

Partial FCC Test Report

(PART 24)

Report No.: RF170927C14-1

FCC ID: N7NEM7455

Test Model: EM7455

Received Date: Sep. 26, 2017

Test Date: Oct. 28, 2017 ~ Nov. 03, 2017

Issued Date: Nov. 16, 2017

Applicant: Trimble Navigation Limited

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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(R.O.C)

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Release Control Record

Issue No.	Description	Date Issued
RF170927C14-1	Original Release	Nov. 16, 2017

1 Certificate of Conformity

Product: Wireless Modules

Brand: SIERRA

Test Model: EM7455

Sample Status: Production Unit

Applicant: Trimble Navigation Limited

Test Date: Oct. 28, 2017 ~ Nov. 03, 2017

Standards: FCC Part 24, Subpart E

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : Evonne Liu, **Date:** Nov. 16, 2017
Evonne Liu / Specialist

Approved by : Dylan Chiou, **Date:** Nov. 16, 2017
Dylan Chiou / Project Engineer

2 Summary of Test Results

Applied Standard: FCC Part 24 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -40.59 dB at 181.20 MHz.

2.1 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	Frequency	Expanded Uncertainty (k=2) (±)
Radiated Emissions up to 1 GHz	30 MHz ~ 200 MHz	2.0153 dB
	200 MHz ~1000 MHz	2.0224 dB

2.2 Test Site And Instruments

Description & Manufacturer	Model No.	Serial No.	Date of Calibration	Due Date of Calibration
Test Receiver Agilent Technologies	N9038A	MY52260177	Jul. 05, 2017	Jul. 04, 2018
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 13, 2016	Dec. 12, 2017
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 16, 2016	Dec. 15, 2017
HORN Antenna ETS-Lindgren	3117	00143293	Dec. 29, 2016	Dec. 28, 2017
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 14, 2016	Dec. 13, 2017
Fixed Attenuator Mini-Circuits	MDCS18N-10	MDCS18N-10-01	Apr. 17, 2017	Apr. 16, 2018
Preamplifier Agilent	310N	187226	Jun. 23, 2017	Jun. 22, 2018
Preamplifier Agilent	83017A	MY39501357	Jun. 23, 2017	Jun. 22, 2018
Power Meter Anritsu	ML2495A	1145013	Mar. 07, 2017	Mar. 06, 2018
Power Sensor Anritsu	MA2411B	1126085	Mar. 07, 2017	Mar. 06, 2018
RF signal cable ETS-LINDGREN	5D-FB	Cable-CH1-01(R FC-SMS-100-SM S-120+RFC-SMS -100-SMS-400)	Jun. 23, 2017	Jun. 22, 2018
RF signal cable ETS-LINDGREN	8D-FB	Cable-CH1-02(R FC-SMS-100-SM S-24)	Jun. 23, 2017	Jun. 22, 2018
Software BV ADT	E3 8.130425b	NA	NA	NA
Antenna Tower MF	NA	NA	NA	NA
Turn Table MF	NA	NA	NA	NA
Antenna Tower & Turn Table Controller MF	MF-7802	NA	NA	NA
Communications Tester-Wireless Agilent	8960 Series 10	MY53201073	Jun. 28, 2017	Jun. 27, 2019
Radio Communication Analyzer Anritsu	MT8820C	6201010284	Nov. 30, 2016	Nov. 29, 2017
Temperature & Humidity Chamber	GTH-120-40-CP-A R	MAA1306-019	Sep. 08, 2017	Sep. 07, 2018
DC Power Supply Topward	33010D	807748	Oct. 25, 2016	Oct. 24, 2018
Digital Multimeter Fluke	87-III	70360742	Jun. 30, 2017	Jun. 29, 2018

- Note:
1. The calibration interval of the above test instruments is 12 / 24 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The test was performed in HsinTien Chamber 1.
 3. The horn antenna and preamplifier (model: 83017A) are used only for the measurement of emission frequency above 1 GHz if tested.
 4. The FCC Designation Number is TW0011. The number will be varied with the Lab location and scope as attached.
 5. The IC Site Registration No. is IC7450I-1.

3 General Information

3.1 General Description of EUT

Product	Wireless Modules	
Brand	SIERRA	
Test Model	EM7455	
Status of EUT	Production Unit	
Power Supply Rating	19.0 Vdc (adapter) 7.27 Vdc (Li-ion battery)	
Modulation Type	WCDMA	QPSK
	LTE	QPSK, 16QAM
Frequency Range	WCDMA	1852.4 ~ 1907.6 MHz
	LTE Band 2 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1909.3 MHz
	LTE Band 2 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1908.5 MHz
	LTE Band 2 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1907.5 MHz
	LTE Band 2 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1905.0 MHz
	LTE Band 2 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1902.5 MHz
	LTE Band 2 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1900.0 MHz
	LTE Band 25 (Channel Bandwidth: 1.4 MHz)	1850.7 ~ 1914.3 MHz
	LTE Band 25 (Channel Bandwidth: 3 MHz)	1851.5 ~ 1913.5 MHz
	LTE Band 25 (Channel Bandwidth: 5 MHz)	1852.5 ~ 1912.5 MHz
	LTE Band 25 (Channel Bandwidth: 10 MHz)	1855.0 ~ 1910.0 MHz
	LTE Band 25 (Channel Bandwidth: 15 MHz)	1857.5 ~ 1907.5 MHz
	LTE Band 25 (Channel Bandwidth: 20 MHz)	1860.0 ~ 1905.0 MHz
Antenna Type	PIFA Antenna	
Accessory Device	Refer to Note as below	
Data Cable Supplied	Refer to Note as below	

Note:

1. The EUT is authorized for use in specific End-product. Please refer to below for more details.

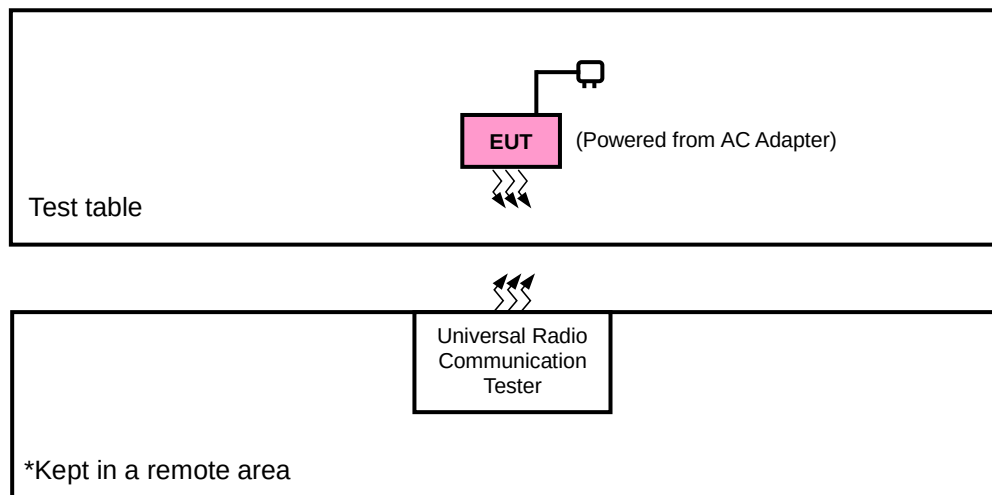
Product	Brand Name	Model Name
Handheld PC	Trimble	121300

2. The EUT contains following accessory devices.

Product	Brand	Model	Description
Adapter	DELTA ELECTRONICS, INC.	ADP-90MD H	I/P: 100-240 Vac, 50-60 Hz, 1.5 A O/P: 19 Vdc, 4.74 A
Battery	Trimble	121300	7.27 Vdc, 3150 mAh, 22.9Wh

3. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

3.2 Configuration of System under Test



3.2.1 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

3.3 Test Mode Applicability and Tested Channel Detail

The worst case was found when positioned as the table below. Following channel(s) was (were) selected for the final test as listed below:

WCDMA

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Mode
-	Radiated Emission	9262 to 9538	9262, 9400, 9538	WCDMA

LTE Band 2

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	18700 to 19100	18700, 18900, 19100	20 MHz	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.

LTE Band 25

EUT Configure Mode	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
-	Radiated Emission	26140 to 26590	26140, 26365, 26590	20 MHz	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 Condition:

Test Item	Environmental Conditions	Input Power	Tested By
Radiated Emission	25 deg. C, 65 % RH	120 Vac, 60 Hz	Karl Lee

3.4 EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.5 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 24

KDB 971168 D01 Power Meas License Digital Systems v02r02

ANSI/TIA-603-E-2016

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

4 Test Types and Results

4.1 Output Power Measurement

4.1.1 Limits of Output Power Measurement

Mobile / Portable station are limited to 2 watts e.i.r.p.

4.1.2 Test Procedures

Conducted Power Measurement:

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

4.1.3 Test Setup

Conducted Power Measurement:



4.1.4 Test Results

Conducted Output Power (dBm)

Band	WCDMA II		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2K	22.86	22.87	22.82
HSDPA Subtest-1	21.80	21.81	21.76
HSDPA Subtest-2	21.82	21.83	21.78
HSDPA Subtest-3	21.30	21.31	21.26
HSDPA Subtest-4	21.29	21.30	21.25
HSUPA Subtest-1	21.48	21.49	21.42
HSUPA Subtest-2	20.85	20.86	20.81
HSUPA Subtest-3	20.44	20.45	20.40
HSUPA Subtest-4	20.70	20.71	20.66
HSUPA Subtest-5	21.89	21.90	21.85

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18607	Mid Ch 18900	High Ch 19193		Low Ch 18607	Mid Ch 18900	High Ch 19193	
			1850.7 MHz	1880.0 MHz	1909.3 MHz		1850.7 MHz	1880.0 MHz	1909.3 MHz	
2 / 1.4M	1	0	22.73	22.78	22.75	0	21.76	21.81	21.78	1
	1	2	22.64	22.69	22.66	0	21.67	21.72	21.69	1
	1	5	22.43	22.48	22.45	0	21.46	21.51	21.48	1
	3	0	22.08	22.13	22.10	0	21.11	21.16	21.13	1
	3	1	22.06	22.11	22.08	0	21.09	21.14	21.11	1
	3	3	22.01	22.06	22.03	0	21.04	21.09	21.06	1
	6	0	21.68	21.73	21.70	1	20.71	20.76	20.73	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18615	Mid Ch 18900	High Ch 19185		Low Ch 18615	Mid Ch 18900	High Ch 19185	
			1851.5 MHz	1880.0 MHz	1908.5 MHz		1851.5 MHz	1880.0 MHz	1908.5 MHz	
2 / 3M	1	0	22.77	22.82	22.79	0	21.80	21.85	21.82	1
	1	7	22.68	22.73	22.70	0	21.71	21.76	21.73	1
	1	14	22.47	22.52	22.49	0	21.50	21.55	21.52	1
	8	0	21.80	21.85	21.82	1	20.83	20.88	20.85	2
	8	3	21.78	21.83	21.80	1	20.81	20.86	20.83	2
	8	7	21.73	21.78	21.75	1	20.76	20.81	20.78	2
	15	0	21.72	21.77	21.74	1	20.75	20.80	20.77	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18625	Mid Ch 18900	High Ch 19175		Low Ch 18625	Mid Ch 18900	High Ch 19175	
			1852.5 MHz	1880.0 MHz	1907.5 MHz		1852.5 MHz	1880.0 MHz	1907.5 MHz	
2 / 5M	1	0	22.82	22.87	22.84	0	21.85	21.90	21.87	1
	1	12	22.73	22.78	22.75	0	21.76	21.81	21.78	1
	1	24	22.52	22.57	22.54	0	21.55	21.60	21.57	1
	12	0	21.85	21.90	21.87	1	20.88	20.93	20.90	2
	12	6	21.83	21.88	21.85	1	20.86	20.91	20.88	2
	12	13	21.78	21.83	21.80	1	20.81	20.86	20.83	2
	25	0	21.77	21.82	21.79	1	20.80	20.85	20.82	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18650	Mid Ch 18900	High Ch 19150		Low Ch 18650	Mid Ch 18900	High Ch 19150	
			1855.0 MHz	1880.0 MHz	1905.0 MHz		1855.0 MHz	1880.0 MHz	1905.0 MHz	
2 / 10M	1	0	22.85	22.90	22.87	0	21.88	21.93	21.90	1
	1	24	22.76	22.81	22.78	0	21.79	21.84	21.81	1
	1	49	22.55	22.60	22.57	0	21.58	21.63	21.60	1
	25	0	21.88	21.93	21.90	1	20.91	20.96	20.93	2
	25	12	21.86	21.91	21.88	1	20.89	20.94	20.91	2
	25	25	21.81	21.86	21.83	1	20.84	20.89	20.86	2
	50	0	21.80	21.85	21.82	1	20.83	20.88	20.85	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18675	Mid Ch 18900	High Ch 19125		Low Ch 18675	Mid Ch 18900	High Ch 19125	
			1857.5 MHz	1880.0 MHz	1902.5 MHz		1857.5 MHz	1880.0 MHz	1902.5 MHz	
2 / 15M	1	0	22.91	22.96	22.93	0	21.94	21.99	21.96	1
	1	37	22.82	22.87	22.84	0	21.85	21.90	21.87	1
	1	74	22.61	22.66	22.63	0	21.64	21.69	21.66	1
	36	0	21.94	21.99	21.96	1	20.97	21.02	20.99	2
	36	19	21.92	21.97	21.94	1	20.95	21.00	20.97	2
	36	39	21.87	21.92	21.89	1	20.90	20.95	20.92	2
	75	0	21.86	21.91	21.88	1	20.89	20.94	20.91	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 18700	Mid Ch 18900	High Ch 19100		Low Ch 18700	Mid Ch 18900	High Ch 19100	
			1860.0 MHz	1880.0 MHz	1900.0 MHz		1860.0 MHz	1880.0 MHz	1900.0 MHz	
2 / 20M	1	0	22.96	23.01	22.98	0	21.99	22.04	22.01	1
	1	50	22.87	22.92	22.89	0	21.90	21.95	21.92	1
	1	99	22.66	22.71	22.68	0	21.69	21.74	21.71	1
	50	0	21.99	22.04	22.01	1	21.02	21.07	21.04	2
	50	25	21.97	22.02	21.99	1	21.00	21.05	21.02	2
	50	50	21.92	21.97	21.94	1	20.95	21.00	20.97	2
	100	0	21.91	21.96	21.93	1	20.94	20.99	20.96	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26047	Mid Ch 26365	High Ch 26683		Low Ch 26047	Mid Ch 26365	High Ch 26683	
			1850.7 MHz	1882.5 MHz	1914.3 MHz		1850.7 MHz	1882.5 MHz	1914.3 MHz	
25 / 1.4M	1	0	22.92	22.81	22.97	0	21.99	21.88	22.04	1
	1	2	22.86	22.75	22.91	0	21.93	21.82	21.98	1
	1	5	22.48	22.37	22.53	0	21.55	21.44	21.60	1
	3	0	22.57	22.34	22.50	0	21.52	21.41	21.57	1
	3	1	22.30	22.19	22.35	0	21.37	21.26	21.42	1
	3	3	22.12	22.01	22.17	0	21.19	21.08	21.24	1
	6	0	21.76	21.65	21.81	1	20.83	20.72	20.88	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26055	Mid Ch 26365	High Ch 26675		Low Ch 26055	Mid Ch 26365	High Ch 26675	
			1851.5 MHz	1882.5 MHz	1913.5 MHz		1851.5 MHz	1882.5 MHz	1913.5 MHz	
25 / 3M	1	0	22.96	22.85	23.01	0	22.03	21.92	22.08	1
	1	7	22.90	22.79	22.95	0	21.97	21.86	22.02	1
	1	14	22.52	22.41	22.57	0	21.59	21.48	21.64	1
	8	0	21.92	21.81	21.97	1	20.99	20.88	21.04	2
	8	3	21.77	21.66	21.82	1	20.84	20.73	20.89	2
	8	7	21.59	21.48	21.64	1	20.66	20.55	20.71	2
	15	0	21.80	21.69	21.85	1	20.87	20.76	20.92	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26065	Mid Ch 26365	High Ch 26665		Low Ch 26065	Mid Ch 26365	High Ch 26665	
			1852.5 MHz	1882.5 MHz	1912.5 MHz		1852.5 MHz	1882.5 MHz	1912.5 MHz	
25 / 5M	1	0	23.00	22.89	23.05	0	22.07	21.96	22.12	1
	1	12	22.94	22.83	22.99	0	22.01	21.90	22.06	1
	1	24	22.56	22.45	22.61	0	21.63	21.52	21.68	1
	12	0	21.96	21.85	22.01	1	21.03	20.92	21.08	2
	12	6	21.81	21.70	21.86	1	20.88	20.77	20.93	2
	12	13	21.63	21.52	21.68	1	20.70	20.59	20.75	2
	25	0	21.84	21.73	21.89	1	20.91	20.80	20.96	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26090	Mid Ch 26365	High Ch 26640		Low Ch 26090	Mid Ch 26365	High Ch 26640	
			1855.0 MHz	1882.5 MHz	1910.0 MHz		1855.0 MHz	1882.5 MHz	1910.0 MHz	
25 / 10M	1	0	23.05	22.94	23.10	0	22.12	22.01	22.17	1
	1	24	22.99	22.88	23.04	0	22.06	21.95	22.11	1
	1	49	22.61	22.50	22.66	0	21.68	21.57	21.73	1
	25	0	22.01	21.90	22.06	1	21.08	20.97	21.13	2
	25	12	21.86	21.75	21.91	1	20.93	20.82	20.98	2
	25	25	21.68	21.57	21.73	1	20.75	20.64	20.80	2
	50	0	21.89	21.78	21.94	1	20.96	20.85	21.01	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26115	Mid Ch 26365	High Ch 26615		Low Ch 26115	Mid Ch 26365	High Ch 26615	
			1857.5 MHz	1882.5 MHz	1907.5 MHz		1857.5 MHz	1882.5 MHz	1907.5 MHz	
25 / 15M	1	0	23.08	22.97	23.13	0	22.15	22.04	22.20	1
	1	37	23.02	22.91	23.07	0	22.09	21.98	22.14	1
	1	74	22.64	22.53	22.69	0	21.71	21.60	21.76	1
	36	0	22.04	21.93	22.09	1	21.11	21.00	21.16	2
	36	19	21.89	21.78	21.94	1	20.96	20.85	21.01	2
	36	39	21.71	21.60	21.76	1	20.78	20.67	20.83	2
	75	0	21.92	21.81	21.97	1	20.99	20.88	21.04	2

Band / BW	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low Ch 26140	Mid Ch 26365	High Ch 26590		Low Ch 26140	Mid Ch 26365	High Ch 26590	
			1860.0 MHz	1882.5 MHz	1905.0 MHz		1860.0 MHz	1882.5 MHz	1905.0 MHz	
25 / 20M	1	0	23.12	23.01	23.17	0	22.19	22.08	22.24	1
	1	50	23.06	22.95	23.11	0	22.13	22.02	22.18	1
	1	99	22.68	22.57	22.73	0	21.75	21.64	21.80	1
	50	0	22.08	21.97	22.13	1	21.15	21.04	21.20	2
	50	25	21.93	21.82	21.98	1	21.00	20.89	21.05	2
	50	50	21.75	21.64	21.80	1	20.82	20.71	20.87	2
	100	0	21.96	21.85	22.01	1	21.03	20.92	21.08	2

4.2 Radiated Emission Measurement

4.2.1 Limits of Radiated Emission Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit is equal to -13 dBm.

4.2.2 Test Procedure

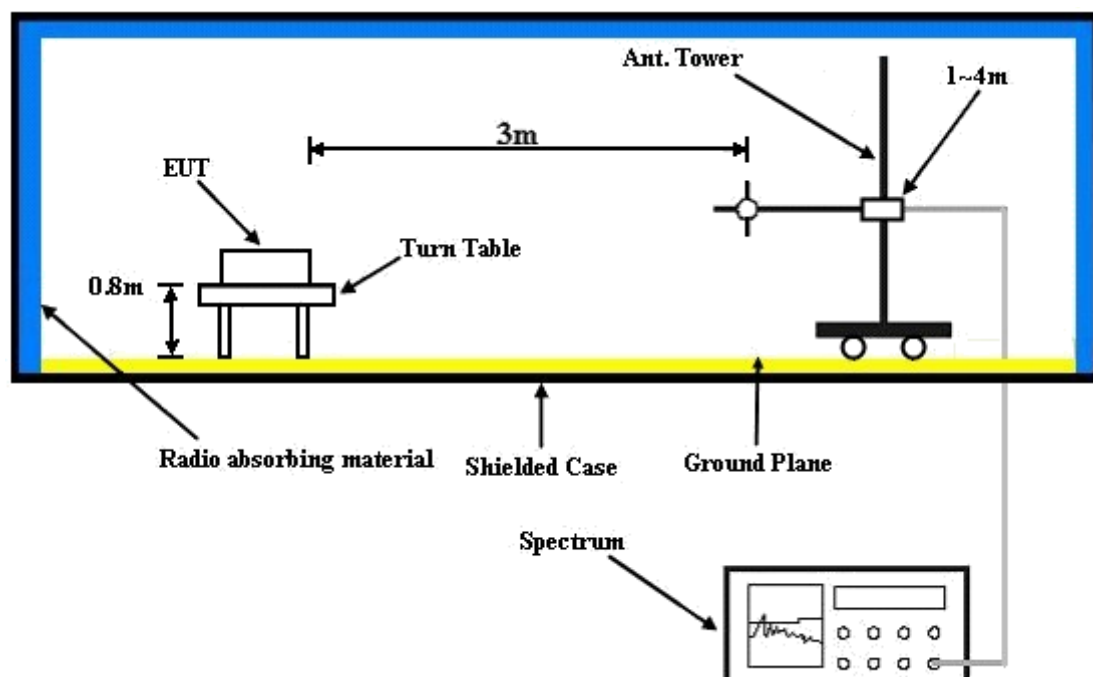
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- 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.
- EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
- E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15 dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

4.2.3 Deviation from Test Standard

No deviation.

4.2.4 Test Setup



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

4.2.5 Test Results

WCDMA:

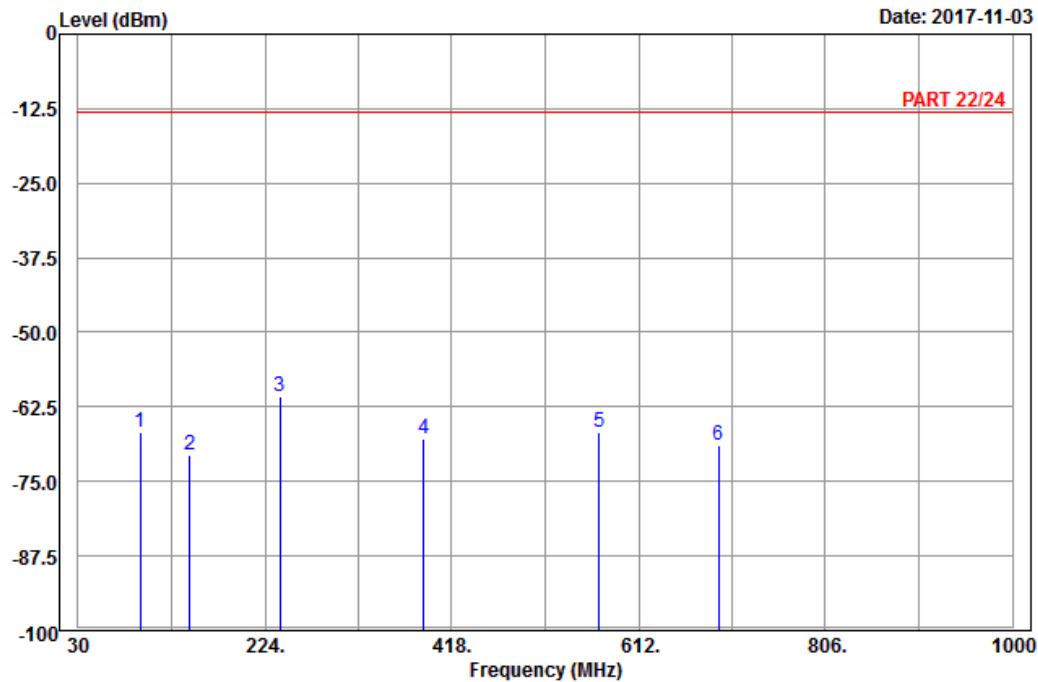


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A D T

Data: 5

Date: 2017-11-03



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : Band II_Link_CH9400
Tested by: Karl Lee

		Read	Limit	Over			
	Freq	Level	Level	Line	Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	94.26	-66.75	-56.30	-13.00	-53.75	-10.45	Peak
2	145.83	-70.53	-62.70	-13.00	-57.53	-7.83	Peak
3 pp	239.79	-60.79	-55.14	-13.00	-47.79	-5.65	Peak
4	388.90	-67.95	-64.64	-13.00	-54.95	-3.31	Peak
5	570.90	-66.65	-65.87	-13.00	-53.65	-0.78	Peak
6	695.50	-68.88	-68.53	-13.00	-55.88	-0.35	Peak

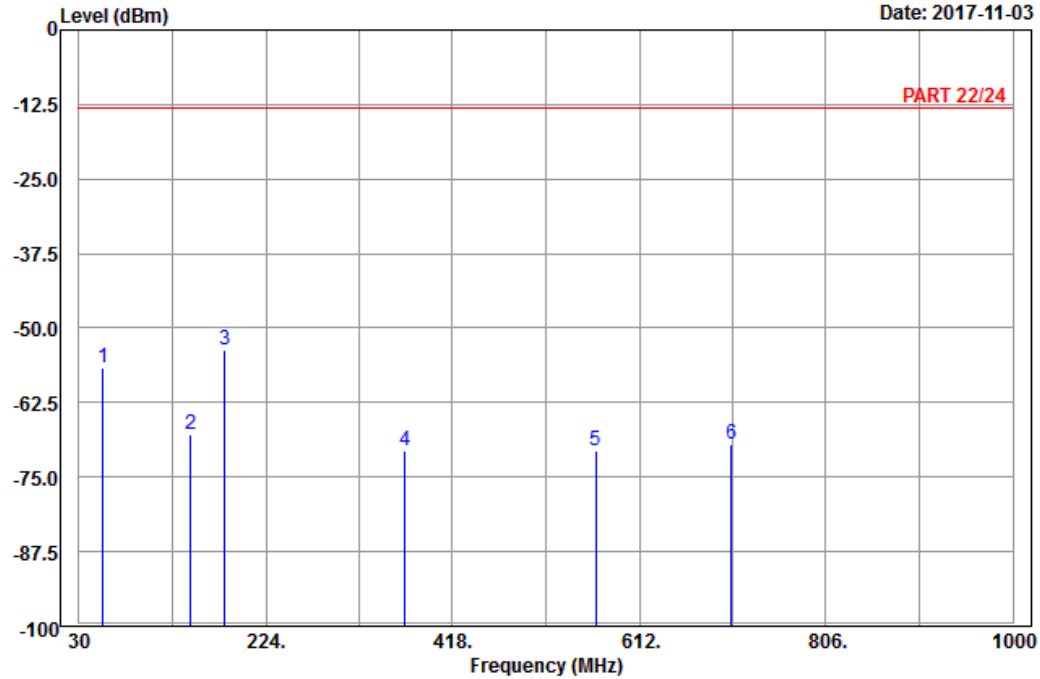


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Data: 6

Date: 2017-11-03



Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : Band II_Link_CH9400
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	54.84	-56.66	-42.60	-13.00	-43.66	-14.06	Peak
2	146.37	-67.98	-60.12	-13.00	-54.98	-7.86	Peak
3 pp	181.20	-53.59	-48.00	-13.00	-40.59	-5.59	Peak
4	368.60	-70.57	-66.17	-13.00	-57.57	-4.40	Peak
5	566.70	-70.61	-69.63	-13.00	-57.61	-0.98	Peak
6	708.10	-69.39	-68.87	-13.00	-56.39	-0.52	Peak

LTE Band 2

Channel Bandwidth: 20 MHz / QPSK

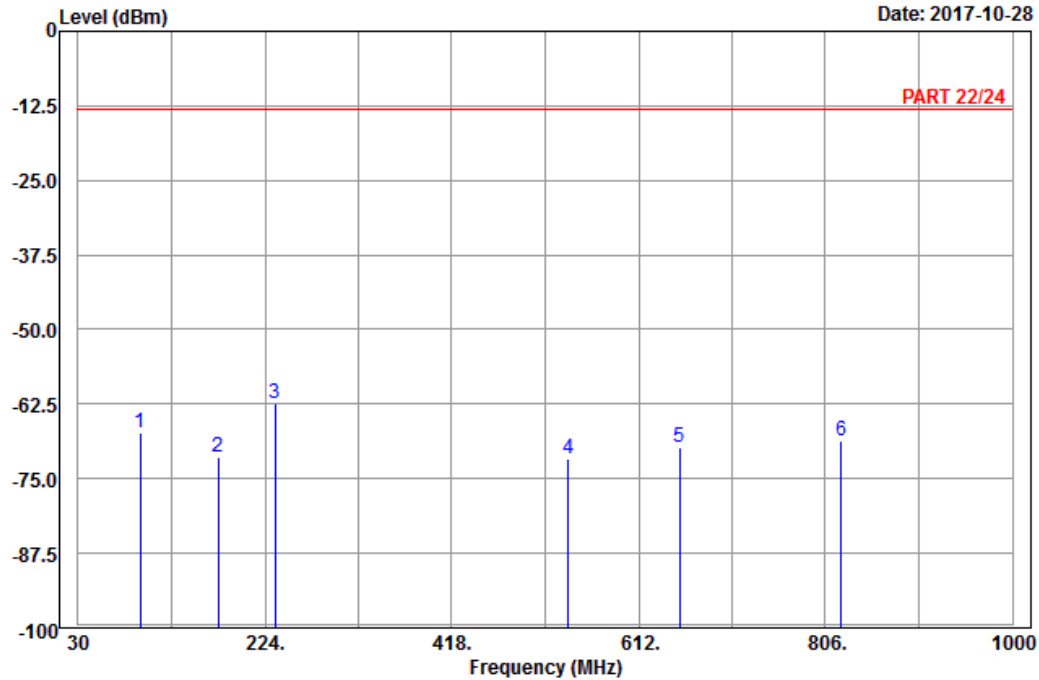


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A D T

Data: 5

Date: 2017-10-28



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 2_Link_CH18900
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	94.53	-67.42	-57.02	-13.00	-54.42	-10.40	Peak
2	175.53	-71.33	-65.24	-13.00	-58.33	-6.09	Peak
3 pp	234.93	-62.45	-56.73	-13.00	-49.45	-5.72	Peak
4	539.40	-71.74	-69.30	-13.00	-58.74	-2.44	Peak
5	654.20	-69.64	-69.48	-13.00	-56.64	-0.16	Peak
6	822.20	-68.73	-70.49	-13.00	-55.73	1.76	Peak

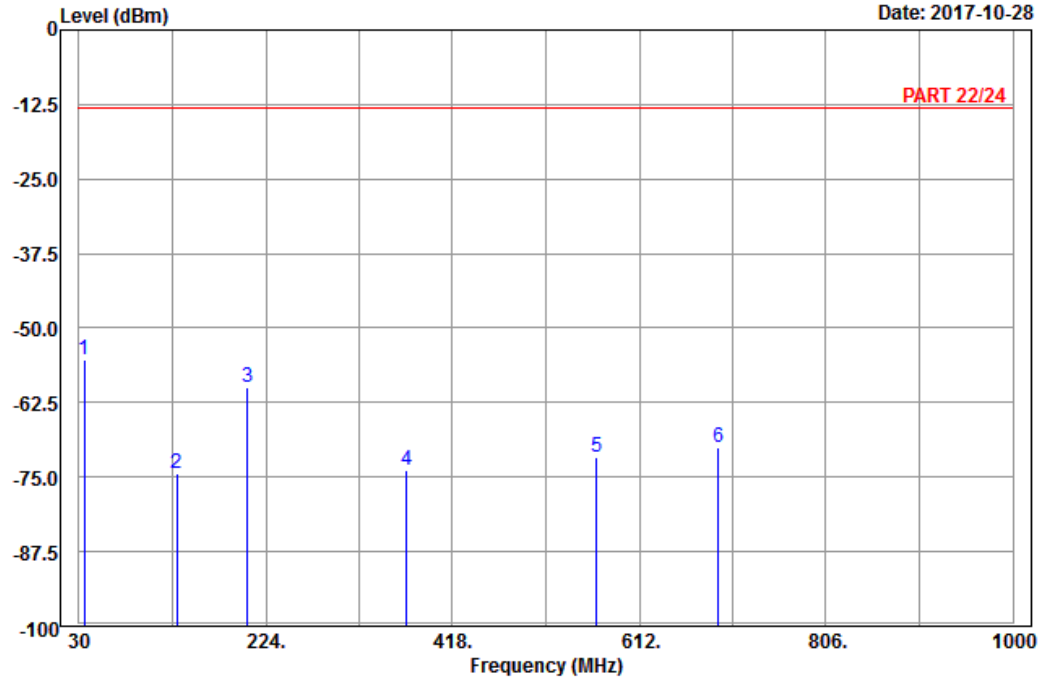


Bureau Veritas Consumer Products Services Ltd., Taoyuan Branch

A D T

Data: 6

Date: 2017-10-28



Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 2_Link_CH18900
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	35.67	-55.45	-44.73	-13.00	-42.45	-10.72	Peak
2	132.06	-74.30	-66.64	-13.00	-61.30	-7.66	Peak
3	204.69	-59.88	-53.76	-13.00	-46.88	-6.12	Peak
4	370.00	-73.91	-69.62	-13.00	-60.91	-4.29	Peak
5	567.40	-71.70	-70.76	-13.00	-58.70	-0.94	Peak
6	694.10	-70.10	-69.75	-13.00	-57.10	-0.35	Peak

LTE Band 25

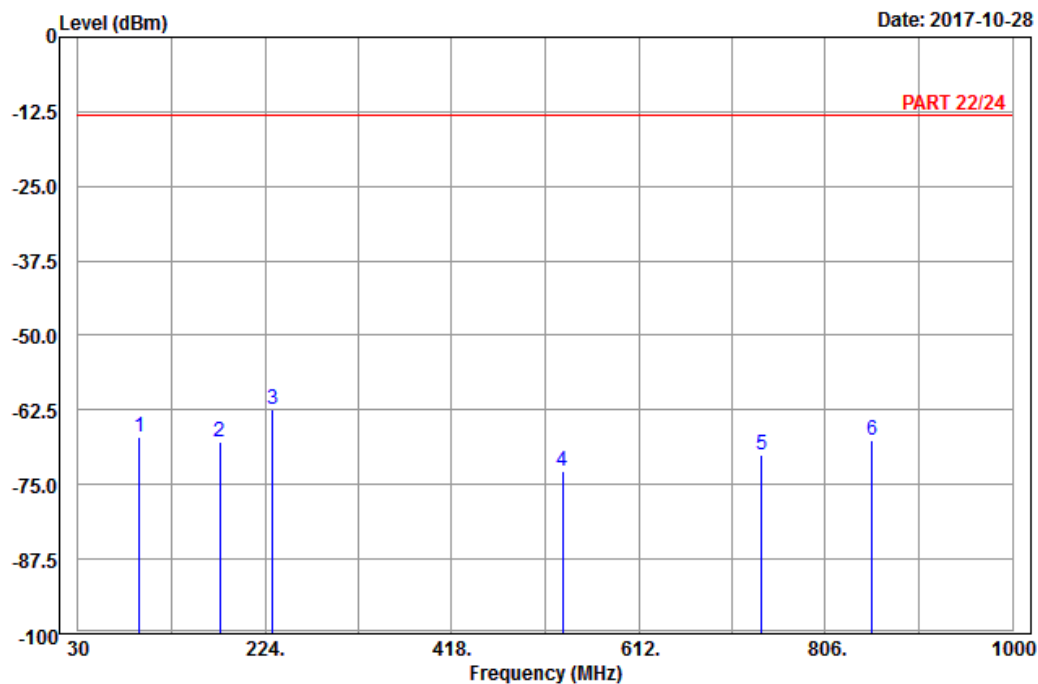
Channel Bandwidth: 20 MHz / QPSK



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Data: 5



Site : 966 chamber 1
Condition: PART 22/24 Horizontal
Remark : LTE_Band 25_Link_CH26365
Tested by: Karl Lee

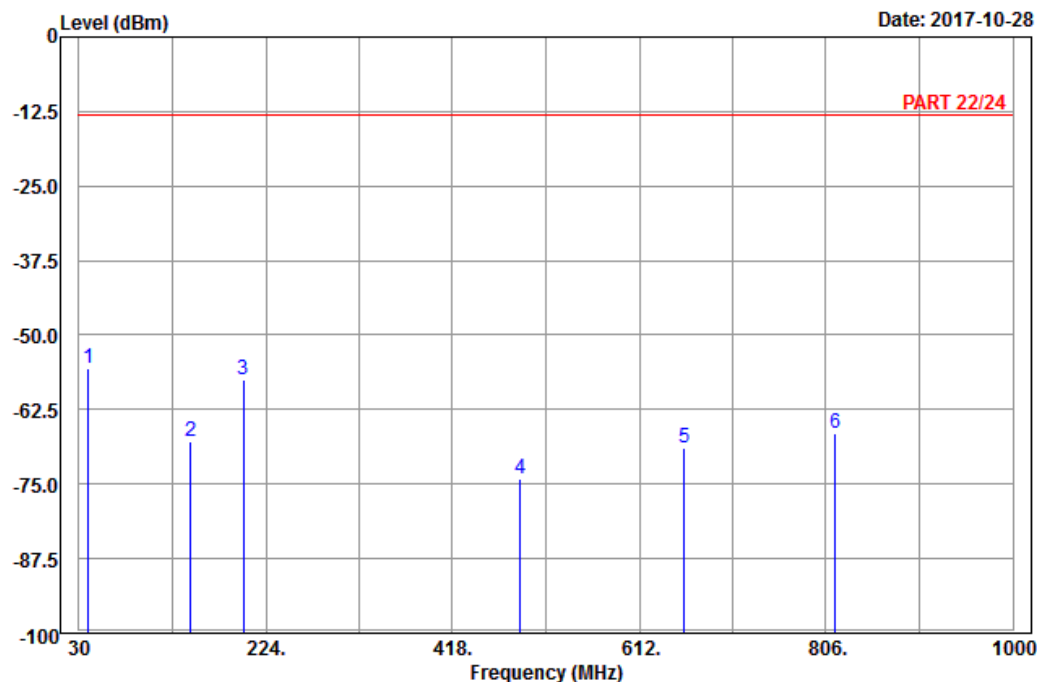
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1	93.99	-67.14	-56.69	-13.00	-54.14	-10.45	Peak
2	176.88	-67.86	-61.87	-13.00	-54.86	-5.99	Peak
3 pp	232.23	-62.36	-56.61	-13.00	-49.36	-5.75	Peak
4	533.10	-72.65	-69.78	-13.00	-59.65	-2.87	Peak
5	739.60	-70.03	-68.90	-13.00	-57.03	-1.13	Peak
6	854.40	-67.50	-69.09	-13.00	-54.50	1.59	Peak



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A D T

Data: 6



Site : 966 chamber 1
Condition: PART 22/24 Vertical
Remark : LTE_Band 25_Link_CH26365
Tested by: Karl Lee

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm	dBm	dBm	dB	dB	
1 pp	39.45	-55.54	-46.33	-13.00	-42.54	-9.21	Peak
2	146.37	-67.98	-60.12	-13.00	-54.98	-7.86	Peak
3	200.91	-57.46	-51.29	-13.00	-44.46	-6.17	Peak
4	488.30	-74.21	-69.29	-13.00	-61.21	-4.92	Peak
5	658.40	-69.06	-68.88	-13.00	-56.06	-0.18	Peak
6	815.90	-66.44	-68.27	-13.00	-53.44	1.83	Peak

5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information on the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

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

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Fax: 886-2-26051924

Hsin Chu EMC/RF/Telecom Lab

Tel: 886-3-6668565

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Email: service.adt@tw.bureauveritas.com

Web Site: www.bureauveritas-adt.com

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

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