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# RADIO TEST REPORT

Report No.: STS2203178W02

Issued for

Mulberry tech group LLC

108 Wall st, lakewood, New Jersey, 08701, USA

<b>Product Name:</b>	4G phone
<b>Brand Name:</b>	fig
<b>Model Name:</b>	F26
<b>Series Model:</b>	N/A
<b>FCC ID:</b>	2A6B4-FIGF26
<b>Test Standard:</b>	47 CFR Part 2, 24(E), 27

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Shenzhen STS Test Services Co., Ltd.

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TEST RESULT CERTIFICATION

Applicant's Name.....: Mulberry tech group LLC
Address.....: 108 Wall st, lakewood, New Jersey, 08701, USA
Manufacturer's Name.....: Ying Tai Electronics Co., Ltd
Address.....: ROOM 803, CHEVALIER HOUSE 45-51 CHATHAM ROAD SOUTH, TSIM SHA TSUI, KOWLOON, HONG KONG, CHINA

Product Description

Product Name.....: 4G phone
Brand Name.....: fig
Model Name.....: F26
Series Model.....: N/A
Test Standards.....: 47 CFR Part 2, 24(E), 27
Test Procedure.....: KDB 971168 D01 v03r01, ANSI C63.26 2015

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Date of Test.....:
Date of receipt of test item.....: 28 Mar. 2022
Date (s) of performance of tests : 28 Mar. 2022 ~ 05 May 2022
Date of Issue.....: 05 May 2022
Test Result.....: Pass

Testing Engineer : [Signature]
(Chris Chen)

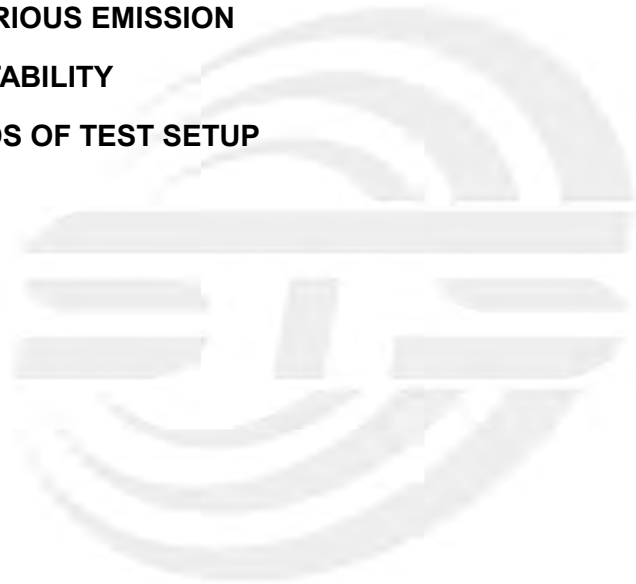
Technical Manager : [Signature]
(Sean she)

Authorized Signatory : [Signature]
(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	05 May 2022	STS2203178W02	ALL	Initial Issue





## 1. TEST FACTORY & MEASUREMENT UNCERTAINTY

### 1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

### 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	RF output power, conducted	$\pm 0.87\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.895\text{dB}$
3	All emissions, radiated 9K-30MHz	$\pm 3.80\text{dB}$
4	All emissions, radiated 30M-1GHz	$\pm 4.09\text{dB}$
5	All emissions, radiated 1G-6GHz	$\pm 4.92\text{dB}$
6	All emissions, radiated >6G	$\pm 5.49\text{dB}$
7	Conducted Emission (9KHz-30MHz)	$\pm 2.73\text{dB}$



## 2. GENERAL INFORMATION

### 2.1 TECHNICAL SPECIFICATIONS AND REGULATIONS

#### 2.1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Name	4G phone
Trade Name	fig
Model Name	F26
Series Model	N/A
Model Difference	N/A
Frequency Bands	U.S. Bands: LTE FDD Band 2      LTE FDD Band 4 LTE FDD Band 5      LTE FDD Band 12 LTE FDD Band 13     LTE FDD Band 17 LTE FDD Band 30     LTE FDD Band 66
SIM Card	SIM 1 and SIM 2 is a chipset unit and tested as single chipset, SIM 1 is used to tested.
Antenna	PIFA
Antenna gain	1dBi
Battery parameter	Rated Voltage:3.8V Charge Limit Voltage: 4.35V Capacity: 1450mAh
Adapter	Input: AC 100-240V 50/60Hz 0.15A Output: DC 5.0V 1A
Extreme Vol. Limits	3V to 4.35V (Nominal 3.8V)
Extreme Temp. Tolerance	-10°C to +50°C
Hardware version number	L531-MB-V3.1
Software version number	N/A

Note: The antenna information refer the manufacturer provide report, applicable only to the tested sa-mple identified in the report.



## 2.1.2 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

Product Specification Subjective To This Standard	
Tx Frequency	LTE Band 2:1850~1910MHz LTE Band 4:1710~1755MHz LTE Band 5:824~849MHz LTE Band 12:699~716MHz LTE Band 13:777~787MHz LTE Band 17:704~716MHz LTE Band 30:2305~2315MHz LTE Band 66:1710~1780MHz
Rx Frequency	LTE Band 2:1930 ~1990MHz LTE Band 4:2110~2155MHz LTE Band 5:869~894MHz LTE Band 12:729~746MHz LTE Band 13:746~756MHz LTE Band 17:734~746MHz LTE Band 30:2350~2360MHz LTE Band 66:2110~2200MHz
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 LTE Band 13: 5MHz / 10MHz LTE Band 17: 5MHz / 10MHz LTE Band 30: 5MHz / 10MHz LTE Band 66: 1.4MHz / 3MHz / 5MHz / 10MHz / 15MHz /20MHz
Maximum Output Power	LTE Band 2: 23.57 dBm LTE Band 4: 23.37 dBm LTE Band 5: 23.51 dBm LTE Band 12: 23.95 dBm LTE Band 13: 23.45 dBm LTE Band 17: 24.04 dBm LTE Band 30: 22.58 dBm LTE Band 66: 23.52 dBm
Type of Modulation	QPSK /16QAM /164QAM



2.1.3 EMISSION DESIGNATOR

<b>LTE Band 2</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
1.4	1M10G7D	1M10W7D
3	2M69G7D	2M69W7D
5	4M54G7D	4M51W7D
10	9M01G7D	8M98W7D
15	13M5G7D	13M4W7D
20	18M0G7D	18M0W7D
<b>LTE Band 4</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
1.4	1M09G7D	1M10W7D
3	2M69G7D	2M69W7D
5	4M53G7D	4M51W7D
10	9M02G7D	8M99W7D
15	13M5G7D	13M5W7D
20	18M0G7D	18M0W7D
<b>LTE Band 5</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
1.4	1M09G7D	1M10W7D
3	2M69G7D	2M69W7D
5	4M54G7D	4M52W7D
10	9M01G7D	8M99W7D
<b>LTE Band 12</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
1.4	1M09G7D	1M10W7D
3	2M69G7D	2M69W7D
5	4M53G7D	4M54W7D
10	9M04G7D	9M04W7D
<b>LTE Band 13</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
5	4M53G7D	4M51W7D
10	9M01G7D	8M97W7D
<b>LTE Band 17</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
5	4M54G7D	4M53W7D
10	9M04G7D	9M04W7D
<b>LTE Band 30</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
5	4M51G7D	4M53W7D
10	8M97G7D	8M98W7D
<b>LTE Band 66</b>	<b>Emission Designator</b>	<b>Emission Designator</b>
<b>BW(MHz)</b>	<b>(99%OBW)QPSK</b>	<b>(99%OBW)16QAM</b>
1.4	1M10G7D	1M11W7D
3	2M70G7D	2M70W7D
5	4M56G7D	4M54W7D
10	9M06G7D	9M06W7D
15	13M6G7D	13M6W7D
20	18M0G7D	18M0W7D





2.1.4 TEST CONFIGURATION OF EQUIPMENT UNDER TEST

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 v03r01 and ANSI C63.26 2015 Power Meas. License Digital Systems with maximum output power. Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

Remark:

1. The mark 'v' means that this configuration is chosen for testing
2. The mark '-' means that this bandwidth is not supported.
3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated.

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	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v			v	v	v	v	v	v	v	v
	12	v	v	v	v			v	v	v	v	v	v	v	v
	13			v	v			v	v	v	v	v		v	
	17			v	v			v	v	v	v	v	v	v	v
	30			v	v			v	v	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Peak&Avera Ratio	2	v	v	v	v	v	v	v	v	v		v		v	
	4	v	v	v	v	v	v	v	v	v		v		v	
	5	v	v	v	v			v	v	v		v		v	
	12	v	v	v	v			v	v	v		v		v	
	13			v	v			v	v	v		v		v	
	17			v	v			v	v	v		v		v	
	30			v	v			v	v	v		v		v	
	66	v	v	v	v	v	v	v	v	v		v		v	
26dB&99% Bandwidth	2	v	v	v	v	v	v	v	v			v		v	
	4	v	v	v	v	v	v	v	v			v		v	
	5	v	v	v	v			v	v			v		v	
	12	v	v	v	v			v	v			v		v	
	13			v	v			v	v			v		v	
	17			v	v			v	v			v		v	
	30			v	v			v	v			v		v	
	66	v	v	v	v	v	v	v	v			v		v	



Conducted Band Edge	2	v	v	v	v	v	v	v	v			v	v		v
	4	v	v	v	v	v	v	v	v			v	v		v
	5	v	v	v	v			v	v			v	v		v
	12	v	v	v	v			v	v			v	v		v
	13			v	v			v	v			v		v	
	17			v	v			v	v			v	v		v
	30			v	v			v	v			v	v		v
	66	v	v	v	v	v	v	v	v			v	v		v
Conducted Spurious Emission	2	v	v	v	v	v	v	v	v	v		v	v		v
	4	v	v	v	v	v	v	v	v	v		v	v		v
	5	v	v	v	v			v	v	v		v	v		v
	12	v	v	v	v			v	v	v		v	v		v
	13			v	v			v	v	v		v		v	
	17			v	v			v	v	v		v	v		v
	30			v	v			v	v	v		v	v		v
	66	v	v	v	v	v	v	v	v	v		v	v		v
Frequency Stability	2				v			v				v			v
	4				v			v				v			v
	5				v			v				v			v
	12				v			v				v			v
	13				v			v				v			v
	17				v			v				v			v
	30				v			v				v			v
	66				v			v				v			v
E.R.P.& E.I.R.P.	2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
	5	v	v	v	v			v	v	v	v	v	v	v	v
	12	v	v	v	v			v	v	v	v	v	v	v	v
	13			v	v			v	v	v	v	v		v	
	17			v	v			v	v	v	v	v	v	v	v
	30			v	v			v	v	v	v	v	v	v	v
	66	v	v	v	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	2	v	v	v	v	v	v	v		v		v	v		v
	4	v	v	v	v	v	v	v		v		v	v		v
	5	v	v	v	v			v		v		v	v		v
	12	v	v	v	v			v		v		v	v		v
	13			v	v			v		v					v
	17			v	v			v		v			v	v	v
	30			v	v			v		v			v	v	v
	66	v	v	v	v	v	v	v		v			v	v	v



#### 2.1.5 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for filing to comply with the 47 CFR Part 2, 24(E), 27.

#### 2.1.6 SPECIAL ACCESSORIES

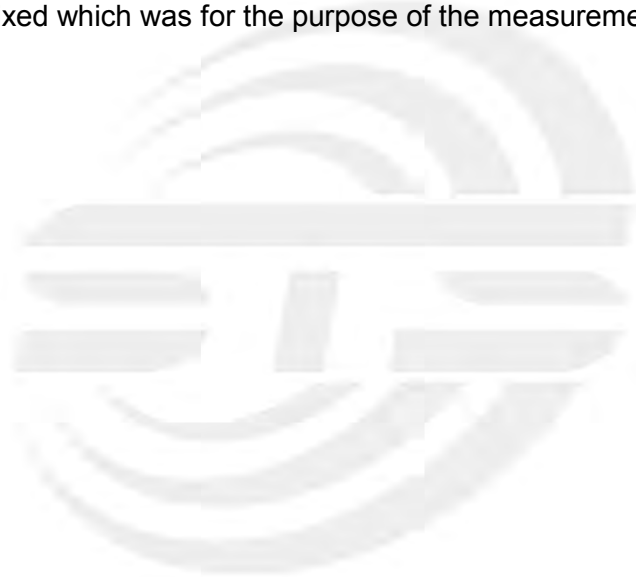
The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with eut intended for fcc grant together.

#### 2.1.7 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

#### 2.1.8 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.





### 2.1.9 CONFIGURATION OF EUT SYSTEM

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission’s requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

E-1 EUT
------------

Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	Length	Note
N/A	N/A	N/A	N/A	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (2) “YES” is means “with core”; “NO” is means “without core”.



2.1.10 MEASUREMENT INSTRUMENTS

The radiated emission testing was performed according to the procedures of ANSI C63.26 2015 and FCC CFR 47 rules of 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057.

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
Signal Analyzer	R&S	FSV 40-N	101823	2021.09.30	2022.09.29
Signal Generator	Agilent	83752A	3610A02740	2021.09.30	2022.09.29
Wireless Communications Test Set	R&S	CMW 500	131428	2022.03.01	2023.02.28
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2021.10.11	2023.10.10
Bilog Antenna	TESEQ	CBL6111D	45873	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1343	2020.10.12	2022.10.11
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier (0.1M-3GHz)	EM	EM330	060665	2021.10.08	2022.10.07
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2021.09.30	2022.09.29
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2021.09.28	2022.09.27
Turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	BULUN	BL410-E/18.905			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Universal Radio communication tester	R&S	CMU200	111058	2021.09.29	2022.09.28
Wireless Communications Test Set	R&S	CMW 500	131428	2022.03.01	2023.02.28
Signal Analyzer	Agilent	N9020A	MY52440124	2022.03.01	2023.02.28
Temperature & Humidity test chamber	Safety test	AG80L	171200018	2022.03.01	2023.02.28
Programmable power supply	Agilent	E3642A	MY40002025	2021.10.08	2022.10.07
Temperature & Humidity	SW-108	SuWei	N/A	2022.03.02	2023.03.01
Test SW	FARAD	LZ-RF /LzRf-3A3			



### 2.1.11 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 EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

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

*Offset = RF Cable Loss + Attenuator Factor.*



### 3. CONDUCTED OUTPUT POWER&RADIATED POWER AND EFFECTIVE ISOTROPIC RADIATED POWER

#### 3.1 DESCRIPTION OF THE CONDUCTED OUTPUT POWER MEASUREMENT

##### 3.1.1 MEASUREMENT METHOD

###### CONDUCTED OUTPUT POWER:

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

Configuration follows KDB 971168 D01 v03r01.

C63.26 2015 Section 5.2.5.5.

In many cases, RF output power limits are specified in terms of the ERP or the EIRP. Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are defined as the product of the power supplied to the antenna and its gain (relative to a dipole antenna in the case of ERP, and relative to an isotropic antenna in the case of EIRP); however, when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts). The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

$$(1) \text{ ERP or EIRP} = P_{\text{Meas}} + GT$$

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

where

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

$P_{\text{Meas}}$  measured transmitter output power or PSD, in dBm or dBW

GT gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

For devices utilizing multiple antennas, see 6.4 for guidance with respect to determining the effective array transmit antenna gain term to be used in the above equation.

The following equations demonstrate the mathematical relationship between ERP and EIRP:

a)  $\text{ERP} = \text{EIRP} - 2.15$ , where ERP and EIRP are expressed in consistent units.

b)  $\text{EIRP} = \text{ERP} + 2.15$ , where ERP and EIRP are expressed in consistent units.

##### 3.1.2 TEST SETUP



##### 3.1.3 TEST PROCEDURES

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

##### 3.1.4 TEST RESULTS

Note: The test data please reference to attachment "STS2203178W02\_Appendix LTE".

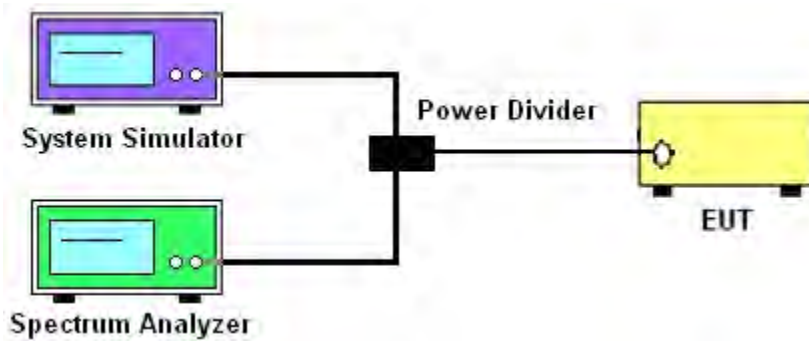
## 4. PEAK-TO-AVERAGE RATIO

### 4.1 DESCRIPTION OF THE CONDUCTED OUTPUT POWER MEASUREMENT

#### 4.1.1 MEASUREMENT METHOD

Use one of the procedures presented in 4.1.3 to measure the total peak power and record as PPK. Use one of the applicable procedures presented 4.1.3 to measure the total average power and record as PAVg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:  
 $PAPR (dB) = PPK (dBm) - PAVg (dBm)$ .

#### 4.1.2 TEST SETUP



#### 4.1.3 TEST PROCEDURES

1. The testing follows FCC KDB 971168 D01 v03r01 Section 5.7 and ANSI C63.26 2015 Section 5.2.6.
2. The EUT was connected to spectrum and system simulator via a power divider
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Set the test probe and measure the peak and average power of the spectrum analyzer
5. Record the deviation as Peak to Average Ratio.

#### 4.1.4 TEST RESULTS

Note: The test data please reference to attachment "STS2203178W02\_Appendix LTE".



## 5. OCCUPIED BANDWIDTH

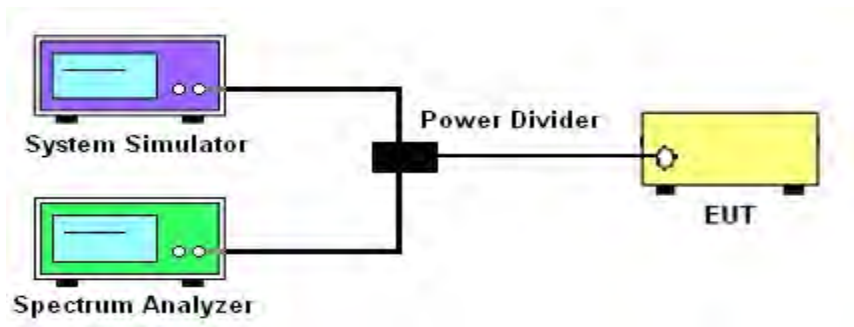
### 5.1 DESCRIPTION OF OCCUPIED BANDWIDTH MEASUREMENT

#### 5.1.1 MEASUREMENT METHOD

1. 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.

2. 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.

#### 5.1.2 TEST SETUP



#### 5.1.3 TEST PROCEDURES

1. The testing follows FCC KDB 971168 D01 v03r01 Section 4.2 and 4.3.
2. The EUT was connected to spectrum and system simulator via a power divider.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Set the test probe and measure the Occupied Bandwidth of the spectrum analyzer.
5. Measure and record the Occupied Bandwidth from the Spectrum Analyzer.

#### 5.1.4 MEASUREMENT RESULT

Note: The test data please reference to attachment “STS2203178W02\_Appendix LTE”.



## 6. CONDUCTED BAND EDGE

### 6.1 DESCRIPTION OF CONDUCTED BAND EDGE MEASUREMENT

#### 6.1.1 MEASUREMENT METHOD

##### 1. §22.917(a)

For operations in the 824 – 849 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 100kHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

##### 2. §24.238 (a)

For operations in the 1850-1910 and 1930-1990 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 1MHz bandwidth. 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

##### 3. §27.53 (h)

For operations in the 1710 – 1755 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

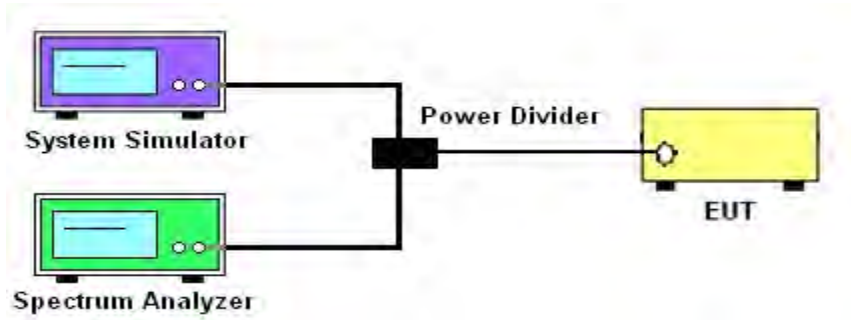
##### 4. §27.53(m)(4)

For operations in the 2500 MHz ~ 2570 MHz band this section, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

##### 5. §27.53 (g)

For operations in the 698 -746 MHz band, the FCC limit is  $43 + 10\log_{10}(P[\text{Watts}])$  dB below the transmitter power  $P(\text{Watts})$  in a 100 kHz bandwidth. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

### 6.1.2 TEST SETUP



### 6.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.7.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured. Set RBW  $\geq$  1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS/AVG detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from  $43 + 10\log(P)$  dB below the transmitter power P(Watts)
 
$$= P(W) - [43 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$$

$$= -13\text{dBm}.$$

Band 7:

$$= P(W) - [55 + 10\log(P)] \text{ (dB)}$$

$$= [30 + 10\log(P)] \text{ (dBm)} - [55 + 10\log(P)] \text{ (dB)}$$

$$= -25\text{dBm}.$$

### 6.1.4 MEASUREMENT RESULT

Note: The test data please reference to attachment "STS2203178W02\_Appendix LTE".

## 7. CONDUCTED SPURIOUS EMISSION

### 7.1 DESCRIPTION OF CONDUCTED SPURIOUS EMISSION MEASUREMENT

#### 7.1.1 MEASUREMENT METHOD

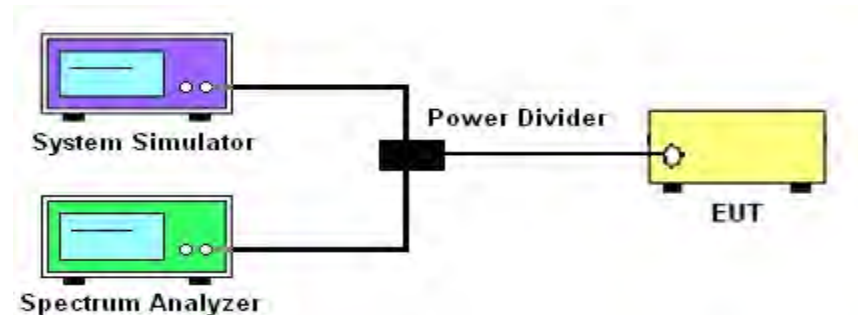
The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

For Band 7:

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least  $55 + 10 \log (P)$  dB.

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

#### 7.1.2 TEST SETUP



#### 7.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 v03r01 Section 6.0 and ANSI C63.26 2015 Section 5.7.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement
4. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. 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)  
 $= -13$  dBm.

For Band 7:  $P(W) - [43 + 10\log(P)]$  (dB) =  $-25$  dBm

#### 7.1.4 TEST RESULTS

Note: The test data please reference to attachment "STS2203178W02\_Appendix LTE".

## 8. RADIATED SPURIOUS EMISSION

### 8.1 DESCRIPTION OF RADIATED SPURIOUS EMISSION

#### 8.1.1 MEASUREMENT METHOD

The radiated spurious emission was measured by substitution method according to ANSI C63.26 2015. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

For Band 7 The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $55 + 10 \log (P)$  dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

#### 8.1.2 TEST SETUP

The procedure of radiated spurious emissions is as follows:

a) Pre-calibration With pre-calibration method, the Radiated Spurious Emissions(RSE) is calculated as,  $RSE = Rx \text{ (dBuV)} + CL \text{ (dB)} + SA \text{ (dB)} + Gain \text{ (dBi)} - 107 \text{ (dBuV to dBm)}$  The SA is calibrated using following setup.

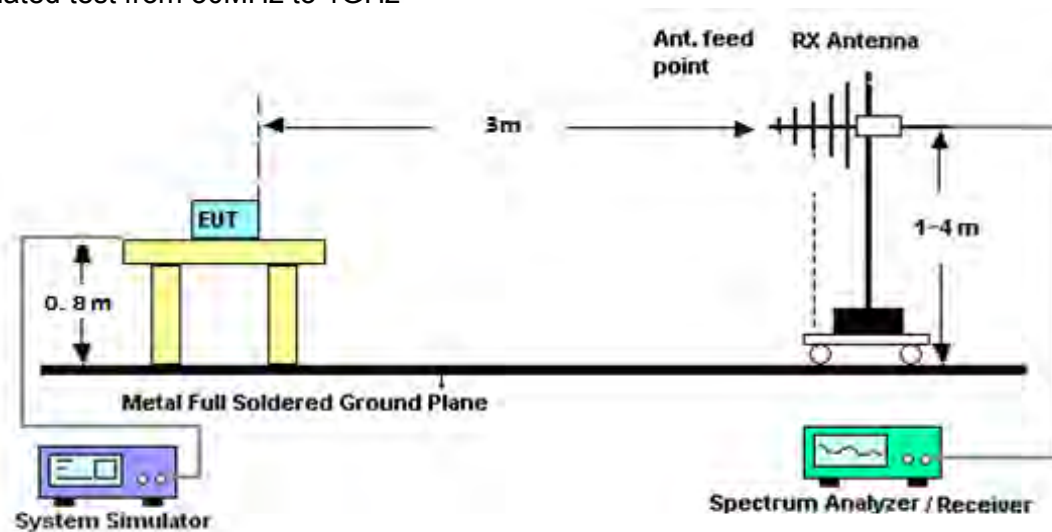
b) EUT was placed on 1.5 m non-conductive stand at a 3 m test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 m from the test item for emission measurements. The height of receiving antenna is 0.8m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the test item and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic measured with peak detector and 1MHz bandwidth.

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of any band into any of the other blocks.

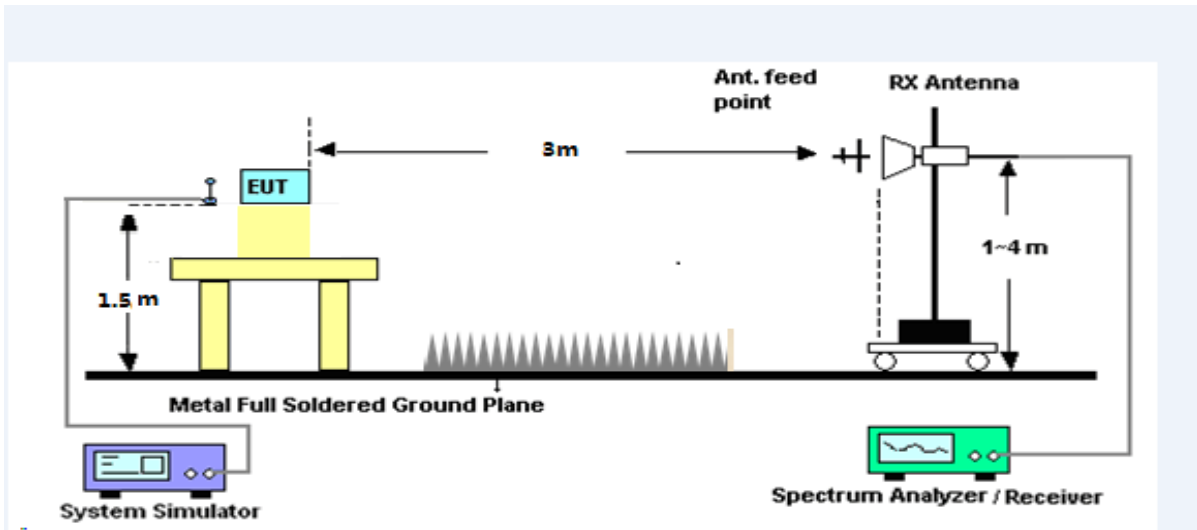
The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established and the ARpl is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss and the air loss. The measurement results are obtained as described below:

$$\text{Power} = \text{PMea} + \text{ARpl}$$

For radiated test from 30MHz to 1GHz



For radiated test from above 1GHz



### 8.1.3 TEST PROCEDURES

1. The testing FCC KDB 971168 D01 Section 7 and ANSI C63.26 2015 Section 5.5.
2. The EUT was placed on a rotatable wooden table with 1.5 meter above ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from  $43 + 10\log(P)\text{dB}$  below the transmitter power  $P(\text{Watts})$   
 $= P(\text{W}) - [43 + 10\log(P)] (\text{dB})$   
 $= [30 + 10\log(P)] (\text{dBm}) - [43 + 10\log(P)] (\text{dB})$   
 $= -13\text{dBm}$

For Band 7:

The limit line is derived from  $55 + 10\log(P)\text{dB}$  below the transmitter power  $P(\text{Watts})$   
 $= [30 + 10\log(P)] (\text{dBm}) - [55 + 10\log(P)] (\text{dB})$   
 $= -25\text{dBm}$

$P_{\text{Mea}} = \text{S.G Level} + \text{Ant-Cable loss}$ ;  $\text{Margin} = P_{\text{Mea}} - \text{Limit}$ .



## 8.1.4 TEST RESULTS

LTE Band 2 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3701.19	-34.10	12.60	12.93	-34.43	-13.00	-21.43	H
5552.07	-34.75	13.10	17.11	-38.76	-13.00	-25.76	H
7402.56	-33.56	11.50	22.20	-44.26	-13.00	-31.26	H
3701.19	-35.59	12.60	12.93	-35.92	-13.00	-22.92	V
5552.07	-34.62	13.10	17.11	-38.63	-13.00	-25.63	V
7402.56	-32.83	11.50	22.20	-43.53	-13.00	-30.53	V
LTE Band 2 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3760.27	-33.76	12.60	12.93	-34.09	-13.00	-21.09	H
5639.91	-35.23	13.10	17.11	-39.24	-13.00	-26.24	H
7519.81	-33.35	11.50	22.20	-44.05	-13.00	-31.05	H
3760.27	-35.95	12.60	12.93	-36.28	-13.00	-23.28	V
5639.91	-34.69	13.10	17.11	-38.70	-13.00	-25.70	V
7519.81	-33.09	11.50	22.20	-43.79	-13.00	-30.79	V
LTE Band 2 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3818.42	-34.15	12.60	12.93	-34.48	-13.00	-21.48	H
5727.71	-34.89	13.10	17.11	-38.90	-13.00	-25.90	H
7637.04	-33.36	11.50	22.20	-44.06	-13.00	-31.06	H
3818.42	-35.88	12.60	12.93	-36.21	-13.00	-23.21	V
5727.71	-34.32	13.10	17.11	-38.33	-13.00	-25.33	V
7637.04	-32.37	11.50	22.20	-43.07	-13.00	-30.07	V



LTE Band 2 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3702.86	-33.60	12.60	12.93	-33.93	-13.00	-20.93	H
5554.18	-34.54	13.10	17.11	-38.55	-13.00	-25.55	H
7405.71	-33.38	11.50	22.20	-44.08	-13.00	-31.08	H
3702.86	-34.84	12.60	12.93	-35.17	-13.00	-22.17	V
5554.18	-34.17	13.10	17.11	-38.18	-13.00	-25.18	V
7405.71	-31.79	11.50	22.20	-42.49	-13.00	-29.49	V
LTE Band 2 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3759.89	-33.84	12.60	12.93	-34.17	-13.00	-21.17	H
5640.22	-34.92	13.10	17.11	-38.93	-13.00	-25.93	H
7519.85	-32.42	11.50	22.20	-43.12	-13.00	-30.12	H
3759.89	-35.09	12.60	12.93	-35.42	-13.00	-22.42	V
5640.22	-34.07	13.10	17.11	-38.08	-13.00	-25.08	V
7519.85	-31.77	11.50	22.20	-42.47	-13.00	-29.47	V
LTE Band 2 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3817.02	-34.18	12.60	12.93	-34.51	-13.00	-21.51	H
5725.28	-34.13	13.10	17.11	-38.14	-13.00	-25.14	H
7633.87	-33.37	11.50	22.20	-44.07	-13.00	-31.07	H
3817.02	-35.13	12.60	12.93	-35.46	-13.00	-22.46	V
5725.28	-34.95	13.10	17.11	-38.96	-13.00	-25.96	V
7633.87	-32.45	11.50	22.20	-43.15	-13.00	-30.15	V





LTE Band 2 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3705.01	-33.74	12.60	12.93	-34.07	-13.00	-21.07	H
5557.14	-34.46	13.10	17.11	-38.47	-13.00	-25.47	H
7409.81	-32.17	11.50	22.20	-42.87	-13.00	-29.87	H
3705.01	-34.56	12.60	12.93	-34.89	-13.00	-21.89	V
5557.14	-34.12	13.10	17.11	-38.13	-13.00	-25.13	V
7409.81	-31.71	11.50	22.20	-42.41	-13.00	-29.41	V
LTE Band 2 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3760.08	-34.61	12.60	12.93	-34.94	-13.00	-21.94	H
5640.22	-34.27	13.10	17.11	-38.28	-13.00	-25.28	H
7520.25	-33.02	11.50	22.20	-43.72	-13.00	-30.72	H
3760.08	-35.08	12.60	12.93	-35.41	-13.00	-22.41	V
5640.22	-34.33	13.10	17.11	-38.34	-13.00	-25.34	V
7520.25	-32.50	11.50	22.20	-43.20	-13.00	-30.20	V
LTE Band 2 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3815.43	-34.71	12.60	12.93	-35.04	-13.00	-22.04	H
5722.16	-35.13	13.10	17.11	-39.14	-13.00	-26.14	H
7630.12	-33.07	11.50	22.20	-43.77	-13.00	-30.77	H
3815.43	-35.83	12.60	12.93	-36.16	-13.00	-23.16	V
5722.16	-34.95	13.10	17.11	-38.96	-13.00	-25.96	V
7630.12	-31.85	11.50	22.20	-42.55	-13.00	-29.55	V



LTE Band 2 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3710.41	-34.54	12.60	12.93	-34.87	-13.00	-21.87	H
5565.34	-34.79	13.10	17.11	-38.80	-13.00	-25.80	H
7419.97	-33.11	11.50	22.20	-43.81	-13.00	-30.81	H
3710.41	-35.88	12.60	12.93	-36.21	-13.00	-23.21	V
5565.34	-34.64	13.10	17.11	-38.65	-13.00	-25.65	V
7419.97	-32.42	11.50	22.20	-43.12	-13.00	-30.12	V
LTE Band 2 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3760.08	-34.70	12.60	12.93	-35.03	-13.00	-22.03	H
5639.99	-34.79	13.10	17.11	-38.80	-13.00	-25.80	H
7520.24	-33.47	11.50	22.20	-44.17	-13.00	-31.17	H
3760.08	-35.56	12.60	12.93	-35.89	-13.00	-22.89	V
5639.99	-35.02	13.10	17.11	-39.03	-13.00	-26.03	V
7520.24	-33.16	11.50	22.20	-43.86	-13.00	-30.86	V
LTE Band 2 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3810.11	-34.42	12.60	12.93	-34.75	-13.00	-21.75	H
5714.61	-35.19	13.10	17.11	-39.20	-13.00	-26.20	H
7620.01	-33.50	11.50	22.20	-44.20	-13.00	-31.20	H
3810.11	-35.97	12.60	12.93	-36.30	-13.00	-23.30	V
5714.61	-35.20	13.10	17.11	-39.21	-13.00	-26.21	V
7620.01	-32.87	11.50	22.20	-43.57	-13.00	-30.57	V



LTE Band 2 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3714.79	-34.51	12.60	12.93	-34.84	-13.00	-21.84	H
5572.50	-34.00	13.10	17.11	-38.01	-13.00	-25.01	H
7430.43	-32.68	11.50	22.20	-43.38	-13.00	-30.38	H
3714.79	-35.03	12.60	12.93	-35.36	-13.00	-22.36	V
5572.50	-34.16	13.10	17.11	-38.17	-13.00	-25.17	V
7430.43	-32.99	11.50	22.20	-43.69	-13.00	-30.69	V
LTE Band 2 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3759.77	-33.68	12.60	12.93	-34.01	-13.00	-21.01	H
5639.82	-34.09	13.10	17.11	-38.10	-13.00	-25.10	H
7520.22	-33.38	11.50	22.20	-44.08	-13.00	-31.08	H
3759.77	-34.57	12.60	12.93	-34.90	-13.00	-21.90	V
5639.82	-34.72	13.10	17.11	-38.73	-13.00	-25.73	V
7520.22	-32.53	11.50	22.20	-43.23	-13.00	-30.23	V
LTE Band 2 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3805.29	-34.27	12.60	12.93	-34.60	-13.00	-21.60	H
5707.63	-34.94	13.10	17.11	-38.95	-13.00	-25.95	H
7610.21	-32.46	11.50	22.20	-43.16	-13.00	-30.16	H
3805.29	-35.71	12.60	12.93	-36.04	-13.00	-23.04	V
5707.63	-33.94	13.10	17.11	-37.95	-13.00	-24.95	V
7610.21	-32.68	11.50	22.20	-43.38	-13.00	-30.38	V



LTE Band 2 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3720.07	-33.81	12.60	12.93	-34.14	-13.00	-21.14	H
5580.30	-35.47	13.10	17.11	-39.48	-13.00	-26.48	H
7440.09	-32.85	11.50	22.20	-43.55	-13.00	-30.55	H
3720.07	-34.82	12.60	12.93	-35.15	-13.00	-22.15	V
5580.30	-34.04	13.10	17.11	-38.05	-13.00	-25.05	V
7440.09	-32.10	11.50	22.20	-42.80	-13.00	-29.80	V
LTE Band 2 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3759.77	-34.73	12.60	12.93	-35.06	-13.00	-22.06	H
5640.04	-34.87	13.10	17.11	-38.88	-13.00	-25.88	H
7519.84	-33.26	11.50	22.20	-43.96	-13.00	-30.96	H
3759.77	-35.26	12.60	12.93	-35.59	-13.00	-22.59	V
5640.04	-34.03	13.10	17.11	-38.04	-13.00	-25.04	V
7519.84	-31.81	11.50	22.20	-42.51	-13.00	-29.51	V
LTE Band 2 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3800.04	-33.52	12.60	12.93	-33.85	-13.00	-20.85	H
5699.79	-34.28	13.10	17.11	-38.29	-13.00	-25.29	H
7599.79	-32.84	11.50	22.20	-43.54	-13.00	-30.54	H
3800.04	-35.31	12.60	12.93	-35.64	-13.00	-22.64	V
5699.79	-35.11	13.10	17.11	-39.12	-13.00	-26.12	V
7599.79	-32.27	11.50	22.20	-42.97	-13.00	-29.97	V



LTE Band 4 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3421.03	-34.06	12.90	12.56	-33.72	-13.00	-20.72	H
5132.03	-34.24	13.10	16.32	-37.46	-13.00	-24.46	H
6842.77	-33.04	12.33	21.13	-41.84	-13.00	-28.84	H
3421.03	-35.30	12.90	12.56	-34.96	-13.00	-21.96	V
5132.03	-34.44	13.10	16.32	-37.66	-13.00	-24.66	V
6842.77	-32.71	12.33	21.13	-41.51	-13.00	-28.51	V
LTE Band 4 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3464.69	-33.68	12.90	12.56	-33.34	-13.00	-20.34	H
5196.80	-35.48	13.10	16.32	-38.70	-13.00	-25.70	H
6930.13	-32.15	12.33	21.13	-40.95	-13.00	-27.95	H
3464.69	-34.67	12.90	12.56	-34.33	-13.00	-21.33	V
5196.80	-35.17	13.10	16.32	-38.39	-13.00	-25.39	V
6930.13	-32.05	12.33	21.13	-40.85	-13.00	-27.85	V
LTE Band 4 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3508.34	-33.78	12.90	12.56	-33.44	-13.00	-20.44	H
5262.29	-34.55	13.10	16.32	-37.77	-13.00	-24.77	H
7015.45	-32.18	12.33	21.13	-40.98	-13.00	-27.98	H
3508.34	-35.33	12.90	12.56	-34.99	-13.00	-21.99	V
5262.29	-35.00	13.10	16.32	-38.22	-13.00	-25.22	V
7015.45	-32.36	12.33	21.13	-41.16	-13.00	-28.16	V



LTE Band 4 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3423.71	-33.67	12.90	12.56	-33.33	-13.00	-20.33	H
5136.05	-34.17	13.10	16.32	-37.39	-13.00	-24.39	H
6848.62	-33.36	12.33	21.13	-42.16	-13.00	-29.16	H
3423.71	-34.63	12.90	12.56	-34.29	-13.00	-21.29	V
5136.05	-35.05	13.10	16.32	-38.27	-13.00	-25.27	V
6848.62	-32.78	12.33	21.13	-41.58	-13.00	-28.58	V
LTE Band 4 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3464.66	-33.60	12.90	12.56	-33.26	-13.00	-20.26	H
5196.95	-34.37	13.10	16.32	-37.59	-13.00	-24.59	H
6930.11	-32.33	12.33	21.13	-41.13	-13.00	-28.13	H
3464.66	-35.07	12.90	12.56	-34.73	-13.00	-21.73	V
5196.95	-35.18	13.10	16.32	-38.40	-13.00	-25.40	V
6930.11	-32.36	12.33	21.13	-41.16	-13.00	-28.16	V
LTE Band 4 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3505.94	-34.56	12.90	12.56	-34.22	-13.00	-21.22	H
5261.93	-34.42	13.10	16.32	-37.64	-13.00	-24.64	H
7012.58	-32.47	12.33	21.13	-41.27	-13.00	-28.27	H
3505.94	-34.83	12.90	12.56	-34.49	-13.00	-21.49	V
5261.93	-34.84	13.10	16.32	-38.06	-13.00	-25.06	V
7012.58	-31.75	12.33	21.13	-40.55	-13.00	-27.55	V



LTE Band 4 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3424.87	-34.14	12.90	12.56	-33.80	-13.00	-20.80	H
5136.88	-35.38	13.10	16.32	-38.60	-13.00	-25.60	H
6849.96	-33.03	12.33	21.13	-41.83	-13.00	-28.83	H
3424.87	-35.10	12.90	12.56	-34.76	-13.00	-21.76	V
5136.88	-34.14	13.10	16.32	-37.36	-13.00	-24.36	V
6849.96	-33.20	12.33	21.13	-42.00	-13.00	-29.00	V
LTE Band 4 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3464.68	-34.82	12.90	12.56	-34.48	-13.00	-21.48	H
5196.59	-34.11	13.10	16.32	-37.33	-13.00	-24.33	H
6929.99	-33.16	12.33	21.13	-41.96	-13.00	-28.96	H
3464.68	-35.61	12.90	12.56	-35.27	-13.00	-22.27	V
5196.59	-34.28	13.10	16.32	-37.50	-13.00	-24.50	V
6929.99	-33.02	12.33	21.13	-41.82	-13.00	-28.82	V
LTE Band 4 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3504.95	-34.04	12.90	12.56	-33.70	-13.00	-20.70	H
5256.87	-34.92	13.10	16.32	-38.14	-13.00	-25.14	H
7010.02	-33.46	12.33	21.13	-42.26	-13.00	-29.26	H
3504.95	-34.56	12.90	12.56	-34.22	-13.00	-21.22	V
5256.87	-34.93	13.10	16.32	-38.15	-13.00	-25.15	V
7010.02	-33.06	12.33	21.13	-41.86	-13.00	-28.86	V



LTE Band 4 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3430.21	-33.71	12.90	12.56	-33.37	-13.00	-20.37	H
5145.16	-34.28	13.10	16.32	-37.50	-13.00	-24.50	H
6860.26	-32.89	12.33	21.13	-41.69	-13.00	-28.69	H
3430.21	-34.52	12.90	12.56	-34.18	-13.00	-21.18	V
5145.16	-33.96	13.10	16.32	-37.18	-13.00	-24.18	V
6860.26	-32.14	12.33	21.13	-40.94	-13.00	-27.94	V
LTE Band 4 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3464.40	-34.86	12.90	12.56	-34.52	-13.00	-21.52	H
5196.64	-34.12	13.10	16.32	-37.34	-13.00	-24.34	H
6929.53	-32.41	12.33	21.13	-41.21	-13.00	-28.21	H
3464.40	-35.19	12.90	12.56	-34.85	-13.00	-21.85	V
5196.64	-34.70	13.10	16.32	-37.92	-13.00	-24.92	V
6929.53	-32.55	12.33	21.13	-41.35	-13.00	-28.35	V
LTE Band 4 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3500.13	-33.92	12.90	12.56	-33.58	-13.00	-20.58	H
5250.22	-35.18	13.10	16.32	-38.40	-13.00	-25.40	H
7000.12	-33.26	12.33	21.13	-42.06	-13.00	-29.06	H
3500.13	-34.57	12.90	12.56	-34.23	-13.00	-21.23	V
5250.22	-35.14	13.10	16.32	-38.36	-13.00	-25.36	V
7000.12	-32.30	12.33	21.13	-41.10	-13.00	-28.10	V





LTE Band 4 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3434.97	-34.87	12.90	12.56	-34.53	-13.00	-21.53	H
5152.19	-35.46	13.10	16.32	-38.68	-13.00	-25.68	H
6870.31	-32.90	12.33	21.13	-41.70	-13.00	-28.70	H
3434.97	-35.95	12.90	12.56	-35.61	-13.00	-22.61	V
5152.19	-34.41	13.10	16.32	-37.63	-13.00	-24.63	V
6870.31	-32.01	12.33	21.13	-40.81	-13.00	-27.81	V
LTE Band 4 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3464.88	-34.28	12.90	12.56	-33.94	-13.00	-20.94	H
5196.82	-34.68	13.10	16.32	-37.90	-13.00	-24.90	H
6930.16	-32.91	12.33	21.13	-41.71	-13.00	-28.71	H
3464.88	-35.27	12.90	12.56	-34.93	-13.00	-21.93	V
5196.82	-35.08	13.10	16.32	-38.30	-13.00	-25.30	V
6930.16	-31.98	12.33	21.13	-40.78	-13.00	-27.78	V
LTE Band 4 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3495.31	-33.89	12.90	12.56	-33.55	-13.00	-20.55	H
5242.36	-35.29	13.10	16.32	-38.51	-13.00	-25.51	H
6990.05	-32.61	12.33	21.13	-41.41	-13.00	-28.41	H
3495.31	-35.18	12.90	12.56	-34.84	-13.00	-21.84	V
5242.36	-35.19	13.10	16.32	-38.41	-13.00	-25.41	V
6990.05	-32.42	12.33	21.13	-41.22	-13.00	-28.22	V



LTE Band 4 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3440.03	-34.92	12.90	12.56	-34.58	-13.00	-21.58	H
5160.31	-34.60	13.10	16.32	-37.82	-13.00	-24.82	H
6880.74	-32.82	12.33	21.13	-41.62	-13.00	-28.62	H
3440.03	-35.83	12.90	12.56	-35.49	-13.00	-22.49	V
5160.31	-34.86	13.10	16.32	-38.08	-13.00	-25.08	V
6880.74	-32.61	12.33	21.13	-41.41	-13.00	-28.41	V
LTE Band 4 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3464.98	-34.22	12.90	12.56	-33.88	-13.00	-20.88	H
5196.74	-35.36	13.10	16.32	-38.58	-13.00	-25.58	H
6929.60	-32.49	12.33	21.13	-41.29	-13.00	-28.29	H
3464.98	-35.17	12.90	12.56	-34.83	-13.00	-21.83	V
5196.74	-34.79	13.10	16.32	-38.01	-13.00	-25.01	V
6929.60	-32.14	12.33	21.13	-40.94	-13.00	-27.94	V
LTE Band 4 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3490.56	-34.87	12.90	12.56	-34.53	-13.00	-21.53	H
5235.29	-35.02	13.10	16.32	-38.24	-13.00	-25.24	H
6979.63	-32.50	12.33	21.13	-41.30	-13.00	-28.30	H
3490.56	-34.78	12.90	12.56	-34.44	-13.00	-21.44	V
5235.29	-34.98	13.10	16.32	-38.20	-13.00	-25.20	V
6979.63	-32.69	12.33	21.13	-41.49	-13.00	-28.49	V



LTE Band 5 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1648.84	-33.86	9.56	9.72	-34.02	-13.00	-21.02	H
2473.62	-34.86	10.50	10.86	-35.22	-13.00	-22.22	H
3298.33	-32.61	12.78	11.57	-31.40	-13.00	-18.40	H
1648.84	-34.95	9.56	9.72	-35.11	-13.00	-22.11	V
2473.62	-33.98	10.50	10.86	-34.34	-13.00	-21.34	V
3298.33	-32.63	12.78	11.57	-31.42	-13.00	-18.42	V
LTE Band 5 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1672.62	-34.55	9.56	9.72	-34.71	-13.00	-21.71	H
2509.36	-35.47	10.50	10.86	-35.83	-13.00	-22.83	H
3345.30	-33.02	12.78	11.57	-31.81	-13.00	-18.81	H
1672.62	-35.84	9.56	9.72	-36.00	-13.00	-23.00	V
2509.36	-34.18	10.50	10.86	-34.54	-13.00	-21.54	V
3345.30	-31.81	12.78	11.57	-30.60	-13.00	-17.60	V
LTE Band 5 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1696.25	-33.78	9.56	9.72	-33.94	-13.00	-20.94	H
2544.36	-34.10	10.50	10.86	-34.46	-13.00	-21.46	H
3392.96	-32.81	12.78	11.57	-31.60	-13.00	-18.60	H
1696.25	-35.30	9.56	9.72	-35.46	-13.00	-22.46	V
2544.36	-33.93	10.50	10.86	-34.29	-13.00	-21.29	V
3392.96	-32.21	12.78	11.57	-31.00	-13.00	-18.00	V



LTE Band 5 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1650.50	-34.92	9.56	9.72	-35.08	-13.00	-22.08	H
2476.06	-35.38	10.50	10.86	-35.74	-13.00	-22.74	H
3301.43	-32.62	12.78	11.57	-31.41	-13.00	-18.41	H
1650.50	-34.59	9.56	9.72	-34.75	-13.00	-21.75	V
2476.06	-34.86	10.50	10.86	-35.22	-13.00	-22.22	V
3301.43	-32.70	12.78	11.57	-31.49	-13.00	-18.49	V
LTE Band 5 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1672.18	-33.77	9.56	9.72	-33.93	-13.00	-20.93	H
2508.67	-34.33	10.50	10.86	-34.69	-13.00	-21.69	H
3345.63	-33.13	12.78	11.57	-31.92	-13.00	-18.92	H
1672.18	-35.64	9.56	9.72	-35.80	-13.00	-22.80	V
2508.67	-34.45	10.50	10.86	-34.81	-13.00	-21.81	V
3345.63	-32.14	12.78	11.57	-30.93	-13.00	-17.93	V
LTE Band 5 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1694.32	-34.86	9.56	9.72	-35.02	-13.00	-22.02	H
2542.14	-34.84	10.50	10.86	-35.20	-13.00	-22.20	H
3389.08	-33.46	12.78	11.57	-32.25	-13.00	-19.25	H
1694.32	-35.57	9.56	9.72	-35.73	-13.00	-22.73	V
2542.14	-34.25	10.50	10.86	-34.61	-13.00	-21.61	V
3389.08	-32.74	12.78	11.57	-31.53	-13.00	-18.53	V



LTE Band 5 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1652.42	-34.91	9.56	9.72	-35.07	-13.00	-22.07	H
2478.78	-35.15	10.50	10.86	-35.51	-13.00	-22.51	H
3305.34	-32.23	12.78	11.57	-31.02	-13.00	-18.02	H
1652.42	-35.44	9.56	9.72	-35.60	-13.00	-22.60	V
2478.78	-34.91	10.50	10.86	-35.27	-13.00	-22.27	V
3305.34	-31.97	12.78	11.57	-30.76	-13.00	-17.76	V
LTE Band 5 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1672.44	-34.11	9.56	9.72	-34.27	-13.00	-21.27	H
2509.02	-34.76	10.50	10.86	-35.12	-13.00	-22.12	H
3345.34	-32.58	12.78	11.57	-31.37	-13.00	-18.37	H
1672.44	-35.38	9.56	9.72	-35.54	-13.00	-22.54	V
2509.02	-34.20	10.50	10.86	-34.56	-13.00	-21.56	V
3345.34	-32.53	12.78	11.57	-31.32	-13.00	-18.32	V
LTE Band 5 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1692.53	-34.50	9.56	9.72	-34.66	-13.00	-21.66	H
2538.69	-34.66	10.50	10.86	-35.02	-13.00	-22.02	H
3385.52	-32.74	12.78	11.57	-31.53	-13.00	-18.53	H
1692.53	-35.76	9.56	9.72	-35.92	-13.00	-22.92	V
2538.69	-35.11	10.50	10.86	-35.47	-13.00	-22.47	V
3385.52	-32.99	12.78	11.57	-31.78	-13.00	-18.78	V



LTE Band 5 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1657.48	-34.43	9.56	9.72	-34.59	-13.00	-21.59	H
2486.57	-34.29	10.50	10.86	-34.65	-13.00	-21.65	H
3315.12	-33.17	12.78	11.57	-31.96	-13.00	-18.96	H
1657.48	-35.60	9.56	9.72	-35.76	-13.00	-22.76	V
2486.57	-34.92	10.50	10.86	-35.28	-13.00	-22.28	V
3315.12	-32.69	12.78	11.57	-31.48	-13.00	-18.48	V
LTE Band 5 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1672.15	-34.40	9.56	9.72	-34.56	-13.00	-21.56	H
2509.07	-34.28	10.50	10.86	-34.64	-13.00	-21.64	H
3345.11	-33.27	12.78	11.57	-32.06	-13.00	-19.06	H
1672.15	-35.48	9.56	9.72	-35.64	-13.00	-22.64	V
2509.07	-33.89	10.50	10.86	-34.25	-13.00	-21.25	V
3345.11	-32.79	12.78	11.57	-31.58	-13.00	-18.58	V
LTE Band 5 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1687.70	-34.27	9.56	9.72	-34.43	-13.00	-21.43	H
2531.27	-34.65	10.50	10.86	-35.01	-13.00	-22.01	H
3375.73	-32.89	12.78	11.57	-31.68	-13.00	-18.68	H
1687.70	-35.59	9.56	9.72	-35.75	-13.00	-22.75	V
2531.27	-34.07	10.50	10.86	-34.43	-13.00	-21.43	V
3375.73	-33.03	12.78	11.57	-31.82	-13.00	-18.82	V



LTE Band 12 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1399.38	-34.34	8.17	9.34	-35.51	-13.00	-22.51	H
2099.08	-35.42	9.53	10.42	-36.31	-13.00	-23.31	H
2798.68	-33.52	11.27	11.12	-33.37	-13.00	-20.37	H
1399.38	-35.01	8.17	9.34	-36.18	-13.00	-23.18	V
2099.08	-35.09	9.53	10.42	-35.98	-13.00	-22.98	V
2798.68	-32.09	11.27	11.12	-31.94	-13.00	-18.94	V
LTE Band 12 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1414.96	-33.54	8.17	9.34	-34.71	-13.00	-21.71	H
2122.48	-34.93	9.53	10.42	-35.82	-13.00	-22.82	H
2829.69	-32.25	11.27	11.12	-32.10	-13.00	-19.10	H
1414.96	-35.58	8.17	9.34	-36.75	-13.00	-23.75	V
2122.48	-34.36	9.53	10.42	-35.25	-13.00	-22.25	V
2829.69	-31.77	11.27	11.12	-31.62	-13.00	-18.62	V
LTE Band 12 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1430.52	-34.15	8.17	9.34	-35.32	-13.00	-22.32	H
2145.61	-34.01	9.53	10.42	-34.90	-13.00	-21.90	H
2860.86	-32.75	11.27	11.12	-32.60	-13.00	-19.60	H
1430.52	-34.63	8.17	9.34	-35.80	-13.00	-22.80	V
2145.61	-34.18	9.53	10.42	-35.07	-13.00	-22.07	V
2860.86	-32.94	11.27	11.12	-32.79	-13.00	-19.79	V



LTE Band 12 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1400.74	-34.28	8.17	9.34	-35.45	-13.00	-22.45	H
2101.15	-35.19	9.53	10.42	-36.08	-13.00	-23.08	H
2801.93	-33.31	11.27	11.12	-33.16	-13.00	-20.16	H
1400.74	-35.20	8.17	9.34	-36.37	-13.00	-23.37	V
2101.15	-34.98	9.53	10.42	-35.87	-13.00	-22.87	V
2801.93	-32.04	11.27	11.12	-31.89	-13.00	-18.89	V
LTE Band 12 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1414.54	-33.45	8.17	9.34	-34.62	-13.00	-21.62	H
2122.29	-35.45	9.53	10.42	-36.34	-13.00	-23.34	H
2829.52	-32.92	11.27	11.12	-32.77	-13.00	-19.77	H
1414.54	-34.82	8.17	9.34	-35.99	-13.00	-22.99	V
2122.29	-34.22	9.53	10.42	-35.11	-13.00	-22.11	V
2829.52	-32.99	11.27	11.12	-32.84	-13.00	-19.84	V
LTE Band 12 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1428.58	-34.60	8.17	9.34	-35.77	-13.00	-22.77	H
2143.23	-34.40	9.53	10.42	-35.29	-13.00	-22.29	H
2857.74	-32.85	11.27	11.12	-32.70	-13.00	-19.70	H
1428.58	-35.42	8.17	9.34	-36.59	-13.00	-23.59	V
2143.23	-33.99	9.53	10.42	-34.88	-13.00	-21.88	V
2857.74	-32.11	11.27	11.12	-31.96	-13.00	-18.96	V





LTE Band 12 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1402.52	-34.15	8.17	9.34	-35.32	-13.00	-22.32	H
2104.47	-34.82	9.53	10.42	-35.71	-13.00	-22.71	H
2805.87	-32.83	11.27	11.12	-32.68	-13.00	-19.68	H
1402.52	-35.80	8.17	9.34	-36.97	-13.00	-23.97	V
2104.47	-35.18	9.53	10.42	-36.07	-13.00	-23.07	V
2805.87	-31.98	11.27	11.12	-31.83	-13.00	-18.83	V
LTE Band 12 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1414.82	-34.05	8.17	9.34	-35.22	-13.00	-22.22	H
2122.11	-34.78	9.53	10.42	-35.67	-13.00	-22.67	H
2829.60	-33.53	11.27	11.12	-33.38	-13.00	-20.38	H
1414.82	-35.85	8.17	9.34	-37.02	-13.00	-24.02	V
2122.11	-35.07	9.53	10.42	-35.96	-13.00	-22.96	V
2829.60	-31.74	11.27	11.12	-31.59	-13.00	-18.59	V
LTE Band 12 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1426.63	-33.91	8.17	9.34	-35.08	-13.00	-22.08	H
2140.25	-34.87	9.53	10.42	-35.76	-13.00	-22.76	H
2853.81	-33.20	11.27	11.12	-33.05	-13.00	-20.05	H
1426.63	-35.65	8.17	9.34	-36.82	-13.00	-23.82	V
2140.25	-34.13	9.53	10.42	-35.02	-13.00	-22.02	V
2853.81	-33.15	11.27	11.12	-33.00	-13.00	-20.00	V



LTE Band 12 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1407.99	-34.74	8.17	9.34	-35.91	-13.00	-22.91	H
2111.66	-35.14	9.53	10.42	-36.03	-13.00	-23.03	H
2815.96	-32.48	11.27	11.12	-32.33	-13.00	-19.33	H
1407.99	-35.19	8.17	9.34	-36.36	-13.00	-23.36	V
2111.66	-34.49	9.53	10.42	-35.38	-13.00	-22.38	V
2815.96	-32.27	11.27	11.12	-32.12	-13.00	-19.12	V
LTE Band 12 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1414.78	-34.23	8.17	9.34	-35.40	-13.00	-22.40	H
2122.27	-35.44	9.53	10.42	-36.33	-13.00	-23.33	H
2829.66	-32.60	11.27	11.12	-32.45	-13.00	-19.45	H
1414.78	-35.11	8.17	9.34	-36.28	-13.00	-23.28	V
2122.27	-35.24	9.53	10.42	-36.13	-13.00	-23.13	V
2829.66	-32.66	11.27	11.12	-32.51	-13.00	-19.51	V
LTE Band 12 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1421.52	-34.88	8.17	9.34	-36.05	-13.00	-23.05	H
2132.98	-35.41	9.53	10.42	-36.30	-13.00	-23.30	H
2843.92	-32.65	11.27	11.12	-32.50	-13.00	-19.50	H
1421.52	-35.79	8.17	9.34	-36.96	-13.00	-23.96	V
2132.98	-33.93	9.53	10.42	-34.82	-13.00	-21.82	V
2843.92	-32.20	11.27	11.12	-32.05	-13.00	-19.05	V



LTE Band 13 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1559.45	-48.76	9.56	9.72	-48.92	-40.00	-8.92	H
2338.34	-46.42	10.50	10.86	-46.78	-13.00	-33.78	H
3117.88	-45.89	12.78	11.57	-44.68	-13.00	-31.68	H
1559.45	-48.67	9.56	9.72	-48.83	-40.00	-8.83	V
2338.34	-47.03	10.50	10.86	-47.39	-13.00	-34.39	V
3117.88	-45.75	12.78	11.57	-44.54	-13.00	-31.54	V

LTE Band 13 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1564.05	-48.51	9.56	9.72	-48.67	-40.00	-8.67	H
2345.67	-47.03	10.50	10.86	-47.39	-13.00	-34.39	H
3127.78	-46.16	12.78	11.57	-44.95	-13.00	-31.95	H
1564.05	-48.71	9.56	9.72	-48.87	-40.00	-8.87	V
2345.67	-46.44	10.50	10.86	-46.80	-13.00	-33.80	V
3127.78	-45.21	12.78	11.57	-44.00	-13.00	-31.00	V

LTE Band 13 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1568.77	-47.44	9.56	9.72	-47.60	-40.00	-7.60	H
2353.43	-46.84	10.50	10.86	-47.20	-13.00	-34.20	H
3138.44	-45.58	12.78	11.57	-44.37	-13.00	-31.37	H
1568.77	-48.13	9.56	9.72	-48.29	-40.00	-8.29	V
2353.43	-46.50	10.50	10.86	-46.86	-13.00	-33.86	V
3138.44	-46.25	12.78	11.57	-45.04	-13.00	-32.04	V

LTE Band 13 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1563.71	-47.45	9.56	9.72	-47.61	-40.00	-7.61	H
2345.82	-46.60	10.50	10.86	-46.96	-13.00	-33.96	H
3127.98	-45.72	12.78	11.57	-44.51	-13.00	-31.51	H
1563.71	-48.60	9.56	9.72	-48.76	-40.00	-8.76	V
2345.82	-46.94	10.50	10.86	-47.30	-13.00	-34.30	V
3127.98	-46.28	12.78	11.57	-45.07	-13.00	-32.07	V



LTE Band 17 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1413.45	-34.30	8.17	9.34	-35.47	-13.00	-22.47	H
2120.65	-35.33	9.53	10.42	-36.22	-13.00	-23.22	H
2826.67	-33.49	11.27	11.12	-33.34	-13.00	-20.34	H
1413.45	-35.70	8.17	9.34	-36.87	-13.00	-23.87	V
2120.65	-35.19	9.53	10.42	-36.08	-13.00	-23.08	V
2826.67	-31.75	11.27	11.12	-31.60	-13.00	-18.60	V
LTE Band 17 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1419.83	-34.28	8.17	9.34	-35.45	-13.00	-22.45	H
2129.94	-35.02	9.53	10.42	-35.91	-13.00	-22.91	H
2839.96	-32.76	11.27	11.12	-32.61	-13.00	-19.61	H
1419.83	-35.89	8.17	9.34	-37.06	-13.00	-24.06	V
2129.94	-34.12	9.53	10.42	-35.01	-13.00	-22.01	V
2839.96	-32.09	11.27	11.12	-31.94	-13.00	-18.94	V
LTE Band 17 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1426.04	-33.75	8.17	9.34	-34.92	-13.00	-21.92	H
2139.57	-34.16	9.53	10.42	-35.05	-13.00	-22.05	H
2852.76	-32.17	11.27	11.12	-32.02	-13.00	-19.02	H
1426.04	-34.96	8.17	9.34	-36.13	-13.00	-23.13	V
2139.57	-35.20	9.53	10.42	-36.09	-13.00	-23.09	V
2852.76	-32.23	11.27	11.12	-32.08	-13.00	-19.08	V



LTE Band 17 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1418.29	-34.49	8.17	9.34	-35.66	-13.00	-22.66	H
2127.18	-34.74	9.53	10.42	-35.63	-13.00	-22.63	H
2836.68	-32.19	11.27	11.12	-32.04	-13.00	-19.04	H
1418.29	-35.51	8.17	9.34	-36.68	-13.00	-23.68	V
2127.18	-33.97	9.53	10.42	-34.86	-13.00	-21.86	V
2836.68	-32.52	11.27	11.12	-32.37	-13.00	-19.37	V
LTE Band 17 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1420.14	-34.58	8.17	9.34	-35.75	-13.00	-22.75	H
2130.28	-35.08	9.53	10.42	-35.97	-13.00	-22.97	H
2839.82	-33.41	11.27	11.12	-33.26	-13.00	-20.26	H
1420.14	-35.75	8.17	9.34	-36.92	-13.00	-23.92	V
2130.28	-34.61	9.53	10.42	-35.50	-13.00	-22.50	V
2839.82	-31.93	11.27	11.12	-31.78	-13.00	-18.78	V
LTE Band 17 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1421.10	-34.65	8.17	9.34	-35.82	-13.00	-22.82	H
2131.78	-35.13	9.53	10.42	-36.02	-13.00	-23.02	H
2842.63	-33.40	11.27	11.12	-33.25	-13.00	-20.25	H
1421.10	-35.13	8.17	9.34	-36.30	-13.00	-23.30	V
2131.78	-33.93	9.53	10.42	-34.82	-13.00	-21.82	V
2842.63	-31.75	11.27	11.12	-31.60	-13.00	-18.60	V



LTE Band 30 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
4615.09	-45.76	12.91	12.95	-45.80	-40.00	-5.80	H
6922.35	-41.47	13.18	17.02	-45.31	-40.00	-5.31	H
9229.73	-35.91	12.45	21.78	-45.24	-40.00	-5.24	H
4615.09	-44.79	12.91	12.95	-44.83	-40.00	-4.83	V
6922.35	-41.47	13.18	17.02	-45.31	-40.00	-5.31	V
9229.73	-36.68	12.45	21.78	-46.01	-40.00	-6.01	V

LTE Band 30 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
4619.86	-44.67	12.91	12.95	-44.71	-40.00	-4.71	H
6929.89	-41.39	13.18	17.02	-45.23	-40.00	-5.23	H
9239.90	-35.62	12.45	21.78	-44.95	-40.00	-4.95	H
4619.86	-44.81	12.91	12.95	-44.85	-40.00	-4.85	V
6929.89	-41.86	13.18	17.02	-45.70	-40.00	-5.70	V
9239.90	-35.38	12.45	21.78	-44.71	-40.00	-4.71	V

LTE Band 30 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
4625.23	-44.88	12.91	12.95	-44.92	-40.00	-4.92	H
6937.67	-41.81	13.18	17.02	-45.65	-40.00	-5.65	H
9250.20	-35.74	12.45	21.78	-45.07	-40.00	-5.07	H
4625.23	-45.29	12.91	12.95	-45.33	-40.00	-5.33	V
6937.67	-41.39	13.18	17.02	-45.23	-40.00	-5.23	V
9250.20	-35.37	12.45	21.78	-44.70	-40.00	-4.70	V

LTE Band 30 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
4620.10	-44.47	12.91	12.95	-44.51	-40.00	-4.51	H
6930.00	-41.30	13.18	17.02	-45.14	-40.00	-5.14	H
9240.11	-35.57	12.45	21.78	-44.90	-40.00	-4.90	H
4620.10	-45.40	12.91	12.95	-45.44	-40.00	-5.44	V
6930.00	-42.06	13.18	17.02	-45.90	-40.00	-5.90	V
9240.11	-35.56	12.45	21.78	-44.89	-40.00	-4.89	V



LTE Band 66 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3421.49	-34.07	12.90	12.56	-33.73	-13.00	-20.73	H
5131.93	-34.46	13.10	16.32	-37.68	-13.00	-24.68	H
6842.85	-32.53	12.33	21.13	-41.33	-13.00	-28.33	H
3421.49	-35.78	12.90	12.56	-35.44	-13.00	-22.44	V
5131.93	-34.39	13.10	16.32	-37.61	-13.00	-24.61	V
6842.85	-32.65	12.33	21.13	-41.45	-13.00	-28.45	V
LTE Band 66 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3490.02	-33.48	12.90	12.56	-33.14	-13.00	-20.14	H
5235.10	-34.45	13.10	16.32	-37.67	-13.00	-24.67	H
6980.00	-33.00	12.33	21.13	-41.80	-13.00	-28.80	H
3490.02	-35.83	12.90	12.56	-35.49	-13.00	-22.49	V
5235.10	-34.08	13.10	16.32	-37.30	-13.00	-24.30	V
6980.00	-32.02	12.33	21.13	-40.82	-13.00	-27.82	V
LTE Band 66 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3558.16	-34.67	12.90	12.56	-34.33	-13.00	-21.33	H
5336.99	-35.15	13.10	16.32	-38.37	-13.00	-25.37	H
7116.73	-33.24	12.33	21.13	-42.04	-13.00	-29.04	H
3558.16	-35.40	12.90	12.56	-35.06	-13.00	-22.06	V
5336.99	-34.34	13.10	16.32	-37.56	-13.00	-24.56	V
7116.73	-32.83	12.33	21.13	-41.63	-13.00	-28.63	V



LTE Band 66 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3423.08	-34.62	12.90	12.56	-34.28	-13.00	-21.28	H
5134.37	-34.44	13.10	16.32	-37.66	-13.00	-24.66	H
6845.86	-33.55	12.33	21.13	-42.35	-13.00	-29.35	H
3423.08	-35.64	12.90	12.56	-35.30	-13.00	-22.30	V
5134.37	-34.93	13.10	16.32	-38.15	-13.00	-25.15	V
6845.86	-31.80	12.33	21.13	-40.60	-13.00	-27.60	V
LTE Band 66 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3490.04	-33.53	12.90	12.56	-33.19	-13.00	-20.19	H
5235.04	-35.05	13.10	16.32	-38.27	-13.00	-25.27	H
6980.07	-33.17	12.33	21.13	-41.97	-13.00	-28.97	H
3490.04	-34.67	12.90	12.56	-34.33	-13.00	-21.33	V
5235.04	-34.00	13.10	16.32	-37.22	-13.00	-24.22	V
6980.07	-32.00	12.33	21.13	-40.80	-13.00	-27.80	V
LTE Band 66 / 3MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3556.88	-33.45	12.90	12.56	-33.11	-13.00	-20.11	H
5262.16	-35.45	13.10	16.32	-38.67	-13.00	-25.67	H
7114.20	-32.95	12.33	21.13	-41.75	-13.00	-28.75	H
3556.88	-35.84	12.90	12.56	-35.50	-13.00	-22.50	V
5262.16	-34.89	13.10	16.32	-38.11	-13.00	-25.11	V
7114.20	-31.92	12.33	21.13	-40.72	-13.00	-27.72	V





LTE Band 66 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3425.05	-34.13	12.90	12.56	-33.79	-13.00	-20.79	H
5137.12	-34.81	13.10	16.32	-38.03	-13.00	-25.03	H
6850.35	-33.05	12.33	21.13	-41.85	-13.00	-28.85	H
3425.05	-35.01	12.90	12.56	-34.67	-13.00	-21.67	V
5137.12	-34.53	13.10	16.32	-37.75	-13.00	-24.75	V
6850.35	-31.93	12.33	21.13	-40.73	-13.00	-27.73	V
LTE Band 66 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3489.78	-33.93	12.90	12.56	-33.59	-13.00	-20.59	H
5234.89	-35.37	13.10	16.32	-38.59	-13.00	-25.59	H
6980.10	-32.22	12.33	21.13	-41.02	-13.00	-28.02	H
3489.78	-34.77	12.90	12.56	-34.43	-13.00	-21.43	V
5234.89	-34.35	13.10	16.32	-37.57	-13.00	-24.57	V
6980.10	-33.00	12.33	21.13	-41.80	-13.00	-28.80	V
LTE Band 66 / 5MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3558.04	-34.59	12.90	12.56	-34.25	-13.00	-21.25	H
52354.07	-34.82	13.10	16.32	-38.04	-13.00	-25.04	H
7109.93	-33.42	12.33	21.13	-42.22	-13.00	-29.22	H
3558.04	-35.45	12.90	12.56	-35.11	-13.00	-22.11	V
52354.07	-34.12	13.10	16.32	-37.34	-13.00	-24.34	V
7109.93	-31.98	12.33	21.13	-40.78	-13.00	-27.78	V



LTE Band 66 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3430.24	-34.60	12.90	12.56	-34.26	-13.00	-21.26	H
5145.23	-34.43	13.10	16.32	-37.65	-13.00	-24.65	H
6880.19	-32.33	12.33	21.13	-41.13	-13.00	-28.13	H
3430.24	-35.90	12.90	12.56	-35.56	-13.00	-22.56	V
5145.23	-34.45	13.10	16.32	-37.67	-13.00	-24.67	V
6880.19	-32.56	12.33	21.13	-41.36	-13.00	-28.36	V
LTE Band 66 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3489.91	-34.91	12.90	12.56	-34.57	-13.00	-21.57	H
5235.16	-35.05	13.10	16.32	-38.27	-13.00	-25.27	H
6979.95	-33.46	12.33	21.13	-42.26	-13.00	-29.26	H
3489.91	-35.88	12.90	12.56	-35.54	-13.00	-22.54	V
5235.16	-35.03	13.10	16.32	-38.25	-13.00	-25.25	V
6979.95	-32.23	12.33	21.13	-41.03	-13.00	-28.03	V
LTE Band 66 / 10MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3550.68	-33.45	12.90	12.56	-33.11	-13.00	-20.11	H
5235.28	-35.12	13.10	16.32	-38.34	-13.00	-25.34	H
7100.11	-32.17	12.33	21.13	-40.97	-13.00	-27.97	H
3550.68	-35.89	12.90	12.56	-35.55	-13.00	-22.55	V
5235.28	-34.82	13.10	16.32	-38.04	-13.00	-25.04	V
7100.11	-32.14	12.33	21.13	-40.94	-13.00	-27.94	V



LTE Band 66 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3435.09	-33.88	12.90	12.56	-33.54	-13.00	-20.54	H
5152.66	-34.42	13.10	16.32	-37.64	-13.00	-24.64	H
6870.26	-33.35	12.33	21.13	-42.15	-13.00	-29.15	H
3435.09	-34.92	12.90	12.56	-34.58	-13.00	-21.58	V
5152.66	-33.80	13.10	16.32	-37.02	-13.00	-24.02	V
6870.26	-32.19	12.33	21.13	-40.99	-13.00	-27.99	V
LTE Band 66 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3490.26	-34.87	12.90	12.56	-34.53	-13.00	-21.53	H
5234.80	-34.80	13.10	16.32	-38.02	-13.00	-25.02	H
6980.13	-32.55	12.33	21.13	-41.35	-13.00	-28.35	H
3490.26	-35.17	12.90	12.56	-34.83	-13.00	-21.83	V
5234.80	-34.66	13.10	16.32	-37.88	-13.00	-24.88	V
6980.13	-33.10	12.33	21.13	-41.90	-13.00	-28.90	V
LTE Band 66 / 15MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3544.92	-33.56	12.90	12.56	-33.22	-13.00	-20.22	H
5332.23	-35.18	13.10	16.32	-38.40	-13.00	-25.40	H
7090.19	-32.39	12.33	21.13	-41.19	-13.00	-28.19	H
3544.92	-35.86	12.90	12.56	-35.52	-13.00	-22.52	V
5332.23	-34.96	13.10	16.32	-38.18	-13.00	-25.18	V
7090.19	-32.73	12.33	21.13	-41.53	-13.00	-28.53	V



LTE Band 66 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3440.02	-34.58	12.90	12.56	-34.24	-13.00	-21.24	H
5160.06	-35.12	13.10	16.32	-38.34	-13.00	-25.34	H
6879.96	-33.27	12.33	21.13	-42.07	-13.00	-29.07	H
3440.02	-36.01	12.90	12.56	-35.67	-13.00	-22.67	V
5160.06	-33.99	13.10	16.32	-37.21	-13.00	-24.21	V
6879.96	-32.66	12.33	21.13	-41.46	-13.00	-28.46	V
LTE Band 66 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3490.06	-33.61	12.90	12.56	-33.27	-13.00	-20.27	H
5235.14	-35.47	13.10	16.32	-38.69	-13.00	-25.69	H
6979.85	-32.29	12.33	21.13	-41.09	-13.00	-28.09	H
3490.06	-35.86	12.90	12.56	-35.52	-13.00	-22.52	V
5235.14	-34.13	13.10	16.32	-37.35	-13.00	-24.35	V
6979.85	-31.95	12.33	21.13	-40.75	-13.00	-27.75	V
LTE Band 66 / 20MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
3539.90	-33.60	12.90	12.56	-33.26	-13.00	-20.26	H
5309.94	-34.72	13.10	16.32	-37.94	-13.00	-24.94	H
7080.92	-32.72	12.33	21.13	-41.52	-13.00	-28.52	H
3539.90	-35.97	12.90	12.56	-35.63	-13.00	-22.63	V
5309.94	-34.78	13.10	16.32	-38.00	-13.00	-25.00	V
7080.92	-33.04	12.33	21.13	-41.84	-13.00	-28.84	V

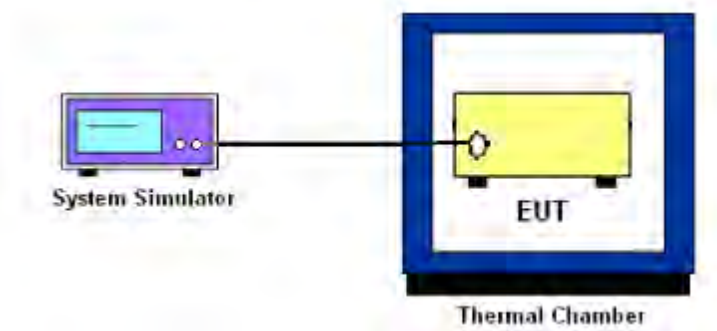
## 9. FREQUENCY STABILITY

### 9.1 DESCRIPTION OF FREQUENCY STABILITY MEASUREMENT

#### 10.1.1 MEASUREMENT METHOD

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within  $\pm 0.00025\%$  ( $\pm 2.5\text{ppm}$ ) of the center frequency.

#### 9.1.2 TEST SETUP



#### 9.1.3 TEST PROCEDURES FOR TEMPERATURE VARIATION

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to  $-30^{\circ}\text{C}$  and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in  $10^{\circ}\text{C}$  step up to  $50^{\circ}\text{C}$ . 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.

#### 9.1.4 TEST PROCEDURES FOR VOLTAGE VARIATION

1. The testing follows FCC KDB 971168 D01v01r03 Section 9.
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.



9.1.5 TEST RESULTS

LTE Band 2 (QPSK) / 1880MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	28.21	0.015	2.5ppm	PASS
40		28.02	0.015		
30		33.77	0.018		
20		20.49	0.011		
10		15.70	0.008		
0		24.90	0.013		
-10		25.27	0.013		
-20		23.05	0.012		
-30		23.40	0.012		
20		Maximum Voltage	32.27		
20	BEP	35.86	0.019		

LTE Band 2 (QPSK) / 1880MHz / BW20M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	26.13	0.014	2.5ppm	PASS
40		24.12	0.013		
30		34.21	0.018		
20		25.42	0.014		
10		18.16	0.010		
0		26.62	0.014		
-10		23.81	0.013		
-20		34.81	0.019		
-30		26.54	0.014		
20		Maximum Voltage	35.20		
20	BEP	15.21	0.008		



LTE Band 4 (QPSK) / 1733MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	20.92	0.012	2.5ppm	PASS
40		19.70	0.011		
30		33.56	0.019		
20		11.55	0.007		
10		20.84	0.012		
0		16.83	0.010		
-10		35.72	0.021		
-20		22.38	0.013		
-30		35.50	0.020		
20		Maximum Voltage	13.60		
20	BEP	25.85	0.015		

LTE Band 4 (QPSK) / 1733MHz / BW20M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	18.33	0.011	2.5ppm	PASS
40		16.59	0.010		
30		17.13	0.010		
20		36.23	0.021		
10		22.21	0.013		
0		29.34	0.017		
-10		16.62	0.010		
-20		27.09	0.016		
-30		21.63	0.012		
20		Maximum Voltage	21.93		
20	BEP	36.48	0.021		



LTE Band 5 (QPSK) / 836.5MHz / BW5M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	31.80	0.045	2.5ppm	PASS
40		17.48	0.025		
30		15.71	0.022		
20		17.30	0.024		
10		24.01	0.034		
0		25.92	0.037		
-10		14.10	0.002		
-20		11.50	0.016		
-30		19.32	0.027		
20		Maximum Voltage	13.61		
20	BEP	18.52	0.026		

LTE Band 5 (QPSK) / 836.5MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	30.26	0.043	2.5ppm	PASS
40		21.13	0.030		
30		32.43	0.046		
20		31.18	0.044		
10		26.91	0.038		
0		18.84	0.027		
-10		15.07	0.002		
-20		30.07	0.042		
-30		19.97	0.028		
20		Maximum Voltage	30.73		
20	BEP	11.50	0.016		





LTE Band 12 (QPSK) / 707.5MHz / BW5M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	29.05	0.041	2.5ppm	PASS
40		17.48	0.025		
30		22.16	0.031		
20		18.86	0.027		
10		19.25	0.027		
0		33.84	0.048		
-10		12.97	0.002		
-20		28.47	0.040		
-30		34.68	0.049		
20		Maximum Voltage	11.52		
20	BEP	33.39	0.047		

LTE Band 12 (QPSK) / 707.5MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	35.53	0.050	2.5ppm	PASS
40		25.46	0.036		
30		26.38	0.037		
20		22.59	0.032		
10		12.36	0.017		
0		27.77	0.039		
-10		27.37	0.004		
-20		25.28	0.036		
-30		34.40	0.048		
20		Maximum Voltage	18.54		
20	BEP	21.40	0.030		



LTE Band 13 (QPSK) / 782MHz / BW5M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	29.79	0.042	2.5ppm	PASS
40		29.66	0.042		
30		20.63	0.029		
20		25.68	0.036		
10		17.97	0.025		
0		32.01	0.045		
-10		16.87	0.002		
-20		25.27	0.036		
-30		35.01	0.049		
20		Maximum Voltage	28.19		
20	BEP	28.82	0.041		

LTE Band 13 (QPSK) / 782MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	27.58	0.039	2.5ppm	PASS
40		17.31	0.024		
30		34.05	0.048		
20		24.98	0.035		
10		25.42	0.036		
0		20.61	0.029		
-10		15.08	0.002		
-20		29.69	0.042		
-30		25.58	0.036		
20		Maximum Voltage	22.94		
20	BEP	35.83	0.050		



LTE Band 17 (QPSK) / 710MHz / BW5M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	15.47	0.022	2.5ppm	PASS
40		13.52	0.019		
30		27.95	0.039		
20		17.63	0.025		
10		35.00	0.049		
0		11.89	0.017		
-10		29.73	0.004		
-20		17.78	0.025		
-30		28.37	0.040		
20		Maximum Voltage	27.25		
20	BEP	22.24	0.031		

LTE Band 17 (QPSK) / 710MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	27.39	0.039	2.5ppm	PASS
40		15.05	0.021		
30		24.65	0.035		
20		11.64	0.016		
10		18.27	0.026		
0		23.43	0.033		
-10		31.19	0.004		
-20		19.34	0.027		
-30		24.19	0.034		
20		Maximum Voltage	17.57		
20	BEP	33.90	0.048		



LTE Band 30 (QPSK) / 2310MHz / BW5M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	29.23	0.041	2.5ppm	PASS
40		14.00	0.020		
30		36.34	0.051		
20		25.63	0.036		
10		22.82	0.032		
0		28.65	0.040		
-10		27.22	0.004		
-20		12.48	0.018		
-30		30.66	0.043		
20		Maximum Voltage	24.32		
20	BEP	15.00	0.021		

LTE Band 30 (QPSK) / 2310MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	27.28	0.038	2.5ppm	PASS
40		20.71	0.029		
30		17.33	0.024		
20		18.43	0.026		
10		22.22	0.031		
0		14.77	0.021		
-10		33.58	0.005		
-20		20.60	0.029		
-30		22.72	0.032		
20		Maximum Voltage	30.49		
20	BEP	27.34	0.039		



LTE Band 66 (QPSK) / 1745MHz / BW10M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	25.74	0.015	2.5ppm	PASS
40		20.23	0.012		
30		16.67	0.010		
20		19.04	0.011		
10		23.45	0.014		
0		33.81	0.020		
-10		22.54	0.013		
-20		28.86	0.017		
-30		18.82	0.011		
20		Maximum Voltage	12.76		
20	BEP	13.53	0.008		

LTE Band 66 (QPSK) / 1745MHz / BW20M					
Temperature (°C)	Voltage	Freq. Dev.	Freq. Dev.	Limit	Result
	(Volt)	(Hz)	(ppm)		
50	Normal Voltage	25.43	0.015	2.5ppm	PASS
40		36.26	0.021		
30		14.60	0.008		
20		25.17	0.015		
10		34.12	0.020		
0		18.93	0.011		
-10		25.75	0.015		
-20		22.90	0.013		
-30		22.24	0.013		
20		Maximum Voltage	16.71		
20	BEP	30.79	0.018		



## APPENDIX-PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

\*\*\*\*\*END OF THE REPORT\*\*\*\*\*

