

Report No.: FG051232-03



# FCC RADIO TEST REPORT

FCC ID : IHDT56ZB1

**Equipment**: Mobile Cellular Phone

**Brand Name : Motorola** 

Model Name : XT2071-2, XT2071-3, XT2071-5

Applicant : Motorola Mobility, LLC

222 W Merchandise Mart Plaza, Suite 1800,

Chicago, IL 60654, United States

Manufacturer: Motorola Mobility, LLC

222 W Merchandise Mart Plaza, Suite 1800,

Chicago, IL 60654, United States

Standard : FCC 47 CFR Part 2, 22(H), 24(E), 27

The product was received on May 22, 2020 and testing was started from Oct. 22, 2020 and completed on Oct. 24, 2020. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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Report Version

: 01

# History of this test report

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Report No.	Version	Description	Issued Date
FG051232-03	01	Initial issue of report	Oct. 30, 2020

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# **Summary of Test Result**

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark	
	§2.1046	Conducted Output Power	Reporting only		
3.2	§22.913 (a)(2)	Effective Radiated Power (n5)			
3.2	§27.50 (c)(10)	Effective Radiated Power (n71)	Pass	-	
	§24.232 (c) §27.50 (h)(2)	Equivalent Isotropic Radiated Power (n2) (n25) (n41)			
3.3	§24.232 (d)	Peak-to-Average Ratio	Pass	-	
3.4	§2.1049	Occupied Bandwidth	Reporting only	-	
3.5	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Conducted Band Edge Measurement (n2) (n5) (n25) (n71)	Pass	-	
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (n41)			
3.6	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Conducted Spurious Emission (n2) (n5) (n25) (n71)	Pass	-	
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (n41)			
3.7	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Pass	-	

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Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
	§2.1053 §22.917 (a) §24.238 (a) §27.53 (g)	Radiated Spurious Emission (n2) (n5) (n25) (n71)		Under limit 23.63 dB at 10172.000 MHz for PT Antenna
4.2	§2.1051 §27.53 (m)(4)	Radiated Spurious Emission (n41)	Pass	Under limit 45.88 dB at 2040.000 MHz for ASDIV Antenna

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**Remark:** This is a variant report by updating SW to enable 5G NR n41 Band and 5G NR n71 Band. All the test cases were performed on original report which can be referred to Sporton Report Number FG051232-02C. Based on the original report, the test cases were verified.

#### **Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

#### **Comments and Explanations:**

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

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# 1 General Description

# 1.1 Product Feature of Equipment Under Test

	Product Feature									
Equipment	Mobile Cellular F	Phone								
Brand Name	Motorola									
Model Name	XT2071-2, XT20	71-3, XT2071-5								
FCC ID	IHDT56ZB1									
		IMEI 1: 353590110016238								
	Conducted :	IMEI 2: 353590110016246								
IMEI Code	Conducted:	IMEI 1: 353590110023739								
IMEI Code		IMEI 2: 353590110023788								
	Radiation :	IMEI 1: 353590110017152								
	Radiation:	IMEI 2: 353590110017160								
	CDMA/EV-DO/G	SM/EGPRS/WCDMA/HSPA/LTE/5G NR/								
	GNSS/NFC									
EUT supports Radios application	WLAN 11a/b/g/n	HT20/HT40								
	WLAN 11ac VH	T20/VHT40/VHT80								
	Bluetooth BR/EDR/LE									
HW Version	DVT2									
EUT Stage	De .									

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**Remark:** The above EUT's information was declared by manufacturer.

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	Accessory List	
	Brand Name :	Motorola
AC Adapter 1 (US)	Model Name :	SC-51
	Manufacturer :	Chenyang
	Brand Name :	Motorola
AC Adapter 1 (EU)	Model Name :	SC-52
. , ,	Manufacturer :	Chenyang
	Brand Name :	Motorola
AC Adapter 1 (UK)	Model Name :	SC-53UK
	Manufacturer:	Chenyang
	Brand Name :	Motorola
AC Adapter 1 (AR)	Model Name :	SC-56
	Manufacturer :	Chenyang
	Brand Name :	Motorola
AC Adapter 1 (AU)	Model Name :	SC-55AU
	Manufacturer :	Chenyang
	Brand Name :	Motorola
AC Adapter 2 (US)	Model Name :	SC-51
	Manufacturer :	Acbel
	Brand Name :	Motorola
AC Adapter 2 (EU)	Model Name :	SC-52
	Manufacturer :	Acbel
	Brand Name :	Motorola
AC Adapter 2 (AR)	Model Name :	SC-56
	Manufacturer :	Acbel
	Brand Name :	Motorola
AC Adapter 3 (IN)	Model Name :	SC-54
	Manufacturer :	Salom
	Brand Name :	Motorola
Battery 1	Model Name :	LS30
	Manufacturer :	ATL
	Brand Name :	Motorola
Battery 2	Model Name :	LS40
	Manufacturer :	ATL
	Brand Name :	Motorola
Standard 3.5mm Headset 1	Model Name :	SH38C37773
	Manufacturer :	Lianyun
01	Brand Name :	Motorola
Standard 3.5mm Headset 2	Model Name :	SH38C44959
	Manufacturer :	Lianyun
USB-C to 3.5mm headset adaptor 1	Brand Name :	Motorola
·	Model Name :	SC18C27844
USB-C to 3.5mm headset adaptor 2	Brand Name :	Motorola
·	Model Name :	SC18C27845
USD Cable 4	Brand Name :	Motorola
USB Cable 1	Model Name :	SC18C24367
	Manufacturer :	Saibao
UCD Calda O	Brand Name :	Motorola
USB Cable 2	Model Name :	SC18C24368
	Manufacturer :	Luxshare

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# 1.2 Product Specification of Equipment Under Test

Standards-re	elated Product Specification
	5G NR n2: 1852.5 MHz ~ 1907.5 MHz
	5G NR n5: 826.5 MHz ~ 846.5 MHz
Tx Frequency	5G NR n25: 1852.5 MHz ~ 1912.5 MHz
	5G NR n41: 2506.02 MHz ~ 2679.99 MHz
	5G NR n71: 668.0 MHz ~ 693.0 MHz
	5G NR n2: 1932.5 MHz ~ 1987.5 MHz
	5G NR n5: 871.5 MHz ~ 891.5 MHz
Rx Frequency	5G NR n25: 1932.5 MHz ~ 1992.5 MHz
	5G NR n41: 2506.02 MHz ~ 2679.99 MHz
	5G NR n71: 668.0 MHz ~ 693.0 MHz
	5G NR n2: 5MHz / 10MHz / 15MHz / 20MHz
	5G NR n5: 5MHz / 10MHz / 15MHz / 20MHz
Bandwidth	5G NR n25: 5MHz / 10MHz / 15MHz / 20MHz
	5G NR n41: 20MHz / 40MHz / 50MHz / 60MHz / 80MHz /
	90MHz / 100MHz
	5G NR n71: 5MHz / 10MHz / 15MHz / 20MHz
	<pt antenna=""> <ant. 2=""></ant.></pt>
	SG NR n41 : 23.43 dBm
Maximum Output Power to Antenna	5G NR n71 : 22.84 dBm
<dft-s-ofdm></dft-s-ofdm>	<asdiv antenna=""></asdiv>
	<ant. 1=""></ant.>
	5G NR n71 : 22.71 dBm
	<pt antenna=""></pt>
	<ant. 2=""></ant.>
	5G NR n41 : 22.48 dBm
Maximum Output Power to Antenna	5G NR n71 : 21.67 dBm
<cp-ofdm></cp-ofdm>	<asdiv antenna=""></asdiv>
	<ant. 1=""></ant.>
	5G NR n71 : 21.33 dBm
Antenna Type	Fixed Internal Antenna
	<pt antenna=""></pt>
	5G NR n2 : -2.68 dBi
	5G NR n5 : -7.43 dBi
	5G NR n25 : -2.68 dBi
Antenna Gain	5G NR n41 : -0.75 dBi
, and many	5G NR n71 : -7.30 dBi
	<asdiv antenna=""></asdiv>
	5G NR n5 : -4.7 dBi
	5G NR n71 : -6.8 dBi
Type of Medulation	
Type of Modulation	PI/2 BPSK / QPSK / 16QAM / 64QAM

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## 1.3 Modification of EUT

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

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# 1.4 Testing Location

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory							
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978							
Test Site No.	Sporton Site No.							
lest site No.	TH05-HY	03CH07-HY						
Test Engineer	Ivy Yeh	Jesse Wang, Stan Hsieh, and Ken Wu						
Temperature	21~24 ℃	23 ~ 25 °C						
Relative Humidity								

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Note: The test site complies with ANSI C63.4 2014 requirement.

FCC Designation No.: TW1190

### 1.5 Applicable Standards

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

- + ANSI C63.26-2015
- ANSI / TIA-603-E
- FCC 47 CFR Part 2, 22(H), 24(E), 27
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01.

#### Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. The TAF code is not including all the FCC KDB listed without accreditation.

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# 2 Test Configuration of Equipment Under Test

#### 2.1 Test Mode

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

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For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z and Accessory (Adapter or Earphone). The worst cases (Z plane with Adapter) were recorded in this report.

Test Items	NR		Baı	ndwid	lth (M	Hz)		Modulation						RB#			Test Channel		
	Band	5	10	15	20	40	50	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	М	Н	
Max. Output Power	n71	٧	v	v	v	•	·	v	٧	v	٧	v	>	v	v	v	>	v	
Peak-to- Average Ratio	n71				>	•	1	v	>	v	>	v	>		v	v	>	v	
26dB and 99% Bandwidth	n71	٧	٧	٧	٧	1	1	v	٧	v	٧	v			v	v	>	v	
Conducted Band Edge	n71	٧	٧	٧	٧	1	1	v	٧	v	٧	v	>		v	v		v	
Conducted Spurious Emission	n71	v	v	v	v	-		v	v	v	v	v	v			v	v	>	
Frequency Stability	n71				v	-	-		v						v		٧		
E.R.P / E.I.R.P	n71	٧	٧	٧	٧	-	-	v	٧	v	٧	v	٧	V		٧	٧	v	
Radiated Spurious Emission	n71							W	orst Cas	е						v	>	v	
Remark	<ol> <li>The state of the s</li></ol>	<ol> <li>The mark "-" means that this bandwidth is not supported.</li> <li>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.</li> <li>For radiated measurement, pre-scanned in two modes, DFT-s OFDM and CP OFDM. The worst cases (DFT-s OFDM) were recorded in this report.</li> </ol>																	

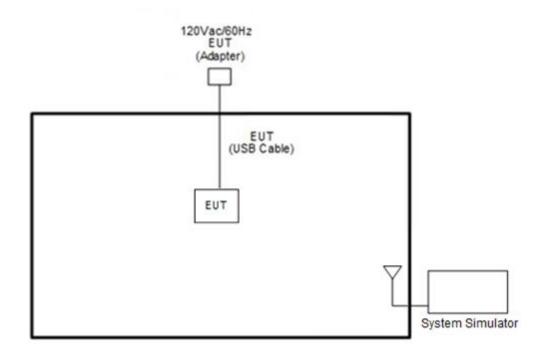
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Test Items	NR Bandwidth (MHz)						Modulation					RB#			Test Channel						
	Band	10	15	20	40	50	60	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	Г	М	Н
Max. Output Power	n41			٧	V	v	v	٧	٧	v	v	٧	v	٧	v	v	v	v	v	٧	v
Peak-to-Aver age Ratio	n41			٧							v	<b>v</b>	v	٧	v	٧		v	٧	٧	v
26dB and 99% Bandwidth	n41			>	>	>	>	>	>	v	v	<b>v</b>	v	٧	v			>	<b>&gt;</b>	<b>v</b>	v
Conducted Band Edge	n41			>	v	v	٧	>	٧	v	v	>	v	٧	v	٧		v	v		v
Conducted Spurious Emission	n41			>	<b>v</b>	<b>v</b>	>	>	>	v	v	٧	v	v	v	٧			٧	٧	v
Frequency Stability	n41			٧								٧						v		٧	
E.I.R.P	n41			v	v	v	٧	v	٧	v	v	٧	v	٧	v	V	v		v	v	v
Radiated																					
Spurious	n41										Worst 0	Case							V	V	٧
Emission	1.	<b>T</b> I				- 41	4.41-1-			41		. 4 4!									
									-		is chosen fo ot supported		3								
											times of fu		ntal signa	ıl for radi	ated spurio	ous en	nissio	n test	und	er	
Remark						•					exploratory to		Ū								d.
											wo modes,		•	•					•		
		were	reco	orded	in th	is rep	ort.														
	5.	All th	ne rac	diated	d test	case	es we	re pe	erforn	ned v	vith Adapter	1.									

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## 2.2 Connection Diagram of Test System



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### 2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord		
1.	System Simulator	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m		

## 2.4 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.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

#### Example:

Offset(dB) = RF cable loss(dB) + attenuator factor(dB). = 4.2 + 10 = 14.2 (dB)

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# 2.5 Frequency List of Low/Middle/High Channels

	5G NR-n41 Cha	nnel and Frequenc	y List	
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	509202	518598	528000
100	Frequency	2546.01	2592.99	2640
90	Channel	508200	518598	528996
90	Frequency	2541	2592.99	2644.98
80	Channel	507204	518598	529998
80	Frequency	2536.02	2592.99	2649.99
60	Channel	505200	518598	531996
60	Frequency	2526	2592.99	2659.98
50	Channel	504204	518598	532998
50	Frequency	2521.02	2592.99	2664.99
40	Channel	503202	518598	534000
40	Frequency	2516.01	2592.99	2670
20	Channel	501204	518598	535998
20	Frequency	2506.02	2592.99	2679.99

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5G NR n71 Channel and Frequency List									
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest					
20	Channel	134600	136100	137600					
20	Frequency	673	680.5	688					
15	Channel	134100	136100	138100					
15	Frequency	670.5	680.5	690.5					
10	Channel	133600	136100	138600					
10	Frequency	668	680.5	693					
E	Channel	133100	136100	139100					
5	Frequency	665.5	680.5	695.5					

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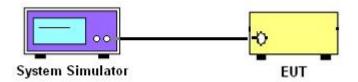
### 3 Conducted Test Items

## 3.1 Measuring Instruments

See list of measuring instruments of this test report.

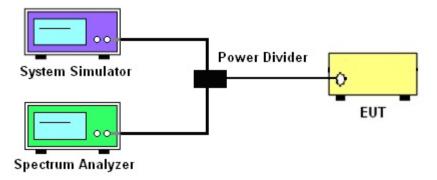
#### 3.1.1 Test Setup

#### 3.1.2 Conducted Output Power

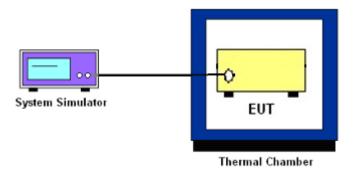


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# 3.1.3 Peak-to-Average Ratio, Occupied Bandwidth ,Conducted Band-Edge and Conducted Spurious Emission



#### 3.1.4 Frequency Stability



#### 3.1.5 Test Result of Conducted Test

Please refer to Appendix A.

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### 3.2 Conducted Output Power and ERP/EIRP

# 3.2.1 Description of the Conducted Output Power Measurement and ERP/EIRP Measurement

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.

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The ERP of mobile transmitters must not exceed 3 Watts for LTE n71

The EIRP of mobile transmitters must not exceed 2 Watts for LTE n41

According to KDB 412172 D01 Power Approach,

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

P<sub>T</sub> = transmitter output power in dBm

 $G_T$  = gain of the transmitting antenna in dBi

L<sub>C</sub> = signal attenuation in the connecting cable between the transmitter and antenna in dB

#### 3.2.2 Test Procedures

- 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.

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### 3.3 Peak-to-Average Ratio

#### 3.3.1 Description of the PAR Measurement

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. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

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#### 3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.6

- 1. The EUT was connected to spectrum and system simulator via a power divider.
- 2. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
- 3. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
- 4. Record the deviation as Peak to Average Ratio.

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### 3.4 Occupied Bandwidth

#### 3.4.1 Description of Occupied 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.

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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.

#### 3.4.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.4.3 (26dB) and Section 5.4.4 (99OB)

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.
   The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
- 3. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
- 4. Set the detection mode to peak, and the trace mode to max hold.
- 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)
- 6. Determine the "-26 dB down amplitude" as equal to (Reference Value X).
- 7. 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.
- 8. Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

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### 3.5 Conducted Band Edge

#### 3.5.1 Description of Conducted Band Edge Measurement

27.53(m)(4)

For mobile digital stations, 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.

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#### 3.5.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 2. The band edges of low and high channels for the highest RF powers were measured.
- 3. Set RBW >= 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
- 4. Beyond the 1 MHz band from the band edge, RBW=1MHz was used.
- 5. Set spectrum analyzer with RMS detector.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 7. Checked that all the results comply with the emission limit line.

The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

For LTE n41

The other 40 dB, and 55 dB have additionally applied same calculation above.

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### 3.6 Conducted Spurious Emission

#### 3.6.1 Description of Conducted Spurious Emission Measurement

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.

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For LTE n41

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.

#### 3.6.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 6.1.

- 1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
- 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.
- 3. The middle channel for the highest RF power within the transmitting frequency was measured.
- 4. The conducted spurious emission for the whole frequency range was taken.
- 5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz.
- 6. Set spectrum analyzer with RMS detector.
- 7. Taking the record of maximum spurious emission.
- 8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- 9. The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

For LTE n41

The other 40 dB, and 55 dB have additionally applied same calculation above.

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### 3.7 Frequency Stability

#### 3.7.1 Description of Frequency Stability Measurement

27.54

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

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#### 3.7.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

- 1. The EUT was set up in the thermal chamber and connected with the system simulator.
- 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.
- 3. With power OFF, the temperature was raised in 10°C step 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.

#### 3.7.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.

- 1. The EUT was placed in a temperature chamber at 20±5° C and connected with the system simulator.
- 2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
- 3. The variation in frequency was measured for the worst case.

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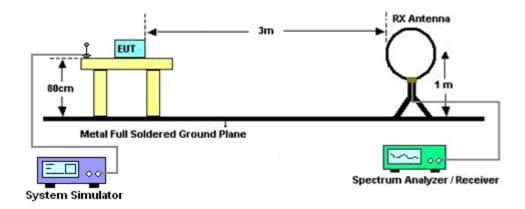
### 4 Radiated Test Items

# 4.1 Measuring Instruments

See list of measuring instruments of this test report.

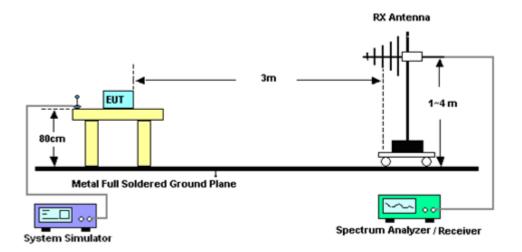
### 4.1.1 Test Setup

#### For radiated test below 30MHz



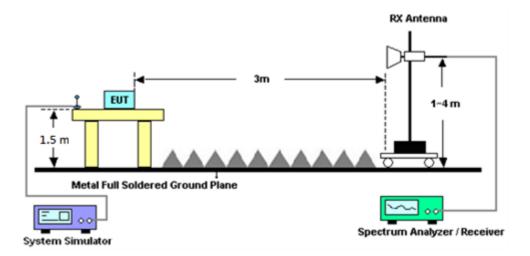
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#### For radiated test from 30MHz to 1GHz



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#### For radiated test above 1GHz



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: 01

#### 4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

#### Note:

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

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### 4.2 Radiated Spurious Emission Measurement

#### 4.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E.

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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 LTE n41

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.

#### 4.2.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

- The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
- 2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
- 3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
- 4. 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.
- 5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
- 6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
- 7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
- 8. Taking the record of output power at antenna port.
- 9. Repeat step 7 to step 8 for another polarization.
- The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)

For LTE n41

The limit line is derived from 55 + 10log(P)dB below the transmitter power P(Watts)

EIRP (dBm) = S.G. Power - Tx Cable Loss + Tx Antenna Gain

ERP (dBm) = EIRP - 2.15

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# 5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Programmable Power Supply	GW Instek	PSS-2005	EL890001	Voltage:0~20V; Current:0~5A	Oct. 05, 2020	Oct. 22, 2020 ~ Oct. 24, 2020	Oct. 04, 2021	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101397	10Hz~40GHz	Nov. 15, 2019	Oct. 22, 2020 ~ Oct. 24, 2020	Nov. 14, 2020	Conducted (TH05-HY)
Temperature Chamber	ESPEC	SU-241	92003713	-30℃ ~95℃	May 15, 2020	Oct. 22, 2020 ~ Oct. 24, 2020	May 14, 2021	Conducted (TH05-HY)
Hygrometer	Testo	608-H1	34893241	NA	Mar. 02, 2020	Oct. 22, 2020 ~ Oct. 24, 2020	Mar. 01, 2021	Conducted (TH05-HY)
Base Station (Measure)	Anritsu	MT8000A	6262012917	5GNR	Jan. 20, 2020	Oct. 22, 2020 ~ Oct. 24, 2020	Jan. 19, 2021	Conducted (TH05-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	35419 & 03	30MHz~1GHz	Apr. 29, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	Apr. 28, 2021	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 06, 2019	Oct. 23, 2020 ~ Oct. 24, 2020	Dec. 05, 2020	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	May 21, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	May 20, 2021	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jun. 09, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	Jun. 08, 2021	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	May 19, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	May 18, 2021	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Nov. 01, 2019	Oct. 23, 2020 ~ Oct. 24, 2020	Oct. 31, 2020	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2,80 1606/2	18GHz~40GHz	Feb. 25, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 25, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 25, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	Feb. 24, 2021	Radiation (03CH07-HY)
Controller	ChainTek	Chaintek 3000	N/A	Control Turn table	N/A	Oct. 23, 2020 ~ Oct. 24, 2020	N/A	Radiation (03CH07-HY)
Controller	Max-Full	MF7802	MF78020836 8	Control Ant Mast	N/A	Oct. 23, 2020 ~ Oct. 24, 2020	N/A	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Oct. 23, 2020 ~ Oct. 24, 2020	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Oct. 23, 2020 ~ Oct. 24, 2020	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	N/A	Oct. 23, 2020 ~ Oct. 24, 2020	N/A	Radiation (03CH07-HY)
Horn Antenna	EMCO	3117	00143261	1GHz~18GHz	Jan. 10, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	Jan. 09, 2021	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Nov. 26, 2019	Oct. 23, 2020 ~ Oct. 24, 2020	Nov. 25, 2020	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 13, 2019	Oct. 23, 2020 ~ Oct. 24, 2020	Dec. 12, 2020	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	N/A	N/A	N/A	Oct. 23, 2020 ~ Oct. 24, 2020	N/A	Radiation (03CH07-HY)
Signal Generator	Anritsu	MG3710A	6261943042	2G / 3G / LTE / 5G FR1	May 10, 2020	Oct. 23, 2020 ~ Oct. 24, 2020	May 09, 2021	Radiation (03CH07-HY)

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# 6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of	3.35
Confidence of 95% (U = 2Uc(y))	3.33

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#### **Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)**

Measuring Uncertainty for a Level of	3.81
Confidence of 95% (U = 2Uc(y))	3.01

### **Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)**

Measuring Uncertainty for a Level of	4.85
Confidence of 95% (U = 2Uc(y))	4.05

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# **Appendix A. Test Results of Conducted Test**

# Conducted Output Power(Average power)

# <PT Antenna> <PT-s-OFDM>

	NR n71 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
5	1	1		22.82	22.78	22.84		
5	1	23		22.62	22.61	22.78		
5	12	6	PI/2 BPSK	22.83	22.70	22.80		
5	1	0	FI/Z BF3K	22.41	22.29	22.64		
5	1	24		22.24	22.30	22.46		
5	25	0		22.43	22.38	22.55		
5	1	1		22.74	22.81	22.83		
5	1	23		22.72	22.73	22.78		
5	12	6	QPSK	22.79	22.78	22.80		
5	1	0	QF3N	22.02	21.97	22.19		
5	1	24		21.69	21.92	21.99		
5	25	0		21.90	21.80	22.10		
5	1	1	16-QAM	22.05	21.99	22.21		
5	1	1	64-QAM	20.63	20.55	20.85		

	NR n71 Maximum Average Power [dBm]								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest			
10	1	1		22.79	22.63	22.81			
10	1	50		22.45	22.83	22.80			
10	25	12	PI/2 BPSK	22.69	22.76	22.83			
10	1	0	FI/Z DF3K	22.26	22.13	22.48			
10	1	51		22.18	22.41	22.35			
10	50	0		22.32	22.42	22.55			
10	1	1		22.81	22.77	22.80			
10	1	50		22.39	22.80	22.80			
10	25	12	QPSK	22.68	22.75	22.80			
10	1	0	QF3K	21.88	21.81	22.15			
10	1	51		21.61	22.07	22.09			
10	50	0		21.83	21.88	22.06			
10	1	1	16-QAM	21.98	21.78	22.25			
10	1	1	64-QAM	20.63	20.37	20.83			



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	NR n71 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
15	1	1		22.79	22.75	22.71		
15	1	77		22.72	22.79	22.83		
15	36	18	PI/2 BPSK	22.79	22.77	22.83		
15	1	0	FI/Z BF3K	21.95	21.98	22.01		
15	1	78		22.17	22.25	22.45		
15	75	0		22.48	22.42	22.53		
15	1	1		22.81	22.80	22.84		
15	1	77		22.63	22.78	22.83		
15	36	18	QPSK	22.74	22.78	22.71		
15	1	0	QF3N	22.09	21.88	21.99		
15	1	78		21.87	21.92	22.08		
15	75	0		21.80	21.86	22.03		
15	1	1	16-QAM	22.18	21.88	22.00		
15	1	1	64-QAM	20.79	20.59	20.63		

	NR n71 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
20	1	1		22.83	22.70	22.64		
20	1	104		22.77	22.72	22.70		
20	50	25	PI/2 BPSK	22.71	22.71	22.76		
20	1	0	FI/Z DF3K	21.86	22.18	22.00		
20	1	105		22.05	22.16	22.26		
20	100	0		22.44	22.39	22.42		
20	1	1		22.78	22.83	22.77		
20	1	104		22.57	22.83	22.82		
20	50	25	QPSK	22.71	22.73	22.81		
20	1	0	QF3K	22.00	21.73	21.86		
20	1	105		21.81	21.94	22.00		
20	100	0		21.72	21.83	21.92		
20	1	1	16-QAM	22.09	21.81	22.05		
20	1	1	64-QAM	20.61	20.55	20.70		



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	NR n41 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
20	1	1		23.12	23.40	23.42		
20	1	49		23.29	23.42	23.39		
20	25	12	PI/2 BPSK	23.20	23.41	23.41		
20	1	0	PI/Z BP3N	22.60	22.97	22.92		
20	1	50		22.79	23.07	22.95		
20	50	0		22.77	23.15	23.10		
20	1	1		23.10	23.41	23.43		
20	1	49		23.34	23.35	23.41		
20	25	12	QPSK	23.25	23.41	23.35		
20	1	0	QF3N	22.14	22.51	22.42		
20	1	50		22.35	22.53	22.44		
20	50	0		22.27	22.60	22.56		
20	1	1	16-QAM	22.20	22.72	22.67		
20	1	1	64-QAM	20.41	20.85	20.96		

NR n41 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	
40	1	1		23.35	23.40	23.40	
40	1	104		23.37	23.40	23.40	
40	50	25	PI/2 BPSK	23.33	23.43	23.41	
40	1	0	FI/Z BF3K	22.98	23.34	23.41	
40	1	105		23.31	23.43	23.38	
40	100	0		23.23	23.38	23.42	
40	1	1		23.31	23.38	23.41	
40	1	104		23.40	23.40	23.40	
40	50	25	QPSK	23.42	23.32	23.34	
40	1	0	QF3K	22.45	22.86	22.93	
40	1	105		22.77	23.05	23.01	
40	100	0		22.72	22.96	22.94	
40	1	1	16-QAM	22.55	22.85	23.03	
40	1	1	64-QAM	20.88	21.35	21.39	



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	NR n41 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
60	1	1		22.70	23.06	23.40		
60	1	160		22.98	23.39	23.19		
60	81	40	PI/2 BPSK	23.09	23.27	23.15		
60	1	0	FI/Z BF3K	22.19	22.55	22.92		
60	1	161		22.48	22.92	22.68		
60	162	0		22.56	22.80	22.76		
60	1	1		22.69	23.05	23.36		
60	1	160		22.96	23.43	23.09		
60	81	40	QPSK	23.09	23.19	23.17		
60	1	0	QF3N	21.71	22.09	22.46		
60	1	161		21.95	22.55	22.15		
60	162	0		22.09	22.31	22.18		
60	1	1	16-QAM	21.85	22.20	22.59		
60	1	1	64-QAM	20.04	20.40	20.76		

	NR n41 Maximum Average Power [dBm]								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest			
80	1	1		22.82	23.25	23.43			
80	1	215		22.95	23.38	23.23			
80	108	54	PI/2 BPSK	23.18	23.32	23.30			
80	1	0	FI/Z BF3K	22.31	22.80	22.99			
80	1	216		22.57	22.93	22.70			
80	216	0		22.59	22.85	22.87			
80	1	1		22.88	23.25	23.40			
80	1	215		23.00	23.36	23.23			
80	108	54	QPSK	23.19	23.34	23.31			
80	1	0	QF3N	21.83	22.23	22.41			
80	1	216		21.98	22.41	22.18			
80	216	0		22.10	22.39	22.41			
80	1	1	16-QAM	22.04	22.36	22.50			
80	1	1	64-QAM	20.42	20.66	20.84			



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	NR n41 Maximum Average Power [dBm]								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest			
100	1	1		23.41	23.34	23.40			
100	1	271		23.41	23.37	23.33			
100	135	67	PI/2 BPSK	23.39	23.41	23.35			
100	1	0	PI/Z BP3K	22.97	22.90	23.00			
100	1	272		22.89	23.08	22.83			
100	270	0		23.02	22.97	22.94			
100	1	1		23.43	23.37	23.43			
100	1	271		23.36	23.40	23.38			
100	135	67	QPSK	23.37	23.41	23.38			
100	1	0	QF3K	22.47	22.37	22.50			
100	1	272		22.43	22.55	22.36			
100	270	0		22.52	22.47	22.48			
100	1	1	16-QAM	22.52	22.48	22.51			
100	1	1	64-QAM	21.01	20.75	21.07			

#### <CP-OFDM>

10. 0.	10. 0.2							
NR n71 Maximum Average Power [dBm]								
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest								
5	1	1	QPSK	21.57	21.31	20.96		
5	1	1	16-QAM	21.07	20.62	20.67		
5	1	1	64-QAM	19.69	19.54	19.52		

	NR n71 Maximum Average Power [dBm]							
BW [MHz]	BW [MHz] RB Size RB Offset Mod Lowest Middle Highest							
10	1	1	QPSK	21.59	21.33	21.10		
10	1	1	16-QAM	21.01	20.82	20.91		
10	1	1	64-QAM	19.62	19.33	19.73		

NR n71 Maximum Average Power [dBm]							
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest							
15	1	1	QPSK	21.67	21.37	21.08	
15	1	1	16-QAM	21.13	20.98	21.00	
15	1	1	64-QAM	19.68	19.51	19.59	

NR n71 Maximum Average Power [dBm]								
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest								
20	1	1	QPSK	21.61	21.36	21.01		
20	1	1	16-QAM	21.14	20.92	20.90		
20	1	1	64-QAM	19.67	19.41	19.48		



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NR n41 Maximum Average Power [dBm]								
BW [MHz]	BW [MHz] RB Size RB Offset Mod Lowest Middle Highest							
20	1	1	QPSK	21.66	22.09	21.81		
20	1	1	16-QAM	21.18	21.61	21.55		
20	1	1	64-QAM	19.60	20.17	20.03		

NR n41 Maximum Average Power [dBm]								
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest								
40	1	1	QPSK	22.01	22.33	22.48		
40	1	1	16-QAM	21.63	21.97	22.09		
40	1	1	64-QAM	20.12	20.36	20.51		

NR n41 Maximum Average Power [dBm]								
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest								
60	1	1	QPSK	21.51	21.96	22.27		
60	1	1	16-QAM	21.14	21.53	21.91		
60	1	1	64-QAM	19.72	20.01	20.33		

NR n41 Maximum Average Power [dBm]								
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest								
80	1	1	QPSK	21.60	22.02	22.21		
80	1	1	16-QAM	21.27	21.64	21.77		
80	1	1	64-QAM	19.77	20.08	20.41		

NR n41 Maximum Average Power [dBm]								
BW [MHz] RB Size RB Offset Mod Lowest Middle Highest								
100	1	1	QPSK	21.47	21.94	21.91		
100	1	1	16-QAM	21.07	21.48	21.53		
100	1	1	64-QAM	19.52	19.91	20.02		

# <ASDIV Antenna> < DFT-s-OFDM>

	NR n71 Maximum Average Power [dBm]								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest			
5	1	1		22.20	22.09	22.33			
5	1	23		21.98	21.91	22.29			
5	12	6	PI/2 BPSK	22.16	22.16	22.38			
5	1	0	FIIZ BF3K	21.79	21.54	21.99			
5	1	24		21.57	21.49	21.81			
5	25	0		21.86	21.65	22.02			
5	1	1		22.32	22.30	22.49			
5	1	23		22.09	22.24	22.34			
5	12	6	QPSK	22.22	22.02	22.41			
5	1	0	QF3K	21.34	21.20	21.53			
5	1	24		21.12	21.04	21.41			
5	25	0		21.23	21.13	21.44			
5	1	1	16-QAM	21.45	21.16	21.56			
5	1	1	64-QAM	19.99	19.83	19.54			

	NR n71 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
10	1	1		22.28	21.74	22.16		
10	1	50		21.82	21.96	22.18		
10	25	12	PI/2 BPSK	22.23	22.01	22.19		
10	1	0	FIIZ BF3K	21.74	21.41	21.75		
10	1	51		21.44	21.63	21.84		
10	50	0		21.61	21.65	22.01		
10	1	1		22.24	22.01	22.20		
10	1	50		21.90	22.27	22.42		
10	25	12	QPSK	22.05	21.10	22.31		
10	1	0	QFSK	21.33	21.06	21.23		
10	1	51		20.93	21.39	21.28		
10	50	0		21.13	21.14	21.38		
10	1	1	16-QAM	21.34	21.02	21.37		
10	1	1	64-QAM	20.08	19.47	20.05		

	NR n71 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest		
15	1	1		22.27	22.16	22.00		
15	1	77		21.92	21.96	21.86		
15	36	18	PI/2 BPSK	22.05	22.04	22.03		
15	1	0	FIIZ BF3K	20.90	21.81	21.57		
15	1	78		21.54	21.54	21.27		
15	75	0		21.69	21.60	21.51		
15	1	1		22.11	22.27	22.07		
15	1	77		22.17	22.14	21.86		
15	36	18	QPSK	22.07	22.01	21.95		
15	1	0	QFSK	21.50	21.44	21.09		
15	1	78		21.13	21.04	20.72		
15	75	0		21.18	21.14	21.08		
15	1	1	16-QAM	21.88	21.40	20.88		
15	1	1	64-QAM	20.55	20.05	20.06		

NR n71 Maximum Average Power [dBm]							
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	
20	1	1		22.53	22.42	22.32	
20	1	104		22.19	22.05	21.88	
20	50	25	PI/2 BPSK	22.45	22.33	22.10	
20	1	0	FIIZ BF3K	22.17	22.04	21.94	
20	1	105		20.20	21.76	21.46	
20	100	0		22.08	21.23	21.78	
20	1	1		22.71	22.67	22.46	
20	1	104		22.32	22.26	21.97	
20	50	25	QPSK	22.47	22.36	22.12	
20	1	0	QF3K	21.88	21.66	21.57	
20	1	105		21.45	21.36	21.15	
20	100	0		21.62	21.49	21.29	
20	1	1	16-QAM	21.83	21.72	21.52	
20	1	1	64-QAM	20.41	20.35	20.17	

### <CP-OFDM>

	5. <del>5</del> . 2							
NR n71 Maximum Average Power [dBm]								
BW [MHz]	BW [MHz] RB Size RB Offset Mod Lowest Middle Highest							
5	1	1	QPSK	20.47	20.76	21.16		
5	1	1	16-QAM	20.41	20.47	20.62		
5	1	1	64-QAM	19.15	19.15	19.33		

NR n71 Maximum Average Power [dBm]								
BW [MHz]	[MHz] RB Size RB Offset Mod Lowest Middle Highest							
10	1	1	QPSK	20.67	20.17	20.49		
10	1	1	16-QAM	20.10	20.04	20.42		
10	1	1	64-QAM	18.71	18.84	19.17		

NR n71 Maximum Average Power [dBm]								
BW [MHz]	V [MHz] RB Size RB Offset Mod Lowest Middle Highest							
15	1	1	QPSK	21.33	21.17	20.47		
15	1	1	16-QAM	20.53	20.76	20.32		
15	1	1	64-QAM	19.54	19.38	18.52		

NR n71 Maximum Average Power [dBm]								
BW [MHz]	W [MHz] RB Size RB Offset Mod Lowest Middle Highest							
20	1	1	QPSK	21.20	21.19	21.23		
20	1	1	16-QAM	20.83	20.89	20.55		
20	1	1	64-QAM	19.55	19.47	19.33		

# FR1 n41

# Peak-to-Average Ratio

Mode					
Mod.	PI/2 BPSK	PI/2 BPSK QPSK 16QAM 64QAM			
RB Size	Full RB	Full RB	Full RB	Full RB	Result
Middle CH	3.77	4.99	6.14	6.38	PASS

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FAX: 886-3-328-4978

FR1 n41 / 20MHz / DFT-S OFDM / Middle Channel / Full RB

Pl/2 BPSK

QPSK

Spectrum

Ref Level 34 il 0 din Offset 4,00 di

Plog 30 di A(1 10.5 pt 2 10.0 din Offset 4,00 di

Plog 30 di A(2 10.5 pt 2 10.0 din Offset 4,00 din

Report No.: FG051232-03

TEL: 886-3-327-3456 Page Number : An41-2 of 61

## 26dB Bandwidth

Mode	FR1 n41 : 26dB BW(MHz) / DFT-S OFDM							
BW	20MHz	40MHz	50MHz	60MHz	80MHz	90MHz	100MHz	
Mod.	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	
Middle CH	18.82	38.20	-	60.42	79.60	-	99.50	

Report No. : FG051232-03

Mode	FR1 n41 : 26dB BW(MHz) / CP OFDM							
BW	20MHz		40MHz		50MHz		60MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Middle CH	19.02	19.34	40.28	40.20	-	-	60.30	60.54
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM
Middle CH	19.18	-	40.28	-	-	-	60.54	-
BW	80MHz		90MHz		100MHz			
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM		
Middle CH	79.92	79.92	-	-	100.30	100.30		
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM		
Middle CH	79.92	-	-	-	100.30	-		

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Report No. : FG051232-03 FR1 n41 / 20MHz / DFT-S OFDM / Middle Channel PI/2 BPSK 18.8210000 1001 pts FR1 n41 / 20MHz / CP OFDM **QPSK 16QAM** Span 40.0 MHz Function Result 19.021 MHz 26.00 dB 136.3 Function Result 19.341 MHz 26.00 dB 134.2 
 X-value
 Y-value
 Function

 2.59299 GHz
 11.22 dBm
 nd8 down

 2.59344 GHz
 -15.15 dBm
 nd8

 2.602461 GHz
 -15.00 dBm
 Q factor
 64QAM 256QAM Function Result 19.181 MHz 26.00 dB 134.8

TEL: 886-3-327-3456 Page Number : An41-4 of 61

FAX: 886-3-328-4978

Type Ref Trc

Type Ref Trc

FAX: 886-3-328-4978

Report No. : FG051232-03 FR1 n41 / 40MHz / DFT-S OFDM / Middle Channel PI/2 BPSK **QPSK 16QAM Middle Channel Middle Channel** Reflevel 24.80 dBm Offset 4.80 dB @ RBW 1 MHz
Att 30 dB SWT 11.4 µs @ VBW 3 MHz Mode Auto FFT
\$10L Count 100/100
}1Pk Max -50 dBm-Span 80.0 MHz Function Result 40.2 MHz 26.00 dB 64.4 
 X-value
 Y-value
 Function

 2.591472 GHz
 12.84 dBm
 nd8 down

 2.57293 GHz
 -12.79 dBm
 nd8

 2.61321 GHz
 -13.68 dBm
 Q factor
 Function Result 40.28 MHz 
 X-value
 Y-value
 Function

 2.587236 GHz
 13.92 dBm
 ndB down
 64QAM 256QAM Span 80.0 MHz

TEL: 886-3-327-3456 Page Number : An41-5 of 61

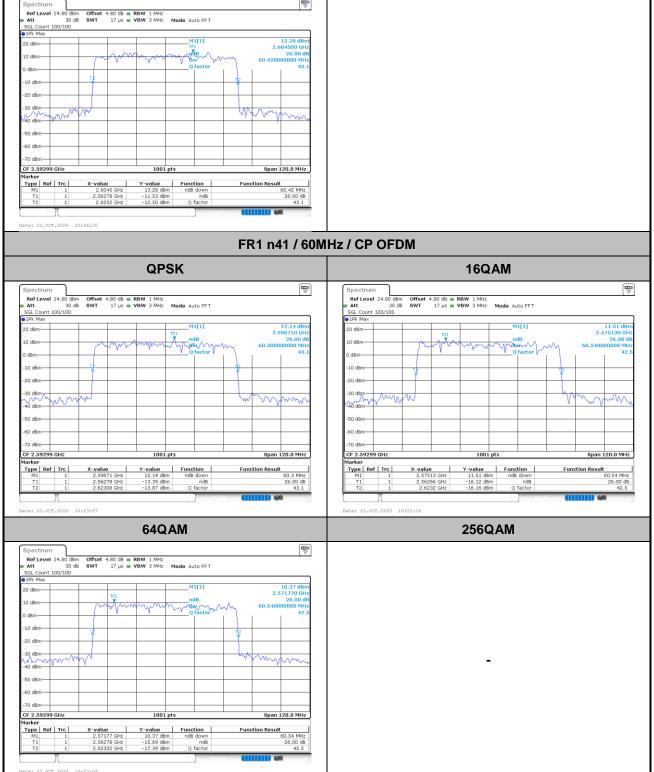
Function Result

Report No. : FG051232-03 FR1 n41 / 60MHz / DFT-S OFDM / Middle Channel PI/2 BPSK FR1 n41 / 60MHz / CP OFDM **QPSK 16QAM** Span 120.0 MHz Function Result 60.3 MHz 26.00 dB 43.1 Function Result 60.54 MHz 26.00 dB 42.5 
 X-value
 Y-value
 Function

 2.59671 GHz
 12.14 dBm
 nd8 down

 2.56278 GHz
 -13.39 dBm
 nd8

 2.62308 GHz
 -13.87 dBm
 Q factor
 | X-value | Y-value | Function | 2.57513 GHz | 11.51 dBm | ndB down | 2.55266 GHz | -16.12 dBm | ndB | 2.6232 GHz | -16.16 dBm | Q factor | 64QAM 256QAM



Report No. : FG051232-03 FR1 n41 / 80MHz / DFT-S OFDM / Middle Channel PI/2 BPSK 1001 pts **QPSK 16QAM** Span 160.0 MHz CF 2.59299 GHz 1001 pts Span 160.0 MHz Function Result
79.92 MHz
26.00 dB
32.7 Function Result
79.92 MHz
26.00 dB
32.2 
 X-value
 Y-value
 Function

 2.61553 GHz
 10.13 dBm
 ndB down

 2.55303 GHz
 -16.95 dBm
 ndB

 2.63295 GHz
 -16.48 dBm
 Q factor
 Type Ref Trc Date: 23.0CT.2020 10:39:50 **64QAM 256QAM** 

TEL: 886-3-327-3456 Page Number : An41-7 of 61

FR1 n41 / 100MHz / DFT-S OFDM / Middle Channel PI/2 BPSK Layer Wham 1001 pts **QPSK 16QAM** ▽ Span 200.0 MHz CF 2.59299 GHz 1001 pts Span 200.0 MHz Function Result 100.3 MHz 26.00 dB 25.9 Function Result 100.3 MHz 26.00 dB 25.9 Type Ref Trc 
 X-value
 Y-value
 Function

 2.59439 GHz
 9.11 dBm
 ndB down

 2.54294 GHz
 -13.93 dBm
 ndB

 2.64314 GHz
 -13.68 dBm
 Q factor

 X-value
 Y-value
 Function

 2.60138 GHz
 9.31 dBm
 ndB down

 2.54294 GHz
 -13.62 dBm
 oB

 2.64314 GHz
 -16.26 dBm
 Q factor
 Date: 23.0CT.2020 10:42:54 **64QAM 256QAM** 

Report No. : FG051232-03

TEL: 886-3-327-3456 Page Number : An41-8 of 61

## **Occupied Bandwidth**

Mode	FR1 n41 : OB BW(MHz) / DFT-S OFDM							
BW	20MHz	40MHz	50MHz	60MHz	80MHz	90MHz	100MHz	
Mod.	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	PI/2 BPSK	
Middle CH	17.90	35.96	-	58.02	77.20	-	96.30	

Report No. : FG051232-03

Mode	FR1 n41 : OB BW(MHz) / CP OFDM								
BW	BW 20MHz		40MHz		50MHz		60MHz		
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	
Middle CH	18.14	18.34	38.04	37.96	-	-	57.90	57.90	
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM	
Middle CH	18.26	-	37.96	-	-	-	57.78	-	
BW	80MHz		90MHz		100MHz				
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM			
Middle CH	77.36	77.36	-	-	97.50	96.90			
Mod.	64QAM	256QAM	64QAM	256QAM	64QAM	256QAM			
Middle CH	77.84	-	-	-	97.50	-			

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Report No. : FG051232-03 FR1 n41 / 20MHz / DFT-S OFDM / Middle Channel PI/2 BPSK 1001 pts Function 17.902097902 MHz **QPSK 16QAM** 11.12 dBi 2.5893140 GF 18.141858142 MF  $\sqrt{\sqrt{}}$ -20 dBm-40 dBm -50 dBm-Span 40.0 MHz Span 40.0 MHz CF 2.59299 GHz 1001 pts 
 X-value
 Y-value
 Function

 2.589314 GHz
 11.12 dBm

 2.5839191 GHz
 5.64 dBm
 Occ Bw

 2.6020609 GHz
 4.97 dBm
 Type Ref Trc Type Ref Trc 
 X-value
 Y-value
 Function

 2.590113 GHz
 11.18 dBm
 2.5837992 GHz
 7.29 dBm
 Occ Bw

 2.6021408 GHz
 6.10 dBm
 0cc Bw
 0cc Bw
 0cc Bw
 Function Result **Function Result** 18.141858142 MHz 18.341658342 MHz Date: 23.0CT.2020 10:08:25 **64QAM 256QAM** my

TEL: 886-3-327-3456 Page Number : An41-10 of 61

18.261738262 MHz

FAX: 886-3-328-4978

| Y-value Function | | | 2 | 10.78 dBm | | | 2 | 5.67 dBm | Occ Bw | | | 2 | 4.63 dBm | |

FR1 n41 / 40MHz / DFT-S OFDM / Middle Channel PI/2 BPSK 1001 pts 35.964035964 MHz **QPSK 16QAM** -20 dBm-40 dBm-Span 80.0 MHz 1001 pts Span 80.0 MHz CF 2.59299 GHz 1001 pts 
 X-value
 Y-value
 Function

 2.575807 GHz
 15.44 dBm

 2.5740489 GHz
 7.08 dBm
 Occ Bw

 2.6120909 GHz
 8.45 dBm

 X-value
 Y-value
 Function

 2.600023 GHz
 13.37 dBm

 2.5740489 GHz
 6.53 dBm
 Occ Bw

 2.612011 GHz
 6.98 dBm
 Type Ref Trc Type Ref Trc Function Result Function Result 38.041958042 MHz 37.962037962 MHz Date: 23.0CT.2020 10:20:45 **64QAM 256QAM** | Y-value | Function | | 2 | 12.39 dBm | | 2 | 6.71 dBm | Occ Bw | | 2 | 6.31 dBm |

Report No. : FG051232-03

TEL: 886-3-327-3456 Page Number : An41-11 of 61

37.962037962 MHz

Report No. : FG051232-03 FR1 n41 / 60MHz / DFT-S OFDM / Middle Channel PI/2 BPSK man 1001 pts Function **QPSK 16QAM** 11.15 dBm 2.600300 GH 57.9020970 -20 dBm-40 dBm 40 dBm Span 120.0 MHz Span 120.0 MHz CF 2.59299 GHz 1001 pts Type Ref Trc 
 X-value
 Y-value
 Function

 2.5653 GHz
 10.91 dBm

 2.563979 GHz
 4.94 dBm
 Occ Bw

 2.621881 GHz
 5.97 dBm

 X-value
 Y-value
 Function

 2.6003 GHz
 11.15 dBm

 2.563859 GHz
 6.13 dBm
 Occ Bw

 2.621761 GHz
 5.92 dBm
 Type Ref Trc Function Result Function Result 57.902097902 MHz 57.902097902 MHz Date: 23.0CT.2020 10:23:22 **64QAM 256QAM** 40 dBm

TEL: 886-3-327-3456 Page Number : An41-12 of 61

57.782217782 MHz

FAX: 886-3-328-4978

| Y-value Function | | | 2 | 11.32 dBm | | | 2 | 5.72 dBm | Occ Bw | | | 2 | 6.63 dBm | |

Report No. : FG051232-03 FR1 n41 / 80MHz / DFT-S OFDM / Middle Channel PI/2 BPSK an Ma 1001 pts X-value 2.61217 GHz 2.553989 GHz 2.631192 GHz Y-value 13.02 dBm 9.48 dBm 6.39 dBm Function **QPSK 16QAM** 11.56 dBn 2.573490 GH: 77.362637°° -20 dBmmyran -50 dBm-Span 160.0 MHz Span 160.0 MHz CF 2.59299 GHz 1001 pts Type Ref Trc 
 X-value
 Y-value
 Function

 2.57701 GHz
 10.50 dBm

 2.554149 GHz
 6.09 dBm
 Occ Bw

 2.631511 GHz
 4.91 dBm
 Type Ref Trc 
 X-value
 Y-value
 Function

 2.57349 GHz
 11.56 dBm
 2.554149 GHz
 6.07 dBm
 Occ Bw

 2.631511 GHz
 4.08 dBm
 0cc Bw
 0cc Bw
 0cc Bw
 Function Result Function Result 77.362637363 MHz 77.362637363 MHz Date: 23.0CT.2020 10:39:43 **64QAM 256QAM** M1[1]

TEL: 886-3-327-3456 Page Number : An41-13 of 61

77.842157842 MHz

FAX: 886-3-328-4978

Y-value Function
2 9.30 dBm
2 3.76 dBm Occ Bw
2 5.58 dBm

Report No. : FG051232-03 FR1 n41 / 100MHz / DFT-S OFDM / Middle Channel PI/2 BPSK 36 gelminandan mayor man 1001 pts Function 96.303696304 MHz **QPSK 16QAM** 9.09 dBm 2.595590 GH 96.903096 -20 dBm--40 dBm my WWW. -50 dBm-CF 2.59299 GHz Span 200.0 MHz Span 200.0 MHz 1001 pts Type Ref Trc 
 X-value
 Y-value
 Function

 2.61597 GHz
 10.22 dBm

 2.544239 GHz
 6.69 dBm
 Occ Bw

 2.641741 GHz
 4.32 dBm

 X-value
 Y-value
 Function

 2.59559 GHz
 9.09 d8m

 2.544239 GHz
 4.53 d8m
 Occ 8w

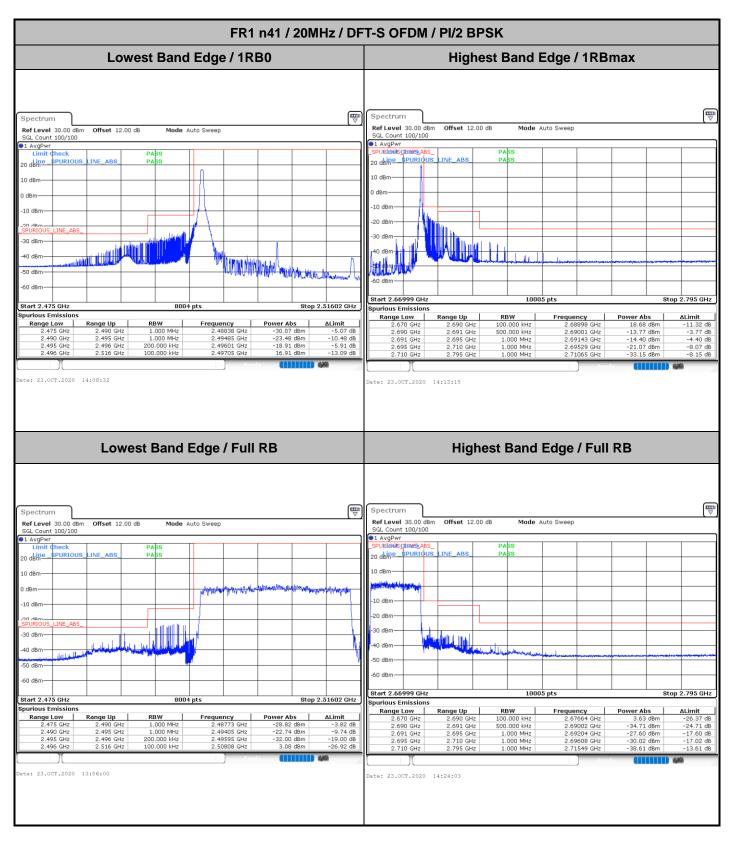
 2.641142 GHz
 3.96 d8m
 Type Ref Trc Function Result Function Result 97.502497502 MHz 96.903096903 MHz Date: 23.0CT.2020 10:42:46 **64QAM 256QAM** 

TEL: 886-3-327-3456 Page Number : An41-14 of 61

FAX: 886-3-328-4978

Y-value	Function	
2	8.62 dBm	
2	4.48 dBm	Occ Bw
3.78 dBm		

## **Conducted Band Edge**



Report No.: FG051232-03

TEL: 886-3-327-3456 Page Number : An41-15 of 61

FR1 n41 / 20MHz / DFT-S OFDM / QPSK Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm Offset 12.00 dB Mode Auto Sweep Count 100/100 SGL Count 100/100 1 AvgPwr PASS an dkine 30 dBm-40 dBm 50 dBm Start 2.475 GHz 8004 pts Stop 2.51602 GHz purious Emissions rious com Range Low 2 670 GHz RBW 100.000 kHz 500.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz Range Up Power Abs 17.20 dBn 2.490 GHz 2.495 GHz 2.495 GHz 2.496 GHz 2.516 GHz 2.48985 GHz 2.48980 GHz 2.49500 GHz 2.49601 GHz 2.49695 GHz -28.39 dBm -22.80 dBm -18.62 dBm 16.68 dBm -12.80 dB -5.40 dB -5.67 dB -10.01 dB -10.71 dB ΔLimit Range Low 2.475 GHz 2.691 GHz 2.695 GHz 2.710 GHz 2.795 GHz ate: 23.0CT.2020 14:05:56 Date: 23.0CT.2020 14:13:53 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Spectrum Ref Level 30.00 dBm Offset 12.00 dB Ref Level 30.00 dBm SGL Count 100/100 Offset 12.00 dB Mode Auto Sweep Mode Auto Sweep SGL Count 100/100 PURIOUS\_LINE\_ABS 20 deine 20 deme -10 dBm -10 dBm -30 dBm-40 dBm -50 dBm -60 dBm-10005 pts Stop 2.795 GHz Start 2.66999 GHz urious Emissions 2.49033 GHz 2.49501 GHz 2.49599 GHz 2.50199 GHz ΔLimit Range Up Power Abs 1.000 MHz 1.000 MHz 200.000 kHz 100.000 kHz 2.490 GHz 2.495 GHz 2.496 GHz 2.516 GHz te: 23.0CT.2020 13:56:27

Report No.: FG051232-03

TEL: 886-3-327-3456 Page Number : An41-16 of 61

FR1 n41 / 20MHz / DFT-S OFDM / 16QAM Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm Offset 12.00 dB Mode Auto Sweep Count 100/100 SGL Count 100/100 1 AvgPwr PASS an dkine 30 dBm-40 dBm 50 dBm Start 2.475 GHz 8004 pts Stop 2.51602 GHz purious Emissions urious com Range Low 2 670 GHz RBW 100.000 kHz 500.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz Power Abs 16.38 dBm -14.01 dBm -14.54 dBm -21.40 dBm -33.66 dBm Range Up ΔLimit 2.490 GHz 2.495 GHz 2.495 GHz 2.496 GHz 2.516 GHz 2.48985 GHz 2.48980 GHz 2.49500 GHz 2.49601 GHz 2.49695 GHz -28.39 dBm -22.80 dBm -18.62 dBm 16.68 dBm 2.68896 GHz 2.68999 GHz 2.69104 GHz 2.69640 GHz 2.71273 GHz -13.62 dB -4.01 dB -4.54 dB -8.40 dB -8.66 dB ΔLimit Range Low 2.475 GHz 2.691 GHz 2.695 GHz 2.710 GHz 2.795 GHz ate: 23.0CT.2020 14:05:56 Date: 23.0CT.2020 14:16:06 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Spectrum Ref Level 30.00 dBm Offset 12.00 dB Ref Level 30.00 dBm SGL Count 100/100 Offset 12.00 dB Mode Auto Sweep Mode Auto Sweep SGL Count 100/100 SPURIOUS\_LINE\_ABS 20 deine 20 deme -10 dBm--10 dBm -30 dBm-40 dBm -50 dBm 60 dBm-10005 pts Stop 2.795 GHz Start 2.66999 GHz urious Emissions 2.49036 GHz 2.49500 GHz 2.49509 GHz 2.49599 GHz 2.51083 GHz ΔLimit Range Up Power Abs 1.000 MHz 1.000 MHz 200.000 kHz 100.000 kHz 2.490 GHz 2.495 GHz 2.496 GHz 2.516 GHz -11.33 dB -15.73 dB -20.78 dB -28.78 dB te: 23.0CT.2020 13:57:27 ate: 23.0CT.2020 14:21:44

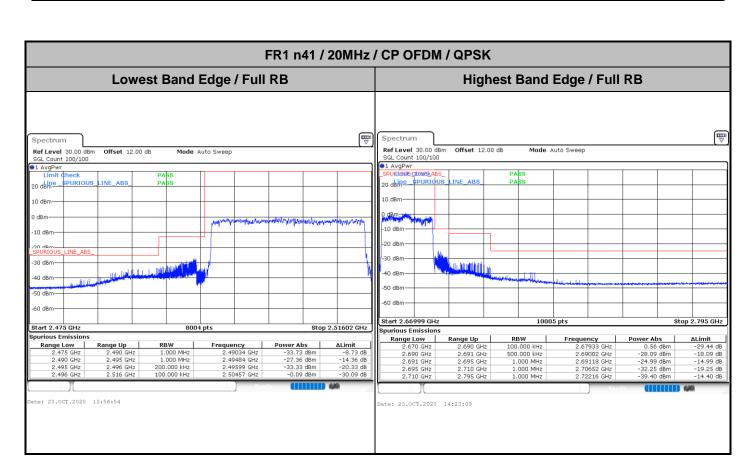
Report No.: FG051232-03

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FR1 n41 / 20MHz / DFT-S OFDM / 64QAM Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Ref Level 30.00 dBm Offset 12.00 dB Mode Auto Sweep Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 SGL Count 100/100 1 AvgPwr PASS 20 dkine <del>Add Malkinglinger</del> 50 dBn 60 dBm Start 2.475 GHz 8004 pts Stop 2.51602 GHz purious Emissions urious com Range Low 2 670 GHz RBW 100.000 kHz 500.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz 2.68887 GHz 2.69000 GHz 2.69099 GHz 2.69798 GHz 2.71146 GHz Range Up Power Abs 17.30 dBn 2.475 GHz 2.490 GHz 2.490 GHz 2.495 GHz 2.496 GHz ΔLimit Range Up RBW Frequency Power Abs 2.691 GHz 2.695 GHz 2.710 GHz 2.795 GHz ate: 23.0CT.2020 13:58:23 Date: 23.0CT.2020 14:17:28 Lowest Band Edge / Full RB **Highest Band Edge / Full RB** Spectrum Spectrum Ref Level 30.00 dBm Offset 12.00 dB Ref Level 30.00 dBm SGL Count 100/100 Offset 12.00 dB Mode Auto Sweep Mode Auto Sweep SGL Count 100/100 ●1 AvgPwr SPURIOUSCHNEKABS 20 dbine SPURIOUS SPURIOUS\_LINE\_ABS 20 deme -10 dBm -10 dBm -30 dBm-40 dBm -50 dBm -60 dBm-10005 pts Stop 2.795 GHz Start 2.66999 GHz 8004 pts urious Emissions 2.48765 GHz 2.49495 GHz 2.49495 GHz 2.49602 GHz 2.50459 GHz ΔLimit Range Up RBW Power Abs 1.000 MHz 1.000 MHz 200.000 kHz 100.000 kHz 2.490 GHz 2.495 GHz 2.496 GHz 2.516 GHz -35.53 dBm -34.82 dBm -33.70 dBm 1.39 dBm -10.53 dB -21.82 dB -20.70 dB -28.61 dB te: 23.0CT.2020 13:57:54 ate: 23.0CT.2020 14:19:48

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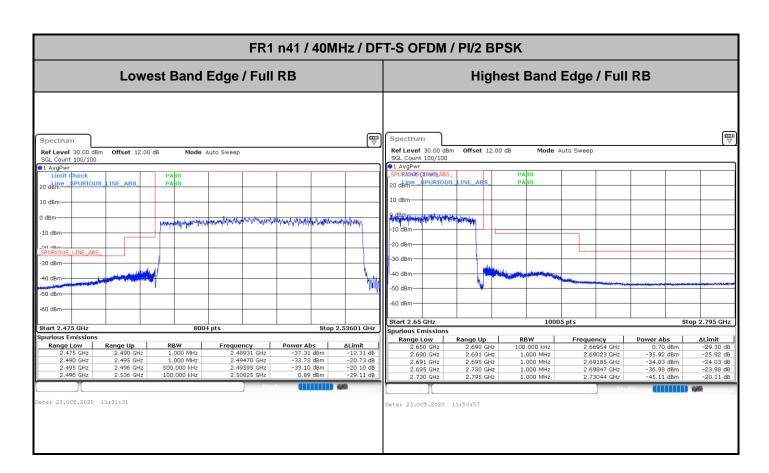


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FR1 n41 / 40MHz / DFT-S OFDM / PI/2 BPSK Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Ref Level 30.00 dBm Offset 12.00 dB Mode Auto Sweep Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 20 dkine Mul Aduland Start 2.475 GHz 8004 pts Stop 2.53601 GHz purious Emissions RBW 100.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz Power Abs 18.13 dBm -9.38 dBm\* -24.63 dBm -33.12 dBm -46.03 dBm Range Low 2.650 GHz Range Up 2.475 GHz 2.490 GHz 2.495 GHz 2.495 GHz 2.496 GHz ΔLimit Power Abs Range Up Frequency -10.62 dB -12.54 dB -3.46 dB -12.34 dB 2.691 GHz 2.695 GHz 2.730 GHz 2.795 GHz 2.69120 GHz 2.69120 GHz 2.69518 GHz 2.79362 GHz ate: 23.0CT.2020 13:41:25 Date: 23.0CT.2020 13:43:09 Channel power -25.42dbm<-10dbm (Pass) Spectrum Offset 12.00 dB • RBW 10 kHz SWT 100 ms • VBW 30 kHz Mode Auto Sweep Ref Level 30.00 dBm 30 dB • SWT Att 30 SGL Count 100/100 20 dBm -10 dBm -30 dBr -60 dBm 691 pts nel Powe Tx Total -25.42 dBm Power -25.42 dBm Bandwidth 1.00 MHz

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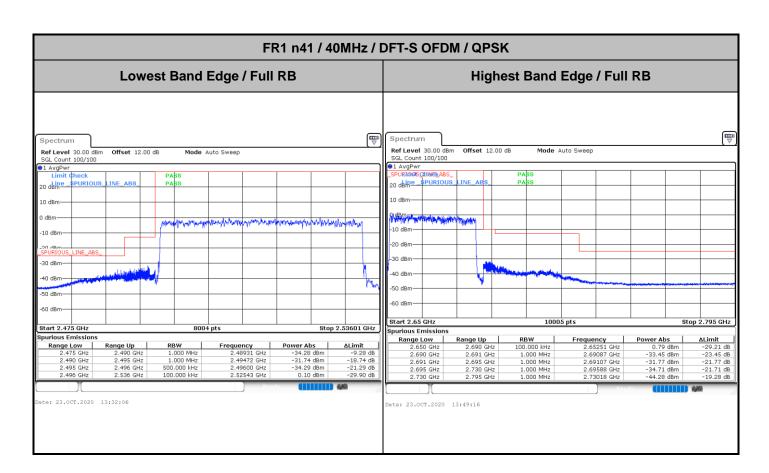


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FR1 n41 / 40MHz / DFT-S OFDM / QPSK Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Offset 12.00 dB Mode Auto Sweep Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 20 dkine Start 2.475 GHz 8004 pts Stop 2.53601 GHz purious Emissions RBW 100.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz Power Abs 18.27 dBm -10.29 dBm -23.93 dBm -33.60 dBm -46.00 dBm 2.68879 GHz 2.68001 GHz 2.69001 GHz 2.69132 GHz 2.69517 GHz 2.79122 GHz Range Low 2.650 GHz Range Up 2.48954 GHz 2.48954 GHz 2.49481 GHz 2.49599 GHz 2.49708 GHz 2.475 GHz 2.490 GHz 2.495 GHz 2.495 GHz 2.496 GHz ΔLimit -11.73 dB -0.29 dB -13.93 dB -20.60 dB -21.00 dB Power Abs Range Up 2.691 GHz 2.695 GHz 2.730 GHz 2.795 GHz ate: 23.0CT.2020 13:38:12 Date: 23.0CT.2020 13:43:42 Channel power -24.58dbm<-10dbm (Pass) Spectrum Offset 12.00 dB • RBW 10 kHz SWT 100 ms • VBW 30 kHz Mode Auto Sweep Ref Level 30.00 dBm 30 dB • SWT Att 30 SGL Count 100/100 20 dBm -10 dBm -30 dBm Wr -60 dBm 691 pts nel Powe Tx Total -24.58 dBm Power -24.58 dBm Bandwidth 1.00 MHz 

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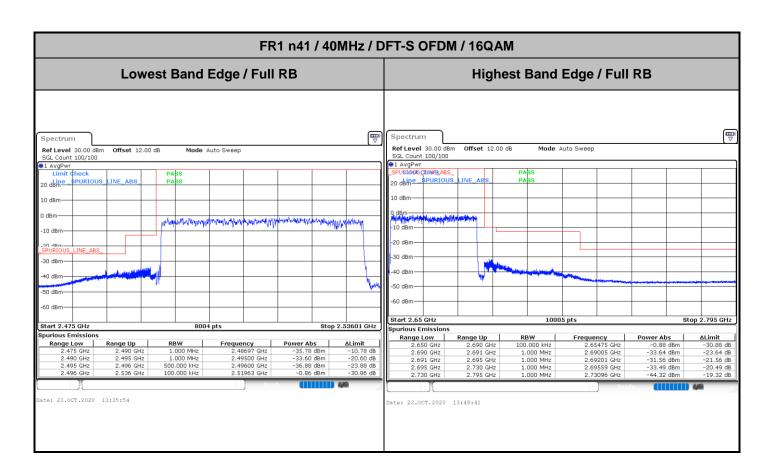


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FR1 n41 / 40MHz / DFT-S OFDM / 16QAM Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Offset 12.00 dB Mode Auto Sweep Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 20 dkine Start 2.475 GHz 8004 pts Stop 2.53601 GHz purious Emissions RBW 100.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz Power Abs 16.59 dBm -9.98 dBm\* -22.28 dBm -31.33 dBm -46.11 dBm Range Low 2.650 GHz Range Up 2.48950 GHz 2.49496 GHz 2.49601 GHz 2.49722 GHz 2.475 GHz 2.490 GHz 2.495 GHz 2.495 GHz 2.496 GHz ΔLimit Range Up Power Abs 2.691 GHz 2.695 GHz 2.730 GHz 2.795 GHz ate: 23.0CT.2020 13:37:43 Date: 23.0CT.2020 13:46:36 Channel power -24.49dbm<-10dbm (Pass) Spectrum Offset 12.00 dB • RBW 10 kHz SWT 100 ms • VBW 30 kHz Mode Auto Sweep Ref Level 30.00 dBm 30 dB • SWT Att 30 SGL Count 100/100 20 dBm -10 dBm month MANAMAN -60 dBm 691 pts nel Powe Tx Total -24,49 dBm Power -24.49 dBm Bandwidth 1.00 MHz 

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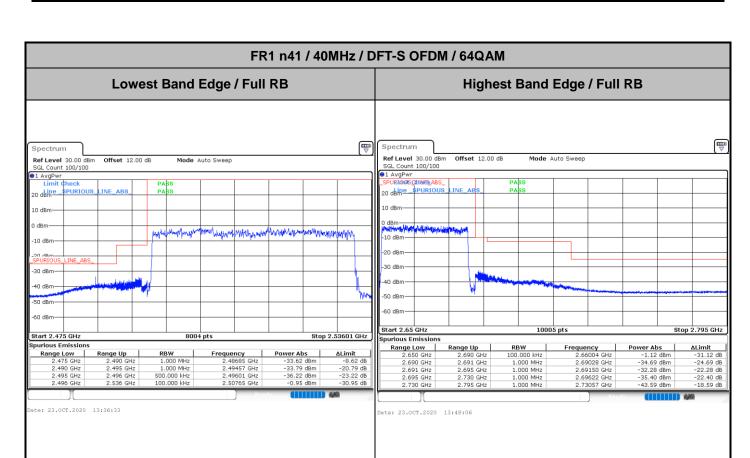


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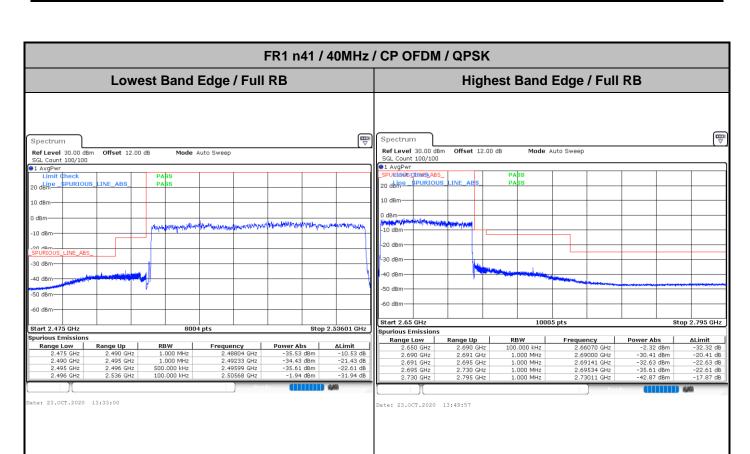
FR1 n41 / 40MHz / DFT-S OFDM / 64QAM Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Offset 12.00 dB Mode Auto Sweep Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 20 dkine Start 2.475 GHz 8004 pts Stop 2.53601 GHz purious Emissions RBW 100.000 kHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz 15.81 dBm -11.43 dBm -30.35 dBm -36.76 dBm -45.73 dBm 2.68893 GHz 2.69000 GHz 2.69132 GHz 2.70767 GHz 2.78384 GHz Range Low 2.650 GHz Range Up ΔLimit RBW 1.000 MHz 1.000 MHz 500.000 kHz 100.000 kHz 2.475 GHz 2.490 GHz 2.495 GHz 2.495 GHz 2.496 GHz ΔLimit -14.19 dB -1.43 dB -20.35 dB -23.76 dB -20.73 dB Power Abs Range Up Frequency -13.18 dB -15.90 dB -5.65 dB -15.22 dB 2.691 GHz 2.695 GHz 2.730 GHz 2.795 GHz ate: 23.0CT.2020 13:37:02 Date: 23.0CT.2020 13:47:28 Channel power -26.45dbm<-10dbm (Pass) Spectrum Offset 12.00 dB • RBW 10 kHz SWT 100 ms • VBW 30 kHz Mode Auto Sweep Ref Level 30.00 dBm 30 dB • SWT Att 30 SGL Count 100/100 20 dBm -10 dBm WWW MWWWW -60 dBm 691 pts nel Powe Tx Total -26.45 dBm Power -26.45 dBm Bandwidth 1.00 MHz 

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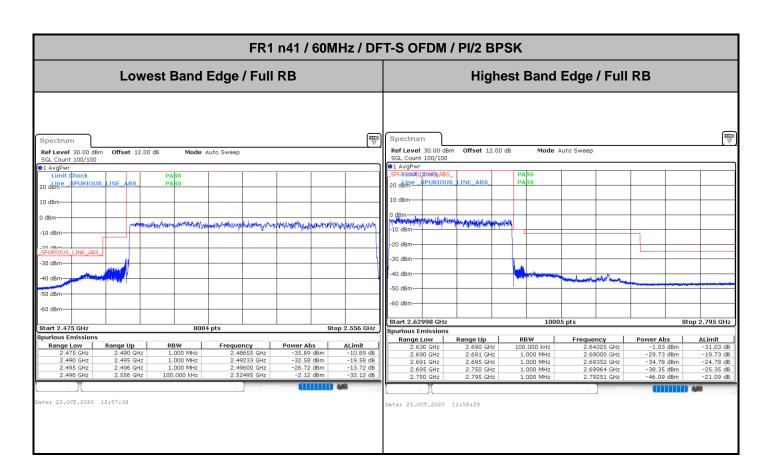


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FR1 n41 / 60MHz / DFT-S OFDM / PI/2 BPSK Lowest Band Edge / 1RB0 **Highest Band Edge / 1RBmax** Spectrum Ref Level 30.00 dBm Offset 12.00 dB Mode Auto Sweep Offset 12.00 dB Mode Auto Sweep Ref Level 30.00 dBm SGL Count 100/100 1 AvgPwr SGL Count 100/100 20 deine SPURIOUS FAI 20 dkine 30 dBm Start 2.475 GHz 8004 pts Stop 2.556 GHz purious Emissions urious com. Range Low 2.630 GHz Range Up RBW 100.000 kHz Power Abs 18.32 dBm ΔLimit 2.475 GHz 2.490 GHz 2.495 GHz 2.495 GHz 2.496 GHz 2.49019 GHz 2.49497 GHz ΔLimit Range Up Power Abs 2.691 GHz 2.695 GHz 2.750 GHz 2.795 GHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz 1.000 MHz -36.75 dBm -31.83 dBm 2.69114 GHz 2.69114 GHz 2.69653 GHz 2.78680 GHz ate: 23.0CT.2020 12:50:55 Date: 23.0CT.2020 13:05:12 Channel power -21.66dbm<-13dbm (Pass) Channel power -23.22dbm<-10dbm (Pass) Spectrum Offset 12.00 dB • RBW 10 kHz SWT 100 ms • VBW 30 kHz Mode Auto Sweep Ref Level 30.00 dBm Ref Level 30.00 dBm Offse Att 30 dB • SWT Offset 12.00 dB ● RBW 10 kHz
SWT 100 ms ● VBW 30 kHz Mode Auto Sweep 30 dB • SWT Att 30 SGL Count 100/100 Count 100/100 20 dBm -10 dBm -10 dBr MANAMANANA 30 dBn -30 dBm -50 dBm wwwwww -60 dBm CF 2.4955 GHz 691 pts 2.04 MHz 691 pts nel Powe Bandwidth 1.00 MHz Power -21.66 dBm Tx Total -21.66 dBm Power -23.22 dBm Tx Total -23,22 dBm Bandwidth 1.00 MHz te: 23.0CT.2020 15:36:17

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