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MEASUREMENT REPORT FCC Part 30 5G mmWave

Applicant Name:

Wistron Neweb Corporation 20 Park Avenue II, Hsinchu Science Park, Hsinchu 308, Taiwan

Date of Testing: 7/12/2021-08/16/2021 Test Site/Location: PCTEST Lab. Columbia, MD, USA Test Report Serial No.: 1M2106230069-02-R3.NKR

FCC ID:

APPLICANT:

NKR-TR2V1-IDU Wistron Neweb Corporation

Application Type	Cartification
Application Type:	Centification
Model:	TR2V1
EUT Type:	5G Extender Gen 2
FCC Classification:	Part 30 Transportable Transmitter (5GT)
FCC Rule Part(s):	2, 30
Test Procedure(s):	ANSI C63.26-2015, KDB 842590 D01 v01r02

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

This revised Test Report (S/N: 1M2106230069-02-R3.NKR) supersedes and replaces the previously issued test report (S/N: 1M2106230069-02-R2.NKR) on the same subject device for the same type of testing as indicated. Please discard or destroy the previously issued test report(s) and dispose of it accordingly.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Randy Ortanez President



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MEASUREMENT REPORT FCC Part 30

						EI	EIRP		
Band	Antenna	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Max Power [W]	Max Power [dBm]	Emission Designator	
					π/2 BPSK	12.417	40.94	45M9G7D	
		50	27525 20225	4	QPSK	12.359	40.92	46M0G7D	
		50	27525 - 26525	1	16QAM	11.995	40.79	45M9W7D	
n261	Donor-H Beam				64QAM	11.830	40.73	45M8W7D	
11201	Donor-In Dearn				π/2 BPSK	12.162	40.85	400MG7D	
		100	27550 - 28300	4	QPSK	12.106	40.83	397MG7D	
		100	27000 - 20000	7	16QAM	11.995	40.79	395MW7D	
					64QAM	11.858	40.74	395MW7D	
					π/2 BPSK	12.474	40.96	46M0G7D	
		50	27525 - 28325	1	QPSK	12.134	40.84	46M0G7D	
		50	27323 - 20323	I	16QAM	12.303	40.90	46M0W7D	
n261	Donor-\/ Beam				64QAM	11.912	40.76	46M0W7D	
11201	hzor Donor-v Deam	100	27550 - 28300	Л	π/2 BPSK	11.668	40.67	400MG7D	
					QPSK	11.535	40.62	402MG7D	
	100	21000 20000	Ŧ	16QAM	11.350	40.55	397MW7D		
					64QAM	11.376	40.56	397MW7D	
		50	27525 - 28325	1	π/2 BPSK	0.249	23.97	46M2G7D	
					QPSK	0.250	23.98	46M3G7D	
					16QAM	0.244	23.87	46M5W7D	
n261	Relay-H Beam				64QAM	0.245	23.89	46M4W7D	
11201	Relay-IT Dealth				π/2 BPSK	0.232	23.66	399MG7D	
		100	27550 - 28300		QPSK	0.229	23.60	396MG7D	
		100	27000 - 20000		16QAM	0.228	23.58	395MW7D	
					64QAM	0.222	23.47	395MW7D	
					π/2 BPSK	0.247	23.93	45M9G7D	
		50	27525 - 28325	1	QPSK	0.246	23.91	46M0G7D	
		00	21020 20020		16QAM	0.240	23.80	45M9W7D	
n261	Relay-V Beam				64QAM	0.239	23.79	45M8W7D	
11201	l toidy v Dedill				π/2 BPSK	0.244	23.87	399MG7D	
		100	27550 - 28300	4	QPSK	0.248	23.95	397MG7D	
		100	21000 - 20000	-	16QAM	0.245	23.89	397MW7D	
				64QAM	0.244	23.88	398MW7D		

EUT Overview (n261)

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	and Antenna Bandwidth Tx Frequer [MHz] [MHz]					El		
Band			Tx Frequency [MHz]	CCs Active	Modulation	Max Power [W]	Max Power [dBm]	Emission Designator
					π/2 BPSK	12.388	40.93	46M1G7D
		50	27025 20075	1	QPSK	12.274	40.89	46M3G7D
		50	37023 - 39973	1	16QAM	12.134	40.84	46M3W7D
n260	Donor-H Beam				64QAM	11.940	40.77	46M4W7D
11200	Donor-In Deam				π/2 BPSK	11.776	40.71	400MG7D
		100	37050 - 30050	4	QPSK	11.614	40.65	398MG7D
		100	37030 - 33330	7	16QAM	11.220	40.50	396MW7D
					64QAM	11.169	40.48	396MW7D
					π/2 BPSK	10.351	40.15	46M4G7D
		50	37025 - 30075	1	QPSK	10.399	40.17	46M2G7D
		50	37023 - 39975	I	16QAM	10.209	40.09	46M5W7D
n260	Donor-V/ Beam				64QAM	10.162	40.07	46M4W7D
11200	H200 Donor-v Deam	100	37050 - 39950	Д	π/2 BPSK	12.190	40.86	402MG7D
					QPSK	12.246	40.88	399MG7D
	100	0/000 00000		16QAM	12.050	40.81	399MW7D	
					64QAM	12.162	40.85	400MW7D
		y-H Beam	37025 - 39975	1	π/2 BPSK	0.247	23.93	45M9G7D
					QPSK	0.248	23.94	46M0G7D
					16QAM	0.245	23.89	46M0W7D
n260	Relay-H Beam				64QAM	0.240	23.81	46M0W7D
11200	Relay IT Deam				π/2 BPSK	0.216	23.35	397MG7D
			37050 - 39950		QPSK	0.219	23.40	395MG7D
		100	01000 00000		16QAM	0.217	23.37	395MW7D
					64QAM	0.215	23.32	394MW7D
					π/2 BPSK	0.249	23.96	45M8G7D
		50	37025 - 39975	1	QPSK	0.248	23.95	45M9G7D
		00	01020 00010		16QAM	0.240	23.80	45M8W7D
n260	Realy-V Beam				64QAM	0.247	23.92	46M0W7D
1200	liteary v Dearn				π/2 BPSK	0.248	23.94	397MG7D
		100	37050 - 39950	4	QPSK	0.247	23.93	395MG7D
		100	01000 - 00000	7	16QAM	0.243	23.85	395MW7D
					64QAM	0.240	23.80	394MW7D

EUT Overview (n260)

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Innovation, Science and Economic Development Canada.

1.2 PCTEST Test Location

These measurement tests were conducted at the PCTEST facility located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at PCTEST located in Columbia, MD 21046, U.S.A.

- PCTEST is an ISO/IEC 17025:2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).
- PCTEST facility is a registered (2451B) test laboratory with the site description on file with ISED.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **5G Extender Gen 2 FCC ID: NKR-TR2V1-IDU**. The test data contained in this report pertains only to the emissions due to the EUT's 5G mmWave function.

The EUT contains two modules for mmWave: Donor and Relay modules. The EUT supports any combination of bandwidths, number of carriers, and modulations as input signals in the n261 (28GHz) band and n260 (39GHz) band. It will transmit all signals within the 5G n261 band and n260 band that are received.

Test Device Serial No.: 4711-2075, 4011-2078

2.2 Software and Firmware

The test was conducted with firmware version 1.0 installed on the EUT.

2.3 Test Configuration

The EUT was tested per the guidance of ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated tests.

All testing was performed using a signal generator connected to a horn antenna, the input signal sends to EUT via horn antenna. The signal generator was set to transmit a representative 5G mmWave NR signal in various sized bandwidths and modulations. All testing was performed on both the relay and the donor sides, and the worst case was included in this report.

2.4 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

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3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the document titled "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) was used in the measurement of the EUT. KDB 842590 D01 v01r02 was referenced for testing the EUT as well.

3.2 Radiated Power and Radiated Spurious Emissions

The radiated test facilities consisted of an indoor 3 meter anechoic chamber used for final measurements and exploratory measurements, when necessary for radiated emissions measurements in the spurious domain. The test site conforms to the site validation requirements of CISPR 16-1-4. The measurement area is contained within the anechoic chamber which is shielded from any ambient interference. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane.

A positioner was used to manipulate the EUT through several positions in space by rotating about the roll axis as shown in the figure below. The positioner was mounted on top of a turntable bringing the total EUT height to 1.5m.



Figure 3-1. Rotation of the EUT Through Three Orthogonal Planes

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The equipment under test was transmitting while connected to its patch or HBF antenna and is placed on a positioner. The measurement antenna is in the far field of the EUT per formula $2D^2/\lambda$ where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. For radiated power and radiated spurious emission measurements, "D" is the largest dimension of the measurement antenna per KDB 842590 D01. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning. It was determined that H=0 degree and V=90 degree are the worst case positions when the EUT was transmitting horizontally and vertically polarized beams, respectively.

The maximized power level is recorded using the spectrum analyzer's "Channel Power" function with the integration bandwidth set to the emissions' occupied bandwidth. The EIRP is calculated from the raw power level measured with the spectrum analyzer using the formulas shown below.

Effective Isotropic Radiated Power Sample Calculation

The measured e.i.r.p is converted to E-field in V/m. Then, the distance correction is applied before converting back to calculated e.i.r.p, as explained in KDB 971168 D01.

Field Strength [dBµV/m]	= Measured Value [dBm] + AFCL [dB/m] + 107
	= - 34.06 dBm + (40.6dB/m + 8.49dB) + 107 = 122.03dBuV/m
	= 10^(122.03/20)/1000000 = 1.26 V/m
e.i.r.p. [dBm]	= 10 * log((E-Field*D _m)^2/30) + 30dB
	= 10*log((1.26V/m * 1.00m)^2/30) + 30dB
	= 17.24 dBm e.i.r.p.

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4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

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5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to an accredited ISO/IEC 17025 calibration facility. Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	4/20/2021	Biennial	4/20/2023	125518
Megaphase	FAC mmWave	AP FAC mmWave 10ft 40GHz	3/3/2021	Annual	3/3/2022	20033008-002
Megaphase	FAC mmWave	AP FAC mmWave 18ft 40GHz	3/3/2021	Annual	3/3/2022	20033003
Narda	180-442-KF	Wide Band Horn Antenna 18.0 - 40.0 GHz	9/14/2020	Annual	9/14/2021	2172481
Narda	180-442-KF	Wide Band Horn Antenna 18.0 - 40.0 GHz	11/5/2020	Biennial	11/5/2022	U157403-01
OML Inc.	M05RH	WR-05 Horn Antenna, 24dBi, 140 to 220 GHz	10/31/2019	Biennial	10/31/2021	18073001
OML Inc.	M08RH	WR-08 Horn Antenna, 24dBi, 90 to 140 GHz	10/31/2019	Biennial	10/31/2021	18073001
OML Inc.	M12RH	WR-12 Horn Antenna, 24dBi, 60 to 90 GHz	10/31/2019	Biennial	10/31/2021	18073001
OML Inc.	M19RH	WR-19 Horn Antenna, 24dBi, 40 to 60 GHz	10/31/2019	Biennial	10/31/2021	18073001
Rohde & Schwarz	FSW67	Signal / Spectrum Analyzer	8/10/2020	Annual	9/10/2021	103200
Rohde & Schwarz	SMW200A	Signal Generator		N/A		190456
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	5/25/2021	Annual	5/25/2022	100348
Sunol Science	JB5	Bi-Log Antenna (30M - 5GHz)	7/27/2020	Biennial	7/27/2022	A051107
Virginia Diodes Inc	SAX679	SAX Module (40 - 60GHz)	8/28/2020	Biennial	8/28/2022	SAX679
Virginia Diodes Inc	SAX680	SAX Module (60 - 90GHz)	8/14/2020	Biennial	8/14/2022	SAX680
Virginia Diodes Inc	SAX681	SAX Module (90 - 140GHz)	10/22/2020	Biennial	10/22/2022	SAX681
Virginia Diodes Inc	SAX682	SAX Module (140 - 220GHz)	9/24/2020	Biennial	9/24/2022	SAX682

Table 5-1. Test Equipment

Notes:

- 1. For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.
- 2. The calibration due date for the FSW67 was extended by one month to accommodate the required testing. The equipment has since returned from calibration within specification.

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6.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 800MG7D

BW = 800 MHz G = Phase Modulation 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 802MW7D

BW = 802 MHz W = Amplitude/Angle Modulated 7 = Quantized/Digital Info D = Data transmission, telemetry, telecommand

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7.0 TEST RESULTS

7.1 Summary

	Company Name:	Wistron Neweb Corporation
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FCC ID: NKR-TR2V1-IDU

FCC Classification: Part 30 Transportable Transmitter (5GT)

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049	Occupied Bandwidth	N/A		PASS	Section 7.2
2.1051, 30.203	Out-of-Band Emissions at the Band Edge	-13dBm/MHz for all out-of- band emissions, -5dBm/MHz from the band edge up to 10% of the channel BW	RADIATED	PASS	Section 7.5
30.202(c)	Equivalent Isotropic Radiated Power	55dBm		PASS	Section 7.3
2.1051, 30.203	Spurious Emissions	-13dBm/MHz for all out-of-band emissions	RADIATED	PASS	Section 7.4
2.1055	Frequency Stability	Fundamental emissions stay within authorized frequency block		PASS	Section 7.6

Table 7-1. Summary of Radiated Test Results

Notes:

- 1) Per 2.1057(a)(2), spurious emissions were investigated up to 100GHz for n261 band and 200GHz for n260 band.
- Testing was completed with a signal generator creating a representative mmWave 5G NR signal, using DFTs-OFDM scheme, various modulations including π/2 BPSK, QPSK, and QAM, 120kHz subcarrier spacing, with one and four carrier configurations using 50MHz and 100MHz bandwidths, full and single resource block allocations.
- 3) The input signal to the EUT was set in order to produce the max power of the AGC range.
- 4) Based upon investigations of all possible modulations, testing was mainly performed with QPSK modulation.
- 5) Triggering from the signal generator was used in order to more accurately gate on the TDD signal with the analyzer.

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§2.1049

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedure Used

ANSI C63.26-2015 Section 5.4.3

Test Settings

- 1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5% of the expected OBW
- 3. VBW \geq 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within
 - 1-5% of the 99% occupied bandwidth observed in Step 7

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n261 Donor Side and Relay Side

Band	Antenna	Channel	Bandwidth	CCs Active	Modulation	OBW [MHz]
			50	1	π/2 BPSK	45.87
					QPSK	45.95
			50	•	16QAM	45.94
n261	Dopor-H Boom	Mid			64QAM	45.84
11201	Donor-in Dearn	Ivilu			π/2 BPSK	400.32
			100	1	QPSK	396.62
			100	-	16QAM	395.07
					64QAM	395.00
					π/2 BPSK	45.95
			50	1	QPSK	45.97
			50	1	16QAM	45.96
n261	n261 Donor-V Beam	Mid			64QAM	45.97
11201		Ivila	100	4	π/2 BPSK	399.57
					QPSK	401.75
					16QAM	396.75
					64QAM	397.08
	Relay-H Beam			1	π/2 BPSK	46.24
			50		QPSK	46.30
			50		16QAM	46.47
n261		Mid			64QAM	46.38
11201		IVIIO	100	4	pi/2-BPSK	398.72
					QPSK	396.16
					16QAM	395.27
					64QAM	395.16
					π/2 BPSK	45.87
			50	4	QPSK	45.95
		50		16QAM	45.86	
	Polov V Room	Mid			64QAM	45.78
11201	INCLAY-V DEALLI	IVIIU			π/2 BPSK	399.34
			100	Λ	QPSK	397.44
			100	4	16QAM	397.23
					64QAM	397.73

Table 7-2. Summary of Occupied Bandwidths – n261

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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ACLRResults									\$
MultiView	- Spectrum								
Ref Level 0.0	00 dBm	RBW 1	l MHz						
Att	10 dB SWT 1.	2 ms 🗢 VBW 10	MHz Mode A	uto Sweep				с	ount 100/100
1 Occupied Ba	andwidth						1		o 1Pk Max
								M1[1]	-18.64 dBm
-10 dBm								27	.9136700 GHZ
			M1						
-20 dBm			the second of						
		Frank		and large and the same	manumente	Mummen	T2		
-30 dBm									
-40 dBm									
-50 dBm									
monthem	My an an and	wharm					madere	An an an a	A abdam a
-60 dBm								an analysing shows	as a contraction of the
-70 dBm									
70 dbiii									
-90 d9m									
oo abiii									
00. d0m									
-90 UBIII									
CF 27.92496	GHz		1001 pt	s	10	0.0 MHz/		Sp	an 100.0 MHz
2 Marker Tab	le					_			
Type Re		X-Value	Hz -	Y-Value 18 64 dBm	Occ Bw	Function		45 873033	esult
T1	1	27.9018226	GHz	-24.61 dBm	Occ Bw Ce	ntroid		27.92475	59165 GHz
T2	1	27.9476957	GHz	-26.21 dBm	Occ Bw Fre	eq Offset		-200.83456	69656 kHz
							Measuring		30.07.2021
									10.33:17

10:35:18 30.07.2021

Plot 7-1. Occupied Bandwidth Plot - (n261 50MHz - $\pi/2$ BPSK - Mid Channel) – Donor Side – H Beam



10:34:13 30.07.2021

Plot 7-2. Occupied Bandwidth Plot - (n261 50MHz - QPSK - Mid Channel) - Donor Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Ø\$ ACLRResults MultiView Spectrum Ref Level 0.00 dBm • RBW 1 MHz Att 10 dB SWT 1.2 ms • VBW 10 MHz Mode Auto Sweet Count 100/100 1 Occupied Bandwidth 19.09 M1[1] 9178700 GH -10 dBm М1 Т -20 dBm han Mr. warm -30 dBn -40 dB -50 dBm was all work montral Mannu Anolon Muy -60 dBm -70 dBm -80 dBm 90 dBm CF 27.92496 GHz 1001 pts 10.0 MHz/ Span 100.0 MHz 2 Marker Table Type Ref 27.91787 GHz 19.09 dBm 45.939546888 MHz M1 Occ Bw Occ Bw Centroid Τ1 27.9019333 GHz 27.9478728 GHz -24.59 dBm -24.74 dBm 27.924903051 GHz -56.948966019 kHz Bw Freq Offs **40** 30.07.

10:36:00 30.07.2021

Plot 7-3. Occupied Bandwidth Plot - (n261 50MHz - 16QAM - Mid Channel) – Donor Side – H Beam



10:36:30 30.07.2021

Plot 7-4. Occupied Bandwidth Plot - (n261 50MHz - 64QAM - Mid Channel) - Donor Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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0 dBm								
o dBm	washing					Low Low Marting	Unexan	and the second
0 dBm		m				T2		
0 dBm			~ ~	- ~~~	M1		2	20.03 0
Att 25 dB SV A Occupied Bandwidth	● RBW 10 VT 4 ms ● VBW 50	MHZ Mode Aut	o Sweep				S C M1[1]	GL ount 100, 0 1Pk -20.03

10:40:18 10.08.2021

Plot 7-5. Occupied Bandwidth Plot - (n261 100MHz - $\pi/2$ BPSK - Mid Channel) – Donor Side – H Beam



10:37:28 10.08.2021

Plot 7-6. Occupied Bandwidth Plot - (n261 100MHz - QPSK - Mid Channel) - Donor Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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CLRResults								
ultiView - Spe	ectrum							
Ref Level -5.00 dBm	● RBW	10 MHz					5	GL
Att 25 dB	SWT 4 ms 🖷 VBW	50 MHz Mode A	luto Sweep				C	ount 100/
Occupied Bandwidth	1	1						O1Pk N
10 dBm							M1[1]	-16,14
					X			28.046800
20 dBm			mm	month	Maria			
		T1 mmmen		i i	the second	2		
30 dBm						k		
40 dBm		4				1 Martin		
	in the company	Л				how we .	a provence	
50rdBm	And						1 Junity	A WAY
50 dBm								
70 dBm								
80 dBm								
90 dBm								
100 dBm								
5 27 0240 CHz		1001 p	te	10				Spap 1.0
Marker Table		1001 p		10				span 1.0
Type Ref Trc	X-Value		Y-Value		Function		Function R	esult
M1 1 T1 1	28.0468 27.73018	GHZ -	-28.80 dBm	Occ Bw Occ Bw Ce	ntroid	3	95.0721309 27.92771	255 MHZ 6081 GHz

10:38:36 10.08.2021

Plot 7-7. Occupied Bandwidth Plot - (n261 100MHz - 16QAM - Mid Channel) – Donor Side – H Beam



10:39:08 10.08.2021

Plot 7-8. Occupied Bandwidth Plot - (n261 100MHz - 64QAM - Mid Channel) – Donor Side – H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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أ∕♦ ACLRResults MultiView Spectrum Ref Level 0.00 dBm • RBW 1 MHz Att 10 dB SWT 1.2 ms - VBW 10 MHz Mode Auto Sweep Count 100/100 1 Occupied Bandwidth M1[1] -10 dBm -20 dBm hours ×4. -30 dBm 40 dBr -50 dBm/ mounder Wald monthly m water -60 dBr -70 dBr -80 dBn -90 dBn -100 dBm· 10.0 MHz/ Span 100.0 MHz 1001 pts CF 27.92496 GHz 2 Marker Table Ref T 45.945420706 MHz 27.91337 GHz -18.60 dBm Occ Bw Occ Bw Centroid Occ Bw Freq Offse Τ1 27.9019245 GHz 27.9478699 GHz -24.48 dBm -24.50 dBm 924897174 GHz 826143806 kHz 28.07.2021 12:43:34 Measuring...

12:43:35 28.07.2021

Plot 7-9. Occupied Bandwidth Plot - (n261 50MHz - $\pi/2$ BPSK - Mid Channel) – Donor Side – V Beam



12:42:12 28.07.2021

Plot 7-10. Occupied Bandwidth Plot - (n261 50MHz - QPSK - Mid Channel) - Donor Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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✨ ACLRResults MultiView Spectrum Ref Level 0.00 dBm • RBW 1 MHz Att 10 dB SWT 1.2 ms - VBW 10 MHz Mode Auto Sweep Count 100/100 1 Occupied Bandwidth O1Pk Ma 20.10 dB M1[1] -10 dBm M1 -20 dBm - warder the ward the serve -30 dBm 40 dBr -\$0 dBm Manne muther deline m Anos "Unonenterment -60 dBn -70 dBr -80 dBn -90 dBn -100 dBm· 10.0 MHz/ Span 100.0 MHz 1001 pts CF 27.92496 GHz 2 Marker Table Ref T 27.91257 GHz -20.10 dBm 45.95932172 MHz Occ Bw Occ Bw Centroid Occ Bw Freq Offse Τ1 27.9019915 GHz 27.9479508 GHz -25.39 dBm -23.93 dBm 27.924971172 GHz 11.172129288 kHz Measuring... 28.07.2021 12:44:05

12:44:06 28.07.2021

Plot 7-11. Occupied Bandwidth Plot - (n261 50MHz - 16QAM - Mid Channel) – Donor Side – V Beam



12:45:05 28.07.2021

Plot 7-12. Occupied Bandwidth Plot - (n261 50MHz - 64QAM - Mid Channel) - Donor Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 126
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art of ⊜ element	•								
CLRResults									4
MultiView	Spectr	um	10.141						
Att PA	20 dB S	WT4ms • VBW	50 MHz Mo	de Auto Sweep				0	GL Count 100/10
Occupied Ban	dwidth							M1[1]	• 1Pk Ma
20 dBm					M1				27.998860 G
20 UBM				mon	John M	m	1		
30 dBm			prim	- ¥			12		
40 dBm							N.		
10 32.11		a martilue					winning	mar	
50 dBm	aladaran mangema	and a second						- Manufactor	apolo and a second of
-60 dBm									
70 dBm									
-80 dBm									
90 dBm									
100 dBm									-
F 27.92496 G⊢	Iz		100	1 pts	10	0.0 MHz/			Span 1.0 G
Marker Table Type Ref	Trc	X-Value		Y-Value		Function		Function R	esult
M1 T1 T2	1 1	27.99886 (27.727749 28.127319	GHz GHz	-18.36 dBm -29.05 dBm -37.24 dBm	Occ Bw Occ Bw Ce Occ Bw Fre	ntroid		399.570312 27.9275 2.57368	42 MHz 3369 GHz 9507 MHz
1.6	-	20.127019	0112	57.24 dbm	OCC DWITE	iy onset	- Boadu	2.37300	28.07.20

13:04:11 28.07.2021

Plot 7-13. Occupied Bandwidth Plot - (n261 100MHz - $\pi/2$ BPSK - Mid Channel) – Donor Side – V Beam



12:57:10 28.07.2021

Plot 7-14. Occupied Bandwidth Plot - (n261 100MHz - QPSK - Mid Channel) - Donor Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Att 20 dB SWT 4 ms VBW 50 MHz Mode Auto Sweep C PA C M1 M1[1] -20 dBm -10 -10 -10 -10 -30 dBm -10 -10 -10 -10 -40 dBm -10 -10 -10 -10 -50 dBm -10 -10 -10 -10 -70 dBm -10 -10 -10 -10 -90 dBm -10 -10 -10 -10	Span 1.0
Art 20 dB SWT 4 ms V BW 50 MHz Mode Auto Sweep C PA 20 dB SWT 4 ms V BW 50 MHz Mode Auto Sweep C Image: Complete Bandwidth -20 dBm Image: Complete Bandwidth -20 dBm Image: Complete Bandwidth -20 dBm Image: Complete Bandwidth -20 dBm Image: Complete Bandwidth -20 dBm Image: Complete Bandwidth -50 dBm Image: Complete Bandwidth -70 dBm Image: Complete Bandwidth Image: Complete Bandwidth Image: Compl	
Net Level - 10.00 unit C North 2000 SWT 4 ms + VBW 50 MHz Mode Auto Sweep C Att 20 dB SWT 4 ms + VBW 50 MHz Mode Auto Sweep C Image: Comparison of the second s	
Net Level = 10.00 unit O minute Note auto Sweep C PA 20 dB SWT 4 ms • VBW 50 MHz Mode Auto Sweep C Image: Complete Bandwidth Image: Comple	
Net 20 dB SWT 4 ms V BW 50 MHz Mode Auto Sweep C At 20 dB SWT 4 ms V BW 50 MHz Mode Auto Sweep C Act 20 dB SWT 4 ms V BW 50 MHz Mode Auto Sweep C Act 20 dB Image: SWT 4 ms V Image: SWT 4 ms C C Act 20 dB Image: SWT 4 ms Image: SWT 4 ms C C C 20 dBm Image: SWT 4 ms <	
Checker = 10.00 um C Korr 10 miz Att 20 dB SWT 4 mis = VBW 50 MHz Mode Auto Sweep C PA 20 dB SWT 4 mis = VBW 50 MHz Mode Auto Sweep C I Occupied Bandwidth Mit M1[1] M1[1] M1[1] -20 dBm	
Net Level = 10.00 unit C Nom 10 mit C Nom 20 mit <thc 20="" mit<="" nom="" th=""> C Nom 20 mit C No</thc>	
Net Level = 10.00 unit C Non 10 mill Att 20 dB SWT 4 ms • VBW 50 MHz Mode Auto Sweep C PA 20 dB SWT 4 ms • VBW 50 MHz Mode Auto Sweep C 20 dBm 1 1 M1 M1[1] 20 dBm 1 1 1 1 20 dBm 1 1 1 1 40 dBm 1 1 1 1	and the second
Nation Control Control <th< td=""><td></td></th<>	
Att 20 dB SWT 4 ms • VBW 50 MHz Mode Auto Sweep CC PA Cocupied Bandwidth	
Natt 20 dB SWT 4 ms VBW 50 MHz Mode Auto Sweep C PA LOccupied Bandwidth LOCCUPIED Bandwidth<	27.990900
Att 20 dB SWT 4 ms ● VBW 50 MHz Mode Auto Sweep C	O 1Pk M
Pattaval -10.00 dBm PRW 10 MHz	ount 100/
MultiView Spectrum	
CLRResults	•

12:56:05 28.07.2021

Plot 7-15. Occupied Bandwidth Plot - (n261 100MHz - 16QAM - Mid Channel) – Donor Side – V Beam



12:54:56 28.07.2021

Plot 7-16. Occupied Bandwidth Plot - (n261 100MHz - 64QAM - Mid Channel) – Donor Side – V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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EST	•								
part of 🖲 element									
ACLRResults									~
MultiView	Spectrum	1							
Ref Level -20.0 Att PA	10 dBm 10 dB SWT	 RBW 1.2 ms VBW 	1 MHz 10 MHz Mod	e Auto Sweep				c	ount 100/10
1 Occupied Band	lwidth								o 1Pk Ma
00.40								M1[1] 2	-34.01 dE 7.9366500 G
-30 dBm		T1	manna	har and the set of		Anna	yny 12		
-40 dBm		7~~~					1		
-50 dBm							+		
-60 dBm		James					- Low		many want
-70 dBm	Human							mound	***0
-80 dBm									
-90 dBm									
50 0.5.11									
-100 dBm									
-110 dBm									
CF 27.92496 GH	z		1001 pt	s	10).0 MHz/		S	 pan 100.0 Mł
2 Marker Table Type Ref M1 T1	Trc	X-Value 27.93665 0 27.9018146	iHz -	Y-Value 34.01 dBm -40.43 dBm	Occ Bw Occ Bw Cer	Function		Function R 46.2408595 27.92493	esult 41 MHz 4982 GHz
12	1	27.9480554	unz	-40.50 aBm	OCC BW Fre	y onset	Measurin	-25.U1/6/ g	1318 KHZ 22.07.202 10:17:1

10:17:12 22.07.2021

Plot 7-17. Occupied Bandwidth Plot - (n261 50MHz - $\pi/2$ BPSK - Mid Channel) – Relay Side – H Beam



10:16:28 22.07.2021

Plot 7-18. Occupied Bandwidth Plot - (n261 50MHz - QPSK - Mid Channel) - Relay Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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EST									
part of ⊜ elemen	t								
ACLRResults									4
MultiView	Spectru	Im							
Ref Level -20 Att	0.00 dBm 10 dB SV	● RBW WT 1.2 ms ● VBW	1 MHz 10 MHz Mode	e Auto Sweep				C	ount 100/10
1 Occupied Ba	ndwidth								●1Pk Ma
								M1[1] 2	-35.39 d 1.9466400 (
-30 dBm							M1		
-40 dBm		Tlothy	hopmona	Maham Margareta	Asherthanken	munihil	manaling 2		
-50 dBm									
-60 dBm							1 Common	and the second second	
marken and man	markenan	Conversion of the second second						an and which the second	marker
-70 dBm									
-80 dBm									
-90 dBm									
-100 dBm									
-110 dBm-									
CF 27.92496 G	iHz		1001 pt	 s	10).0 MHz/		St) an 100.0 M
2 Marker Table	8			-					
Type Ref	Trc	X-Value	H7	Y-Value	Qae Ru:	Function		Function Re	
T1	1	27.9017781 (GHz -	-43.02 dBm	Occ BW Occ Bw Cer	ntroid	4	27.925015	5264 GHz
T2	1	27.9482525 (GHz	-41.74 dBm	Occ Bw Fre	q Offset		55.26410	3317 kHz
							Measuring		10:1

10:18:43 22.07.2021

Plot 7-19. Occupied Bandwidth Plot - (n261 50MHz - 16QAM - Mid Channel) – Relay Side – H Beam



10:18:13 22.07.2021

Plot 7-20. Occupied Bandwidth Plot - (n261 50MHz - 64QAM - Mid Channel) – Relay Side – H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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ACLRResults									\$
MultiView	Spectrum	1							•
Ref Level -2	20.00 dBm	RBW	10 MHz					S	GL
 Att 	10 dB SWT	4 ms 🖷 VBW :	50 MHz Mode	Auto Sweep				C	ount 100/100
PA									-
1 Occupied B	andwidth								O1Pk Max
								M1[1]	-35.98 dBm
								1	28.013800 GHz
-30 dBm					M1				
						<u></u> .			
-40 dBm			$+ \alpha \cdot \Lambda_{\infty}$			$\sim \sim \sim$			
			₽~~~ ``	v cu i	ſ	~ ·	₩ 12		
-50 dBm			<u> </u>						
		.					A Contraction of the second se		
							1 and a		
-60 dBm	the tenders and a	WWW Bland March					March marchar	man.	
many and when	Mar Mar	1 MIL						and an and the start of the sta	anythe her have be
-70 dBm									
-80 dBm									
00 000									
-90 dBm									
-100 dBm									
-110 dBm									
CF 27.9249 G	Hz		1001 pt	s	. 10	0.0 MHz/			Span 1.0 GHz
2 Marker Tab	le								
Type Re	ef Trc	X-Value		Y-Value		Function		Function Re	esult
M1	1	28.0138 G	iHz -	35.98 dBm	Occ Bw		3	98.7168881	.89 MHz
T1	1	27.724995 (GHz	-47.12 dBm	Occ Bw Ce	ntroid		27.92435	53219 GHz
T2	1	28.123712 (GHz	-46.68 dBm	Occ Bw Fre	eq Offset		-546.7809	58702 kHz
							Ready		10.08.2021
									09:49:14

09:49:14 10.08.2021

Plot 7-21. Occupied Bandwidth Plot - (n261 100MHz - $\pi/2$ BPSK - Mid Channel) – Relay Side – H Beam



09:48:41 10.08.2021

Plot 7-22. Occupied Bandwidth Plot - (n261 100MHz - QPSK - Mid Channel) - Relay Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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ACLRResults									\$
MultiView	- Spectrum								-
Ref Level -2	0.00 dBm	RBW 1	0 MHz					s	GL
Att	10 dB SWT	4 ms 🖷 VBW 5	0 MHz Mode /	Auto Sweep				C	ount 100/100
PA									
1 Occupied Ba	andwidth								O1Pk Max
								M1[1]	-34.69 dBm
								1	8.015800 GHz
-30 dBm					MI				
			M	AM	mound	aller have	1		
-40 dBm			1 porter of	1 marson 1		an manual	ส์		
			Ý i	r			V		
-50 dBm									
-60 dBm		Marchard					Mar mar		
www. wounder	an and the second	weekerser						manufarham	and a second
-70 dBm									a an an Assessment
10 000									
-80 dBm									
-90 dBm									
-100 dBm									
-110 dBm									
CF 27.9249 G	Hz		1001 pt	s	10	0.0 MHz/			Span 1.0 GHz
2 Marker Tab	le								
Type Re	f Trc	X-Value		Y-Value		Function		Function Re	esult
M1 T1	1	28.0158 G	nz	42.02 dBm	Occ Bw	otroid	3	95.2704805	
T2	1	28 122063 0	inz iHz	-43.92 dBm	OCC BW Ce	na Offset		-472 4899	+2731 GHZ 16467 kHz
	*	20.122000 0		12.10 GDIT	SSS DW HIC	ig onoot		.72.4055	10.08.2021
	<i>w</i>						Ready		09:48:09

09:48:09 10.08.2021

Plot 7-23. Occupied Bandwidth Plot - (n261 100MHz - 16QAM - Mid Channel) – Relay Side – H Beam



09:47:34 10.08.2021

Plot 7-24. Occupied Bandwidth Plot - (n261 100MHz - 64QAM - Mid Channel) - Relay Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 26 of 126
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ACLRResults							~
MultiView Spectrum Ref Level -20.00 dBm • Att 10 dB SW PA	• RBW 1 MHz VT 1.2 ms • VBW 10 MHz	Mode Auto Sweep				s	GL ount 100/100
1 Occupied Bandwidth						M1[1]	 0 1Pk Max -33 99 dBt
20 40 m						27	.9289600 GH
-40 dBm	Jan Martin	- the and the second	month many	- youngered	T2		
-50 dBm					\rightarrow		
-60 dBm					-		
-79, demand and any any and	AMAN				M	www.how	MAM MAN
-80 dBm							
-90 dBm							
-100 dBm							
-110 dBm							
CF 27.92496 GHz	10	01 pts	10.0 M	Hz/		Sp	an 100.0 MH
2 Marker Table	V Value	V Value	E			E	
M1 1 T1 1 T2 1	27.92896 GHz 27.9020016 GHz 27.9478672 GHz	-33.99 dBm -44.39 dBm -40.31 dBm	Occ Bw Occ Bw Centroid Occ Bw Fred Off	icuon i set	4	27.92493 -25.59417	58 MHz 4406 GHz 6064 kHz
	2			~	Ready		09.08.202 15:50:3

15:50:33 09.08.2021

Plot 7-25. Occupied Bandwidth Plot - (n261 50MHz - $\pi/2$ BPSK - Mid Channel) – Relay Side – V Beam



15:50:06 09.08.2021

Plot 7-26. Occupied Bandwidth Plot - (n261 50MHz - QPSK - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	PCTEST	MEASUREMENT REPORT	Approved by:
	Proud to be part of element	(CERTIFICATION)	Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 27 of 126
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EST									
part of 🔵 element									
ACLRResults									
MultiView Ref Level -20.00 • Att PA	Spectrum O dBm 10 dB SWT	• RBV 1.2 ms • VBW	/ 1 MHz / 10 MHz Mode	e Auto Sweep				s	GL Count 100/10
1 Occupied Band	width								o 1Pk Ma
								MI[1] 2	-32.96 dB 7.9287600 G
-30 dBm					M1				
-40 dBm		pm	Jan Markan	fall have been a second		along the second way les	the second se		
-50 dBm									
-60 dBm									
stordem and MMM	momore	Marin M					WANY	hannananan	M Maryana Maryana
-80 dBm									
-90 dBm									
-100 dBm									
-110 dBm									
CF 27.92496 GHz	:		1001 pt	s	10).0 MHz/		St	oan 100.0 M
2 Marker Table	Tuo	V Voluo		V Value		Function		Eurotion D	ooult
M1 T1 T2	1	27.92876 27.9020031	GHz -	-43.09 dBm	Occ Bw Occ Bw Cer	ntroid		45.8615099 27.92493 26.10019	34 MHz 3891 GHz
 	1	27.9478646	<u>unz</u>	-42.95 aBm	OCC BW Fre	q unset	Ready	-26.10918	09.08.202 09.08.202 15:51:1

15:51:23 09.08.2021

Plot 7-27. Occupied Bandwidth Plot - (n261 50MHz - 16QAM - Mid Channel) – Relay Side – V Beam



15:51:44 09.08.2021

Plot 7-28. Occupied Bandwidth Plot - (n261 50MHz - 64QAM - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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ACLRResults									\$
MultiView	Spectrum								*
Ref Level -2	20.00 dBm	RBW 1	.0 MHz					s	GL
 Att 	10 dB SWT	4 ms 🖷 VBW 5	0 MHz Mode /	Auto Sweep				с	ount 100/100
PA									
1 Occupied B	andwidth		1			1			o1Pk Max
								M1[1]	-34.01 dBm
- 20 dBm					141			2	7.994800 GHz
-30 0611					Å				
-40 dBm			mat		- mu	men and			
		!	W				ŧ		
-50 dBm							<u> </u>		
		/					N		
-60 dBm									
na	a mananara	manument					manythreen a	La distance in	
a manager of the second	al and a second s	1						Manual Marth	monowhichda
-70 dBm									
-80 dBm									
-90 dBm									
-100 dBm									
-110 dBm-									
110 000									
CF 27.9249 G	Hz		1001 pt	s	10	0.0 MHz/	1		Span 1.0 GHz
2 Marker Tab	le								
Type Re	ef Trc	X-Value		Y-Value		Function		Function Re	esult
M1	1	27.9948 G	Hz -:	34.01 dBm	Occ Bw		3	99.3380132	72 MHz
T1	1	27.724923 0	6Hz	-47.55 dBm	Occ Bw Cer	ntroid		27.92459	01807 GHz
12	1	28.124261 0	bHZ	-46.71 dBm	Ucc Bw Fre	eq Urrset		-308.1929.	21108 KHZ
	~					~	Ready		10.08.2021 09:36:34

09:36:35 10.08.2021

Plot 7-29. Occupied Bandwidth Plot - (n261 100MHz - $\pi/2$ BPSK - Mid Channel) – Relay Side – V Beam



09:35:39 10.08.2021

Plot 7-30. Occupied Bandwidth Plot - (n261 100MHz - QPSK - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 126
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09:37:08 10.08.2021

Plot 7-31. Occupied Bandwidth Plot - (n261 100MHz - 16QAM - Mid Channel) – Relay Side – V Beam



09:37:38 10.08.2021

Plot 7-32. Occupied Bandwidth Plot - (n261 100MHz - 64QAM - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	PCTEST*	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 126
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n260 Donor Side and Relay Side

Band	Antenna	Channel	Bandwidth	CCs Active	Modulation	OBW [MHz]
					π/2 BPSK	46.13
		Naid	50	1	QPSK	46.31
	Donor H Boom		50		16QAM	46.34
n260					64QAM	46.35
11200	Donor-in Dearn	Ivila			π/2 BPSK	399.61
			100	1	QPSK	397.94
			100	-	16QAM	396.11
					64QAM	396.23
					π/2 BPSK	46.42
			50	1	QPSK	46.18
			50	I	16QAM	46.52
n260	Donor-V Beam	Mid			64QAM	46.42
11200		Ivila	100		π/2 BPSK	401.73
				4	QPSK	399.28
					16QAM	398.55
					64QAM	399.52
			50	1	π/2 BPSK	45.89
					QPSK	45.99
					16QAM	46.01
n260	Relay-H Beam	Mid			64QAM	45.95
11200	Relay-IT Dealth	Ivila			pi/2-BPSK	397.19
			100	4	QPSK	394.64
			100	7	16QAM	394.66
					64QAM	394.34
					π/2 BPSK	45.84
			50	1	QPSK	45.90
			50	•	16QAM	45.84
n260	Relay-V Beam	Mid			64QAM	45.89
11200	Today V Dealli	ivita			π/2 BPSK	396.99
			100	Δ	QPSK	394.66
			100	7	16QAM	394.93
					64QAM	394.37

Table 7-3. Summary of Occupied Bandwidths – n260

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 21 of 126	
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ACLRResults									I
MultiView	Spectrum	1							•
Ref Level -5.	00 dBm	RBW	1 MHz					S	GL
Att	25 dB SWT	1.2 ms 🖷 VBW .	50 MHz Mode	Auto Sweep				с	ount 100/100
PA									
1 Occupied Ba	ndwidth			1	1				o1Pk Max
-10 dBm								M1[1]	-18.55 dBm
						M1		38	5168400 GHz
-20 dBm						MM			
-30 dBm		Ţ1h	Marrie Marrie Marrie		mythyperform	work the	fulny 2		
				Marchan					
40 d0m									
-40 ubm							het.		
-50 dBm	Mr. Mr.	Mary 1					WW W	WWWW	L. Male
Mythen have the	Mr. Maria	100 YOU						man	WIMMAN MI
-60 dBm									
-70 dBm									
00.40.0									
-80 dBm-									
-90 dBm									
-100 dBm									
CE 00 4000C (21.1-		1001 1		1				100 0 10-
CF 38,49996 (əHZ		1001 pt	s	10	J.U MHZ/		Sp	an 100.0 MHz
∠ Marker fabl	e	V Value		V V-h	_	E		Europhice De	
MI Rei	1	38 51684 6	Hz -	18 55 dBm	Occ Bw	Function	4	Function Re	
T1	1	38 4769751	GHz	-30.89 dBm	Occ Bw Cer	ntroid	-	38 500041	864 GHz
T2	1	38.5231086	GHz	-31.82 dBm	Occ Bw Fre	q Offset		81.863920	0128 kHz
	v						Ready		10.08.2021
									22125121

11:19:15 10.08.2021

Plot 7-33. Occupied Bandwidth Plot - (n260 50MHz - π/2 BPSK - Mid Channel) – Donor Side – H Beam



11:20:06 10.08.2021

Plot 7-34. Occupied Bandwidth Plot - (n260 50MHz - QPSK - Mid Channel) - Donor Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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11:20:42 10.08.2021

Plot 7-35. Occupied Bandwidth Plot - (n260 50MHz - 16QAM - Mid Channel) – Donor Side – H Beam



11:21:08 10.08.2021

Plot 7-36. Occupied Bandwidth Plot - (n260 50MHz - 64QAM - Mid Channel) - Donor Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 22 of 126
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<u>EST</u>							
part of element							
ACLRResults							
MultiView Spectru Ref Level -10.00 dBm • • Att 20 dB 5" PA • •	• RBW 10 MHz WT 3.2 ms • VBW 50 MHz	Mode Auto Sweep				SC	GL 9unt 100/100
1 Occupied Bandwidth						M1[1]	01Pk Max
			M1			3	8.523880 Gł
-20 dBm			\wedge	mon	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
-30 UBM	I man a						
-40 dBm							
Sovaban Marine North Marine	remained				Line	An and the second s	alle the e holesed
-60 dBm							determina determina de
-70 dBm							
-80 dBm							
-90 dBm							
-100 dpm							
100 0.011							
CF 38.4999 GHz	100	D1 pts	80).0 MHz/		Spa	an 800.0 MH
2 Marker Table	X Value	V Value		Function		Eupotion Do	ou ilt
M1 1 T1 1 T2 1	38.52388 GHz 38.297953 GHz 38.697561 GHz	-20.51 dBm -37.93 dBm -30.95 dBm	Occ Bw Occ Bw Cer Occ Bw Fre	ntroid	39	38.497757 -2.142942	41 MHz 7058 GHz 2497 MHz
· · · · ·	Selection Chil	Solds abiit	000 200 110		- Ready		40 10.08.202 11:24:5

11:24:57 10.08.2021

Proud to

Plot 7-37. Occupied Bandwidth Plot - (n260 100MHz - π/2 BPSK - Mid Channel) – Donor Side – H Beam



11:24:14 10.08.2021

Plot 7-38. Occupied Bandwidth Plot - (n260 100MHz - QPSK - Mid Channel) - Donor Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 24 of 126
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e part of element									
ACLRResults									
MultiView	Spectrum	1							•
Ref Level -10.0 Att	0 dBm 20 dB SWT	 RBW 3.2 ms VBW 	10 MHz 50 MHz Mode	e Auto Sweep				s	GL count 100/100
1 Occupied Band	lwidth								●1Pk Max
					M1			M1[1]	-21.60 dBm 8.513490 GHz
-20 dBm				May	In my my	my supertrue	whoman T2		
-30 dBm		- The second sec	an age age of the second second	Cardina By		- Mar			
-40 dBm	Maria								
w50-dBm	pr Mushall	1 - an why					Untrafty	and the second and the second s	manthemark
-60 dBm									
-70 dBm									
-80 dBm									
-90 dBm									
-100 dBm									
CE 38 4999 GHz			1001 pt	s	80	0 MHz/		Sr	an 800 0 MHz
2 Marker Table			1001 pt			510 11 IL)			
Type Ref M1 T1	Trc 1	X-Value 38.51349 GI 38.300802 G	Hz -	Y-Value 21.60 dBm -34.01 dBm	Occ Bw Occ Bw Cer	Function	39	Function Re 56.1110078 38.49885	esult 43 MHz 57611 GHz
- 12	1	38.696913 G	HZ	-31.22 dBm	Occ Bw Fre	q uffset	 Ready 	-1.0423	10.08.2021 11:25:58

11:25:58 10.08.2021

Plot 7-39. Occupied Bandwidth Plot - (n260 100MHz - 16QAM - Mid Channel) – Donor Side – H Beam



11:25:28 10.08.2021

Plot 7-40. Occupied Bandwidth Plot - (n260 100MHz - 64QAM - Mid Channel) – Donor Side – H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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art of ⊜ element									
CLRResults									 Ø
MultiView 📲	Spectrum								
Ref Level -5.00 Att)dBm 36 dB SWT	• RBW 1.2 ms • VBW	1 MHz 50 MHz Mode	Auto Sweep				s	GL ount 100/10
Occupied Banc	lwidth								o1Pk Ma>
-10 dBm								M1[1]	-22,50 dB
								3	3.5146500 G
-20 dBm						MI			
20. dam.		- oth	a mon		monroadent	Martin	WMT2		
So ubiii		∮'	Martha .	Whenter			Y		
40 dBm		- (
							m.		
50 dBm	monardenter	Maryan					Mark Mark	martine ward	howally and
60 dBm									-
70 dBm									
-80 dBm									
90 dBm									
-100 dBm-									
CF 38.49996 GH	Z		1001 p	ts	10).0 MHz/		SI	an 100.0 MH
Type Ref	Trc	X-Value		Y-Value		Function		Function R	esult
M1	1	38.51465 0	Hz -	22.50 dBm	Occ Bw Occ Bw Cor	atroid	4	16.4209667	
- 1 TO	i.	20 522170		22.60 dBm	Occ Div Cel	- Offerek		47 40716	6000 LU-

11:32:44 10.08.2021

Plot 7-41. Occupied Bandwidth Plot - (n260 50MHz - $\pi/2$ BPSK - Mid Channel) – Donor Side – V Beam



11:31:57 10.08.2021

Plot 7-42. Occupied Bandwidth Plot - (n260 50MHz - QPSK - Mid Channel) - Donor Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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11:33:10 10.08.2021

Plot 7-43. Occupied Bandwidth Plot - (n260 50MHz - 16QAM - Mid Channel) – Donor Side – V Beam



11:33:35 10.08.2021

Plot 7-44. Occupied Bandwidth Plot - (n260 50MHz - 64QAM - Mid Channel) - Donor Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 27 of 126
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cart of element							
CLRResults							4
MultiView Spec	trum						
Ref Level -15.00 dBm Att 15 dB	RBW 1 SWT 3.2 ms • VBW 5	0 MHz 0 MHz Mode Auto Swee	p			s	GL Count 100/10
l Occupied Bandwidth				1	1	1	●1Pk Ma
-20 dBm				1 mm	ľ.	M1[1]	-19.77 de 38.670130 G
-30 dBm	- Vienne	~ hand men	\sim				
-40 dBm					$ \rightarrow $		
50 dBm	normany				man	mandapharman	an man
-60 dBm							
-70 dBm							
-80 dBm							
-90 dBm							
-100 dBm							
-110 dBm							
CF 38.4999 GHz		1001 pts	8	0.0 MHz/		S) ban 800.0 M
2 Marker Table	V Voluo	V Valua		Function		Function D	aault
M1 1 T1 1	38.296774 GH	z -19.77 dB z -34.44 d	m Occ Bw Bm Occ Bw Ce	entroid	40	01.7282262 38.49763	34 MHz 7811 GHz

10:28:04 29.07.2021

Plot 7-45. Occupied Bandwidth Plot - (n260 100MHz - π/2 BPSK - Mid Channel) – Donor Side – V Beam



10:28:44 29.07.2021

Plot 7-46. Occupied Bandwidth Plot - (n260 100MHz - QPSK - Mid Channel) - Donor Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 20 of 120
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part of 😑 element									
CLRResults									
MultiView	Spectrun	n							
RefLevel -15.0 Att	00 dBm 15 dB SW	● RB\ I 3.2 ms ● VB\	№ 10 MHz № 50 MHz Mo	de Auto Sweep				s	GL ount 100/10
1 Occupied Ban	dwidth								●1Pk Ma
-20 dBm							M1	M1[1]	-19.89 dl
-30 dBm		TIM	montering	monormany	mound	manne	12		58.667730 6
-40 dBm		<i> </i>							
-50 dBm	multillites	manual					an water	mahaman hallower of	normbyl glove
-60 dBm									
-70 dBm									
-80 dBm									
-90 dBm									
-100 dBm									
-110 dBm									
CF 38.4999 GHz			1001	ots	81	0.0 MHz/		St	an 800.0 M
2 Marker Table	Tuo	V Voluo	_	V Volue		Function		Eurotian D	ault
<u>туре кег</u> М1 Т1	1 1 1	38.66773 (38.29913	GHz GHz	-19.89 dBm -31.48 dBm	Occ Bw Occ Bw Ce	ntroid	3	398.5521173 38.49840	81 MHz 6112 GHz

10:27:11 29.07.2021

Plot 7-47. Occupied Bandwidth Plot - (n260 100MHz - 16QAM - Mid Channel) – Donor Side – V Beam



10:29:37 29.07.2021

Plot 7-48. Occupied Bandwidth Plot - (n260 100MHz - 64QAM - Mid Channel) – Donor Side – V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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part of element									
ACLRResults									
MultiView Ref Level -20.00 Att 1 PA	Spectrum dBm LO dB SWT 1.2	● RBW ms ● VBW	1 MHz 50 MHz Mode	• Auto Sweep				s	GL ount 100/100
1 Occupied Bandw	vidth							M1[1]	 1Pk Max -38.78 dBi
-30 dBm								38	3.4989600 G⊦
-40 dBm			wallwarmoral	M1	- Alexandra	Ammonute	How T2		
-50 dBm		<u>[`</u>							
-60 dBm									
1-79-dempanyanyanyanya	in Marin Appr	www						N-WINDIAN	warman
-80 dBm	****								
-90 dBm									
-100 dBm									
-110 dBm									
CE 38 49996 GHz			1001 nt	s	10	0 MHz/		Sr	ap 100.0 MH
2 Marker Table			1001 pt	5		//o /////2/		0	
Type Ref M1 T1 T2	Trc 38. 1 38. 1 31	X-Value 49896 G 8.4768919 (8.5227838 (Hz -: GHz GHz	Y-Value 38.78 dBm -44.78 dBm -44.54 dBm	Occ Bw Occ Bw Cer Occ Bw Fre	Function ntroid		Function Re 45.8919011 38.49983 -122.1972	11 MHz 37803 GHz 77878 kHz
. 12	1 30	0.322/030	3172	-44.54 UDIII	OLC DW FIE	y onser	Ready	-122.1972.	23.07.202

11:29:50 23.07.2021

Plot 7-49. Occupied Bandwidth Plot - (n260 50MHz - $\pi/2$ BPSK - Mid Channel) – Relay Side – H Beam



11:29:01 23.07.2021

Plot 7-50. Occupied Bandwidth Plot - (n260 50MHz - QPSK - Mid Channel) - Relay Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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pair of Gronnen								
ACLRResults								
MultiView = 5	Spectrum							
Ref Level -20.00 a	dBm DdB SWT 1.2 m	 RBW 1 MHz s • VBW 50 MHz 	Mode Auto Sweep				s	GL ount 100/10
PA 1 Occupied Bandw	idth							o 1Pk Ma
00 /b.,							M1[1] 38	-36.81 dB 3.5003600 G
-30 dBm			, i	41				
-40 dBm		Thursday	my many my many many	manhahah	mentalitation	WWW V		
-50 dBm						\vdash		
-60 dBm	a A have the							
NAMABIN MANY MANY	M-PV-MAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	291				WWW	man when when	Marghas
-80 dBm								
-00 dBm								
-90 UBII								
-100 dBm								
-110 dBm								
CF 38.49996 GHz		1	001 pts	10	1.0 MHz/		Sp	an 100.0 M⊦
2 Marker Table	rc X-	Value	Y-Value		Function		Function Re	esult
lype Ret I								

11:25:50 23.07.2021

Plot 7-51. Occupied Bandwidth Plot - (n260 50MHz - 16QAM - Mid Channel) – Relay Side – H Beam



11:27:58 23.07.2021

Plot 7-52. Occupied Bandwidth Plot - (n260 50MHz - 64QAM - Mid Channel) - Relay Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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11:48:17 10.08.2021

Plot 7-53. Occupied Bandwidth Plot - (n260 100MHz - π/2 BPSK - Mid Channel) – Relay Side – H Beam



11:47:41 10.08.2021

Plot 7-54. Occupied Bandwidth Plot - (n260 100MHz - QPSK - Mid Channel) - Relay Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 42 of 126
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11:47:09 10.08.2021

Plot 7-55. Occupied Bandwidth Plot - (n260 100MHz - 16QAM - Mid Channel) – Relay Side – H Beam



11:46:34 10.08.2021

Plot 7-56. Occupied Bandwidth Plot - (n260 100MHz - 64QAM - Mid Channel) - Relay Side - H Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 42 of 126
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ACLR esubs ACLR esubs MultiView © Spectrum Ref Level -20:00 dbm BBW 1 MHz SGL Att 10 db SWT 1.2 ms © VBW 50 MHz Mode Auto Sweep SGL Att 10 db SWT 1.2 ms © VBW 50 MHz Mode Auto Sweep SGL Output: Output: Output: MI[1]	EST	0								
ACLR Results Solutivity Spectrum Ref Level -2000 dbm • RBW 1 MHz SGL Att 10 db SWT 12 ms • VBW 50 MHz Mode Auto Sweep Count 100/11 PA 0 dbm 01 kk Ma SSL -30 dbm 10 dcm 10 dbm M1[1] -40.90 dbm -40 dbm 10 10 dbm 10 dbm 38,511550 dbm -40 dbm 10 10 dbm 10 dbm 10 dbm -60 dbm 10 dbm 10 dbm 10 dbm 10 dbm -60 dbm 10 dbm 10 dbm 10 dbm 10 dbm -70 dbm 10 dbm 10 dbm 10 dbm 10 dbm -100 dbm 10 dbm 10 dbm 10 dbm 10 dbm -100 dbm 10 dbm 10 dbm 10 dbm 10 dbm 10 dbm -110 dbm 10 dbm 10 dbm 10 dbm 10 dbm 10 dbm -110 dbm 11 dbm 10 dbm 10 dbm 10 dbm 10 dbm 10 dbm -110 dbm 10 dbm 10 d	part of 😑 element									
MultiView Spectrum Ref Level -20:00 dBm • RBW 1 MHz SGL Att 10 dB SWT 1.2 ms VBW 50 MHz Mode Auto Sweep Count 100/11 10 Cocupied Bandwidth • UF MA -30 dBm • UF MA -30 dBm • UF MA -40 dBm • UF MA -50 dBm • UF MA -50 dBm • UF MA -50 dBm • UF MA -50 dBm • UF MA -50 dBm • UF MA -50 dBm • UF MA • UF MA • UF MA •	ACLRResults									
Ref Level -20:00 dBm • RBW 1 MHz SGL Att 10 dB SWT 1.2 ms VBW 50 MHz Mode Auto Sweep OUPL M I Occupied Bandwidth OUPL M OUPL M OUPL M OUPL M -30 dBm	MultiView	Spectru	11							•
Att 10 dB SWT 1.2 ms VBW 50 MHz Mode Auto Sweep Count 100/11 PA Occupied Bandwidth OIPk MS MII[1] -40.90 MII[1] <td>Ref Level -20.</td> <td>00 dBm</td> <td>= RB</td> <td>W 1 MHz</td> <td></td> <td></td> <td></td> <td></td> <td>s</td> <td>GL</td>	Ref Level -20.	00 dBm	= RB	W 1 MHz					s	GL
1 Occupied Bandwidth 01Pk Ma -30 dBm -40.90 -40 dBm -41 -40 dBm -41 -50 dBm -41 -60 dBm -41 -60 dBm -41 -70 dBm -40.90 -100 dBm -40.90 -110 dBm -40.90 -110 dBm -40.90 -110 dBm -40.90 dBm	Att DA	10 dB SW	T 1.2 ms 🖷 VB	W 50 MHz	Mode Auto Sweep				С	ount 100/100
-30 dBm -40 dBm -40 dBm -50 dBm -50 dBm -60 dBm -70	1 Occupied Ban	idwidth								o 1Pk Max
-30 dBm -38.511550 (c) -40 dBm -40 dBm -50 dBm -50 dBm -60 dBm -60 dBm -60 dBm -60 dBm -70 dBm -60 dBm -70 dBm -70 dB									M1[1]	-40.90 dBr
-40 dBm -100 d	-30 dBm								38	3.5115500 GH
-40 dBm -50 dBm -60 dBm -70							MI			
-50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -90	-40 dBm		T1		1 11		1			
-50 dBm -60 dBm -70 dBm -70 dBm -70 dBm -90 dBm -100 dBm -100 dBm -100 dBm -100 dBm -100 dBm -100 dBm -100 dBm -100 dBm -101 dBm -100 dBm -1			Your	manyment	www.when when when when when when when when	monterm	man dy her	monthing?		
-60 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -90 dBm -90 dBm -100	-50 dBm		+ /					+		
-0.0 dBm -0.0 dBm -70 dBm -0.0 dBm -90 dBm -0.0 dBm -100 dBm -0.0 dBm -110 dBm -0.	-60 dBm									
-70 dBm	-00 0811									
With Million With Million<	-70 dBm									
Bit dem CF 38.49996 GHz 1001 pts 10.0 MHz/ Span 100.0 M -100 d8m -100 d8m -100 d8m -100 d8m -100 d8m -100 d8m -100 d8m -100 d8m -100 d8m -100 d8m -110 d8m -100 d8m -100 d8m -100 d8m -100 d8m -110 d8m -110 d8m -100 d8m -100 d8m -100 d8m -110 d8m -110 d8m -110 d8m -100 d8m -100 d8m -110 d8m -110 d8m -100 d8m -100 d8m -100 d8m -110 d8m -110 d8m -110 d8m -100 d8m -100 d8m -110 d8m -110 d8m -100 d8m -100 d8m -100 d8m -110 d8m -100 d8m -100 d8m -100 d8m -100 d8m -110 d8m -100 d8m -100 d8m -100 d8m -100 d8m -110 d8m -100 d8m -100 d8m -100 d8m -100 d8m -110 d8m -100 d8m -100 d8m -100 d8m -100 d8m -110 d8m -100 d8m -100 d8m -100 d8m -100 d8m 11 1 38.4769559 GHz -40.90 d8m -46.38 d8m -0cc Bw Freq Offset -38.851212051 kHz 12 1 33.5227964 GHz -48.39 d8m -48.39 d8m -0cc Bw Freq Offset	ma day to a		Wellen Harden					Whanh	ALL LI AL	mounder.
-90 dem	-80 dBm	Mendpolu	da						"Marchlynnon"	a north a northern
-90 dBm -90 dBm -100 dBm <										
-100 d8m -100 d	-90 dBm									
-100 dBm -100 dBm -110 dBm -110 dBm -110 dBm -110 dBm CF 38.49996 GHz 1001 pts 2 Marker Table										
-110 dBm CF 38.49996 GHz 1001 pts 10.0 MHz/ Span 100.0 M 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 38.51155 GHz -40.90 dBm Occ Bw 45.840525967 MHz T1 1 38.4769559 GHz -46.38 dBm Occ Bw Centroid 38.499876149 GHz T2 1 38.5227964 GHz -48.39 dBm Occ Bw Freq Offset -83.851212051 kHz	-100 dBm-									
To dom CF 38.49996 GHz 1001 pts 10.0 MHz/ Span 100.0 M 2 Marker Table Type Ref Trc X-Value V-Value Function Function Result M1 1 38.51155 GHz -40.90 dBm Occ Bw GE W 45.840525967 MHz T1 1 38.4769559 GHz -46.38 dBm Occ Bw Centroid 38.499876149 GHz T2 1 38.5227964 GHz -48.39 dBm Occ Bw Freq Offset -38.51212051 kHz	-110 dpm									
CF 38.49996 GHz 1001 pts 10.0 MHz/ Span 100.0 M 2 Marker Table Type Ref Trc X-Value Y-Value Function Function Result M1 1 38.551155 GHz -40.90 dBm Occ Bw GC Bw 45.840525967 MHz T1 1 38.4769559 GHz -46.38 dBm Occ Bw Centroid 38.499876149 GHz T2 1 38.5227964 GHz -48.39 dBm Occ Bw Freq Offset -38.51212051 kHz	110 000									
Cr-38.49996 CH2 Tot 1 pts 10.0 MH2/ Spain 100.0 M Varker Table Type Ref Trc X-Value Function Function Result M1 1 38.45155 GHz -40.90 dBm Occ Bw 45.840525967 MHz T1 1 38.4769559 GHz -46.38 dBm Occ Bw Centroid 38.499876149 GHz T2 1 38.5227964 GHz -48.39 dBm Occ Bw Freq Offset -38.851212051 kHz	CE 00. 40006 CI	-			001					100.0 M
Type Ref Trc X-Value Y-Value Function Function Result M1 1 38.51155 GHz -40.90 dBm Occ Bw 45.84052596 MHz T1 1 38.4769559 GHz -46.38 dBm Occ Bw Centroid 38.499876149 GHz T2 1 38.5227964 GHz -48.39 dBm Occ Bw Freq Offset -83.851212051 kHz	2 Marker Table	ĦΖ		1	oor pts	11	J.U MHZ7		5	oan 100.0 MH2
M1 1 38.51155 GHz -40.90 dBm Occ Bw 45.840525967 MHz T1 1 38.4769559 GHz -46.38 dBm Occ Bw Centroid 38.499676149 GHz T2 1 38.5227964 GHz -48.39 dBm Occ Bw Freq Offset -83.851212051 kHz	Type Ref	Trc	X-Value		Y-Value		Function		Function Re	esult
11 1 36,4996/6149 GHz -40.59 doi:11 Otc BW Centrolid 36,4996/6149 GHz T2 1 38,5227964 GHz -48,39 dBm Occ Bw Freq Offset -83,851212051 kHz Sector	M1	1	38.51155	GHZ	-40.90 dBm	Occ Bw	otroid	4	15.8405259	57 MHz
- Ready 09.08.20	T2	1	38.522796	9 GHZ 4 GHz	-40.38 dBm -48.39 dBm	Occ Bw Ce Occ Bw Fre	eq Offset		-83.85121	2051 kHz
NOUVY NOUVY		~						Ready	mmmm	09.08.2023

15:36:31 09.08.2021

Plot 7-57. Occupied Bandwidth Plot - (n260 50MHz - π/2 BPSK - Mid Channel) – Relay Side – V Beam

ACERRESUILS									\sim
MultiView	Spectrum								*
Ref Level -20.0	00 dBm	= RBW	1 MHz					s	GL
Att	10 dB SWT	1.2 ms 🖷 VBW	50 MHz Mode	Auto Sweep				с	ount 100/100
PA									
1 Occupied Ban	dwidth		1	1	1			1	o 1Pk Max
								M1[1]	-41.20 dBm
-30 dBm								38	3.5103500 GHz
55 0.5.1									
-40 d9m						41			
-40 0011		T1	and here we have	And a set - only a		Marchenster 1			
50.40.0		7	a de adres de la constru	1. Monas has Me	. why there is	. A upped Arete	MAR		
-50 dBm									
-60 dBm									
							1		
-70 dBm	, lo	March					march a		
weighter white	Mark My Mich Mark	Contractille a						Mary May Con	Windhand
-80 dBm									
-90 dBm									
-100 dBm									
-110 dBm-									
05.00.10004.00			1001						100.01
CF 38,49996 GH	IZ		1001 pt	s	10	J.U MHZ/		Sp	an 100.0 MHz
2 Marker Table	Tro	V Value		V Value		Euroction		Eurotion Dr	soult
M1	1	38.51035 (GHZ -4	41.20 dBm	Occ Bw	Function		15.8974519	72 MHz
T1	î	38.4769605	GHz	-47.67 dBm	Occ Bw Cer	ntroid		38.499909	9207 GHz
T2	1	38.5228579	GHz	-48.58 dBm	Occ Bw Fre	eq Offset		-50.79336	2915 kHz
-							Ready		100 09.08.2021
									15:35:49

15:35:49 09.08.2021

Plot 7-58. Occupied Bandwidth Plot - (n260 50MHz - QPSK - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 44 of 126
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EST									
part of 😑 elemen	nt								
ACLRResults									4
MultiView	Spectr	um							
Ref Level -20 Att	0.00 dBm 10 dB S	● RE SWT 1.2 ms ● VB	W 1 MHz W 50 MHz	Mode Auto Sweep				s	GL ount 100/10
1 Occupied Ba	ndwidth								●1Pk Ma
								M1[1] 3	-40.37 di 8.5005600 c
-30 dBm					М1				
-40 dBm		 	uhunhar	my man man	Magnenger	monpughin	WULLAND		
-50 dBm									
-60 dBm		_					+		
-70 dBm	h.	-						t the off	M
-80 dBm-	N/MWW/WWW	hard the day and a					Villuvillar	Munul MANA	www.
-90 dBm									
50 dbm									
-100 dBm									
-110 dBm									
CF 38.49996 G	GHz		1	001 pts	1	0.0 MHz/		S) an 100.0 M
2 Marker Tabl	e								
M1 T1	1 1 1	X-Value 38.50056 38.477000	GHz 3 GHz	-40.37 dBm -47.43 dBm	Occ Bw Occ Bw Ce	Function	4	Function R 5.8426541 38.49992	sult 33 MHz 1637 GHz
T2	1	38.52284	3 GHz	-46.79 dBm	Occ Bw Fre	eq Offset		-38.36297	8226 kHz
	~						Ready		15:37

15:37:04 09.08.2021

Plot 7-59. Occupied Bandwidth Plot - (n260 50MHz - 16QAM - Mid Channel) – Relay Side – V Beam



15:37:31 09.08.2021

Plot 7-60. Occupied Bandwidth Plot - (n260 50MHz - 64QAM - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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part of element										
CLRResults										4
MultiView 📲	Spectru	m								•
Ref Level -20.00 Att	dBm LO dB SW	/T 3.2 ms =	RBW 10 VBW 50	MHz MHz Mo	de Auto Sweep					SGL Count 100/100
l Occupied Bandy	vidth							_		o1Pk Ma⊁
									M1[1]	-38.25 dB 38.670930 GF
-30 dBm								M1		
-40 dBm		т1	M	-	ming	man		$\downarrow \downarrow \downarrow \downarrow \downarrow 2$		
-50 dBm		1 7	~~					+		
-60 dBm		+						+		
-70 dBm	with the with	rowenand							the mathematic man	and when we are
10 40.00										
-80 dBm										
-90 dBm										
-100 dBm										
-110 dBm										
CF 38.4999 GHz				1001 p	ots	80).0 MHz/		S	span 800.0 M⊦
2 Marker Table	Tre	X-Va	مىل		V-Value		Function		Eupction E	Decult
M1 T1	1	38.670	93 GHz		-38.25 dBm	Occ Bw Occ Bw Cer	atroid	l	396.992247	277 MHz
T2	1	38.69	9824 GHz		-46.81 dBm	Occ Bw Fre	a Offset		-156.290	284401 kHz

12:08:29 10.08.2021

Plot 7-61. Occupied Bandwidth Plot - (n260 100MHz - π/2 BPSK - Mid Channel) – Relay Side – V Beam



12:09:01 10.08.2021

Plot 7-62. Occupied Bandwidth Plot - (n260 100MHz - QPSK - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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12:10:40 10.08.2021

Plot 7-63. Occupied Bandwidth Plot - (n260 100MHz - 16QAM - Mid Channel) – Relay Side – V Beam



12:10:05 10.08.2021

Plot 7-64. Occupied Bandwidth Plot - (n260 100MHz - 64QAM - Mid Channel) - Relay Side - V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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7.3 Equivalent Isotropic Radiated Power §30.202(c)

Test Overview

Equivalent Isotropic Radiated Power (EIRP) measurements are performed using broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at the appropriate frequencies with the max power condition as specified by the AGC software of the EUT.

The average power of the sum of all antenna elements is limited to a maximum EIRP of +55 dBm.

Test Procedures Used

ANSI C63.26-2015 Section 5.2.4.4.1

Test Settings

- 1. Radiated power measurements are performed using the signal analyzer's "channel power" measurement capability for signals with continuous operation.
- 2. RBW = 1 5% of the expected OBW, not to exceed 1MHz
- 3. VBW \geq 3 x RBW
- 4. Span = 2x to 3x the OBW
- 5. No. of sweep points $\geq 2 \times \text{span} / \text{RBW}$
- 6. Detector = RMS
- 7. The integration bandwidth was roughly set equal to the measured OBW of the signal for signals with

continuous operation.

- 8. Trace mode = trace averaging (RMS) over 100 sweeps
- 9. The trace was allowed to stabilize

Test Notes

- The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 2) The input signal to the EUT was set in order to produce the max power allowed by the AGC software of the EUT.
- 3) EIRP measurements were taken in the far field.
- 4) A signal generator fed a 5G NR mmWave signal into the EUT.
- 5) The average EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states: EIRP (dBm) = E (dBµV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m. The field strength E is calculated E (dBµV/m) = Spectrum Analyzer Channel Power Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + 107.

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	27525.00	DFT-s-OFDM	π/2 BPSK	2	н	SISO	Н	2	1	1/0	40.94
		Low	27525.00	DFT-s-OFDM	QPSK	2	н	SISO	Н	2	1	1/0	40.92
		Low	27525.00	DFT-s-OFDM	16QAM	2	н	SISO	Н	2	1	1/0	40.79
		Low	27525.00	DFT-s-OFDM	64QAM	2	Н	SISO	Н	2	1	1/0	40.73
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	2	н	SISO	Н	2	1	1/0	40.59
50	1	Mid	27924.96	DFT-s-OFDM	QPSK	2	н	SISO	Н	2	1	1/0	40.60
50		Mid	27924.96	DFT-s-OFDM	16QAM	2	н	SISO	Н	2	1	1/0	40.55
		Mid	27924.96	DFT-s-OFDM	64QAM	2	н	SISO	Н	2	1	1/0	40.45
		High	28324.92	DFT-s-OFDM	π/2 BPSK	2	н	SISO	Н	2	1	1 / 16	40.45
		High	28324.92	DFT-s-OFDM	QPSK	2	н	SISO	Н	2	1	1 / 16	40.57
		High	28324.92	DFT-s-OFDM	16QAM	2	н	SISO	Н	2	1	1 / 16	40.47
		High	28324.92	DFT-s-OFDM	64QAM	2	н	SISO	Н	2	1	1 / 16	40.40
		Low	27700.02	DFT-s-OFDM	π/2 BPSK	2	н	SISO	Н	2	0	1/0	40.19
		Low	27700.02	DFT-s-OFDM	QPSK	2	н	SISO	Н	2	0	1/0	40.17
		Low	27700.02	DFT-s-OFDM	16QAM	2	н	SISO	Н	2	0	1/0	40.16
		Low	27700.02	DFT-s-OFDM	64QAM	2	н	SISO	Н	2	0	1/0	40.11
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	2	н	SISO	Н	2	0	1 / 65	40.85
100	4	Mid	27924.96	DFT-s-OFDM	QPSK	2	н	SISO	Н	2	0	1 / 65	40.83
100	4	Mid	27924.96	DFT-s-OFDM	16QAM	2	н	SISO	Н	2	0	1 / 65	40.79
		Mid	27924.96	DFT-s-OFDM	64QAM	2	н	SISO	Н	2	0	1 / 65	40.74
		High	28150.02	DFT-s-OFDM	π/2 BPSK	2	н	SISO	Н	2	0	1 / 65	40.72
		High	28150.02	DFT-s-OFDM	QPSK	2	н	SISO	Н	2	0	1 / 65	40.65
		High	28150.02	DFT-s-OFDM	16QAM	2	н	SISO	н	2	0	1 / 65	40.60
		High	28150.02	DFT-s-OFDM	64QAM	2	н	SISO	Н	2	0	1 / 65	40.59

Table 7-4. n261 EIRP – Donor Side – H Beam

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	27525.00	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1/0	40.79
		Low	27525.00	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1/0	40.75
		Low	27525.00	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1/0	40.73
		Low	27525.00	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1/0	40.45
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	0	0	1 / 31	40.62
50	1	Mid	27924.96	DFT-s-OFDM	QPSK	0	V	SISO	V	0	0	1 / 31	40.45
50		Mid	27924.96	DFT-s-OFDM	16QAM	0	V	SISO	V	0	0	1 / 31	40.38
		Mid	27924.96	DFT-s-OFDM	64QAM	0	V	SISO	V	0	0	1 / 31	40.52
		High	28324.92	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 16	40.96
		High	28324.92	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 16	40.84
		High	28324.92	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 16	40.90
		High	28324.92	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 16	40.76
		Low	27700.02	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 33	40.09
		Low	27700.02	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 33	40.14
		Low	27700.02	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 33	40.04
		Low	27700.02	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 33	40.02
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 65	40.67
100	4	Mid	27924.96	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 65	40.62
100	4	Mid	27924.96	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 65	40.55
		Mid	27924.96	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 65	40.56
		High	28150.02	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 33	40.63
		High	28150.02	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 33	40.62
		High	28150.02	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 33	40.52
		High	28150.02	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 33	40.32

Table 7-5. n261 EIRP – Donor Side – V Beam

FCC ID: NKR-TR2V1-IDU	PCTEST [®] Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 40 of 126
1M2106230069-02-R3.NKR	07/12/2021-08/16/2021	5G Extender Gen 2	Fage 49 01 130
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Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	27525.00	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	0	1 / 31	23.50
		Low	27525.00	DFT-s-OFDM	QPSK	0	н	SISO	н	1	0	1 / 16	23.44
		Low	27525.00	DFT-s-OFDM	16QAM	0	н	SISO	н	1	0	1 / 16	23.31
		Low	27525.00	DFT-s-OFDM	64QAM	0	н	SISO	Н	1	0	1 / 16	23.27
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	0	1 / 31	23.55
50	1	Mid	27924.96	DFT-s-OFDM	QPSK	0	н	SISO	н	1	0	1 / 31	23.29
50	'	Mid	27924.96	DFT-s-OFDM	16QAM	0	н	SISO	н	1	0	1 / 31	23.27
		Mid	27924.96	DFT-s-OFDM	64QAM	0	н	SISO	н	1	0	1 / 31	23.45
		High	28324.92	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	0	1 / 16	23.97
		High	28324.92	DFT-s-OFDM	QPSK	0	н	SISO	н	1	0	1 / 16	23.98
		High	28324.92	DFT-s-OFDM	16QAM	0	н	SISO	н	1	0	1 / 16	23.87
		High	28324.92	DFT-s-OFDM	64QAM	0	н	SISO	н	1	0	1 / 16	23.89
		Low	27700.02	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	1	1 / 65	23.66
		Low	27700.02	DFT-s-OFDM	QPSK	0	н	SISO	н	1	1	1 / 65	23.60
		Low	27700.02	DFT-s-OFDM	16QAM	0	н	SISO	н	1	1	1 / 65	23.58
		Low	27700.02	DFT-s-OFDM	64QAM	0	н	SISO	н	1	1	1 / 65	23.47
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	2	1	1 / 65	23.50
100	4	Mid	27924.96	DFT-s-OFDM	QPSK	0	н	SISO	н	2	1	1 / 65	23.55
100	-	Mid	27924.96	DFT-s-OFDM	16QAM	0	н	SISO	н	2	1	1 / 65	23.48
		Mid	27924.96	DFT-s-OFDM	64QAM	0	Н	SISO	н	2	1	1 / 65	23.39
		High	28150.02	DFT-s-OFDM	π/2 BPSK	0	н	SISO	Н	1	1	1 / 33	23.48
		High	28150.02	DFT-s-OFDM	QPSK	0	Н	SISO	Н	1	1	1 / 33	23.37
		High	28150.02	DFT-s-OFDM	16QAM	0	Н	SISO	Н	1	1	1 / 33	23.35
		High	28150.02	DFT-s-OFDM	64QAM	0	Н	SISO	Н	1	1	1/33	23.31

Table 7-6. n261 EIRP – Relay Side – H Beam

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	27525.00	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 16	23.93
		Low	27525.00	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 16	23.91
		Low	27525.00	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 16	23.80
		Low	27525.00	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 16	23.79
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 16	23.63
50	1	Mid	27924.96	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 16	23.60
50		Mid	27924.96	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 16	23.59
		Mid	27924.96	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 16	23.44
		High	28324.92	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1/0	23.87
		High	28324.92	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1/0	23.73
		High	28324.92	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1/0	23.71
		High	28324.92	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1/0	23.77
		Low	27700.02	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 33	23.56
		Low	27700.02	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 33	23.55
		Low	27700.02	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 33	23.52
		Low	27700.02	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 33	23.45
		Mid	27924.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 65	23.87
100	4	Mid	27924.96	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 65	23.95
100	-	Mid	27924.96	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 65	23.89
		Mid	27924.96	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 65	23.88
		High	28150.02	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1/0	23.64
		High	28150.02	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1/0	23.67
		High	28150.02	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1/0	23.65
		High	28150.02	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1/0	23.63

Table 7-7. n261 EIRP – Relay Side – V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dege E0 of 120
1M2106230069-02-R3.NKR	07/12/2021-08/16/2021	5G Extender Gen 2	Page 50 01 136
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Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	37025.04	DFT-s-OFDM	π/2 BPSK	12	н	SISO	Н	1	0	1 / 16	40.07
		Low	37025.04	DFT-s-OFDM	QPSK	12	н	SISO	Н	1	0	1 / 16	40.09
		Low	37025.04	DFT-s-OFDM	16QAM	12	н	SISO	Н	1	0	1 / 16	40.05
		Low	37025.04	DFT-s-OFDM	64QAM	12	н	SISO	Н	1	0	1 / 16	40.04
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	12	н	SISO	Н	1	0	1 / 16	40.83
50	1	Mid	38499.96	DFT-s-OFDM	QPSK	12	н	SISO	Н	1	0	1 / 16	40.87
50	'	Mid	38499.96	DFT-s-OFDM	16QAM	12	н	SISO	Н	1	0	1 / 16	40.68
		Mid	38499.96	DFT-s-OFDM	64QAM	12	н	SISO	Н	1	0	1 / 16	40.14
		High	39975.00	DFT-s-OFDM	π/2 BPSK	12	н	SISO	Н	1	0	1 / 16	40.93
		High	39975.00	DFT-s-OFDM	QPSK	12	н	SISO	Н	1	0	1 / 16	40.89
		High	39975.00	DFT-s-OFDM	16QAM	12	н	SISO	Н	1	0	1 / 16	40.84
		High	39975.00	DFT-s-OFDM	64QAM	12	н	SISO	Н	1	0	1 / 16	40.77
		Low	37199.94	DFT-s-OFDM	π/2 BPSK	12	н	SISO	Н	1	0	1 / 65	40.12
		Low	37199.94	DFT-s-OFDM	QPSK	12	н	SISO	Н	1	0	1 / 65	40.06
		Low	37199.94	DFT-s-OFDM	16QAM	12	н	SISO	Н	1	0	1 / 65	40.04
		Low	37199.94	DFT-s-OFDM	64QAM	12	н	SISO	Н	1	0	1 / 65	40.01
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	12	н	SISO	Н	1	0	1/0	40.71
100	4	Mid	38499.96	DFT-s-OFDM	QPSK	12	н	SISO	Н	1	0	1/0	40.65
100	-	Mid	38499.96	DFT-s-OFDM	16QAM	12	н	SISO	Н	1	0	1/0	40.50
		Mid	38499.96	DFT-s-OFDM	64QAM	12	Н	SISO	Н	1	0	1/0	40.48
		High	39799.98	DFT-s-OFDM	π/2 BPSK	12	н	SISO	H	1	0	1/0	40.32
		High	39799.98	DFT-s-OFDM	QPSK	12	н	SISO	H	1	0	1/0	40.29
		High	39799.98	DFT-s-OFDM	16QAM	12	н	SISO	H	1	0	1/0	40.23
		High	39799.98	DET-s-OEDM	64QAM	12	н	SISO	н	1	0	1/0	40.25

Table 7-8. n260 EIRP – Donor Side – H Beam

Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	37025.04	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	0	0	1 / 31	40.13
		Low	37025.04	DFT-s-OFDM	QPSK	0	V	SISO	V	0	0	1 / 31	40.17
		Low	37025.04	DFT-s-OFDM	16QAM	0	V	SISO	V	0	0	1 / 31	40.06
		Low	37025.04	DFT-s-OFDM	64QAM	0	V	SISO	V	0	0	1 / 31	40.01
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 16	40.15
50	1	Mid	38499.96	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 16	40.16
50		Mid	38499.96	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 16	40.09
		Mid	38499.96	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 16	40.07
		High	39975.00	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	0	0	1/0	40.06
		High	39975.00	DFT-s-OFDM	QPSK	0	V	SISO	V	0	0	1/0	40.10
		High	39975.00	DFT-s-OFDM	16QAM	0	V	SISO	V	0	0	1/0	40.04
		High	39975.00	DFT-s-OFDM	64QAM	0	V	SISO	V	0	0	1/0	40.01
		Low	37199.94	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	0	0	1 / 65	40.24
		Low	37199.94	DFT-s-OFDM	QPSK	0	V	SISO	V	0	0	1 / 65	40.25
		Low	37199.94	DFT-s-OFDM	16QAM	0	V	SISO	V	0	0	1 / 65	40.19
		Low	37199.94	DFT-s-OFDM	64QAM	0	V	SISO	V	0	0	1 / 65	40.12
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 65	40.86
100	4	Mid	38499.96	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 65	40.88
100	-	Mid	38499.96	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 65	40.81
		Mid	38499.96	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 65	40.85
		High	39799.98	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1/0	40.51
		High	39799.98	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1/0	40.38
		High	39799.98	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1/0	40.34
		High	39799.98	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1/0	40.24

Table 7-9. n260 EIRP – Donor Side – V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo E1 of 126
1M2106230069-02-R3.NKR	07/12/2021-08/16/2021	5G Extender Gen 2	Page 51 01 136
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Bandwidth [MHz]	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beam ID	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	37025.04	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	1	1 / 16	23.93
		Low	37025.04	DFT-s-OFDM	QPSK	0	н	SISO	Н	1	1	1 / 16	23.90
		Low	37025.04	DFT-s-OFDM	16QAM	0	н	SISO	н	1	1	1 / 16	23.89
		Low	37025.04	DFT-s-OFDM	64QAM	0	н	SISO	н	1	1	1 / 16	23.77
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	0	1 / 16	23.92
50	1	Mid	38499.96	DFT-s-OFDM	QPSK	0	н	SISO	н	1	0	1 / 16	23.94
50	'	Mid	38499.96	DFT-s-OFDM	16QAM	0	н	SISO	н	1	0	1 / 16	23.89
		Mid	38499.96	DFT-s-OFDM	64QAM	0	н	SISO	н	1	0	1 / 16	23.81
		High	39975.00	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	0	1 / 31	23.79
		High	39975.00	DFT-s-OFDM	QPSK	0	н	SISO	н	1	0	1 / 31	23.81
		High	39975.00	DFT-s-OFDM	16QAM	0	н	SISO	н	1	0	1 / 31	23.78
		High	39975.00	DFT-s-OFDM	64QAM	0	н	SISO	н	1	0	1 / 31	23.41
		Low	37199.94	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	1	1 / 33	23.35
		Low	37199.94	DFT-s-OFDM	QPSK	0	н	SISO	н	1	1	1 / 33	23.40
		Low	37199.94	DFT-s-OFDM	16QAM	0	н	SISO	н	1	1	1 / 33	23.37
		Low	37199.94	DFT-s-OFDM	64QAM	0	н	SISO	н	1	1	1 / 33	23.32
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	0	н	SISO	н	1	0	1/0	23.13
100	4	Mid	38499.96	DFT-s-OFDM	QPSK	0	н	SISO	н	1	0	1/0	23.24
100	-	Mid	38499.96	DFT-s-OFDM	16QAM	0	н	SISO	н	1	0	1/0	23.20
		Mid	38499.96	DFT-s-OFDM	64QAM	0	н	SISO	н	1	0	1/0	23.16
		High	39799.98	DFT-s-OFDM	π/2 BPSK	0	н	SISO	Н	2	0	1 / 65	23.16
		High	39799.98	DFT-s-OFDM	QPSK	0	н	SISO	Н	2	0	1 / 65	23.23
		High	39799.98	DFT-s-OFDM	16QAM	0	Н	SISO	Н	2	0	1 / 65	23.18
		High	39799.98	DFT-s-OFDM	64QAM	0	н	SISO	Н	2	0	1 / 65	23.06

Table 7-10. n260 EIRP – Relay Side – H Beam

Bandwidth (MHz)	CCs Active	Channel	Frequency [MHz]	Transmission Scheme	Modulation	Beaml D	Beam Pol.	Ant. Div.	Ant. Pol. [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	RB Size/Offset	EIRP [dBm]
		Low	37025.04	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 16	23.96
		Low	37025.04	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 16	23.95
		Low	37025.04	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 16	23.80
		Low	37025.04	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 16	23.92
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1/0	23.76
50	1	Mid	38499.96	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1/0	23.68
50		Mid	38499.96	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1/0	23.66
		Mid	38499.96	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1/0	23.72
		High	39975.00	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	0	0	1 / 31	23.87
		High	39975.00	DFT-s-OFDM	QPSK	0	V	SISO	V	0	0	1 / 31	23.69
		High	39975.00	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 31	23.63
		High	39975.00	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 31	23.61
		Low	37199.94	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 33	23.94
		Low	37199.94	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 33	23.87
		Low	37199.94	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 33	23.85
		Low	37199.94	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 33	23.79
		Mid	38499.96	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1/0	23.51
100	4	Mid	38499.96	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1/0	23.53
100	-	Mid	38499.96	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1/0	23.50
		Mid	38499.96	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1/0	23.49
		High	39799.98	DFT-s-OFDM	π/2 BPSK	0	V	SISO	V	1	0	1 / 65	23.92
		High	39799.98	DFT-s-OFDM	QPSK	0	V	SISO	V	1	0	1 / 65	23.93
		High	39799.98	DFT-s-OFDM	16QAM	0	V	SISO	V	1	0	1 / 65	23.84
L		High	39799.98	DFT-s-OFDM	64QAM	0	V	SISO	V	1	0	1 / 65	23.80

Table 7-11. n260 EIRP – Relay Side – V Beam

FCC ID: NKR-TR2V1-IDU	Proud to be part of @ element	MEASUREMENT REPORT (CERTIFICATION)	Approved by: Technical Manager
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7.4 Radiated Spurious and Harmonic Emissions §2.1051, §30.203

Test Overview

The spectrum is scanned from 30MHz to 100GHz for n261 band, and 30MHz to 200MHz for n260 band. All out of band emissions are measured in a radiated test setup while the EUT is operating at the appropriate frequencies with the max power condition as specified by the AGC software of the EUT. All modulations were investigated to determine the worst case configuration. All modes of operation were investigated and the worst case configuration results are reported in this section.

The conductive power or total radiated power of any emissions outside a licensee's frequency block shall be -13dBm/1MHz.

Test Procedure Used

ANSI C63.26-2015 Section 5.7.4

Test Settings

- 1. Start frequency was set to 30MHz and stop frequency was set to 100 GHz. Several plots are used to show investigations in this entire span.
- 2. Detector = RMS
- 3. Trace mode = Max Hold
- 4. Sweep time = auto couple
- 5. Number of sweep points \geq 2 x Span/RBW
- 6. The trace was allowed to stabilize
- 7. RBW = 1MHz, VBW = 3MHz

Test Notes

- 1) The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below. The worst case found was QPSK, 1RB and was tested as such. All configurations of EUT on Donor side and Relay side were investigated and the worst case was included in this report.
- 2) All radiated spurious emissions were measured as EIRP to compare with the §30.203 TRP limits.
- 3) The plots from 1-200GHz show corrected EIRP levels. Plots below 1GHz are corrected field strength levels. The EIRP reported below is calculated per section 5.2.7 of ANSI C63.26-2015 which states:

EIRP (dBm) = E (dB μ V/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

The field strength E is calculated E (dBµV/m) = Spectrum Analyzer Level (dBm) + Antenna Factor (dB/m) + Cable Loss (dB) + Harmonic Mixer Conversion Loss (dB) + 107.

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All appropriate Antenna Factor and Cable Loss have been applied in the spectrum analyzer for each measurement. For measurements > 40GHz, Harmonic Mixer Conversion Loss was also applied to the spectrum analyzer.

- 4) Emissions below 18GHz were measured at a 3 meter test distance, while emissions above 18GHz were measured at the appropriate far field distance. The far field of the mmWave signal is based on formula: R > 2D^2/wavelength, where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT.
- 5) All emissions from 30MHz 40GHz were measured using a spectrum analyzer with an internal preamplifier. Emissions >40GHz were measured using a harmonic mixer with the spectrum analyzer.
- 6) The "-" shown in the following RSE tables are used to denote a noise floor measurement.

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30MHz – 1GHz



Plot 7-65. Radiated Spurious Plot 30 MHz - 1 GHz (1CC QPSK Mid Channel)

Spurious Emissions ERP Sample Calculation

The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE ERP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE ERP [dBm] = A	Analyzer Level [dBm] +	107 + AFCL [dB/m] +	20Log(Dm) - 104.8 - 2.15dB
	, L J	L 3	5.

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
137.37	Low	50	Н	QPSK	н	132	230	-69.20	-13.00	-56.20
225.19	Low	50	Н	QPSK	н	134	138	-68.82	-13.00	-55.82
187.51	Mid	50	Н	QPSK	Н	104	151	-62.63	-13.00	-49.63
223.80	Mid	50	Н	QPSK	Н	126	122	-71.98	-13.00	-58.98
162.55	High	50	Н	QPSK	н	239	166	-72.82	-13.00	-59.82
225.87	High	50	Н	QPSK	Н	133	127	-68.88	-13.00	-55.88

Table 7-12. Spurious Emissions Table (30MHz-1GHz)

<u>Notes</u>

The RSE ERP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

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Plot 7-66. Radiated Spurious Plot 1-18 GHz (1CC QPSK Mid Channel)

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Spurious Emissions EIRP Sample Calculation

The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 3 meter.

RSE EIRP [dBm] = Analyzer Level [dBm] + 107 + AFCL [dB/m] + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Antenna Height [cm]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
17682.53	Low	50	Н	QPSK	Н	-	-	-29.43	-13.00	-16.43
17718.43	Mid	50	Н	QPSK	н	-	-	-29.22	-13.00	-16.22
17800.64	High	50	Н	QPSK	н	-	-	-29.53	-13.00	-16.53

Table 7-13. Spurious Emissions Table (1GHz-18GHz)

<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 3 meter.

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Plot 7-67. Radiated Spurious Plot 18-27.5 GHz (1CC QPSK Mid Channel)

The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP [dBm] = Analyzer Level [dBm] + 107 + AFCL [dB/m] + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
27380.05	Low	50	Н	QPSK	Н	1	0	-20.85	-13.00	-7.85
27381.46	Mid	50	Н	QPSK	Н	1	0	-20.95	-13.00	-7.95
27374.86	High	50	Н	QPSK	Н	1	0	-20.61	-13.00	-7.61

Table 7-14. Spurious Emissions Table (18-27.5GHz)

<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 1 meter.

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Plot 7-68. Radiated Spurious Plot 28.35-40 GHz (1CC QPSK Mid Channel)

The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP [dBm] = Analyzer Level [dBm] + 107 + AFCL [dB/m] + 20Log(Dm) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
28463.61	Low	50	Н	QPSK	Н	1	0	-21.99	-13.00	-8.99
28476.65	Mid	50	Н	QPSK	Н	1	0	-22.35	-13.00	-9.35
28462.60	High	50	Н	QPSK	Н	1	0	-22.04	-13.00	-9.04

Table 7-15. Spurious Emissions Table (28.35-40 GHz)

<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses. Measurements were performed at a distance of 1 meter.

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The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1.5 meter.

RSE EIRP [dBm] = Analyzer Level [dBm] + 107 + AFCL [dB/m] + 20Log(Dm) + Harmonic Mixer Loss (dB) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
55051.20	Low	50	Н	QPSK	н	1	0	-29.41	-13.00	-16.41
55851.21	Mid	50	Н	QPSK	Н	2	0	-28.08	-13.00	-15.08
56650.43	High	50	Н	QPSK	Н	2	0	-30.69	-13.00	-17.69

 Table 7-16. Spurious Emissions Table (40 - 60GHz)

<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1.5 meter.

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Plot 7-70. Radiated Spurious Plot 60-90 GHz (1CC QPSK Mid Channel)

The raw radiated spurious level is converted to field strength in dBµV/m. Then, the RSE EIRP level is calculated by applying the additional factors shown below for a test distance of 1 meter.

RSE EIRP [dBm] = Analyzer Level [dBm] + 107 + AFCL [dB/m] + 20Log(Dm) + Harmonic Mixer Loss (dB) - 104.8

Frequency [MHz]	Channnel	Bandwidth (MHz)	EUT Beam Pol.	Modulation	Antenna Polarization [H/V]	Turntable Azimuth [degrees]	Positioner Azimuth [degrees]	Spurious Emission Level [dBm]	Limit [dBm]	Margin [dB]
82576.95	Low	50	Н	QPSK	н	2	0	-29.05	-13.00	-16.05
83777.07	Mid	50	Н	QPSK	н	1	0	-27.97	-13.00	-14.97
84976.98	High	50	Н	QPSK	Н	1	0	-27.84	-13.00	-14.84

Table 7-17. Spurious Emissions Table (60-90GHz)

<u>Notes</u>

The RSE EIRP level is taken directly from the spectrum analyzer which includes the appropriate antenna factors, cable losses, and harmonic mixer conversion losses. Measurements were performed at a distance of 1 meter.

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