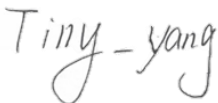



FCC RF Verification Test Report

For

Beijing InHand Networks Technology Co., Ltd

Test Standards:	<u>FCC 47 CFR Part 2, 22(H), 24(E), 27(L), 27(H)</u>
Product Description:	<u>Industrial cellular router</u>
Brand Name:	<u>InHand</u>
Model Name:	<u>IR611-S</u>
Additional Model:	<u>N/A</u>
FCC ID:	<u>2AANYIR611S</u>
Contains FCC ID:	<u>XPY1EIQ24NN</u>
Classification	<u>PCS Licensed Transmitter (PCB)</u>
Report No.:	<u>EC1909032RF02</u>
Tested Date:	<u>2019-10-09 to 2019-10-30</u>
Issued Date:	<u>2019-11-05</u>
Tested/ Prepared By:	<u></u> Tiny Yang/ Engineer
Approved By:	<u></u> Bacon Wu / RF Manager

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Note: The test results in this report apply exclusively to the tested model / sample. Without written approval of Hunan Ecloud Testing Technology Co., Ltd., the test report shall not be reproduced except in full.

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2019.11.05	Valid	Original Report

Note: This report was based on the test report No. MDE_UBLOX_1712_FCCd. The FCC ID 2AANYIR611S is the host device, and the host device contains FCC ID XPY1EIQ24NN.

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
4.2	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(2)	Effective Radiated Power (Band 5)	< 7 Watts	PASS	-
	§27.50(b)(10)	Effective Radiated Power (Band 12)	< 3 Watt	PASS	-
	§27.50(d)(4)	Effective Isotropic Radiated Power (Band 4)	< 1 Watts	PASS	-
	§24.232(c)	Effective Isotropic Radiated Power (Band 2)	< 2 Watts	PASS	-
4.3	§22.913(d) §24.232(d)	Peak-to-Average Ratio	< 13 dB	Note 1	-
4.4	§2.1049 §22.917(b) §24.238(b)	Occupied Bandwidth	Reporting Only	Note 1	-
4.5	§2.1051 §22.917(a) §24.238(a) §27.53(g)	Band Edge Measurement	< 43+10log ₁₀ (P[Watts])	Note 1	-
4.6	§2.1051 §22.917(a) §24.238(a) §27.53(g)	Conducted Emission	< 43+10log ₁₀ (P[Watts])	Note 1	-
4.7	§2.1055 §22.355	Frequency Stability for Temperature & Voltage	< 2.5 ppm	Note 1	-
	§2.1055 §24.235 §27.54		Within Authorized Band		

5.2	§2.1053 §22.917(a) §24.238(a) §27.53(g)	Field Strength of Spurious Radiation	$< 43+10\log_{10}(P[\text{Watts}])$	Note 2	Under limit 34.33 dB at 7620 MHz
Note 1: Refer to the test report No.MDE_UBLOX_1712_FCCd.					
Note 2: According to the test report No.MDE_UBLOX_1712_FCCd, only the worst case mode eFDD2 QPSK 1RB0 High channel was tested.					

1 Test Laboratory

1.1 Test facility

CNAS (accreditation number: L11138)

Hunan Ecloud Testing Technology Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (Designation number: CN1244 , Test Firm Registration Number: 793308)

Hunan Ecloud Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

ISED(CAB identifier: CN0012)

Hunan Ecloud Testing Technology Co., Ltd. has been listed on the Wireless Device Testing Laboratories list of innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements.

A2LA (Certificate Number: 4895.01)

Hunan Ecloud Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

2 General Description

2.1 Applicant

Beijing InHand Networks Technology Co., Ltd
 302, floor 3, building 103, lize zhongyuan, chaoyang district, Beijing

2.2 Manufacturer

Beijing InHand Networks Technology Co., Ltd
 302, floor 3, building 103, lize zhongyuan, chaoyang district, Beijing

2.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Industrial cellular router
Brand Name	InHand
Model Name	IR611-S
Additional Model	N/A
FCC ID	2AANYIR611S
Nominal Voltage	12 Vdc From Adapter Input AC120V/60Hz
Extreme Voltage	AC 108V and AC 132V
Extreme Temperature	-20°C and 70°C
Modulation Type	WIFI 802.11b : DSSS 802.11g/n : OFDM
	WCDMA BPSK
	LTE QPSK,16QAM
Operating Frequency	WIFI 2412MHz~2462MHz
	WCDMA 826.4 MHz ~ 846.6 MHz (FOR WCDMA 850) 1852.4 MHz ~ 1907.6 MHz (FOR WCDMA 1900)
	LTE LTE Band 2: 1805.7 MHz ~ 1909.3MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 12: 699.7 MHz ~ 715.3 MHz
HW Version	V3.4
SW Version	V2.3.0
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's

manual for more detailed description.

2. The EUT was investigated in three orthogonal orientations X/Y/Z on antennas. For Main antenna, it was determined that worst-case orientation Y (Landscape) orientation.
3. Antenna listed as below

Cable No.	Description	Connector	Length	Supplied by
1	WIFI Antenna	SMA	2.5m	Applicant
2	WIFI Antenna	SMA	2.5m	Applicant
3	4G Antenna	SMA-J	2.0m	Applicant
4	4G Antenna	SMA-J	2.0m	Applicant

2.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	WCDMA: Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz Band 4: 1710.7 MHz ~ 1754.3 MHz Band 5: 824.7 MHz ~ 848.3 MHz Band 12: 699.7 MHz ~ 715.3 MHz
Rx Frequency	WCDMA: Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz LTE Band 2: 1930.7 MHz ~ 1989.3 MHz Band 4: 2110.7 MHz ~ 2154.3 MHz Band 5: 869.7 MHz ~ 893.3 MHz Band 12: 729.7 MHz ~ 745.3 MHz
Maximum EIRP Power	WCDMA: Band V: 25.37 dBm Band II: 24.62 dBm LTE Band 2: 24.50 dBm Band 4: 24.71 dBm Band 5: 24.99 dBm Band 12: 27.10 dBm
Bandwidth	LTE Band 2 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 4 : 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz / 20MHz LTE Band 5 : 1.4MHz / 3MHz / 5MHz / 10MHz LTE Band 12 : 1.4MHz / 3MHz / 5MHz / 10MHz
Antenna Type	Sucker antenna
Antenna Gain (Main)	2.5 dBi
Antenna Gain (AUX -Only RX)	2.5 dBi
Type of Modulation	WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) QPSK/ 16QAM

2.5 Modification of EUT

No modifications are made to the EUT during all test items.

2.6 Applicable Standards

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

- ◆ 47 CFR Part 2, 22(H), 24(E), 27
- ◆ ANSI / TIA / EIA-603-E-2016
- ◆ ANSI C63.26-2015
- ◆ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

3 Test Configuration of Equipment Under Test

3.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated from 30 MHz to 10th harmonic.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	Radiated TCs	Conducted TCs
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

Test Items	Band	Bandwidth(MHz)						Modulation			RB#			Test Channel		
		1.4	3	5	10	15	20	QPSK		16QAM	1	Half	Full	L	M	H
Max. Output Power and E.R.P./E.I.R.P.	2	●	●	●	●	●	●	●		●	●	●	●	●	●	●
	4	●	●	●	●	●	●	●		●	●	●	●	●	●	●
	5	●	●	●	●	-	-	●		●	●	●	●	●	●	●
	12	●	●	●	●	-	-	●		●	●	●	●	●	●	●
Peak-to-Average Ratio	2	●	●	●	●	●	●	●		●	●	-	●	●	●	●
	4	●	●	●	●	●	●	●		●	●	-	●	●	●	●
	5	●	●	●	●	-	-	●		●	●	-	●	●	●	●
	12	●	●	●	●	-	-	●		●	●	-	●	●	●	●
26dB and 99% Bandwidth	2	●	●	●	●	●	●	●		●	-	-	●	●	●	●
	4	●	●	●	●	●	●	●		●	-	-	●	●	●	●
	5	●	●	●	●	-	-	●		●	-	-	●	●	●	●
	12	●	●	●	●	-	-	●		●	-	-	●	●	●	●
Conducted Band Edge	2	●	●	●	●	●	●	●		●	●	-	●	●	●	●
	4	●	●	●	●	●	●	●		●	●	-	●	●	●	●
	5	●	●	●	●	-	-	●		●	●	-	●	●	●	●
	12	●	●	●	●	-	-	●		●	●	-	●	●	●	●

Conducted Spurious Emission	2	•	•	•	•	•	•	•		•	•	-	-	•	•	•
	4	•	•	•	•	•	•	•		•	•	-	-	•	•	•
	5	•	•	•	•	-	-	•		•	•	-	-	•	•	•
	12	•	•	•	•	-	-	•		•	-	-	•	•	•	•
Test Items	Band	Bandwidth(MHz)						Modulation			RB#			Test Channel		
		1.4	3	5	10	15	20	QPSK		16QAM	1	Half	Full	L	M	H
Frequency Stability	2	•	•	•	•	•	•	•		•	•	-	-	•	•	•
	4	•	•	•	•	•	•	•		•	•	-	-	•	•	•
	5	•	•	•	•	-	-	•		•	•	-	-	•	•	•
	12	•	•	•	•	-	-	•		•	-	-	•	•	•	•
Radiated Spurious Emission	2	•	•	•	•	•	•	•		•	•	•	•	•	•	•
	4	•	•	•	•	•	•	•		•	•	•	•	•	•	•
	5	•	•	•	•	-	-	•		•	•	•	•	•	•	•
	12	•	•	•	•	-	-	•		•	•	•	•	•	•	•
Note	<p>1. The mark "•" means that this configuration is chosen for testing.</p> <p>2. The mark "-" means that this bandwidth is not supported.</p> <p>3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.</p>															

3.2 Frequency List of Low/Middle/High Channels

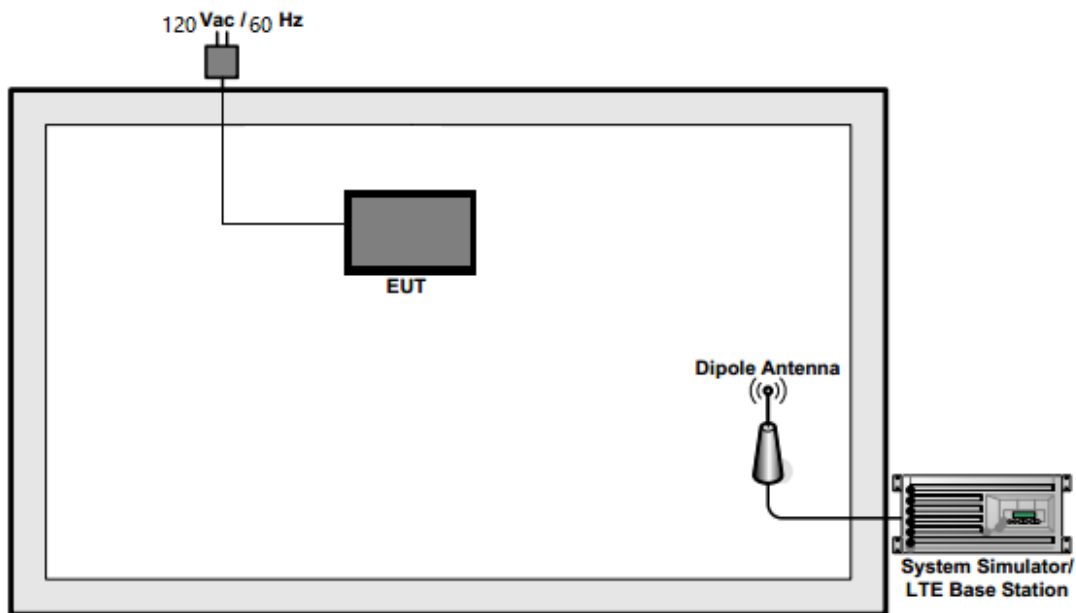
LTE Band 2 Channel	Bandwidth [MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	1.4	18607	1850.7	607	1930.7
	3	18615	1851.5	615	1931.5
	5	18625	1852.5	625	1932.5
	10	18650	1855	650	1935
	15	18675	1857.5	675	1937.5
	20	18700	1860	700	1940
Middle Range	1.4/3/5/10/15/20	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	19125	1902.5	1125	1982.5
	20	19100	1900	1100	1980

LTE Band 4 Channel	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
Middle Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

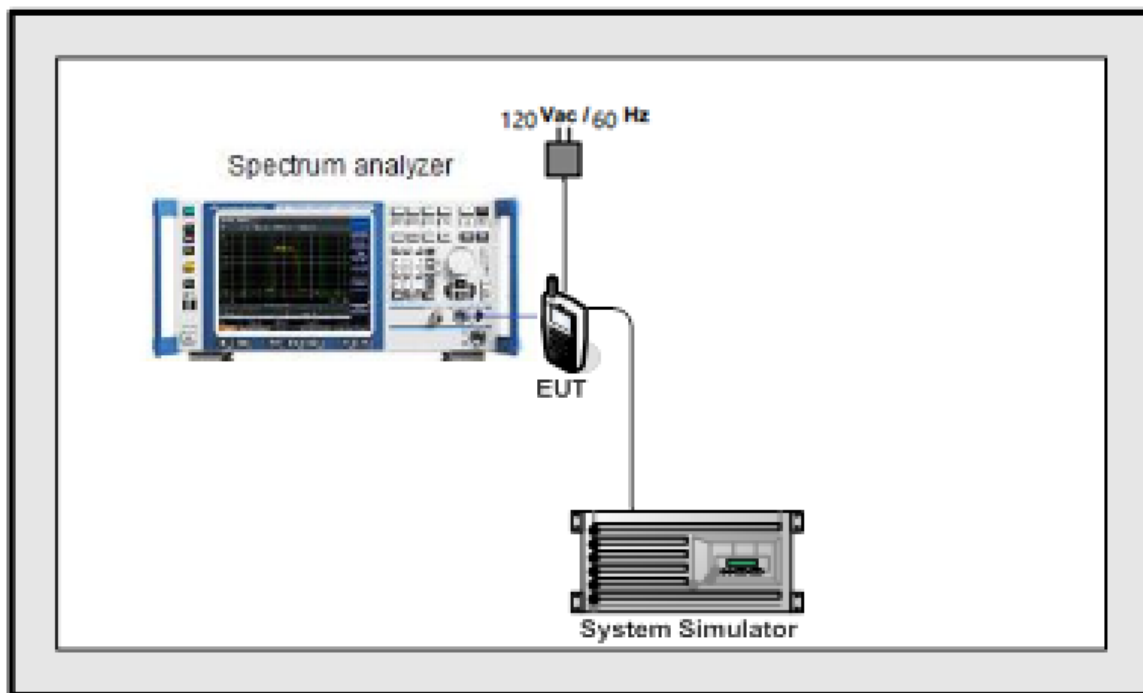
LTE Band 5 Channel	Bandwidth[MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	1.4	20407	824.7	2407	869.7
	3	20415	825.5	2415	870.5
	5	20425	826.5	2425	871.5
	10	20450	829	2450	874
Middle Range	1.4/3/5/10	20525	836.5	2525	881.5
High Range	1.4	20643	848.3	2643	893.3
	3	20635	847.5	2635	892.5
	5	20625	846.5	2625	891.5
	10	20600	844	2600	889

LTE Band 12 Channel	Bandwidth[MHz]	N _{UL}	Frequency of Uplink [MHz]	N _{DL}	Frequency of Downlink [MHz]
Low Range	1.4	23017	699.7	5017	729.7
	3	23025	700.5	5025	730.5
	5	23035	701.5	5035	731.5
	10	23060	704	5060	734
Middle Range	1.4/3/5/10	23095	707.5	5095	737.5
High Range	1.4	23173	715.3	5173	745.3
	3	23165	714.5	5165	744.5
	5	23155	713.5	5155	743.5
	10	23130	711	5130	741

3.3 Connection Diagram of Test System



Radiated Setup



Conducted Setup

3.4 Support Unit used in test configuration

Support equipment

Manufacturer	Description	Model	Serial Number	Certificate	Supplied by
Lenovo	PC	Xiaoxinchao5000	PF0QPQMH	DOC	Ecloud

Support adapter

Adapter	
Brand:	KUANTEN
Model:	KT10W120100CHD
Input:	AC 100-240V, 50/60Hz, 0.4A
Output:	DC 12V, 1A
Supplied by	Applicant

3.5 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 4.5 dB and a 10dB attenuator.

Example :

$$\begin{aligned}
 \text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)}. \\
 &= 4.5 + 10 = 14.5 \text{ (dB)}
 \end{aligned}$$

4 Conducted Test Result

4.1 Measuring Instruments

See list of measuring instruments of this test report.

4.2 Conducted Output Power and ERP/EIRP

4.2.1 Description of the Conducted Output Power and ERP/EIRP

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for WCDMA Band V

The EIRP of mobile transmitters must not exceed 2 Watts for WCDMA Band II

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, Where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

All LTE bands conducted average power is obtained from the CMW500 telecommunication test set.

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

FCC: §2.1046, §22.913, §24.232, §27.50

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications

27.50 (c) (10) the following power and antenna height requirements apply to stations transmitting in the 698–746 MHz band, the portable stations (hand-held devices) are limited to 3 watts ERP.

27.50 (b)(10) Portable stations (hand-held devices) transmitting in the 746–757 MHz, 758–763 MHz, 776–793 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

27.50 (d)(4) The following power and antenna height requirements apply to stations transmitting in the 1710–1755 MHz and 2110–2155 MHz bands: Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.

4.2.2 Test Procedures

UMTS REL99

The following summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Setting	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	β_c	Not Applicable
	β_d	Not Applicable
	β_{ec}	Not Applicable
	β_c/β_d	8/15
	β_{hs}	Not Applicable
	β_{ed}	Not Applicable

HSPA REL 6 (HSDPA & HSUPA)

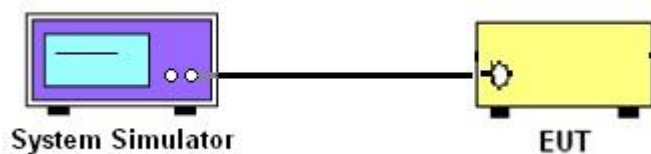
The following summary of these settings are illustrated below:

	Mode	Rel6	Rel6	Rel6	Rel6	Rel6	
	Subtest	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA	
		1	2	3	4	5	
WCDMA General Settings	Loopback Mode	Test Mode 1					
	Rel99 RMC	12.2kbps RMC					
	HSDPA FRC	H-Set1					
	HSUPA Test	HSUPA Loopback					
	Power Control Algorithm	Algorithm2					
	β_c	11/15	6/15	15/15	2/15	15/15	
	β_d	15/15	15/15	9/15	15/15	0	
	β_{ec}	209/225	12/15	30/15	2/15	5/15	
	β_c/β_d	11/15	6/15	15/9	2/15	15/1	
	β_{hs}	22/15	12/15	30/15	4/15	5/15	
	β_{ed}	1309/225	94/75	47/15	56/75	47/15	
	CM (dB)	1	3	2	3	1	
MPR (dB)	0	2	1	2	0		
HSDPA Specific Settings	DACK	8					
	DNAK	8					
	DCQI	8					
	Ack-Nack repetition factor	3					
	CQI Feedback (Table 5.2B.4)	4ms					
	CQI Repetition Factor (Table 5.2B.4)	2					
	$A_{hs} = \beta_{hs}/\beta_c$	30/15					
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7	
	DHARQ	0	0	0	0	0	
	AG Index	20	12	15	17	12	
	ETFCI	75	67	92	71	67	
	Associated Max UL Data Rate	242.1	174.9	482.8	205.8	308.9	
	Reference E_TFCIs	E-TFCI11				E-TFCI11	
		E-TFCI PO 4				E-TFCI PO 4	
		E-TFCI 67				E-TFCI 67	
E-TFCI PO 18					E-TFCI PO 18		
E-TFCI 71		E-TFCI 11		E-TFCI 71			
E-TFCI PO 23		E-TFCI PO 4		E-TFCI PO 23			
E-TFCI 75		E-TFCI 92		E-TFCI 75			
E-TFCI PO 26	E-TFCI PO18		E-TFCI PO 26				

LTE

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

4.2.3 Test Setup



4.2.4 Test Results

Refer to Appendix A of this test report.

4.3 Peak-to-Average Ratio

4.3.1 Description of the PAR Measurement

A peak to average ratio measurement is performed at the conducted port of the EUT. For WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

Power Complementary Cumulative Distribution Function (CCDF) curves provide a means for characterizing the power peaks of a digitally modulated signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level. Most contemporary measurement instrumentation include the capability to produce CCDF curves for an input signal provided that the instrument's resolution bandwidth can be set wide enough to accommodate the entire input signal bandwidth.

4.3.2 Limit

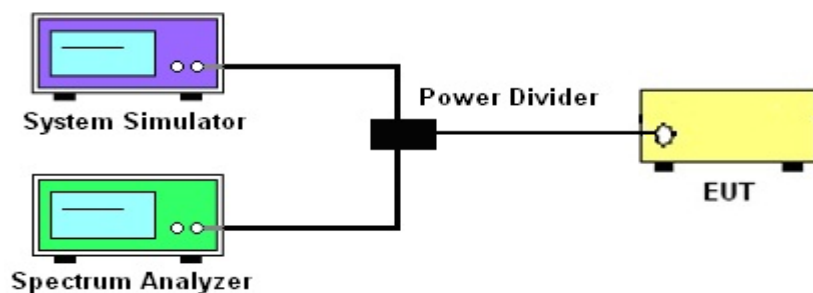
when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

4.3.3 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2.3.4 (CCDF)
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. Set EUT to transmit at maximum output power.
4. The signal analyzer's CCDF measurement profile is enabled
5. Frequency = carrier center frequency
6. Measurement BW > Emission bandwidth of signal
7. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
8. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer.

Record the maximum PAPR level associated with a probability of 0.1%.

4.3.4 Test Setup



4.3.5 Test Results

Refer to the test report MDE_UBLOX_1712_FCCd.

4.4 99% Occupied Bandwidth and 26dB Bandwidth Measurement

4.4.1 Description of 99% Occupied Bandwidth and 26dB Bandwidth Measurement

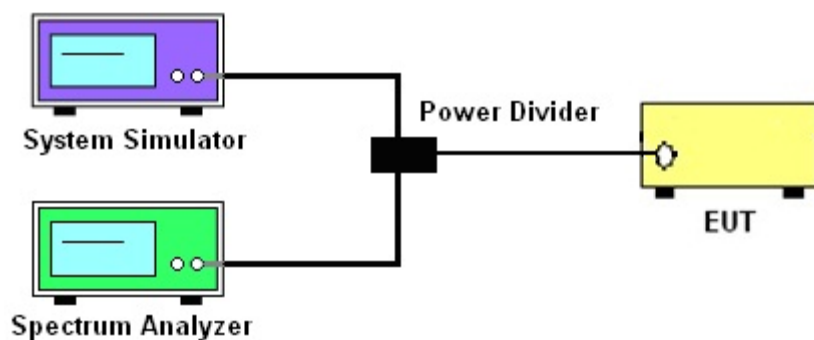
The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

4.4.2 Test Procedures

- 1.The testing follows Sub clause 5.4.3 of ANSI C63.26-2015
- 2.The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 3.The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth the bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 4.RBW = 1~5% of the expected OBW, VBW \geq 3 x RBW
- 5.Set the detection mode to peak, and the trace mode to max hold.
- 6.Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.(this is the reference value)
- 7.Determine the "-26 dB down amplitude" as equal to (Reference Value – X).
- 8.Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the "-X dB down amplitude" determined in step 6. If a marker is below this "-X dB down amplitude" value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
- 9.Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

4.4.3 Test Setup



4.4.4 Test Results

Refer to the test report MDE_UBLOX_1712_FCCd.

4.5 Conducted Band Edge

4.5.1 Description of Conducted Band Edge Measurement

The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel). In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of 100kHz or 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed. The EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.

4.5.2 Limit

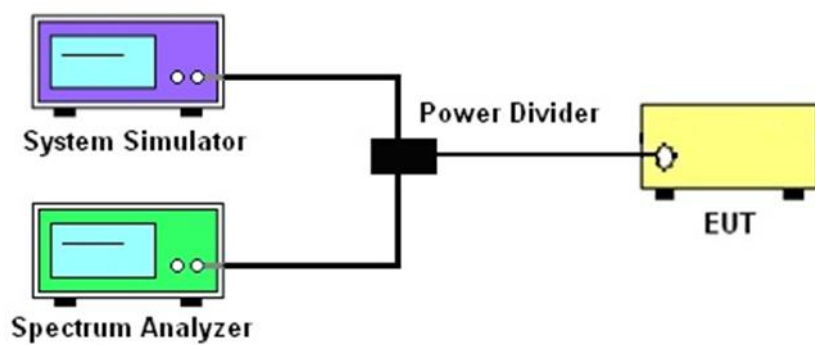
FCC: §22.917, §24.238, §27.53

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.

4.5.3 Test Procedures

1. The testing follows ANSI C63.26 Section 5.7.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. Start and stop frequency were set such that the band edge would be placed in the center of the plot
4. Span was set large enough so as to capture all out of band emissions near the band edge
5. RBW \geq 1% of the emission bandwidth
6. VBW \geq 3 x RBW
7. Detector = RMS
8. Number of sweep points \geq 2 x Span/RBW
9. Trace mode = trace average for continuous emissions, max hold for pulse emissions
10. Sweep time = auto couple
11. The trace was allowed to stabilize
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
13. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10\log(P)]$ (dB)
= $[30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
= -13dBm.

4.5.4 Test Setup



4.5.5 Test Results

Refer to the test report MDE_UBLOX_1712_FCCd.

4.6 Conducted Spurious Emission

4.6.1 Description of Conducted Spurious Emission Measurement

The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyzer, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel). 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. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

4.6.2 Limit

FCC: §22.917, §24.238, §27.53

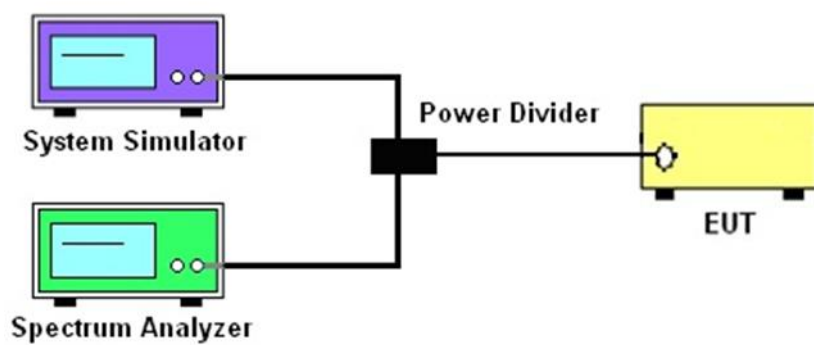
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

4.6.3 Test Procedures

1. The testing follows ANSI C63.26 section 5.7.
2. The EUT was connected to the spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by an RF cable and attenuator. The path loss was compensated to the results for each measurement.
4. The middle channel for the highest RF power within the transmitting frequency was measured.
5. The conducted spurious emission for the whole frequency range was taken.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
7. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)
= $P(W) - [43 + 10\log(P)]$ (dB)
= $[30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)
= -13dBm.

4.6.4 Test Setup



4.6.5 Test Results

Refer to the test report MDE_UBLOX_1712_FCCd.

4.7 Frequency Stability

4.7.1 Description of Frequency Stability Measurement

FCC §22.355

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

FCC §24.235 & §27.54

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

4.7.2 Test Condition

Temp. = -30° to $+50^{\circ}\text{C}$

Voltage = (85% - 115%)

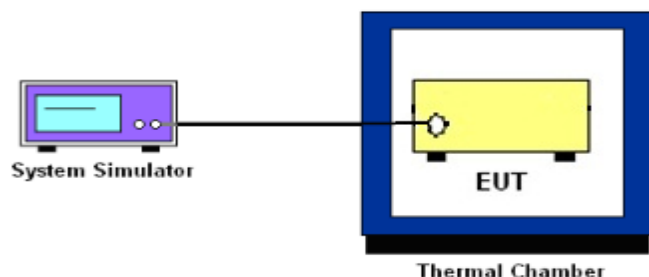
4.7.3 Test Procedures for Temperature Variation

1. The testing follows ANSI C63.26 section 5.6.4.
2. The EUT was set up in the thermal chamber and connected with the system simulator.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in 10°C steps up to 50°C . The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

4.7.4 Test Procedures for Voltage Variation

1. The testing follows ANSI C63.26 section 5.6.5.
2. The EUT was placed in a temperature chamber at $25\pm 5^{\circ}\text{C}$ and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

4.7.5 Test Setup



4.7.6 Test Results

Refer to the test report MDE_UBLOX_1712_FCCd.

5 Radiated Test Items

5.1 Measuring Instruments

See list of measuring instruments of this test report.

5.2 Field Strength of Spurious Radiation Measurement

5.2.1 Description of Field Strength of Spurious Radiated Measurement

FCC: §22.917, §24.238, §27.53

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.

5.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 5.8 and ANSI / TIA-603-E-2016 Section 2.2.12.

Below 1GHz test procedure as below:

- 1.The EUT was powered ON and placed on a 80cm high table in the chamber. The antenna of the transmitter was extended to its maximum length.
- 2.Make the measurement with the spectrum analyzer's RBW = 100KHz, VBW = 100KHz, taking record of maximum spurious emission.
- 3.The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
- 4.Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
- 5.The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
- 6.A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 2) is obtained for this set of conditions.
- 7.The output power into the substitution antenna was then measured.
- 8.Steps 5) and 6) were repeated with both antennas polarized.
- 9.Calculate power in dBm by the following formula:

$$\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)} - 2.15$$

Where:

Pd is the dipole equivalent power, Pg is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to Pg [dBm] – cable loss [dB]. The calculated

Pd levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of $43 + 10\log_{10}(\text{Power [Watts]})$.

Above 1GHz test procedure as below:

1. The EUT was powered ON and placed on a 150cm high table in the chamber. The antenna of the transmitter was extended to its maximum length.
2. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
3. The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
4. Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
5. The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
6. A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 2) is obtained for this set of conditions.
7. The output power into the substitution antenna was then measured.
8. Steps 5) and 6) were repeated with both antennas polarized.
9. Calculate power in dBm by the following formula:

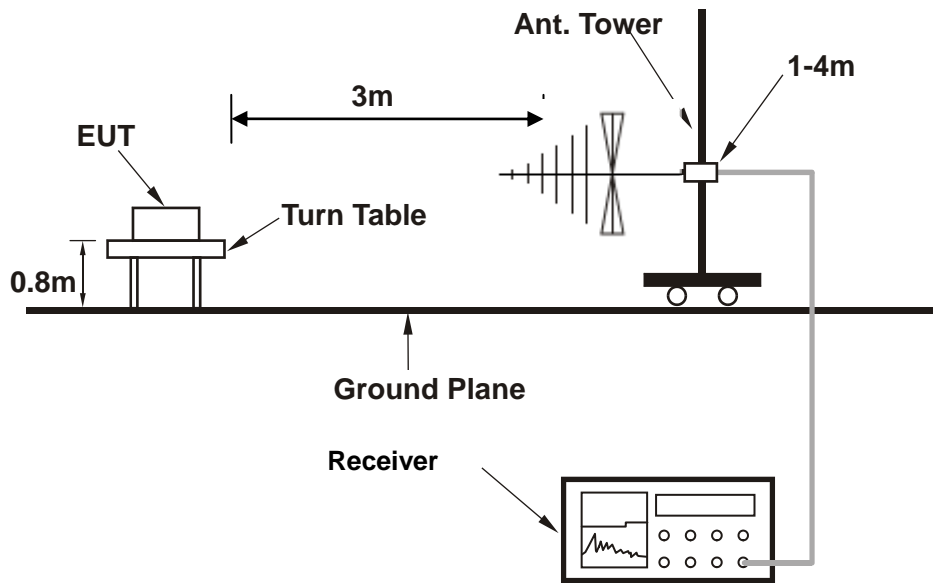
$$\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$

Where:

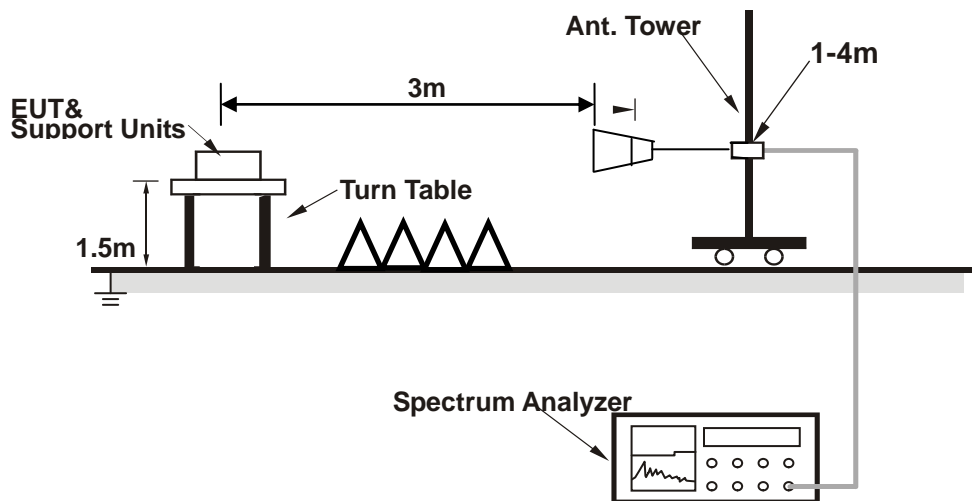
Pd is the dipole equivalent power, Pg is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to $\text{Pg [dBm]} - \text{cable loss [dB]}$. The calculated Pd levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of $43 + 10\log_{10}(\text{Power [Watts]})$.

5.2.3 Test Setup

For radiated test from 30MHz to 1GHz



For radiated test above 1GHz



5.2.4 Test Results

Refer to Appendix B of this test report.

6 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Due Date	Remark
Spectrum Analyzer	Keysight	N9010A	MY56070788	2019-01-23	2020-01-22	Conducted
Base Station	R&S	CMW500	164998	2019-01-23	2020-01-22	Conducted
Thermal Chamber	Sanmtest	SMC-408-CD	2435	2019/05/09	2020/05/08	Conducted
Signal Generator (Interferer)	Keysight	N5182B	MY56200384	2019-05-19	2020-05-18	Conducted
Signal Generator (Blocker)	Keysight	N5171B	MY56200661	2019-01-23	2020-01-22	Conducted

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV 40	101433	2019-02-18	2020-02-17	Radiation
Amplifier	Sonoma	310	363917	2019-01-22	2020-01-21	Radiation
Amplifier	Schwarzbeck	BBV 9718	327	2019-01-22	2020-01-21	Radiation
Amplifier	Narda	TTA1840-35-HG	2034380	2019/05/15	2020/05/14	Radiation
Loop Antenna	Schwarzbeck	FMZB 1519 B	1519B-051	2017/3/3	2020/3/2	Radiation
Broadband Antenna	Schwarzbeck	VULB 9168	9168-757	2017/3/3	2020/3/2	Radiation
Horn Antenna	Schwarzbeck	BBHA 9120 D	1677	2017/3/3	2020/3/2	Radiation
Horn Antenna	COM-POWER	AH-1840	101117	2018-06-20	2021-06-19	Radiation
Signal Generator (Blocker)	R&S	SMB100A	180717	2019-01-23	2020-01-22	Radiation
Test Software	Audix	E3	6.111221a	N/A	N/A	Radiation

N/A: No Calibration Required

7 Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0 dB
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Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9dB
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Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

Effective Radiated Power

Band	Channel	Power(dBm)	EIRP/ERP(dBm)	Limit(dBm)	Verdict
Band II	9262	22.12	24.62	33	PASS
Band II	9400	21.79	24.29	33	PASS
Band II	9538	21.55	24.05	33	PASS
Band V	4132	22.70	23.06	38.5	PASS
Band V	4182	22.53	22.89	38.5	PASS
Band V	4233	22.87	23.23	38.5	PASS

Band	Channel	SubTest	Power(dBm)	EIRP/ERP(dBm)	Limit(dBm)	Verdict
Band II	9262	HSDPA_Sub1	21.93	24.43	33	PASS
Band II	9262	HSDPA_Sub2	21.91	24.41	33	PASS
Band II	9262	HSDPA_Sub3	21.33	23.83	33	PASS
Band II	9262	HSDPA_Sub4	21.10	23.6	33	PASS
Band II	9400	HSDPA_Sub1	21.56	24.06	33	PASS
Band II	9400	HSDPA_Sub2	21.53	24.03	33	PASS
Band II	9400	HSDPA_Sub3	21.48	23.98	33	PASS
Band II	9400	HSDPA_Sub4	21.34	23.84	33	PASS
Band II	9538	HSDPA_Sub1	21.25	23.75	33	PASS
Band II	9538	HSDPA_Sub2	21.25	23.75	33	PASS
Band II	9538	HSDPA_Sub3	21.21	23.71	33	PASS
Band II	9538	HSDPA_Sub4	21.18	23.68	33	PASS
Band V	4132	HSDPA_Sub1	22.76	23.12	38.5	PASS
Band V	4132	HSDPA_Sub2	22.74	23.1	38.5	PASS
Band V	4132	HSDPA_Sub3	22.21	22.57	38.5	PASS
Band V	4132	HSDPA_Sub4	21.94	22.3	38.5	PASS
Band V	4182	HSDPA_Sub1	22.50	22.86	38.5	PASS
Band V	4182	HSDPA_Sub2	22.52	22.88	38.5	PASS
Band V	4182	HSDPA_Sub3	22.48	22.84	38.5	PASS
Band V	4182	HSDPA_Sub4	22.43	22.79	38.5	PASS

Band V	4233	HSDPA_Sub1	22.61	22.97	38.5	PASS
Band V	4233	HSDPA_Sub2	22.61	22.97	38.5	PASS
Band V	4233	HSDPA_Sub3	22.62	22.98	38.5	PASS
Band V	4233	HSDPA_Sub4	22.56	22.92	38.5	PASS

Band	Channel	SubTest	Power(dBm)	EIRP/ERP(dBm)	Limit(dBm)	Verdict
Band II	9262	HSUPA_Sub1	21.48	23.98	33	PASS
Band II	9262	HSUPA_Sub2	20.24	22.74	33	PASS
Band II	9262	HSUPA_Sub3	21.05	23.55	33	PASS
Band II	9262	HSUPA_Sub4	21.15	23.65	33	PASS
Band II	9262	HSUPA_Sub5	20.89	23.39	33	PASS
Band II	9400	HSUPA_Sub1	21.75	24.25	33	PASS
Band II	9400	HSUPA_Sub2	21.19	23.69	33	PASS
Band II	9400	HSUPA_Sub3	21.31	23.81	33	PASS
Band II	9400	HSUPA_Sub4	21.06	23.56	33	PASS
Band II	9400	HSUPA_Sub5	21.94	24.44	33	PASS
Band II	9538	HSUPA_Sub1	20.75	23.25	33	PASS
Band II	9538	HSUPA_Sub2	21.34	23.84	33	PASS
Band II	9538	HSUPA_Sub3	21.66	24.16	33	PASS
Band II	9538	HSUPA_Sub4	21.17	23.67	33	PASS
Band II	9538	HSUPA_Sub5	20.69	23.19	33	PASS
Band V	4132	HSUPA_Sub1	22.19	22.55	38.5	PASS
Band V	4132	HSUPA_Sub2	21.11	21.47	38.5	PASS
Band V	4132	HSUPA_Sub3	21.82	22.18	38.5	PASS
Band V	4132	HSUPA_Sub4	21.74	22.1	38.5	PASS
Band V	4132	HSUPA_Sub5	22.06	22.42	38.5	PASS
Band V	4182	HSUPA_Sub1	22.31	22.67	38.5	PASS
Band V	4182	HSUPA_Sub2	21.27	21.63	38.5	PASS
Band V	4182	HSUPA_Sub3	21.82	22.18	38.5	PASS
Band V	4182	HSUPA_Sub4	21.39	21.75	38.5	PASS
Band V	4182	HSUPA_Sub5	22.15	22.51	38.5	PASS
Band V	4233	HSUPA_Sub1	22.67	23.03	38.5	PASS
Band V	4233	HSUPA_Sub2	21.85	22.21	38.5	PASS
Band V	4233	HSUPA_Sub3	21.75	22.11	38.5	PASS
Band V	4233	HSUPA_Sub4	21.39	21.75	38.5	PASS
Band V	4233	HSUPA_Sub5	22.08	22.44	38.5	PASS

Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dBm)	EIRP/ERP (dBm)	Verdict
Band2	1.4MHz	QPSK	18607	1RB#0	21.53	24.03	PASS
Band2	1.4MHz	QPSK	18607	1RB#2	21.47	23.97	PASS
Band2	1.4MHz	QPSK	18607	1RB#5	21.38	23.88	PASS
Band2	1.4MHz	QPSK	18607	3RB#0	21.44	23.94	PASS
Band2	1.4MHz	QPSK	18607	3RB#1	21.46	23.96	PASS
Band2	1.4MHz	QPSK	18607	3RB#3	21.44	23.94	PASS
Band2	1.4MHz	QPSK	18607	6RB#0	20.47	22.97	PASS
Band2	1.4MHz	QPSK	18900	1RB#5	21.26	23.76	PASS
Band2	1.4MHz	QPSK	18900	1RB#2	21.30	23.8	PASS
Band2	1.4MHz	QPSK	18900	1RB#0	21.32	23.82	PASS
Band2	1.4MHz	QPSK	18900	3RB#1	21.21	23.71	PASS
Band2	1.4MHz	QPSK	18900	3RB#3	21.27	23.77	PASS
Band2	1.4MHz	QPSK	18900	3RB#0	21.27	23.77	PASS
Band2	1.4MHz	QPSK	18900	6RB#0	20.32	22.82	PASS
Band2	1.4MHz	QPSK	19193	1RB#5	20.98	23.48	PASS
Band2	1.4MHz	QPSK	19193	1RB#0	21.06	23.56	PASS
Band2	1.4MHz	QPSK	19193	1RB#2	21.03	23.53	PASS
Band2	1.4MHz	QPSK	19193	3RB#1	21.04	23.54	PASS
Band2	1.4MHz	QPSK	19193	3RB#3	21.06	23.56	PASS
Band2	1.4MHz	QPSK	19193	3RB#0	21.09	23.59	PASS
Band2	1.4MHz	QPSK	19193	6RB#0	20.64	23.14	PASS
Band2	1.4MHz	16QAM	18607	1RB#2	20.72	23.22	PASS
Band2	1.4MHz	16QAM	18607	1RB#0	20.83	23.33	PASS
Band2	1.4MHz	16QAM	18607	1RB#5	20.73	23.23	PASS
Band2	1.4MHz	16QAM	18607	3RB#0	20.37	22.87	PASS
Band2	1.4MHz	16QAM	18607	3RB#1	20.33	22.83	PASS
Band2	1.4MHz	16QAM	18607	3RB#3	20.89	23.39	PASS
Band2	1.4MHz	16QAM	18607	6RB#0	20.57	23.07	PASS
Band2	1.4MHz	16QAM	18900	1RB#5	20.38	22.88	PASS
Band2	1.4MHz	16QAM	18900	1RB#2	20.35	22.85	PASS
Band2	1.4MHz	16QAM	18900	1RB#0	20.45	22.95	PASS
Band2	1.4MHz	16QAM	18900	3RB#0	20.50	23	PASS
Band2	1.4MHz	16QAM	18900	3RB#1	20.71	23.21	PASS

Band2	1.4MHz	16QAM	18900	3RB#3	20.72	23.22	PASS
Band2	1.4MHz	16QAM	18900	6RB#0	20.59	23.09	PASS
Band2	1.4MHz	16QAM	19193	1RB#5	20.69	23.19	PASS
Band2	1.4MHz	16QAM	19193	1RB#0	20.34	22.84	PASS
Band2	1.4MHz	16QAM	19193	1RB#2	20.49	22.99	PASS
Band2	1.4MHz	16QAM	19193	3RB#0	20.69	23.19	PASS
Band2	1.4MHz	16QAM	19193	3RB#1	20.72	23.22	PASS
Band2	1.4MHz	16QAM	19193	3RB#3	20.75	23.25	PASS
Band2	1.4MHz	16QAM	19193	6RB#0	20.68	23.18	PASS
Band2	3MHz	QPSK	18615	1RB#0	21.46	23.96	PASS
Band2	3MHz	QPSK	18615	1RB#14	21.33	23.83	PASS
Band2	3MHz	QPSK	18615	1RB#8	21.38	23.88	PASS
Band2	3MHz	QPSK	18615	8RB#4	20.41	22.91	PASS
Band2	3MHz	QPSK	18615	8RB#7	20.34	22.84	PASS
Band2	3MHz	QPSK	18615	8RB#0	20.43	22.93	PASS
Band2	3MHz	QPSK	18615	15RB#0	20.40	22.9	PASS
Band2	3MHz	QPSK	18900	1RB#14	21.15	23.65	PASS
Band2	3MHz	QPSK	18900	1RB#8	21.30	23.8	PASS
Band2	3MHz	QPSK	18900	1RB#0	21.33	23.83	PASS
Band2	3MHz	QPSK	18900	8RB#7	20.33	22.83	PASS
Band2	3MHz	QPSK	18900	8RB#4	20.34	22.84	PASS
Band2	3MHz	QPSK	18900	8RB#0	20.35	22.85	PASS
Band2	3MHz	QPSK	18900	15RB#0	20.33	22.83	PASS
Band2	3MHz	QPSK	19185	1RB#14	20.92	23.42	PASS
Band2	3MHz	QPSK	19185	1RB#8	21.02	23.52	PASS
Band2	3MHz	QPSK	19185	1RB#0	21.04	23.54	PASS
Band2	3MHz	QPSK	19185	8RB#4	20.89	23.39	PASS
Band2	3MHz	QPSK	19185	8RB#0	20.74	23.24	PASS
Band2	3MHz	QPSK	19185	8RB#7	20.73	23.23	PASS
Band2	3MHz	QPSK	19185	15RB#0	20.86	23.36	PASS
Band2	3MHz	16QAM	18615	1RB#8	20.51	23.01	PASS
Band2	3MHz	16QAM	18615	1RB#14	20.43	22.93	PASS
Band2	3MHz	16QAM	18615	1RB#0	20.61	23.11	PASS
Band2	3MHz	16QAM	18615	8RB#0	20.54	23.04	PASS
Band2	3MHz	16QAM	18615	8RB#4	20.52	23.02	PASS
Band2	3MHz	16QAM	18615	8RB#7	20.43	22.93	PASS
Band2	3MHz	16QAM	18615	15RB#0	20.67	23.17	PASS

Band2	3MHz	16QAM	18900	1RB#14	20.89	23.39	PASS
Band2	3MHz	16QAM	18900	1RB#8	20.97	23.47	PASS
Band2	3MHz	16QAM	18900	1RB#0	20.62	23.12	PASS
Band2	3MHz	16QAM	18900	8RB#7	20.72	23.22	PASS
Band2	3MHz	16QAM	18900	8RB#0	20.86	23.36	PASS
Band2	3MHz	16QAM	18900	8RB#4	20.68	23.18	PASS
Band2	3MHz	16QAM	18900	15RB#0	20.55	23.05	PASS
Band2	3MHz	16QAM	19185	1RB#8	20.61	23.11	PASS
Band2	3MHz	16QAM	19185	1RB#14	20.78	23.28	PASS
Band2	3MHz	16QAM	19185	1RB#0	20.59	23.09	PASS
Band2	3MHz	16QAM	19185	8RB#0	20.76	23.26	PASS
Band2	3MHz	16QAM	19185	8RB#4	20.79	23.29	PASS
Band2	3MHz	16QAM	19185	8RB#7	20.59	23.09	PASS
Band2	3MHz	16QAM	19185	15RB#0	20.83	23.33	PASS
Band2	5MHz	QPSK	18625	1RB#0	21.48	23.98	PASS
Band2	5MHz	QPSK	18625	1RB#24	21.35	23.85	PASS
Band2	5MHz	QPSK	18625	1RB#12	21.38	23.88	PASS
Band2	5MHz	QPSK	18625	12RB#0	20.52	23.02	PASS
Band2	5MHz	QPSK	18625	12RB#6	20.51	23.01	PASS
Band2	5MHz	QPSK	18625	12RB#13	20.41	22.91	PASS
Band2	5MHz	QPSK	18625	25RB#0	20.42	22.92	PASS
Band2	5MHz	QPSK	18900	1RB#24	21.25	23.75	PASS
Band2	5MHz	QPSK	18900	1RB#12	21.41	23.91	PASS
Band2	5MHz	QPSK	18900	1RB#0	21.54	24.04	PASS
Band2	5MHz	QPSK	18900	12RB#0	20.37	22.87	PASS
Band2	5MHz	QPSK	18900	12RB#6	20.38	22.88	PASS
Band2	5MHz	QPSK	18900	12RB#13	20.63	23.13	PASS
Band2	5MHz	QPSK	18900	25RB#0	20.33	22.83	PASS
Band2	5MHz	QPSK	19175	1RB#24	21.08	23.58	PASS
Band2	5MHz	QPSK	19175	1RB#0	21.39	23.89	PASS
Band2	5MHz	QPSK	19175	1RB#12	21.22	23.72	PASS
Band2	5MHz	QPSK	19175	12RB#0	20.32	22.82	PASS
Band2	5MHz	QPSK	19175	12RB#13	20.57	23.07	PASS
Band2	5MHz	QPSK	19175	12RB#6	20.64	23.14	PASS
Band2	5MHz	QPSK	19175	25RB#0	20.66	23.16	PASS
Band2	5MHz	16QAM	18625	1RB#12	20.61	23.11	PASS
Band2	5MHz	16QAM	18625	1RB#24	20.57	23.07	PASS

Band2	5MHz	16QAM	18625	1RB#0	20.71	23.21	PASS
Band2	5MHz	16QAM	18625	12RB#6	20.49	22.99	PASS
Band2	5MHz	16QAM	18625	12RB#0	20.53	23.03	PASS
Band2	5MHz	16QAM	18625	12RB#13	20.48	22.98	PASS
Band2	5MHz	16QAM	18625	25RB#0	20.42	22.92	PASS
Band2	5MHz	16QAM	18900	1RB#12	20.81	23.31	PASS
Band2	5MHz	16QAM	18900	1RB#0	20.59	23.09	PASS
Band2	5MHz	16QAM	18900	1RB#24	20.76	23.26	PASS
Band2	5MHz	16QAM	18900	12RB#6	20.49	22.99	PASS
Band2	5MHz	16QAM	18900	12RB#0	20.49	22.99	PASS
Band2	5MHz	16QAM	18900	12RB#13	20.48	22.98	PASS
Band2	5MHz	16QAM	18900	25RB#0	20.49	22.99	PASS
Band2	5MHz	16QAM	19175	1RB#12	20.72	23.22	PASS
Band2	5MHz	16QAM	19175	1RB#0	20.36	22.86	PASS
Band2	5MHz	16QAM	19175	1RB#24	20.49	22.99	PASS
Band2	5MHz	16QAM	19175	12RB#13	20.80	23.3	PASS
Band2	5MHz	16QAM	19175	12RB#6	20.71	23.21	PASS
Band2	5MHz	16QAM	19175	12RB#0	20.79	23.29	PASS
Band2	5MHz	16QAM	19175	25RB#0	20.59	23.09	PASS
Band2	10MHz	QPSK	18650	1RB#0	21.47	23.97	PASS
Band2	10MHz	QPSK	18650	1RB#24	21.14	23.64	PASS
Band2	10MHz	QPSK	18650	1RB#49	21.21	23.71	PASS
Band2	10MHz	QPSK	18650	25RB#25	20.48	22.98	PASS
Band2	10MHz	QPSK	18650	25RB#0	20.44	22.94	PASS
Band2	10MHz	QPSK	18650	25RB#12	20.51	23.01	PASS
Band2	10MHz	QPSK	18650	50RB#0	20.46	22.96	PASS
Band2	10MHz	QPSK	18900	1RB#24	21.09	23.59	PASS
Band2	10MHz	QPSK	18900	1RB#0	21.61	24.11	PASS
Band2	10MHz	QPSK	18900	1RB#49	21.09	23.59	PASS
Band2	10MHz	QPSK	18900	25RB#25	20.73	23.23	PASS
Band2	10MHz	QPSK	18900	25RB#0	20.53	23.03	PASS
Band2	10MHz	QPSK	18900	25RB#12	20.54	23.04	PASS
Band2	10MHz	QPSK	18900	50RB#0	20.43	22.93	PASS
Band2	10MHz	QPSK	19150	1RB#49	20.79	23.29	PASS
Band2	10MHz	QPSK	19150	1RB#0	21.48	23.98	PASS
Band2	10MHz	QPSK	19150	1RB#24	21.19	23.69	PASS
Band2	10MHz	QPSK	19150	25RB#25	20.93	23.43	PASS

Band2	10MHz	QPSK	19150	25RB#12	20.89	23.39	PASS
Band2	10MHz	QPSK	19150	25RB#0	20.79	23.29	PASS
Band2	10MHz	QPSK	19150	50RB#0	20.65	23.15	PASS
Band2	10MHz	16QAM	18650	1RB#49	20.53	23.03	PASS
Band2	10MHz	16QAM	18650	1RB#24	20.54	23.04	PASS
Band2	10MHz	16QAM	18650	1RB#0	20.82	23.32	PASS
Band2	10MHz	16QAM	18650	25RB#25	20.47	22.97	PASS
Band2	10MHz	16QAM	18650	25RB#12	20.52	23.02	PASS
Band2	10MHz	16QAM	18650	25RB#0	20.49	22.99	PASS
Band2	10MHz	16QAM	18650	50RB#0	20.45	22.95	PASS
Band2	10MHz	16QAM	18900	1RB#24	20.78	23.28	PASS
Band2	10MHz	16QAM	18900	1RB#49	20.59	23.09	PASS
Band2	10MHz	16QAM	18900	1RB#0	20.62	23.12	PASS
Band2	10MHz	16QAM	18900	25RB#25	20.46	22.96	PASS
Band2	10MHz	16QAM	18900	25RB#12	20.57	23.07	PASS
Band2	10MHz	16QAM	18900	25RB#0	20.52	23.02	PASS
Band2	10MHz	16QAM	18900	50RB#0	20.67	23.17	PASS
Band2	10MHz	16QAM	19150	1RB#0	20.59	23.09	PASS
Band2	10MHz	16QAM	19150	1RB#24	20.82	23.32	PASS
Band2	10MHz	16QAM	19150	1RB#49	20.93	23.43	PASS
Band2	10MHz	16QAM	19150	25RB#25	20.49	22.99	PASS
Band2	10MHz	16QAM	19150	25RB#0	20.42	22.92	PASS
Band2	10MHz	16QAM	19150	25RB#12	20.47	22.97	PASS
Band2	10MHz	16QAM	19150	50RB#0	20.55	23.05	PASS
Band2	15MHz	QPSK	18675	1RB#74	21.55	24.05	PASS
Band2	15MHz	QPSK	18675	1RB#38	21.53	24.03	PASS
Band2	15MHz	QPSK	18675	1RB#0	21.94	24.44	PASS
Band2	15MHz	QPSK	18675	38RB#37	20.86	23.36	PASS
Band2	15MHz	QPSK	18675	38RB#0	21.27	23.77	PASS
Band2	15MHz	QPSK	18675	38RB#18	20.82	23.32	PASS
Band2	15MHz	QPSK	18675	75RB#0	20.73	23.23	PASS
Band2	15MHz	QPSK	18900	1RB#0	22.00	24.5	PASS
Band2	15MHz	QPSK	18900	1RB#38	21.42	23.92	PASS
Band2	15MHz	QPSK	18900	1RB#74	21.37	23.87	PASS
Band2	15MHz	QPSK	18900	38RB#18	20.44	22.94	PASS
Band2	15MHz	QPSK	18900	38RB#0	20.92	23.42	PASS
Band2	15MHz	QPSK	18900	38RB#37	20.40	22.9	PASS

Band2	15MHz	QPSK	18900	75RB#0	20.64	23.14	PASS
Band2	15MHz	QPSK	19125	1RB#38	21.45	23.95	PASS
Band2	15MHz	QPSK	19125	1RB#0	21.94	24.44	PASS
Band2	15MHz	QPSK	19125	1RB#74	21.26	23.76	PASS
Band2	15MHz	QPSK	19125	38RB#37	20.51	23.01	PASS
Band2	15MHz	QPSK	19125	38RB#18	20.55	23.05	PASS
Band2	15MHz	QPSK	19125	38RB#0	21.08	23.58	PASS
Band2	15MHz	QPSK	19125	75RB#0	20.57	23.07	PASS
Band2	15MHz	16QAM	18675	1RB#74	20.86	23.36	PASS
Band2	15MHz	16QAM	18675	1RB#38	20.76	23.26	PASS
Band2	15MHz	16QAM	18675	1RB#0	21.11	23.61	PASS
Band2	15MHz	16QAM	18675	38RB#37	20.82	23.32	PASS
Band2	15MHz	16QAM	18675	38RB#18	20.85	23.35	PASS
Band2	15MHz	16QAM	18675	38RB#0	21.31	23.81	PASS
Band2	15MHz	16QAM	18675	75RB#0	20.76	23.26	PASS
Band2	15MHz	16QAM	18900	1RB#74	20.42	22.92	PASS
Band2	15MHz	16QAM	18900	1RB#38	20.43	22.93	PASS
Band2	15MHz	16QAM	18900	1RB#0	20.92	23.42	PASS
Band2	15MHz	16QAM	18900	38RB#0	20.94	23.44	PASS
Band2	15MHz	16QAM	18900	38RB#18	20.40	22.9	PASS
Band2	15MHz	16QAM	18900	38RB#37	20.41	22.91	PASS
Band2	15MHz	16QAM	18900	75RB#0	20.72	23.22	PASS
Band2	15MHz	16QAM	19125	1RB#38	20.59	23.09	PASS
Band2	15MHz	16QAM	19125	1RB#74	20.50	23	PASS
Band2	15MHz	16QAM	19125	1RB#0	21.06	23.56	PASS
Band2	15MHz	16QAM	19125	38RB#18	20.56	23.06	PASS
Band2	15MHz	16QAM	19125	38RB#37	20.53	23.03	PASS
Band2	15MHz	16QAM	19125	38RB#0	21.06	23.56	PASS
Band2	15MHz	16QAM	19125	75RB#0	20.47	22.97	PASS
Band2	20MHz	QPSK	18700	1RB#99	21.30	23.8	PASS
Band2	20MHz	QPSK	18700	1RB#49	21.37	23.87	PASS
Band2	20MHz	QPSK	18700	1RB#0	21.79	24.29	PASS
Band2	20MHz	QPSK	18700	50RB#50	20.47	22.97	PASS
Band2	20MHz	QPSK	18700	50RB#25	20.67	23.17	PASS
Band2	20MHz	QPSK	18700	50RB#0	20.69	23.19	PASS
Band2	20MHz	QPSK	18700	100RB#0	20.63	23.13	PASS
Band2	20MHz	QPSK	18900	1RB#0	21.72	24.22	PASS

Band2	20MHz	QPSK	18900	1RB#49	21.17	23.67	PASS
Band2	20MHz	QPSK	18900	1RB#99	20.90	23.4	PASS
Band2	20MHz	QPSK	18900	50RB#25	20.65	23.15	PASS
Band2	20MHz	QPSK	18900	50RB#0	20.66	23.16	PASS
Band2	20MHz	QPSK	18900	50RB#50	20.31	22.81	PASS
Band2	20MHz	QPSK	18900	100RB#0	20.52	23.02	PASS
Band2	20MHz	QPSK	19100	1RB#99	20.72	23.22	PASS
Band2	20MHz	QPSK	19100	1RB#49	21.09	23.59	PASS
Band2	20MHz	QPSK	19100	1RB#0	21.75	24.25	PASS
Band2	20MHz	QPSK	19100	50RB#50	20.98	23.48	PASS
Band2	20MHz	QPSK	19100	50RB#0	20.46	22.96	PASS
Band2	20MHz	QPSK	19100	50RB#25	20.49	22.99	PASS
Band2	20MHz	QPSK	19100	100RB#0	20.59	23.09	PASS
Band2	20MHz	16QAM	18700	1RB#49	20.47	22.97	PASS
Band2	20MHz	16QAM	18700	1RB#0	20.98	23.48	PASS
Band2	20MHz	16QAM	18700	1RB#99	20.43	22.93	PASS
Band2	20MHz	16QAM	18700	50RB#50	20.56	23.06	PASS
Band2	20MHz	16QAM	18700	50RB#0	20.71	23.21	PASS
Band2	20MHz	16QAM	18700	50RB#25	20.66	23.16	PASS
Band2	20MHz	16QAM	18700	100RB#0	20.63	23.13	PASS
Band2	20MHz	16QAM	18900	1RB#99	20.84	23.34	PASS
Band2	20MHz	16QAM	18900	1RB#49	20.79	23.29	PASS
Band2	20MHz	16QAM	18900	1RB#0	20.83	23.33	PASS
Band2	20MHz	16QAM	18900	50RB#50	20.75	23.25	PASS
Band2	20MHz	16QAM	18900	50RB#25	20.69	23.19	PASS
Band2	20MHz	16QAM	18900	50RB#0	20.74	23.24	PASS
Band2	20MHz	16QAM	18900	100RB#0	20.45	22.95	PASS
Band2	20MHz	16QAM	19100	1RB#0	20.83	23.33	PASS
Band2	20MHz	16QAM	19100	1RB#99	20.99	23.49	PASS
Band2	20MHz	16QAM	19100	1RB#49	20.71	23.21	PASS
Band2	20MHz	16QAM	19100	50RB#0	20.46	22.96	PASS
Band2	20MHz	16QAM	19100	50RB#25	20.48	22.98	PASS
Band2	20MHz	16QAM	19100	50RB#50	20.96	23.46	PASS
Band2	20MHz	16QAM	19100	100RB#0	20.81	23.31	PASS
Band4	1.4MHz	QPSK	19957	1RB#2	21.72	24.22	PASS
Band4	1.4MHz	QPSK	19957	1RB#5	21.78	24.28	PASS
Band4	1.4MHz	QPSK	19957	1RB#0	21.83	24.33	PASS

Band4	1.4MHz	QPSK	19957	3RB#0	21.84	24.34	PASS
Band4	1.4MHz	QPSK	19957	3RB#1	21.84	24.34	PASS
Band4	1.4MHz	QPSK	19957	3RB#3	21.74	24.24	PASS
Band4	1.4MHz	QPSK	19957	6RB#0	20.69	23.19	PASS
Band4	1.4MHz	QPSK	20175	1RB#2	21.81	24.31	PASS
Band4	1.4MHz	QPSK	20175	1RB#0	21.85	24.35	PASS
Band4	1.4MHz	QPSK	20175	1RB#5	21.86	24.36	PASS
Band4	1.4MHz	QPSK	20175	3RB#3	21.79	24.29	PASS
Band4	1.4MHz	QPSK	20175	3RB#1	21.78	24.28	PASS
Band4	1.4MHz	QPSK	20175	3RB#0	21.79	24.29	PASS
Band4	1.4MHz	QPSK	20175	6RB#0	20.76	23.26	PASS
Band4	1.4MHz	QPSK	20393	1RB#2	21.83	24.33	PASS
Band4	1.4MHz	QPSK	20393	1RB#0	21.84	24.34	PASS
Band4	1.4MHz	QPSK	20393	1RB#5	21.85	24.35	PASS
Band4	1.4MHz	QPSK	20393	3RB#1	21.77	24.27	PASS
Band4	1.4MHz	QPSK	20393	3RB#3	21.78	24.28	PASS
Band4	1.4MHz	QPSK	20393	3RB#0	21.77	24.27	PASS
Band4	1.4MHz	QPSK	20393	6RB#0	20.80	23.3	PASS
Band4	1.4MHz	16QAM	19957	1RB#5	20.99	23.49	PASS
Band4	1.4MHz	16QAM	19957	1RB#2	21.05	23.55	PASS
Band4	1.4MHz	16QAM	19957	1RB#0	21.06	23.56	PASS
Band4	1.4MHz	16QAM	19957	3RB#0	20.66	23.16	PASS
Band4	1.4MHz	16QAM	19957	3RB#1	20.67	23.17	PASS
Band4	1.4MHz	16QAM	19957	3RB#3	20.59	23.09	PASS
Band4	1.4MHz	16QAM	19957	6RB#0	20.79	23.29	PASS
Band4	1.4MHz	16QAM	20175	1RB#2	20.94	23.44	PASS
Band4	1.4MHz	16QAM	20175	1RB#5	20.87	23.37	PASS
Band4	1.4MHz	16QAM	20175	1RB#0	20.89	23.39	PASS
Band4	1.4MHz	16QAM	20175	3RB#1	20.69	23.19	PASS
Band4	1.4MHz	16QAM	20175	3RB#0	20.74	23.24	PASS
Band4	1.4MHz	16QAM	20175	3RB#3	20.71	23.21	PASS
Band4	1.4MHz	16QAM	20175	6RB#0	20.73	23.23	PASS
Band4	1.4MHz	16QAM	20393	1RB#5	20.78	23.28	PASS
Band4	1.4MHz	16QAM	20393	1RB#0	20.81	23.31	PASS
Band4	1.4MHz	16QAM	20393	1RB#2	20.78	23.28	PASS
Band4	1.4MHz	16QAM	20393	3RB#0	20.75	23.25	PASS
Band4	1.4MHz	16QAM	20393	3RB#1	20.75	23.25	PASS

Band4	1.4MHz	16QAM	20393	3RB#3	20.70	23.2	PASS
Band4	1.4MHz	16QAM	20393	6RB#0	20.84	23.34	PASS
Band4	3MHz	QPSK	19965	1RB#14	21.80	24.3	PASS
Band4	3MHz	QPSK	19965	1RB#8	21.83	24.33	PASS
Band4	3MHz	QPSK	19965	1RB#0	21.96	24.46	PASS
Band4	3MHz	QPSK	19965	8RB#0	20.82	23.32	PASS
Band4	3MHz	QPSK	19965	8RB#4	20.83	23.33	PASS
Band4	3MHz	QPSK	19965	8RB#7	20.78	23.28	PASS
Band4	3MHz	QPSK	19965	15RB#0	20.79	23.29	PASS
Band4	3MHz	QPSK	20175	1RB#0	21.83	24.33	PASS
Band4	3MHz	QPSK	20175	1RB#14	21.80	24.3	PASS
Band4	3MHz	QPSK	20175	1RB#8	21.79	24.29	PASS
Band4	3MHz	QPSK	20175	8RB#7	20.81	23.31	PASS
Band4	3MHz	QPSK	20175	8RB#0	20.81	23.31	PASS
Band4	3MHz	QPSK	20175	8RB#4	20.79	23.29	PASS
Band4	3MHz	QPSK	20175	15RB#0	20.73	23.23	PASS
Band4	3MHz	QPSK	20385	1RB#0	21.76	24.26	PASS
Band4	3MHz	QPSK	20385	1RB#8	21.78	24.28	PASS
Band4	3MHz	QPSK	20385	1RB#14	21.70	24.2	PASS
Band4	3MHz	QPSK	20385	8RB#0	20.76	23.26	PASS
Band4	3MHz	QPSK	20385	8RB#7	20.71	23.21	PASS
Band4	3MHz	QPSK	20385	8RB#4	20.75	23.25	PASS
Band4	3MHz	QPSK	20385	15RB#0	20.75	23.25	PASS
Band4	3MHz	16QAM	19965	1RB#8	20.87	23.37	PASS
Band4	3MHz	16QAM	19965	1RB#14	20.81	23.31	PASS
Band4	3MHz	16QAM	19965	1RB#0	20.92	23.42	PASS
Band4	3MHz	16QAM	19965	8RB#7	20.90	23.4	PASS
Band4	3MHz	16QAM	19965	8RB#4	20.94	23.44	PASS
Band4	3MHz	16QAM	19965	8RB#0	20.97	23.47	PASS
Band4	3MHz	16QAM	19965	15RB#0	20.77	23.27	PASS
Band4	3MHz	16QAM	20175	1RB#14	20.71	23.21	PASS
Band4	3MHz	16QAM	20175	1RB#0	20.83	23.33	PASS
Band4	3MHz	16QAM	20175	1RB#8	20.80	23.3	PASS
Band4	3MHz	16QAM	20175	8RB#0	20.89	23.39	PASS
Band4	3MHz	16QAM	20175	8RB#7	20.82	23.32	PASS
Band4	3MHz	16QAM	20175	8RB#4	20.88	23.38	PASS
Band4	3MHz	16QAM	20175	15RB#0	20.76	23.26	PASS

Band4	3MHz	16QAM	20385	1RB#0	20.74	23.24	PASS
Band4	3MHz	16QAM	20385	1RB#14	20.67	23.17	PASS
Band4	3MHz	16QAM	20385	1RB#8	20.72	23.22	PASS
Band4	3MHz	16QAM	20385	8RB#7	20.81	23.31	PASS
Band4	3MHz	16QAM	20385	8RB#4	20.85	23.35	PASS
Band4	3MHz	16QAM	20385	8RB#0	20.90	23.4	PASS
Band4	3MHz	16QAM	20385	15RB#0	20.86	23.36	PASS
Band4	5MHz	QPSK	19975	1RB#0	21.87	24.37	PASS
Band4	5MHz	QPSK	19975	1RB#24	21.67	24.17	PASS
Band4	5MHz	QPSK	19975	1RB#12	21.82	24.32	PASS
Band4	5MHz	QPSK	19975	12RB#13	20.72	23.22	PASS
Band4	5MHz	QPSK	19975	12RB#6	20.86	23.36	PASS
Band4	5MHz	QPSK	19975	12RB#0	20.84	23.34	PASS
Band4	5MHz	QPSK	19975	25RB#0	20.74	23.24	PASS
Band4	5MHz	QPSK	20175	1RB#24	21.81	24.31	PASS
Band4	5MHz	QPSK	20175	1RB#0	21.98	24.48	PASS
Band4	5MHz	QPSK	20175	1RB#12	21.90	24.4	PASS
Band4	5MHz	QPSK	20175	12RB#0	20.77	23.27	PASS
Band4	5MHz	QPSK	20175	12RB#6	20.79	23.29	PASS
Band4	5MHz	QPSK	20175	12RB#13	20.77	23.27	PASS
Band4	5MHz	QPSK	20175	25RB#0	20.82	23.32	PASS
Band4	5MHz	QPSK	20375	1RB#0	21.88	24.38	PASS
Band4	5MHz	QPSK	20375	1RB#12	21.75	24.25	PASS
Band4	5MHz	QPSK	20375	1RB#24	21.66	24.16	PASS
Band4	5MHz	QPSK	20375	12RB#6	20.85	23.35	PASS
Band4	5MHz	QPSK	20375	12RB#13	20.73	23.23	PASS
Band4	5MHz	QPSK	20375	12RB#0	20.85	23.35	PASS
Band4	5MHz	QPSK	20375	25RB#0	20.76	23.26	PASS
Band4	5MHz	16QAM	19975	1RB#24	20.99	23.49	PASS
Band4	5MHz	16QAM	19975	1RB#12	21.11	23.61	PASS
Band4	5MHz	16QAM	19975	1RB#0	21.12	23.62	PASS
Band4	5MHz	16QAM	19975	12RB#0	20.87	23.37	PASS
Band4	5MHz	16QAM	19975	12RB#6	20.86	23.36	PASS
Band4	5MHz	16QAM	19975	12RB#13	20.74	23.24	PASS
Band4	5MHz	16QAM	19975	25RB#0	20.78	23.28	PASS
Band4	5MHz	16QAM	20175	1RB#12	20.66	23.16	PASS
Band4	5MHz	16QAM	20175	1RB#24	20.71	23.21	PASS

Band4	5MHz	16QAM	20175	1RB#0	20.78	23.28	PASS
Band4	5MHz	16QAM	20175	12RB#0	20.84	23.34	PASS
Band4	5MHz	16QAM	20175	12RB#6	20.85	23.35	PASS
Band4	5MHz	16QAM	20175	12RB#13	20.84	23.34	PASS
Band4	5MHz	16QAM	20175	25RB#0	20.89	23.39	PASS
Band4	5MHz	16QAM	20375	1RB#0	20.77	23.27	PASS
Band4	5MHz	16QAM	20375	1RB#12	20.67	23.17	PASS
Band4	5MHz	16QAM	20375	1RB#24	20.64	23.14	PASS
Band4	5MHz	16QAM	20375	12RB#0	20.80	23.3	PASS
Band4	5MHz	16QAM	20375	12RB#6	20.80	23.3	PASS
Band4	5MHz	16QAM	20375	12RB#13	20.76	23.26	PASS
Band4	5MHz	16QAM	20375	25RB#0	20.78	23.28	PASS
Band4	10MHz	QPSK	20000	1RB#49	21.72	24.22	PASS
Band4	10MHz	QPSK	20000	1RB#24	21.76	24.26	PASS
Band4	10MHz	QPSK	20000	1RB#0	22.03	24.53	PASS
Band4	10MHz	QPSK	20000	25RB#12	20.88	23.38	PASS
Band4	10MHz	QPSK	20000	25RB#25	20.68	23.18	PASS
Band4	10MHz	QPSK	20000	25RB#0	20.90	23.4	PASS
Band4	10MHz	QPSK	20000	50RB#0	20.79	23.29	PASS
Band4	10MHz	QPSK	20175	1RB#24	21.78	24.28	PASS
Band4	10MHz	QPSK	20175	1RB#0	21.98	24.48	PASS
Band4	10MHz	QPSK	20175	1RB#49	21.82	24.32	PASS
Band4	10MHz	QPSK	20175	25RB#12	20.87	23.37	PASS
Band4	10MHz	QPSK	20175	25RB#0	20.87	23.37	PASS
Band4	10MHz	QPSK	20175	25RB#25	20.74	23.24	PASS
Band4	10MHz	QPSK	20175	50RB#0	20.80	23.3	PASS
Band4	10MHz	QPSK	20350	1RB#24	21.82	24.32	PASS
Band4	10MHz	QPSK	20350	1RB#0	22.07	24.57	PASS
Band4	10MHz	QPSK	20350	1RB#49	21.79	24.29	PASS
Band4	10MHz	QPSK	20350	25RB#12	20.94	23.44	PASS
Band4	10MHz	QPSK	20350	25RB#0	20.92	23.42	PASS
Band4	10MHz	QPSK	20350	25RB#25	20.73	23.23	PASS
Band4	10MHz	QPSK	20350	50RB#0	20.75	23.25	PASS
Band4	10MHz	16QAM	20000	1RB#24	20.92	23.42	PASS
Band4	10MHz	16QAM	20000	1RB#49	20.79	23.29	PASS
Band4	10MHz	16QAM	20000	1RB#0	21.18	23.68	PASS
Band4	10MHz	16QAM	20000	25RB#0	20.99	23.49	PASS

Band4	10MHz	16QAM	20000	25RB#25	20.72	23.22	PASS
Band4	10MHz	16QAM	20000	25RB#12	20.96	23.46	PASS
Band4	10MHz	16QAM	20000	50RB#0	20.88	23.38	PASS
Band4	10MHz	16QAM	20175	1RB#0	20.94	23.44	PASS
Band4	10MHz	16QAM	20175	1RB#49	20.73	23.23	PASS
Band4	10MHz	16QAM	20175	1RB#24	20.74	23.24	PASS
Band4	10MHz	16QAM	20175	25RB#25	20.84	23.34	PASS
Band4	10MHz	16QAM	20175	25RB#12	20.96	23.46	PASS
Band4	10MHz	16QAM	20175	25RB#0	20.92	23.42	PASS
Band4	10MHz	16QAM	20175	50RB#0	20.83	23.33	PASS
Band4	10MHz	16QAM	20350	1RB#49	20.71	23.21	PASS
Band4	10MHz	16QAM	20350	1RB#0	20.97	23.47	PASS
Band4	10MHz	16QAM	20350	1RB#24	20.75	23.25	PASS
Band4	10MHz	16QAM	20350	25RB#0	20.98	23.48	PASS
Band4	10MHz	16QAM	20350	25RB#12	21.02	23.52	PASS
Band4	10MHz	16QAM	20350	25RB#25	20.76	23.26	PASS
Band4	10MHz	16QAM	20350	50RB#0	20.79	23.29	PASS
Band4	15MHz	QPSK	20025	1RB#38	21.72	24.22	PASS
Band4	15MHz	QPSK	20025	1RB#74	21.85	24.35	PASS
Band4	15MHz	QPSK	20025	1RB#0	22.21	24.71	PASS
Band4	15MHz	QPSK	20025	38RB#0	21.38	23.88	PASS
Band4	15MHz	QPSK	20025	38RB#18	20.89	23.39	PASS
Band4	15MHz	QPSK	20025	38RB#37	21.00	23.5	PASS
Band4	15MHz	QPSK	20025	75RB#0	20.81	23.31	PASS
Band4	15MHz	QPSK	20175	1RB#0	22.08	24.58	PASS
Band4	15MHz	QPSK	20175	1RB#74	21.83	24.33	PASS
Band4	15MHz	QPSK	20175	1RB#38	21.74	24.24	PASS
Band4	15MHz	QPSK	20175	38RB#18	20.71	23.21	PASS
Band4	15MHz	QPSK	20175	38RB#37	20.68	23.18	PASS
Band4	15MHz	QPSK	20175	38RB#0	20.98	23.48	PASS
Band4	15MHz	QPSK	20175	75RB#0	20.85	23.35	PASS
Band4	15MHz	QPSK	20325	1RB#0	22.14	24.64	PASS
Band4	15MHz	QPSK	20325	1RB#74	21.72	24.22	PASS
Band4	15MHz	QPSK	20325	1RB#38	21.80	24.3	PASS
Band4	15MHz	QPSK	20325	38RB#0	21.18	23.68	PASS
Band4	15MHz	QPSK	20325	38RB#37	20.77	23.27	PASS
Band4	15MHz	QPSK	20325	38RB#18	20.89	23.39	PASS

Band4	15MHz	QPSK	20325	75RB#0	20.90	23.4	PASS
Band4	15MHz	16QAM	20025	1RB#38	20.89	23.39	PASS
Band4	15MHz	16QAM	20025	1RB#74	20.98	23.48	PASS
Band4	15MHz	16QAM	20025	1RB#0	21.33	23.83	PASS
Band4	15MHz	16QAM	20025	38RB#37	20.96	23.46	PASS
Band4	15MHz	16QAM	20025	38RB#18	20.90	23.4	PASS
Band4	15MHz	16QAM	20025	38RB#0	21.35	23.85	PASS
Band4	15MHz	16QAM	20025	75RB#0	20.83	23.33	PASS
Band4	15MHz	16QAM	20175	1RB#74	20.70	23.2	PASS
Band4	15MHz	16QAM	20175	1RB#0	21.03	23.53	PASS
Band4	15MHz	16QAM	20175	1RB#38	20.76	23.26	PASS
Band4	15MHz	16QAM	20175	38RB#0	20.99	23.49	PASS
Band4	15MHz	16QAM	20175	38RB#18	20.74	23.24	PASS
Band4	15MHz	16QAM	20175	38RB#37	20.69	23.19	PASS
Band4	15MHz	16QAM	20175	75RB#0	20.81	23.31	PASS
Band4	15MHz	16QAM	20325	1RB#0	21.13	23.63	PASS
Band4	15MHz	16QAM	20325	1RB#74	20.78	23.28	PASS
Band4	15MHz	16QAM	20325	1RB#38	20.86	23.36	PASS
Band4	15MHz	16QAM	20325	38RB#0	21.16	23.66	PASS
Band4	15MHz	16QAM	20325	38RB#18	20.88	23.38	PASS
Band4	15MHz	16QAM	20325	38RB#37	20.78	23.28	PASS
Band4	15MHz	16QAM	20325	75RB#0	20.88	23.38	PASS
Band4	20MHz	QPSK	20050	1RB#0	22.13	24.63	PASS
Band4	20MHz	QPSK	20050	1RB#99	21.63	24.13	PASS
Band4	20MHz	QPSK	20050	1RB#49	21.72	24.22	PASS
Band4	20MHz	QPSK	20050	50RB#0	20.90	23.4	PASS
Band4	20MHz	QPSK	20050	50RB#25	20.91	23.41	PASS
Band4	20MHz	QPSK	20050	50RB#50	20.68	23.18	PASS
Band4	20MHz	QPSK	20050	100RB#0	20.72	23.22	PASS
Band4	20MHz	QPSK	20175	1RB#0	21.88	24.38	PASS
Band4	20MHz	QPSK	20175	1RB#99	21.54	24.04	PASS
Band4	20MHz	QPSK	20175	1RB#49	21.58	24.08	PASS
Band4	20MHz	QPSK	20175	50RB#50	20.71	23.21	PASS
Band4	20MHz	QPSK	20175	50RB#25	20.87	23.37	PASS
Band4	20MHz	QPSK	20175	50RB#0	20.90	23.4	PASS
Band4	20MHz	QPSK	20175	100RB#0	20.85	23.35	PASS
Band4	20MHz	QPSK	20300	1RB#99	21.65	24.15	PASS

Band4	20MHz	QPSK	20300	1RB#49	21.81	24.31	PASS
Band4	20MHz	QPSK	20300	1RB#0	22.12	24.62	PASS
Band4	20MHz	QPSK	20300	50RB#25	20.97	23.47	PASS
Band4	20MHz	QPSK	20300	50RB#0	20.94	23.44	PASS
Band4	20MHz	QPSK	20300	50RB#50	20.69	23.19	PASS
Band4	20MHz	QPSK	20300	100RB#0	20.87	23.37	PASS
Band4	20MHz	16QAM	20050	1RB#0	21.18	23.68	PASS
Band4	20MHz	16QAM	20050	1RB#49	20.78	23.28	PASS
Band4	20MHz	16QAM	20050	1RB#99	20.71	23.21	PASS
Band4	20MHz	16QAM	20050	50RB#0	20.97	23.47	PASS
Band4	20MHz	16QAM	20050	50RB#25	20.97	23.47	PASS
Band4	20MHz	16QAM	20050	50RB#50	20.66	23.16	PASS
Band4	20MHz	16QAM	20050	100RB#0	20.71	23.21	PASS
Band4	20MHz	16QAM	20175	1RB#99	20.57	23.07	PASS
Band4	20MHz	16QAM	20175	1RB#49	20.68	23.18	PASS
Band4	20MHz	16QAM	20175	1RB#0	20.88	23.38	PASS
Band4	20MHz	16QAM	20175	50RB#25	20.93	23.43	PASS
Band4	20MHz	16QAM	20175	50RB#0	20.93	23.43	PASS
Band4	20MHz	16QAM	20175	50RB#50	20.78	23.28	PASS
Band4	20MHz	16QAM	20175	100RB#0	20.85	23.35	PASS
Band4	20MHz	16QAM	20300	1RB#0	21.03	23.53	PASS
Band4	20MHz	16QAM	20300	1RB#49	20.70	23.2	PASS
Band4	20MHz	16QAM	20300	1RB#99	20.56	23.06	PASS
Band4	20MHz	16QAM	20300	50RB#0	20.96	23.46	PASS
Band4	20MHz	16QAM	20300	50RB#50	20.68	23.18	PASS
Band4	20MHz	16QAM	20300	50RB#25	20.95	23.45	PASS
Band4	20MHz	16QAM	20300	100RB#0	20.87	23.37	PASS
Band5	1.4MHz	QPSK	20407	1RB#5	22.41	22.77	PASS
Band5	1.4MHz	QPSK	20407	1RB#0	22.34	22.7	PASS
Band5	1.4MHz	QPSK	20407	1RB#2	22.35	22.71	PASS
Band5	1.4MHz	QPSK	20407	3RB#3	22.35	22.71	PASS
Band5	1.4MHz	QPSK	20407	3RB#0	22.35	22.71	PASS
Band5	1.4MHz	QPSK	20407	3RB#1	22.33	22.69	PASS
Band5	1.4MHz	QPSK	20407	6RB#0	21.33	21.69	PASS
Band5	1.4MHz	QPSK	20525	1RB#5	22.45	22.81	PASS
Band5	1.4MHz	QPSK	20525	1RB#0	22.44	22.8	PASS
Band5	1.4MHz	QPSK	20525	1RB#2	22.39	22.75	PASS

Band5	1.4MHz	QPSK	20525	3RB#1	22.31	22.67	PASS
Band5	1.4MHz	QPSK	20525	3RB#3	22.32	22.68	PASS
Band5	1.4MHz	QPSK	20525	3RB#0	22.31	22.67	PASS
Band5	1.4MHz	QPSK	20525	6RB#0	21.32	21.68	PASS
Band5	1.4MHz	QPSK	20643	1RB#0	22.13	22.49	PASS
Band5	1.4MHz	QPSK	20643	1RB#5	22.16	22.52	PASS
Band5	1.4MHz	QPSK	20643	1RB#2	22.10	22.46	PASS
Band5	1.4MHz	QPSK	20643	3RB#3	22.16	22.52	PASS
Band5	1.4MHz	QPSK	20643	3RB#1	22.19	22.55	PASS
Band5	1.4MHz	QPSK	20643	3RB#0	22.22	22.58	PASS
Band5	1.4MHz	QPSK	20643	6RB#0	21.12	21.48	PASS
Band5	1.4MHz	16QAM	20407	1RB#0	21.71	22.07	PASS
Band5	1.4MHz	16QAM	20407	1RB#2	21.36	21.72	PASS
Band5	1.4MHz	16QAM	20407	1RB#5	21.43	21.79	PASS
Band5	1.4MHz	16QAM	20407	3RB#0	21.26	21.62	PASS
Band5	1.4MHz	16QAM	20407	3RB#3	21.22	21.58	PASS
Band5	1.4MHz	16QAM	20407	3RB#1	21.23	21.59	PASS
Band5	1.4MHz	16QAM	20407	6RB#0	21.17	21.53	PASS
Band5	1.4MHz	16QAM	20525	1RB#2	21.25	21.61	PASS
Band5	1.4MHz	16QAM	20525	1RB#0	21.27	21.63	PASS
Band5	1.4MHz	16QAM	20525	1RB#5	21.28	21.64	PASS
Band5	1.4MHz	16QAM	20525	3RB#0	21.25	21.61	PASS
Band5	1.4MHz	16QAM	20525	3RB#1	21.27	21.63	PASS
Band5	1.4MHz	16QAM	20525	3RB#3	21.21	21.57	PASS
Band5	1.4MHz	16QAM	20525	6RB#0	21.25	21.61	PASS
Band5	1.4MHz	16QAM	20643	1RB#2	21.42	21.78	PASS
Band5	1.4MHz	16QAM	20643	1RB#0	21.43	21.79	PASS
Band5	1.4MHz	16QAM	20643	1RB#5	21.42	21.78	PASS
Band5	1.4MHz	16QAM	20643	3RB#1	21.00	21.36	PASS
Band5	1.4MHz	16QAM	20643	3RB#0	21.01	21.37	PASS
Band5	1.4MHz	16QAM	20643	3RB#3	20.96	21.32	PASS
Band5	1.4MHz	16QAM	20643	6RB#0	21.15	21.51	PASS
Band5	3MHz	QPSK	20415	1RB#14	22.34	22.7	PASS
Band5	3MHz	QPSK	20415	1RB#8	22.44	22.8	PASS
Band5	3MHz	QPSK	20415	1RB#0	22.49	22.85	PASS
Band5	3MHz	QPSK	20415	8RB#0	21.32	21.68	PASS
Band5	3MHz	QPSK	20415	8RB#7	21.34	21.7	PASS

Band5	3MHz	QPSK	20415	8RB#4	21.34	21.7	PASS
Band5	3MHz	QPSK	20415	15RB#0	21.32	21.68	PASS
Band5	3MHz	QPSK	20525	1RB#0	22.45	22.81	PASS
Band5	3MHz	QPSK	20525	1RB#14	22.37	22.73	PASS
Band5	3MHz	QPSK	20525	1RB#8	22.35	22.71	PASS
Band5	3MHz	QPSK	20525	8RB#7	21.28	21.64	PASS
Band5	3MHz	QPSK	20525	8RB#4	21.34	21.7	PASS
Band5	3MHz	QPSK	20525	8RB#0	21.34	21.7	PASS
Band5	3MHz	QPSK	20525	15RB#0	21.21	21.57	PASS
Band5	3MHz	QPSK	20635	1RB#8	22.12	22.48	PASS
Band5	3MHz	QPSK	20635	1RB#14	22.08	22.44	PASS
Band5	3MHz	QPSK	20635	1RB#0	22.19	22.55	PASS
Band5	3MHz	QPSK	20635	8RB#7	21.20	21.56	PASS
Band5	3MHz	QPSK	20635	8RB#0	21.18	21.54	PASS
Band5	3MHz	QPSK	20635	8RB#4	21.23	21.59	PASS
Band5	3MHz	QPSK	20635	15RB#0	21.21	21.57	PASS
Band5	3MHz	16QAM	20415	1RB#8	21.40	21.76	PASS
Band5	3MHz	16QAM	20415	1RB#0	21.45	21.81	PASS
Band5	3MHz	16QAM	20415	1RB#14	21.28	21.64	PASS
Band5	3MHz	16QAM	20415	8RB#4	20.36	20.72	PASS
Band5	3MHz	16QAM	20415	8RB#7	20.37	20.73	PASS
Band5	3MHz	16QAM	20415	8RB#0	20.36	20.72	PASS
Band5	3MHz	16QAM	20415	15RB#0	21.25	21.61	PASS
Band5	3MHz	16QAM	20525	1RB#0	21.29	21.65	PASS
Band5	3MHz	16QAM	20525	1RB#14	21.29	21.65	PASS
Band5	3MHz	16QAM	20525	1RB#8	21.26	21.62	PASS
Band5	3MHz	16QAM	20525	8RB#7	21.19	21.55	PASS
Band5	3MHz	16QAM	20525	8RB#4	20.34	20.7	PASS
Band5	3MHz	16QAM	20525	8RB#0	20.35	20.71	PASS
Band5	3MHz	16QAM	20525	15RB#0	21.14	21.5	PASS
Band5	3MHz	16QAM	20635	1RB#0	21.14	21.5	PASS
Band5	3MHz	16QAM	20635	1RB#8	21.13	21.49	PASS
Band5	3MHz	16QAM	20635	1RB#14	21.07	21.43	PASS
Band5	3MHz	16QAM	20635	8RB#0	21.20	21.56	PASS
Band5	3MHz	16QAM	20635	8RB#7	21.17	21.53	PASS
Band5	3MHz	16QAM	20635	8RB#4	21.20	21.56	PASS
Band5	3MHz	16QAM	20635	15RB#0	21.19	21.55	PASS

Band5	5MHz	QPSK	20425	1RB#0	22.40	22.76	PASS
Band5	5MHz	QPSK	20425	1RB#24	22.26	22.62	PASS
Band5	5MHz	QPSK	20425	1RB#12	22.35	22.71	PASS
Band5	5MHz	QPSK	20425	12RB#0	21.38	21.74	PASS
Band5	5MHz	QPSK	20425	12RB#6	21.36	21.72	PASS
Band5	5MHz	QPSK	20425	12RB#13	21.25	21.61	PASS
Band5	5MHz	QPSK	20425	25RB#0	21.25	21.61	PASS
Band5	5MHz	QPSK	20525	1RB#12	22.40	22.76	PASS
Band5	5MHz	QPSK	20525	1RB#0	22.46	22.82	PASS
Band5	5MHz	QPSK	20525	1RB#24	22.43	22.79	PASS
Band5	5MHz	QPSK	20525	12RB#13	21.25	21.61	PASS
Band5	5MHz	QPSK	20525	12RB#6	21.32	21.68	PASS
Band5	5MHz	QPSK	20525	12RB#0	21.31	21.67	PASS
Band5	5MHz	QPSK	20525	25RB#0	21.20	21.56	PASS
Band5	5MHz	QPSK	20625	1RB#12	22.22	22.58	PASS
Band5	5MHz	QPSK	20625	1RB#0	22.19	22.55	PASS
Band5	5MHz	QPSK	20625	1RB#24	22.12	22.48	PASS
Band5	5MHz	QPSK	20625	12RB#6	21.25	21.61	PASS
Band5	5MHz	QPSK	20625	12RB#0	21.25	21.61	PASS
Band5	5MHz	QPSK	20625	12RB#13	21.12	21.48	PASS
Band5	5MHz	QPSK	20625	25RB#0	21.18	21.54	PASS
Band5	5MHz	16QAM	20425	1RB#24	21.52	21.88	PASS
Band5	5MHz	16QAM	20425	1RB#0	21.61	21.97	PASS
Band5	5MHz	16QAM	20425	1RB#12	21.58	21.94	PASS
Band5	5MHz	16QAM	20425	12RB#0	20.33	20.69	PASS
Band5	5MHz	16QAM	20425	12RB#6	20.33	20.69	PASS
Band5	5MHz	16QAM	20425	12RB#13	20.75	21.11	PASS
Band5	5MHz	16QAM	20425	25RB#0	21.22	21.58	PASS
Band5	5MHz	16QAM	20525	1RB#12	21.14	21.5	PASS
Band5	5MHz	16QAM	20525	1RB#24	21.18	21.54	PASS
Band5	5MHz	16QAM	20525	1RB#0	21.17	21.53	PASS
Band5	5MHz	16QAM	20525	12RB#13	21.30	21.66	PASS
Band5	5MHz	16QAM	20525	12RB#6	21.33	21.69	PASS
Band5	5MHz	16QAM	20525	12RB#0	21.32	21.68	PASS
Band5	5MHz	16QAM	20525	25RB#0	21.22	21.58	PASS
Band5	5MHz	16QAM	20625	1RB#0	21.12	21.48	PASS
Band5	5MHz	16QAM	20625	1RB#24	21.09	21.45	PASS

Band5	5MHz	16QAM	20625	1RB#12	21.12	21.48	PASS
Band5	5MHz	16QAM	20625	12RB#6	21.21	21.57	PASS
Band5	5MHz	16QAM	20625	12RB#13	21.13	21.49	PASS
Band5	5MHz	16QAM	20625	12RB#0	21.20	21.56	PASS
Band5	5MHz	16QAM	20625	25RB#0	21.20	21.56	PASS
Band5	10MHz	QPSK	20450	1RB#49	22.23	22.59	PASS
Band5	10MHz	QPSK	20450	1RB#24	22.30	22.66	PASS
Band5	10MHz	QPSK	20450	1RB#0	22.37	22.73	PASS
Band5	10MHz	QPSK	20450	25RB#0	21.31	21.67	PASS
Band5	10MHz	QPSK	20450	25RB#12	21.31	21.67	PASS
Band5	10MHz	QPSK	20450	25RB#25	21.22	21.58	PASS
Band5	10MHz	QPSK	20450	50RB#0	21.25	21.61	PASS
Band5	10MHz	QPSK	20525	1RB#49	22.30	22.66	PASS
Band5	10MHz	QPSK	20525	1RB#24	22.38	22.74	PASS
Band5	10MHz	QPSK	20525	1RB#0	22.39	22.75	PASS
Band5	10MHz	QPSK	20525	25RB#0	21.36	21.72	PASS
Band5	10MHz	QPSK	20525	25RB#25	21.34	21.7	PASS
Band5	10MHz	QPSK	20525	25RB#12	21.36	21.72	PASS
Band5	10MHz	QPSK	20525	50RB#0	21.26	21.62	PASS
Band5	10MHz	QPSK	20600	1RB#24	22.22	22.58	PASS
Band5	10MHz	QPSK	20600	1RB#0	22.36	22.72	PASS
Band5	10MHz	QPSK	20600	1RB#49	22.18	22.54	PASS
Band5	10MHz	QPSK	20600	25RB#25	21.21	21.57	PASS
Band5	10MHz	QPSK	20600	25RB#12	21.25	21.61	PASS
Band5	10MHz	QPSK	20600	25RB#0	21.25	21.61	PASS
Band5	10MHz	QPSK	20600	50RB#0	21.24	21.6	PASS
Band5	10MHz	16QAM	20450	1RB#49	21.30	21.66	PASS
Band5	10MHz	16QAM	20450	1RB#24	21.38	21.74	PASS
Band5	10MHz	16QAM	20450	1RB#0	21.43	21.79	PASS
Band5	10MHz	16QAM	20450	25RB#12	20.31	20.67	PASS
Band5	10MHz	16QAM	20450	25RB#0	20.32	20.68	PASS
Band5	10MHz	16QAM	20450	25RB#25	20.57	20.93	PASS
Band5	10MHz	16QAM	20450	50RB#0	20.64	21	PASS
Band5	10MHz	16QAM	20525	1RB#24	21.25	21.61	PASS
Band5	10MHz	16QAM	20525	1RB#0	21.27	21.63	PASS
Band5	10MHz	16QAM	20525	1RB#49	21.14	21.5	PASS
Band5	10MHz	16QAM	20525	25RB#25	20.68	21.04	PASS

Band5	10MHz	16QAM	20525	25RB#0	20.35	20.71	PASS
Band5	10MHz	16QAM	20525	25RB#12	20.34	20.7	PASS
Band5	10MHz	16QAM	20525	50RB#0	20.54	20.9	PASS
Band5	10MHz	16QAM	20600	1RB#24	21.30	21.66	PASS
Band5	10MHz	16QAM	20600	1RB#0	21.34	21.7	PASS
Band5	10MHz	16QAM	20600	1RB#49	21.13	21.49	PASS
Band5	10MHz	16QAM	20600	25RB#0	20.68	21.04	PASS
Band5	10MHz	16QAM	20600	25RB#12	20.59	20.95	PASS
Band5	10MHz	16QAM	20600	25RB#25	20.74	21.1	PASS
Band5	10MHz	16QAM	20600	50RB#0	20.66	21.02	PASS
Band12	1.4MHz	QPSK	23017	1RB#5	23.74	24.1	PASS
Band12	1.4MHz	QPSK	23017	1RB#0	23.49	23.85	PASS
Band12	1.4MHz	QPSK	23017	1RB#2	23.54	23.9	PASS
Band12	1.4MHz	QPSK	23017	3RB#1	23.45	23.81	PASS
Band12	1.4MHz	QPSK	23017	3RB#0	23.40	23.76	PASS
Band12	1.4MHz	QPSK	23017	3RB#3	23.55	23.91	PASS
Band12	1.4MHz	QPSK	23017	6RB#0	22.53	22.89	PASS
Band12	1.4MHz	QPSK	23095	1RB#2	24.45	24.81	PASS
Band12	1.4MHz	QPSK	23095	1RB#0	24.44	24.8	PASS
Band12	1.4MHz	QPSK	23095	1RB#5	24.49	24.85	PASS
Band12	1.4MHz	QPSK	23095	3RB#0	24.48	24.84	PASS
Band12	1.4MHz	QPSK	23095	3RB#1	24.43	24.79	PASS
Band12	1.4MHz	QPSK	23095	3RB#3	24.42	24.78	PASS
Band12	1.4MHz	QPSK	23095	6RB#0	23.39	23.75	PASS
Band12	1.4MHz	QPSK	23173	1RB#5	24.24	24.6	PASS
Band12	1.4MHz	QPSK	23173	1RB#2	24.18	24.54	PASS
Band12	1.4MHz	QPSK	23173	1RB#0	24.27	24.63	PASS
Band12	1.4MHz	QPSK	23173	3RB#3	24.12	24.48	PASS
Band12	1.4MHz	QPSK	23173	3RB#1	24.14	24.5	PASS
Band12	1.4MHz	QPSK	23173	3RB#0	24.15	24.51	PASS
Band12	1.4MHz	QPSK	23173	6RB#0	23.11	23.47	PASS
Band12	1.4MHz	16QAM	23017	1RB#5	22.58	22.94	PASS
Band12	1.4MHz	16QAM	23017	1RB#2	22.47	22.83	PASS
Band12	1.4MHz	16QAM	23017	1RB#0	22.35	22.71	PASS
Band12	1.4MHz	16QAM	23017	3RB#3	22.44	22.8	PASS
Band12	1.4MHz	16QAM	23017	3RB#1	22.36	22.72	PASS
Band12	1.4MHz	16QAM	23017	3RB#0	22.37	22.73	PASS

Band12	1.4MHz	16QAM	23017	6RB#0	21.58	21.94	PASS
Band12	1.4MHz	16QAM	23095	1RB#5	23.65	24.01	PASS
Band12	1.4MHz	16QAM	23095	1RB#2	23.66	24.02	PASS
Band12	1.4MHz	16QAM	23095	1RB#0	23.72	24.08	PASS
Band12	1.4MHz	16QAM	23095	3RB#3	23.16	23.52	PASS
Band12	1.4MHz	16QAM	23095	3RB#1	23.15	23.51	PASS
Band12	1.4MHz	16QAM	23095	3RB#0	23.16	23.52	PASS
Band12	1.4MHz	16QAM	23095	6RB#0	22.36	22.72	PASS
Band12	1.4MHz	16QAM	23173	1RB#0	23.20	23.56	PASS
Band12	1.4MHz	16QAM	23173	1RB#2	23.17	23.53	PASS
Band12	1.4MHz	16QAM	23173	1RB#5	23.12	23.48	PASS
Band12	1.4MHz	16QAM	23173	3RB#3	23.02	23.38	PASS
Band12	1.4MHz	16QAM	23173	3RB#1	23.05	23.41	PASS
Band12	1.4MHz	16QAM	23173	3RB#0	23.04	23.4	PASS
Band12	1.4MHz	16QAM	23173	6RB#0	22.03	22.39	PASS
Band12	3MHz	QPSK	23025	1RB#0	23.37	23.73	PASS
Band12	3MHz	QPSK	23025	1RB#14	23.79	24.15	PASS
Band12	3MHz	QPSK	23025	1RB#8	23.68	24.04	PASS
Band12	3MHz	QPSK	23025	8RB#0	22.38	22.74	PASS
Band12	3MHz	QPSK	23025	8RB#7	22.62	22.98	PASS
Band12	3MHz	QPSK	23025	8RB#4	22.32	22.68	PASS
Band12	3MHz	QPSK	23025	15RB#0	22.58	22.94	PASS
Band12	3MHz	QPSK	23095	1RB#0	24.31	24.67	PASS
Band12	3MHz	QPSK	23095	1RB#14	24.44	24.8	PASS
Band12	3MHz	QPSK	23095	1RB#8	24.47	24.83	PASS
Band12	3MHz	QPSK	23095	8RB#4	23.33	23.69	PASS
Band12	3MHz	QPSK	23095	8RB#0	23.36	23.72	PASS
Band12	3MHz	QPSK	23095	8RB#7	23.36	23.72	PASS
Band12	3MHz	QPSK	23095	15RB#0	23.42	23.78	PASS
Band12	3MHz	QPSK	23165	1RB#0	24.34	24.7	PASS
Band12	3MHz	QPSK	23165	1RB#8	24.23	24.59	PASS
Band12	3MHz	QPSK	23165	1RB#14	24.15	24.51	PASS
Band12	3MHz	QPSK	23165	8RB#4	23.17	23.53	PASS
Band12	3MHz	QPSK	23165	8RB#7	23.03	23.39	PASS
Band12	3MHz	QPSK	23165	8RB#0	23.15	23.51	PASS
Band12	3MHz	QPSK	23165	15RB#0	23.01	23.37	PASS
Band12	3MHz	16QAM	23025	1RB#14	22.79	23.15	PASS

Band12	3MHz	16QAM	23025	1RB#0	22.35	22.71	PASS
Band12	3MHz	16QAM	23025	1RB#8	22.60	22.96	PASS
Band12	3MHz	16QAM	23025	8RB#7	21.82	22.18	PASS
Band12	3MHz	16QAM	23025	8RB#0	21.57	21.93	PASS
Band12	3MHz	16QAM	23025	8RB#4	21.61	21.97	PASS
Band12	3MHz	16QAM	23025	15RB#0	21.51	21.87	PASS
Band12	3MHz	16QAM	23095	1RB#14	23.38	23.74	PASS
Band12	3MHz	16QAM	23095	1RB#8	23.40	23.76	PASS
Band12	3MHz	16QAM	23095	1RB#0	23.24	23.6	PASS
Band12	3MHz	16QAM	23095	8RB#7	22.57	22.93	PASS
Band12	3MHz	16QAM	23095	8RB#0	22.53	22.89	PASS
Band12	3MHz	16QAM	23095	8RB#4	22.50	22.86	PASS
Band12	3MHz	16QAM	23095	15RB#0	22.52	22.88	PASS
Band12	3MHz	16QAM	23165	1RB#0	23.24	23.6	PASS
Band12	3MHz	16QAM	23165	1RB#14	23.03	23.39	PASS
Band12	3MHz	16QAM	23165	1RB#8	23.15	23.51	PASS
Band12	3MHz	16QAM	23165	8RB#0	22.24	22.6	PASS
Band12	3MHz	16QAM	23165	8RB#4	22.20	22.56	PASS
Band12	3MHz	16QAM	23165	8RB#7	22.21	22.57	PASS
Band12	3MHz	16QAM	23165	15RB#0	22.09	22.45	PASS
Band12	5MHz	QPSK	23035	1RB#24	24.00	24.36	PASS
Band12	5MHz	QPSK	23035	1RB#12	23.80	24.16	PASS
Band12	5MHz	QPSK	23035	1RB#0	23.34	23.7	PASS
Band12	5MHz	QPSK	23035	12RB#13	22.89	23.25	PASS
Band12	5MHz	QPSK	23035	12RB#6	22.63	22.99	PASS
Band12	5MHz	QPSK	23035	12RB#0	22.63	22.99	PASS
Band12	5MHz	QPSK	23035	25RB#0	22.67	23.03	PASS
Band12	5MHz	QPSK	23095	1RB#12	24.60	24.96	PASS
Band12	5MHz	QPSK	23095	1RB#24	24.52	24.88	PASS
Band12	5MHz	QPSK	23095	1RB#0	24.41	24.77	PASS
Band12	5MHz	QPSK	23095	12RB#13	23.47	23.83	PASS
Band12	5MHz	QPSK	23095	12RB#0	23.33	23.69	PASS
Band12	5MHz	QPSK	23095	12RB#6	23.36	23.72	PASS
Band12	5MHz	QPSK	23095	25RB#0	23.32	23.68	PASS
Band12	5MHz	QPSK	23155	1RB#0	24.40	24.76	PASS
Band12	5MHz	QPSK	23155	1RB#12	24.25	24.61	PASS
Band12	5MHz	QPSK	23155	1RB#24	23.97	24.33	PASS

Band12	5MHz	QPSK	23155	12RB#6	23.25	23.61	PASS
Band12	5MHz	QPSK	23155	12RB#13	23.05	23.41	PASS
Band12	5MHz	QPSK	23155	12RB#0	23.19	23.55	PASS
Band12	5MHz	QPSK	23155	25RB#0	23.12	23.48	PASS
Band12	5MHz	16QAM	23035	1RB#12	23.02	23.38	PASS
Band12	5MHz	16QAM	23035	1RB#0	22.52	22.88	PASS
Band12	5MHz	16QAM	23035	1RB#24	23.23	23.59	PASS
Band12	5MHz	16QAM	23035	12RB#13	21.89	22.25	PASS
Band12	5MHz	16QAM	23035	12RB#0	21.69	22.05	PASS
Band12	5MHz	16QAM	23035	12RB#6	21.69	22.05	PASS
Band12	5MHz	16QAM	23035	25RB#0	21.79	22.15	PASS
Band12	5MHz	16QAM	23095	1RB#24	23.32	23.68	PASS
Band12	5MHz	16QAM	23095	1RB#12	23.22	23.58	PASS
Band12	5MHz	16QAM	23095	1RB#0	23.09	23.45	PASS
Band12	5MHz	16QAM	23095	12RB#13	22.58	22.94	PASS
Band12	5MHz	16QAM	23095	12RB#6	22.46	22.82	PASS
Band12	5MHz	16QAM	23095	12RB#0	22.47	22.83	PASS
Band12	5MHz	16QAM	23095	25RB#0	22.47	22.83	PASS
Band12	5MHz	16QAM	23155	1RB#0	23.25	23.61	PASS
Band12	5MHz	16QAM	23155	1RB#12	23.12	23.48	PASS
Band12	5MHz	16QAM	23155	1RB#24	22.82	23.18	PASS
Band12	5MHz	16QAM	23155	12RB#13	22.18	22.54	PASS
Band12	5MHz	16QAM	23155	12RB#6	22.35	22.71	PASS
Band12	5MHz	16QAM	23155	12RB#0	22.32	22.68	PASS
Band12	5MHz	16QAM	23155	25RB#0	22.31	22.67	PASS
Band12	10MHz	QPSK	23060	1RB#49	24.38	24.74	PASS
Band12	10MHz	QPSK	23060	1RB#0	23.33	23.69	PASS
Band12	10MHz	QPSK	23060	1RB#24	24.07	24.43	PASS
Band12	10MHz	QPSK	23060	25RB#25	23.20	23.56	PASS
Band12	10MHz	QPSK	23060	25RB#12	22.63	22.99	PASS
Band12	10MHz	QPSK	23060	25RB#0	22.62	22.98	PASS
Band12	10MHz	QPSK	23060	50RB#0	22.84	23.2	PASS
Band12	10MHz	QPSK	23095	1RB#49	24.23	24.59	PASS
Band12	10MHz	QPSK	23095	1RB#24	24.52	24.88	PASS
Band12	10MHz	QPSK	23095	1RB#0	23.95	24.31	PASS
Band12	10MHz	QPSK	23095	25RB#12	23.14	23.5	PASS
Band12	10MHz	QPSK	23095	25RB#25	23.41	23.77	PASS

Band12	10MHz	QPSK	23095	25RB#0	23.20	23.56	PASS
Band12	10MHz	QPSK	23095	50RB#0	23.27	23.63	PASS
Band12	10MHz	QPSK	23130	1RB#49	23.97	24.33	PASS
Band12	10MHz	QPSK	23130	1RB#24	24.32	24.68	PASS
Band12	10MHz	QPSK	23130	1RB#0	24.34	24.7	PASS
Band12	10MHz	QPSK	23130	25RB#25	23.18	23.54	PASS
Band12	10MHz	QPSK	23130	25RB#12	23.49	23.85	PASS
Band12	10MHz	QPSK	23130	25RB#0	23.43	23.79	PASS
Band12	10MHz	QPSK	23130	50RB#0	23.34	23.7	PASS
Band12	10MHz	16QAM	23060	1RB#49	23.47	23.83	PASS
Band12	10MHz	16QAM	23060	1RB#24	23.20	23.56	PASS
Band12	10MHz	16QAM	23060	1RB#0	22.37	22.73	PASS
Band12	10MHz	16QAM	23060	25RB#0	21.70	22.06	PASS
Band12	10MHz	16QAM	23060	25RB#12	21.72	22.08	PASS
Band12	10MHz	16QAM	23060	25RB#25	22.26	22.62	PASS
Band12	10MHz	16QAM	23060	50RB#0	21.95	22.31	PASS
Band12	10MHz	16QAM	23095	1RB#49	23.26	23.62	PASS
Band12	10MHz	16QAM	23095	1RB#0	22.87	23.23	PASS
Band12	10MHz	16QAM	23095	1RB#24	23.36	23.72	PASS
Band12	10MHz	16QAM	23095	25RB#25	22.54	22.9	PASS
Band12	10MHz	16QAM	23095	25RB#12	22.31	22.67	PASS
Band12	10MHz	16QAM	23095	25RB#0	22.31	22.67	PASS
Band12	10MHz	16QAM	23095	50RB#0	22.36	22.72	PASS
Band12	10MHz	16QAM	23130	1RB#24	23.47	23.83	PASS
Band12	10MHz	16QAM	23130	1RB#49	22.87	23.23	PASS
Band12	10MHz	16QAM	23130	1RB#0	23.31	23.67	PASS
Band12	10MHz	16QAM	23130	25RB#0	22.44	22.8	PASS
Band12	10MHz	16QAM	23130	25RB#12	22.51	22.87	PASS
Band12	10MHz	16QAM	23130	25RB#25	22.33	22.69	PASS
Band12	10MHz	16QAM	23130	50RB#0	22.37	22.73	PASS

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

LTE Band 2 (5MHz Bandwidth)									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Highest	3810	-57.18	-13	-44.18	-65.78	-64.93	4.85	12.60	H
	5715	-53.40	-13	-40.40	-66.87	-60.92	5.58	13.10	H
	7620	-47.33	-13	-34.33	-67.68	-52.07	6.56	11.30	H
	3810	-57.45	-13	-44.45	-66.15	-65.20	4.85	12.6	V
	5715	-54.23	-13	-41.23	-67.95	-61.75	5.58	13.1	V
	7620	-48.10	-13	-35.10	-68.74	-52.84	6.56	11.3	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

Appendix C. TEST SETUP PHOTOGRAPHS

<Radiated Emission >

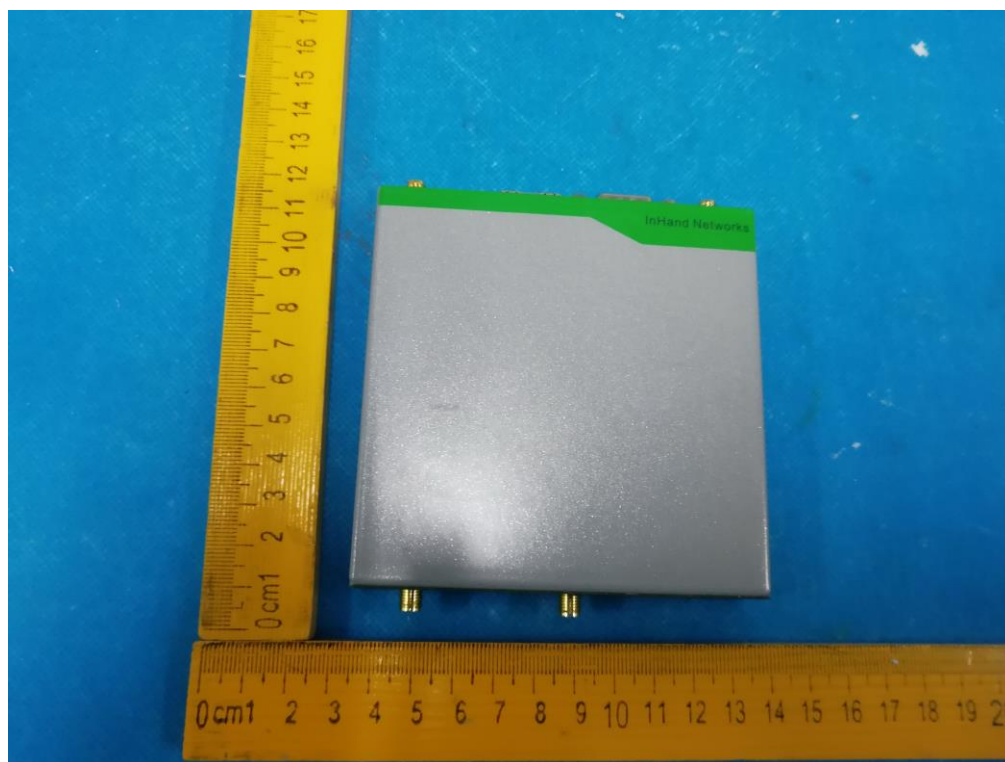
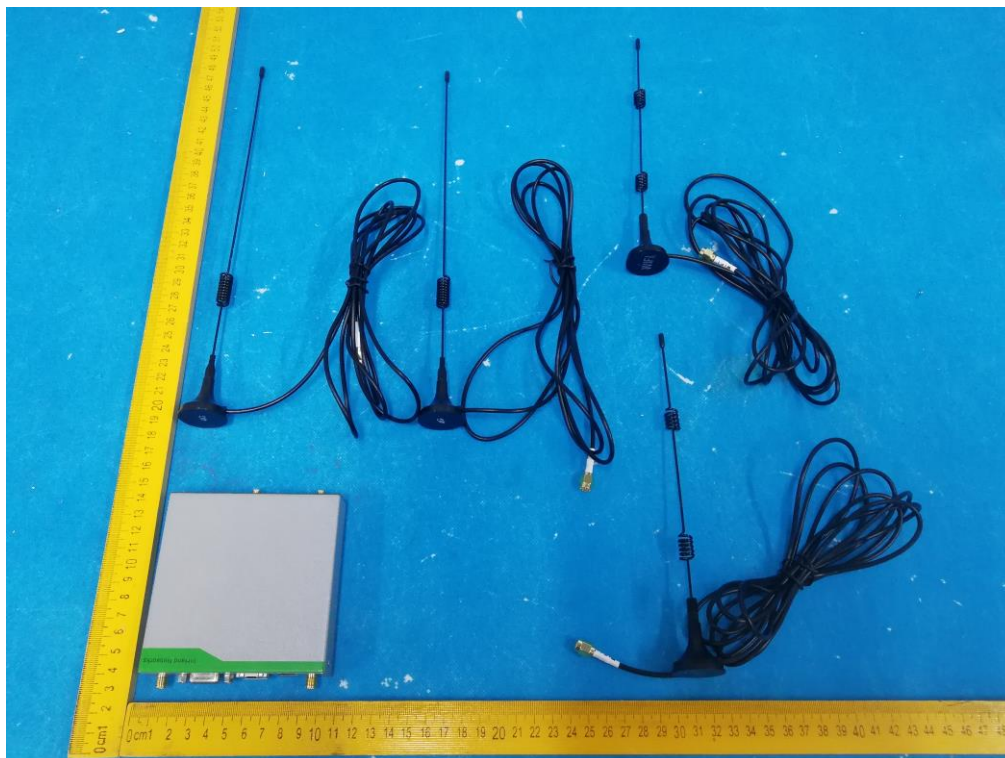
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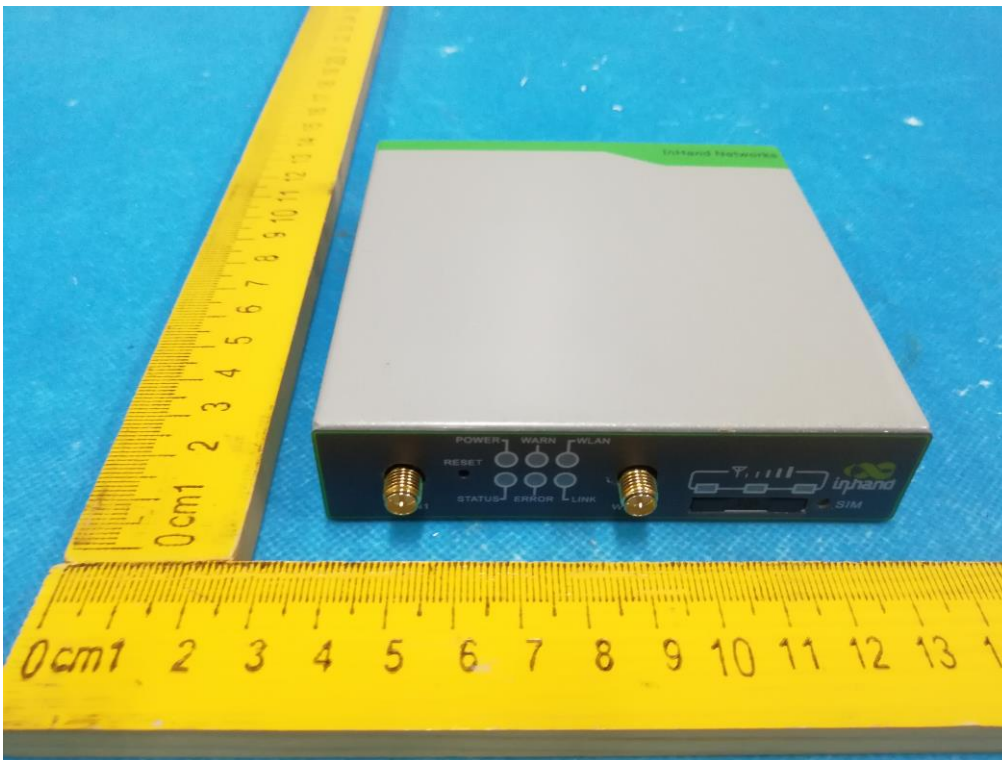


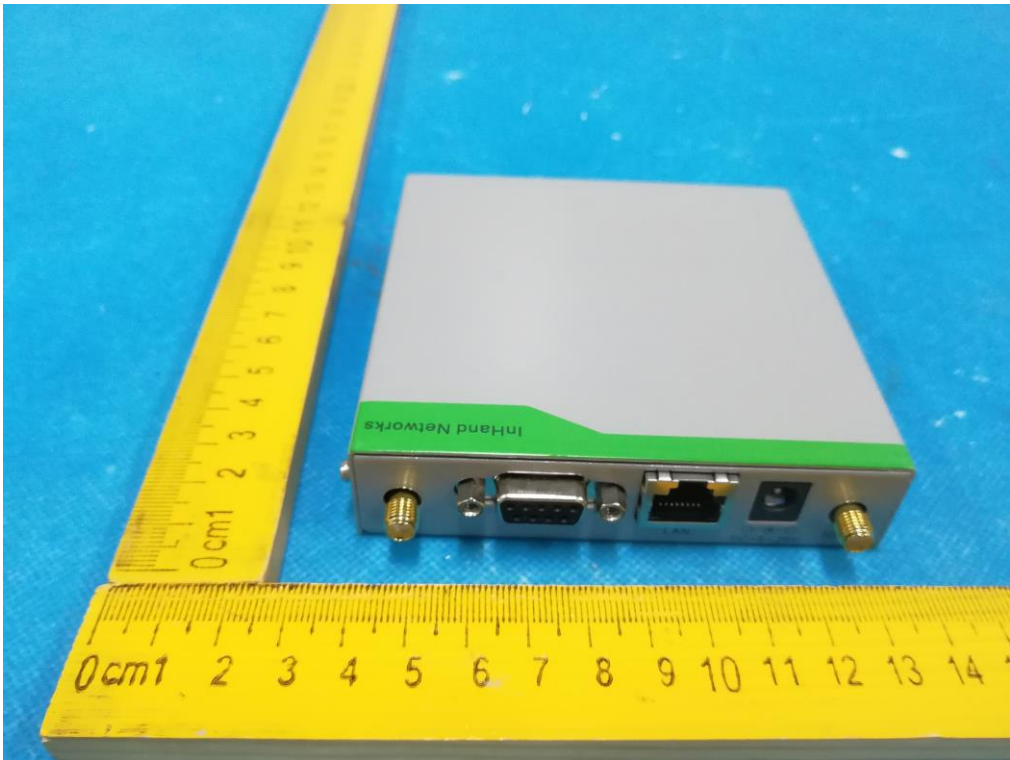
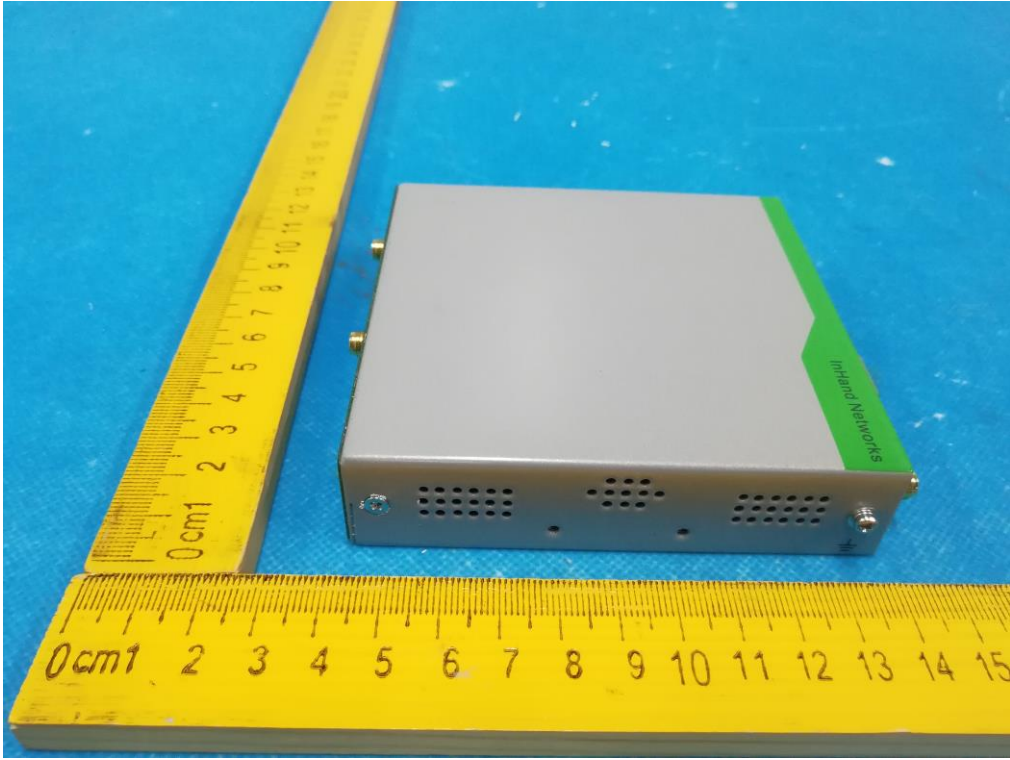
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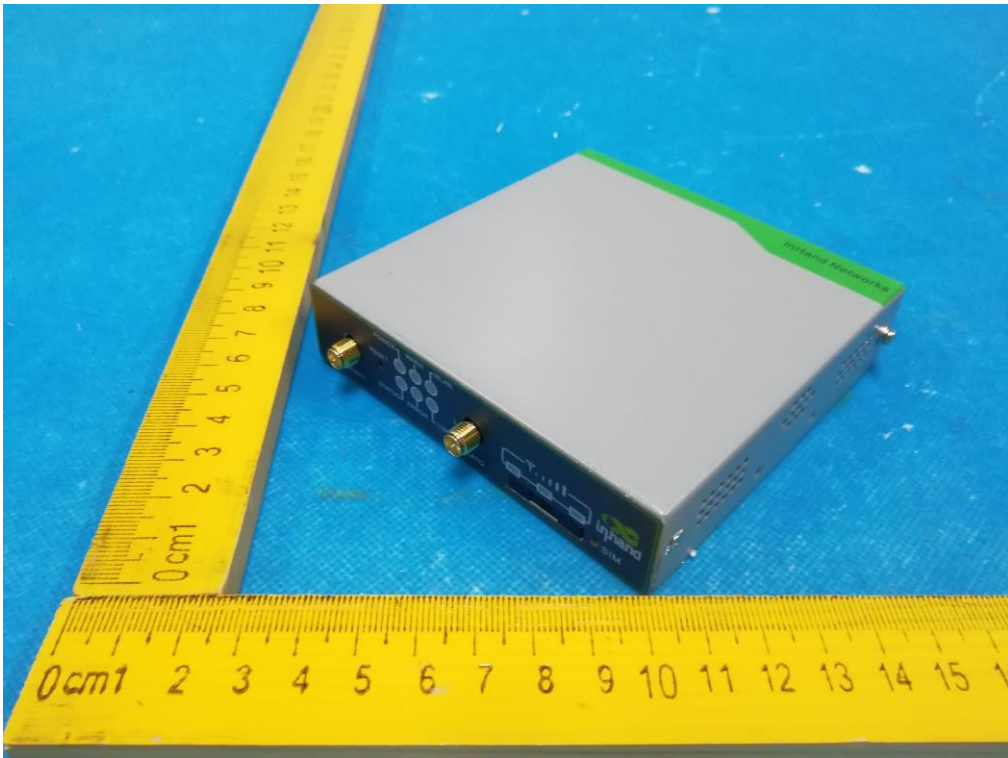
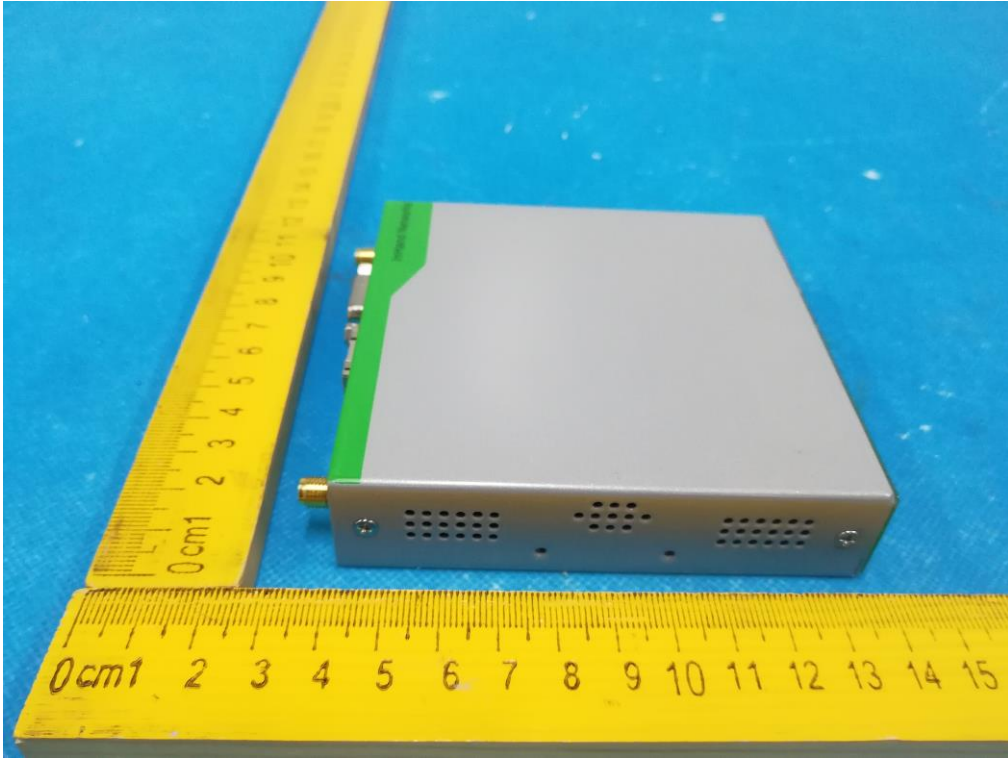


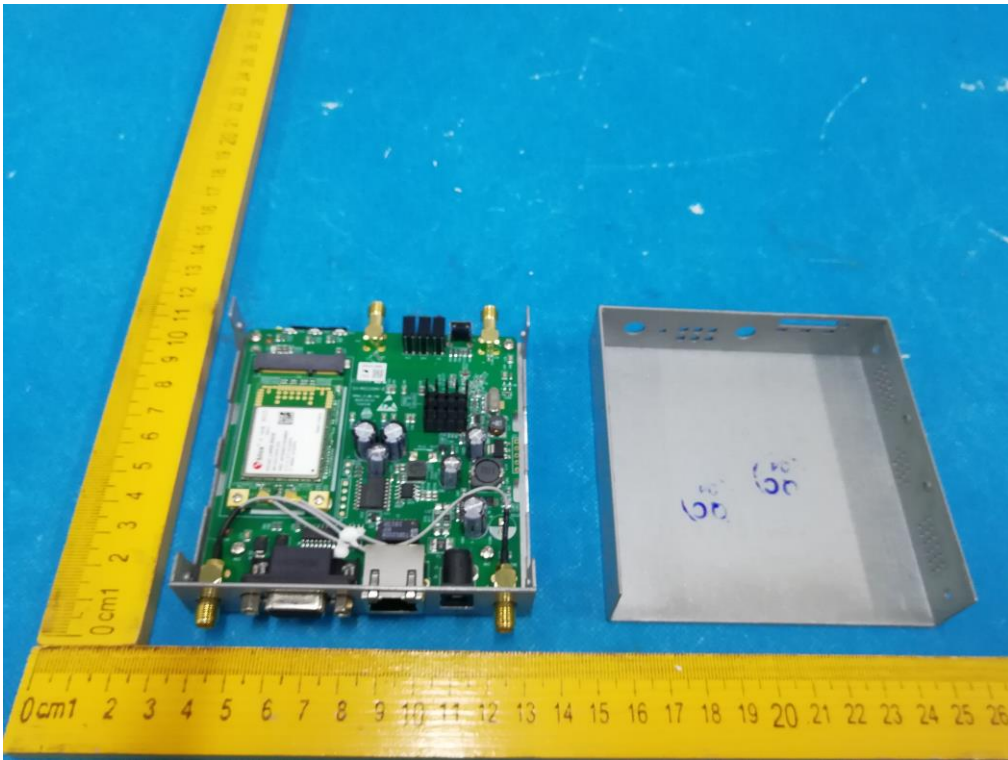
Appendix D. EUT PHOTOGRAPHS

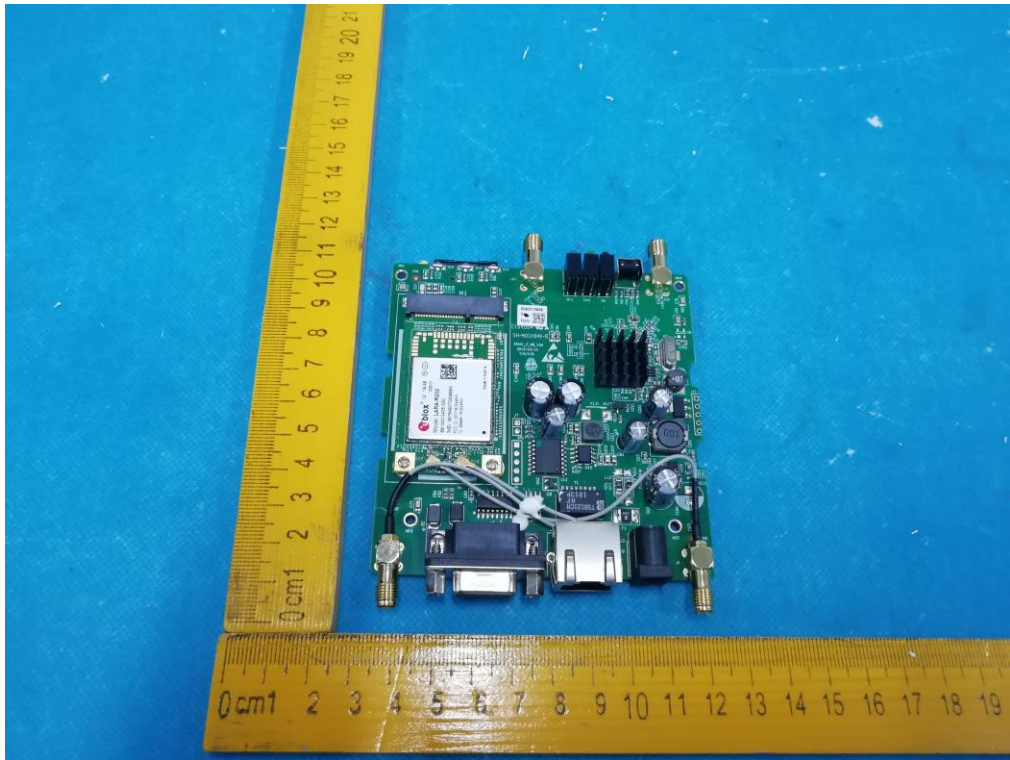




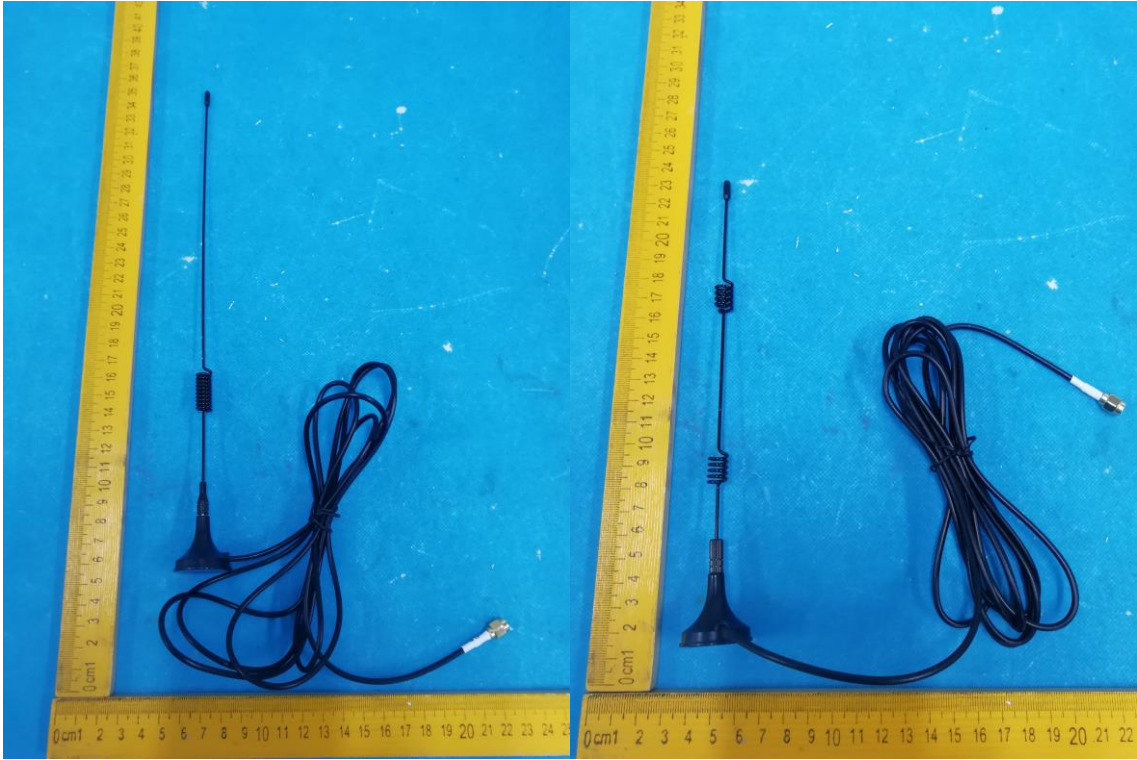












-----End of the report-----