ~ 821.5MHz
	LTE Band 26 (Channel Bandwidth: 10MHz)	819MHz
EMISSION DESIGNATOR	LTE Band 26 (Channel Bandwidth: 1.4MHz)	QPSK: 1M11G7D
		16QAM: 941KW7D
		64QAM: /
	LTE Band 26 (Channel Bandwidth: 3MHz)	QPSK: 1M11G7D
		16QAM: 946KW7D
		64QAM: /
	LTE Band 26 (Channel Bandwidth: 5MHz)	QPSK: 1M11G7D
		16QAM: 949KW7D
		64QAM: /
	LTE Band 26 (Channel Bandwidth: 10MHz)	QPSK: 1M12G7D
		16QAM: 966KW7D
		64QAM: /
MAX. EIRP POWER	LTE Band 26 (Channel Bandwidth: 1.4MHz)	31.62mW
	LTE Band 26 (Channel Bandwidth: 3MHz)	31.41mW
	LTE Band 26 (Channel Bandwidth: 5MHz)	31.55mW
	LTE Band 26 (Channel Bandwidth: 10MHz)	31.7mW
ANTENNA TYPE	Internal/External Antenna	



**BUREAU
VERITAS**

Test Report No.: W7L-230608W001RF04

ANTENNA GAIN	US08Ba: Internal Antenna with -3.94dBi gain for LTE B26 US08Ba: External Antenna with -2.98dBi gain for LTE B26 US08B: Internal Antenna with -3.94 dBi forLTE Band 26
HW VERSION	PVT
SW VERSION	CFT_PICO_SPARROW_20230315
I/O PORTS	Refer to user's manual
DATA CABLE	N/A
EXTREME TEMPERATURE	-20-50 °C
EXTREME VOLTAGE	110V - 240V

NOTE:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receiver:

MODULATION MODE	TX FUNCTION
LTE	1TX/1RX

3. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
4. US08Ba and US08B Difference description:

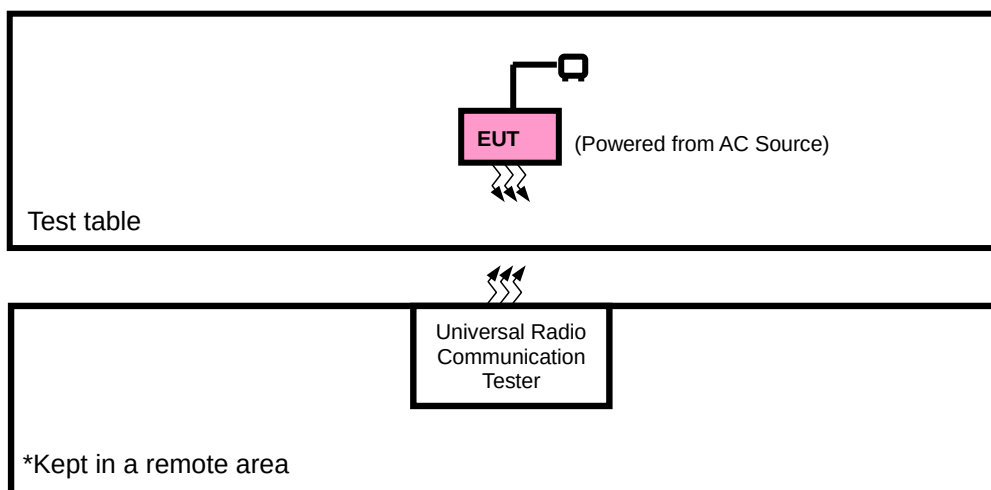
No	Model ID	Difference Description
1	US08B (Verified sample)	Only supports Internal Antenna
2	US08Ba (Mainly tested Sample)	Supports both Internal Antenna and External Antenna There is an additional Sub board which is connected with main board by RF cable for External antenna assembly.

List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	CHAOCHUANG	N/A	CR2032	Capacity : 3.0Vdc, 210mAh

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	N/A	N/A	N/A	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line: Unshielded, Detachable 1m

2.4 DESCRIPTION OF TEST MODES

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case in ERP/EIRP and radiated emission was found when positioned on X-plane for LTE. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter with LTE link

LTE BAND 26 MODE

EUT CONFIGURE MODE	TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
A	ERP	26697 to 26783	26697, 26740, 26783	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26715 to 26765	26715, 26740, 26765	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
A	RADIATED EMISSION	26697 to 26783	26740	1.4MHz	QPSK	1 RB / 0 RB Offset
		26705 to 26775	26705, 26740, 26775	3MHz	QPSK	1 RB / 0 RB Offset
		26715 to 26765	26740	5MHz	QPSK	1 RB / 0 RB Offset
		26740	26740	10MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.



Test Report No.: W7L-230608W001RF04

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
EIRP(ERP)	24deg. C, 60%RH	120Vac/60Hz	Jace Hu
RADIATED EMISSION	23deg. C, 70%RH	120Vac/60Hz	Jace Hu

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 90

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Per FCC Part 90.635(a)(b)

The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

3.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_{\text{T}} - L_{\text{C}}$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_{T} = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

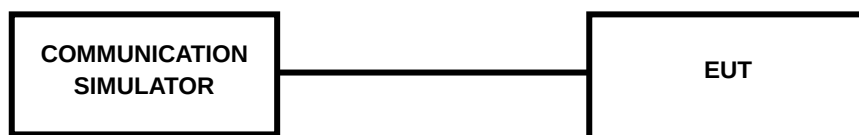
L_{C} = signal attenuation in the connecting cable between the transmitter and antenna, in dB

CONDUCTED POWER MEASUREMENT:

- The EUT was set up for the maximum power with 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.

3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.1.4 TEST RESULTS

AVERAGE CONDUCTED OUTPUT POWER (dBm)

LTE Band 26

Band/BW	Modulation	RB Size	RB Offset	Low CHG 26697	Mid CH 26740	High CH 26783
				Frequency 814.7 MHz	Frequency 819 MHz	Frequency 823.3 MHz
26/ 1.4	QPSK	1	0	20.06	20.05	19.99
		1	5	19.96	19.95	19.97
		3	0	20.03	20.00	20.04
		3	3	19.99	19.94	19.96
		6	0	19.54	19.52	19.58
	16QAM	1	0	19.89	19.83	19.90
		1	5	19.81	19.85	19.84
		3	0	20.12	20.06	20.13
		3	3	19.95	19.99	19.98
		6	0	20.00	19.97	20.01

Band/BW	Modulation	RB Size	RB Offset	Low CHG 26705	Mid CH 26740	High CH 26775
				Frequency 815.5 MHz	Frequency 819 MHz	Frequency 822.5 MHz
26/ 3	QPSK	1	0	20.00	19.99	20.01
		1	5	20.00	19.97	20.01
		3	0	20.04	19.99	20.01
		3	3	19.95	19.93	19.99
		6	0	19.58	19.52	19.59
	16QAM	1	0	19.83	19.87	19.86
		1	5	19.87	19.81	19.88
		3	0	20.06	20.10	20.09
		3	3	20.00	19.97	20.01
		6	0	20.01	19.96	19.98

Band/BW	Modulation	RB Size	RB Offset	Low CHG 26715	Mid CH 26740	High CH 26765
				Frequency 816.5 MHz	Frequency 819 MHz	Frequency 821.5 MHz
26/ 5	QPSK	1	0	20.00	20.02	20.05
		1	5	19.95	20.01	19.98
		3	0	20.04	19.98	20.04
		3	3	19.93	19.95	19.93
		6	0	19.54	19.58	19.54
	16QAM	1	0	19.84	19.86	19.89
		1	5	19.83	19.82	19.84
		3	0	20.07	20.09	20.12
		3	3	19.95	20.01	19.97
		6	0	19.95	20.02	20.01

Band/BW	Modulation	RB Size	RB Offset	/	Mid CH 26740	/
				/	Frequency 819 MHz	/
26/ 10	QPSK	1	0	/	20.07	/
		1	5	/	20.03	/
		3	0	/	20.06	/
		3	3	/	20.01	/
		6	0	/	19.60	/
	16QAM	1	0	/	19.91	/
		1	5	/	19.89	/
		3	0	/	20.14	/
		3	3	/	20.03	/
		6	0	/	20.03	/

ERP

Internal Antenna:

LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	20.06	-3.94	13.97	24.95	100
26740	819	20.05	-3.94	13.96	24.89	100
26783	823.3	20.04	-3.94	13.95	24.83	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	20.12	-3.94	14.03	25.29	100
26740	819	20.06	-3.94	13.97	24.95	100
26783	823.3	20.13	-3.94	14.04	25.35	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	20.04	-3.94	13.95	24.83	100
26740	819	19.99	-3.94	13.9	24.55	100
26775	822.5	20.01	-3.94	13.92	24.66	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	20.06	-3.94	13.97	24.95	100
26740	819	20.1	-3.94	14.01	25.18	100
26775	822.5	20.09	-3.94	14	25.12	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	20.04	-3.94	13.95	24.83	100
26740	819	20.02	-3.94	13.93	24.72	100
26765	821.5	20.05	-3.94	13.96	24.89	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	20.07	-3.94	13.98	25	100
26740	819	20.09	-3.94	14	25.12	100
26765	821.5	20.12	-3.94	14.03	25.29	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	20.07	-3.94	13.98	25	100
-	-	-	-	-	-	-

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	20.14	-3.94	14.05	25.41	100
-	-	-	-	-	-	-

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).



**BUREAU
VERITAS**

Test Report No.: W7L-230608W001RF04

External Antenna:

LTE BAND 26

CHANNEL BANDWIDTH: 1.4MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	20.06	-2.98	14.93	31.12	100
26740	819	20.05	-2.98	14.92	31.05	100
26783	823.3	20.04	-2.98	14.91	30.97	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 1.4MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26697	814.7	20.12	-2.98	14.99	31.55	100
26740	819	20.06	-2.98	14.93	31.12	100
26783	823.3	20.13	-2.98	15	31.62	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 3MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	20.04	-2.98	14.91	30.97	100
26740	819	19.99	-2.98	14.86	30.62	100
26775	822.5	20.01	-2.98	14.88	30.76	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 3MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26705	815.5	20.06	-2.98	14.93	31.12	100
26740	819	20.1	-2.98	14.97	31.41	100
26775	822.5	20.09	-2.98	14.96	31.33	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 5MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	20.04	-2.98	14.91	30.97	100
26740	819	20.02	-2.98	14.89	30.83	100
26765	821.5	20.05	-2.98	14.92	31.05	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 5MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
26715	816.5	20.07	-2.98	14.94	31.19	100
26740	819	20.09	-2.98	14.96	31.33	100
26765	821.5	20.12	-2.98	14.99	31.55	100

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

LTE BAND 26

CHANNEL BANDWIDTH: 10MHz QPSK

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	20.07	-2.98	14.94	31.19	100
-	-	-	-	-	-	-

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

CHANNEL BANDWIDTH: 10MHz 16QAM

Channel	Frequency (MHz)	Conducted Power (dBm)	G _T -L _C (dB)	ERP (dBm)	ERP (mW)	Limit (W)
-	-	-	-	-	-	-
26740	819	20.14	-2.98	15.01	31.7	100
-	-	-	-	-	-	-

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dB).

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

(1) The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $43 + 10 \log_{10}(P)$ dB. The limit of emission equal to -13dBm

(2) For operations in the 763–775 MHz and 793–805 MHz bands, all emissions including harmonics in the band 1559– 1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

3.2.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. 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.
- b. 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
- c. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15\text{dBi}.$

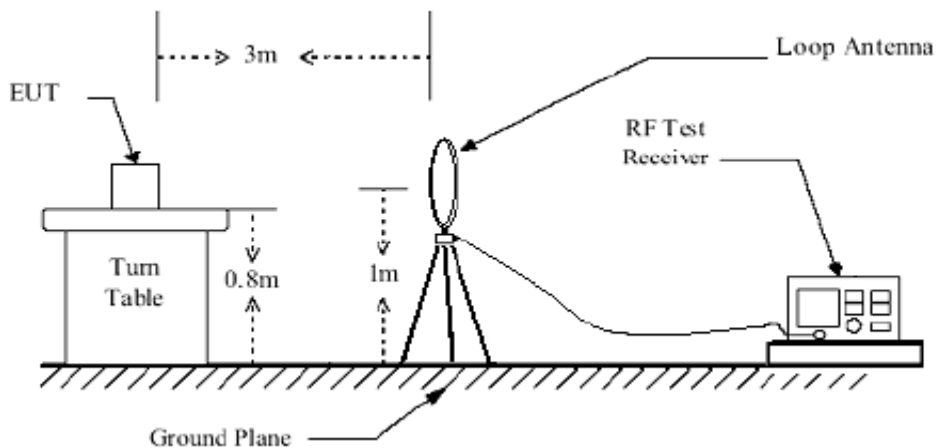
NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

3.2.3 DEVIATION FROM TEST STANDARD

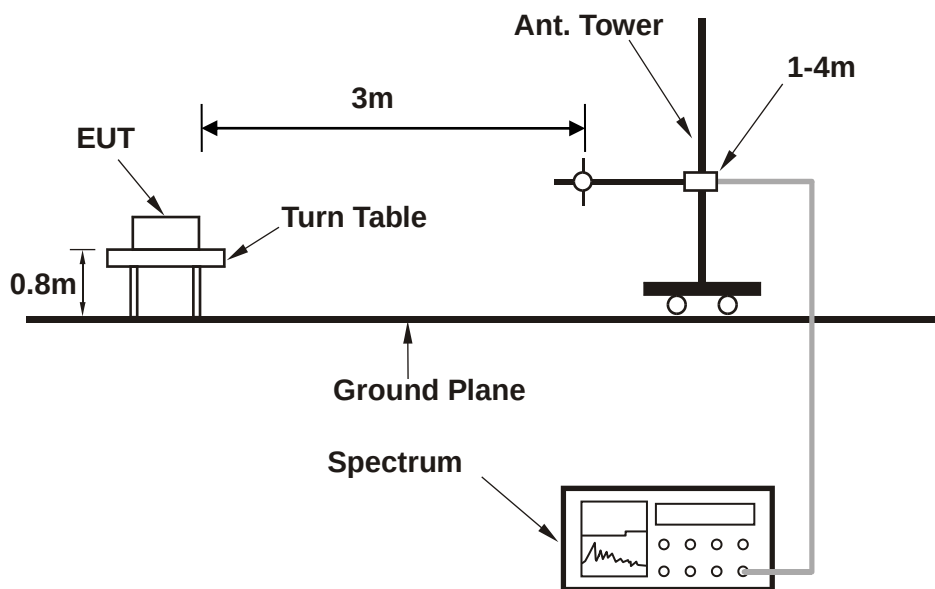
No deviation

3.2.4 TEST SETUP

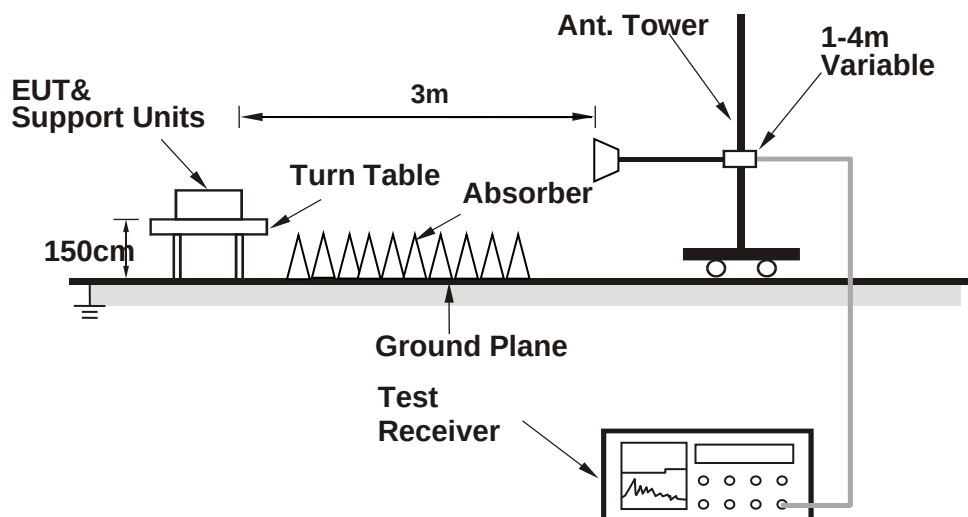
<Below 30MHz>



< Frequency Range 30MHz~1GHz >



< Frequency Range above 1GHz >



For the actual test configuration, please refer to the attached file (Test Setup Photo).

3.2.5 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Internal Antenna:

BELOW 1GHz WORST-CASE DATA

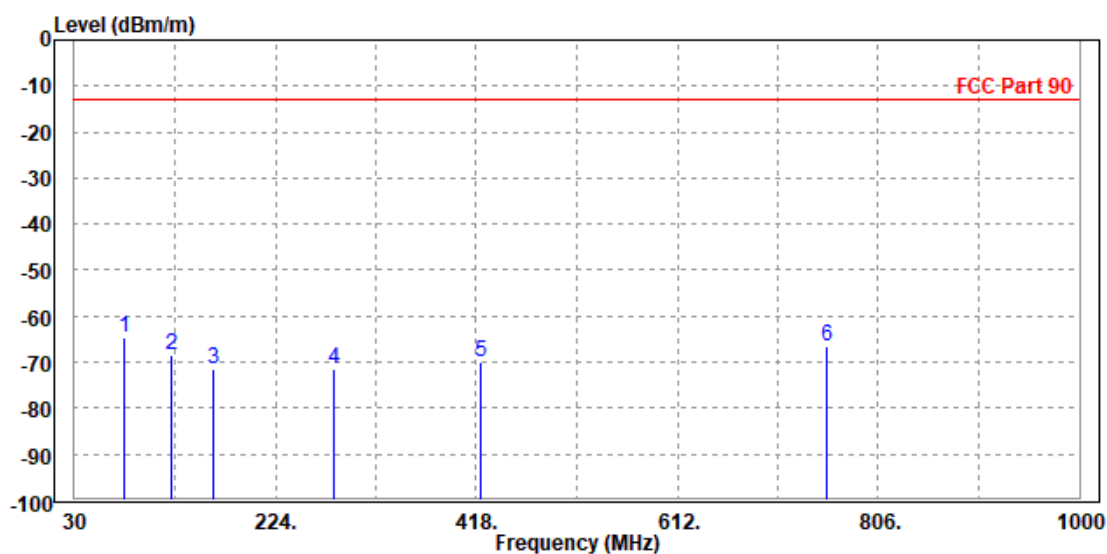
30 MHz – 1GHz data:

LTE Band 26:

CHANNEL BANDWIDTH: 3MHz / QPSK

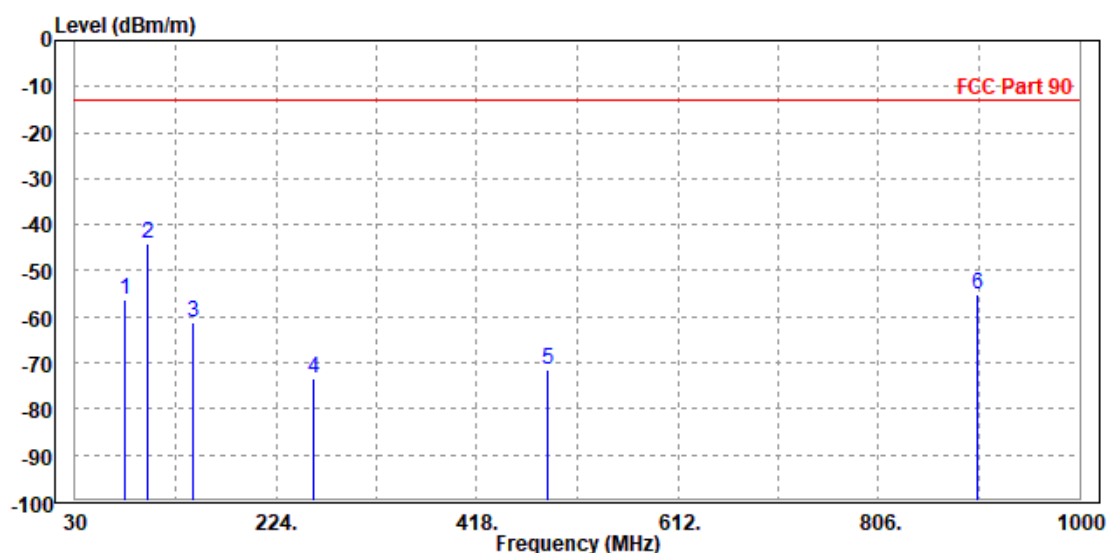
MODE	TX channel 26740	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace HU		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	77.530	-64.73	-43.27	-13.00	-51.73	-21.46	Peak	Horizontal
2	124.090	-68.53	-47.58	-13.00	-55.53	-20.95	Peak	Horizontal
3	163.860	-71.65	-55.58	-13.00	-58.65	-16.07	Peak	Horizontal
4	280.260	-71.38	-59.32	-13.00	-58.38	-12.06	Peak	Horizontal
5	422.850	-69.91	-60.29	-13.00	-56.91	-9.62	Peak	Horizontal
6	756.530	-66.51	-62.82	-13.00	-53.51	-3.69	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace HU		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	77.530	-56.41	-36.39	-13.00	-43.41	-20.02	Peak	Vertical
2 PP	99.840	-44.15	-37.64	-13.00	-31.15	-6.51	Peak	Vertical
3	143.490	-61.31	-46.54	-13.00	-48.31	-14.77	Peak	Vertical
4	259.890	-73.46	-60.41	-13.00	-60.46	-13.05	Peak	Vertical
5	486.870	-71.57	-63.37	-13.00	-58.57	-8.20	Peak	Vertical
6	901.060	-55.02	-52.78	-13.00	-42.02	-2.24	Peak	Vertical





Test Report No.: W7L-230608W001RF04

ABOVE 1GHz

Note: For higher frequency, the emission is too low to be detected.

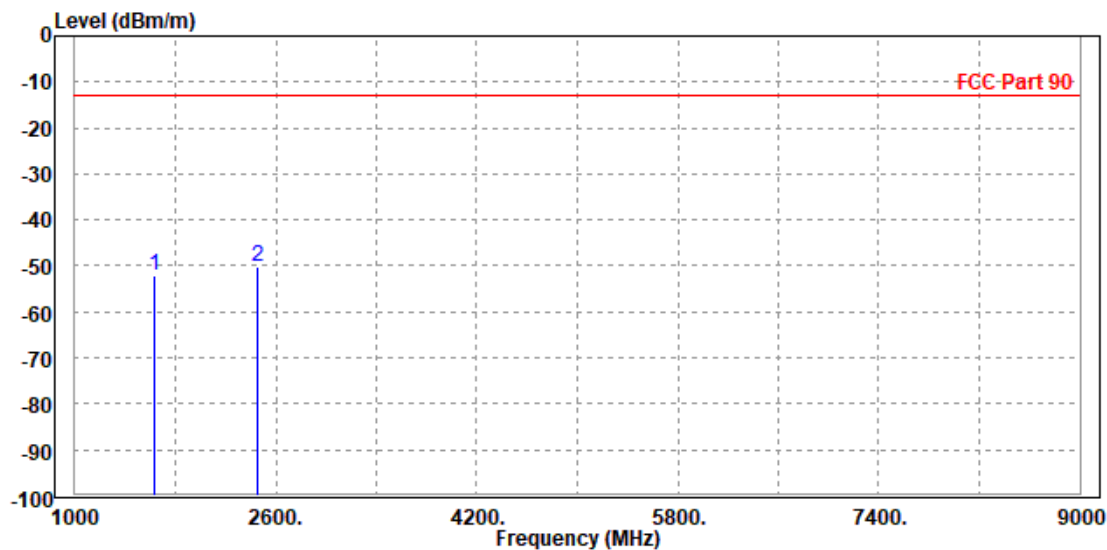
LTE BAND 26

CHANNEL BANDWIDTH: 3MHz / QPSK

CH26740

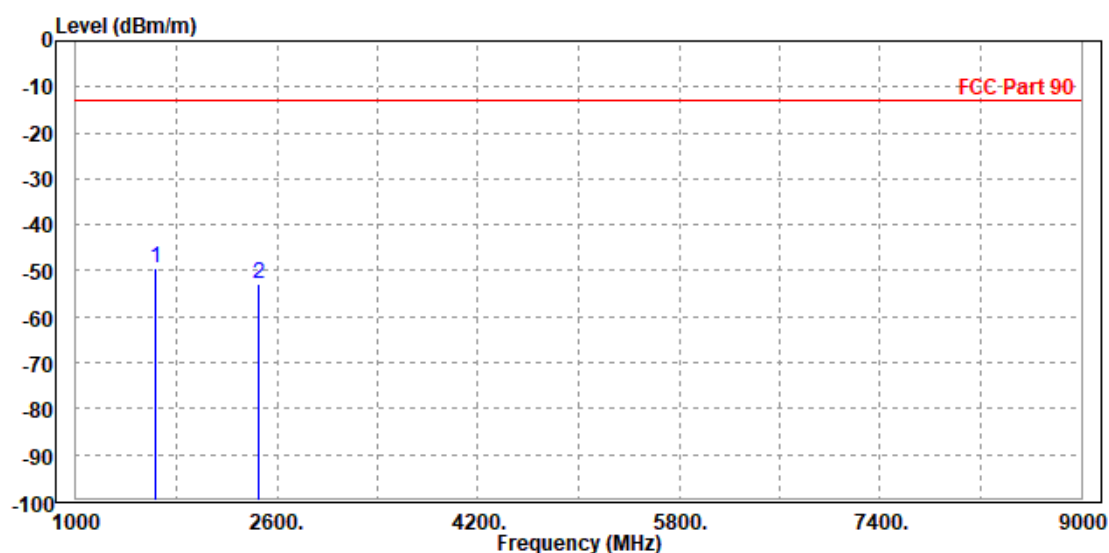
MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1	1638.000	-51.94	-52.63	-13.00	-38.94	0.69	Peak	Horizontal
2 PP	2457.000	-50.06	-55.34	-13.00	-37.06	5.28	Peak	Horizontal



MODE	TX channel 26740	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH	INPUT POWER	AC 120V/60HZ
TESTED BY	Jace Hu		
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M			

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark	Pol/Phase
	MHz	dBm/m	dBm	dBm/m	dB	dB/m		
1 PP	1638.000	-49.38	-50.34	-13.00	-36.38	0.96	Peak	Vertical
2	2457.000	-52.95	-57.77	-13.00	-39.95	4.82	Peak	Vertical





Test Report No.: W7L-230608W001RF04

4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Shenzhen EMC/RF Lab:

Tel: +86-755-88696566

Fax: +86-755-88696577

Email: customerservice.sw@bureauveritas.com

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.



Test Report No.: W7L-230608W001RF04

5 MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No modifications were made to the EUT by the lab during the test.