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# Report On

FCC Testing of the  
Ericsson Dot 4469 B41K, KRY 901 502/2, LTE, NR, LTE & NR, (2515-  
2675 MHz), with compatible Main Unit in a Base Station configuration  
in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 27

COMMERCIAL-IN-CONFIDENCE

FCC: TA8AKRY901502-1 & TA8AKRY901502-2

PREPARED BY

Glen Westwell  
Senior Test Engineer

APPROVED BY

Scott Drysdale  
Authorised Signatory

DATED

29 Oct 2021

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## **SECTION 1**

### **REPORT INFORMATION**



## 1.1 REPORT DETAILS

Manufacturer	Ericsson
Address	Torshamnsgatan 23 Kista SE-16480 Stockholm Sweden
Product Name & Product Number	Dot 4469 B41K using IRU 1648 - KRY 901 502/2 using KRC 161 842/1
Serial Number(s)	TD3W150451
Software Version	CXP 203 0045/26 Revision R10B285
Hardware Version	R1C
Non-Tested Variant (See Section 1.8 Additional Information)	Dot 4459 B41K KRY 901 502/1
Test Specification/Issue/Date	FCC CFR 47 Part 2: 2020 FCC CFR 47 Part 27: 2020
Test Plan	Dot 4469 B41K_RA_testplan_NR_LTE (TUV SUD)
Start of Test	14 September 2021
Finish of Test	17 September 2021
Name of Engineer(s)	Glen Westwell
Related Document(s)	KDB 971168 D01 v02r02 KDB 662911 D01 v02r01 ANSI C63.26-2015

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### ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate compliance with and FCC CFR 47 Part 2: 2020, FCC CFR 47 Part 27: 2020. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

Glen Westwell



## 1.2 BRIEF SUMMARY OF RESULTS

The tests that have been selected are detailed in the customer Test Plan as defined in section 1.1 of this report.

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 27 is shown below.

Section	Specification Clause		Test Description	Result
	FCC CFR 47 Part 2	FCC CFR 47 Part 27		
2.1	2.1046	27.50	Maximum Peak Output Power and Peak to Average Ratio - Conducted	Pass
2.2	2.1049	27.53	Occupied Bandwidth	Pass
2.3	2.1051	27.53	Band Edge	Pass
2.4	2.1051	27.53	Transmitter Spurious Emissions	Pass
2.5	2.1055	27.54	Frequency Stability	Pass



### 1.3 TEST RATIONALE

The tests that have been selected are detailed in the customer Test Plan as defined in section 1.1 of this report..



### 1.4 CONFIGURATION DESCRIPTION

Configuration A					
RAT	No. of Carriers	Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
LTE	1	5 MHz	2,517.5	2,595.0	2,672.5
		10 MHz	2,520.0	2,595.0	2,670.0
		15 MHz	2,522.5	2,595.0	2,667.5
		20 MHz	2,525.0	2,595.0	2,665.0
NR	1	20 MHz	2,525.0	2,595.0	2,665.0
		40 MHz	2,535.0	2,595.0	2,655.0
		50 MHz	2,540.0	2,595.0	2,650.0
		60 MHz	2,545.0	2,595.0	2,645.0
		80 MHz	2,555.0	2,595.0	2,635.0
		100 MHz	2,565.0	2,595.0	2,625.0

Configuration B					
RAT	No. Of Carriers	Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
LTE+NR	2	L5+NR20 MHz	2517.5+2530.0	2582.5+2595.0	2652.5+2665.0

Configuration C					
RAT	NO. of Carriers	Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
LTE	6	5 MHz	2517.5+2522.5+2527.5+	2582.5+2587.5+2592.5+	2647.5+2652.5+2657.5+
			2532.5+2537.5+2542.5 MHz	2597.5+2602.5+2607.5 MHz	2662.5+2667.5+2672.5 MHz
		10 MHz	2520.0+2530.0+2540.0+	2570.0+2580.0+2590.0+	2620.0+2630.0+2640.0+
			2550.0+2560.0+2570.0 MHz	2600.0+2610.0+2620.0 MHz	2650.0+2660.0+2670.0 MHz
		15 MHz	2522.5+2537.5+2552.2+	2550.0+2565.0+2580.0+	2592.5+2607.5+2622.5+
			2567.5+2582.5+2597.5 MHz	2595.0+2610.0+2625.0 MHz	2637.5+2652.5+2667.5 MHz
20 MHz	2525.0+2545.0+2565.0+		2565.0+2585.0+2605.0+		
	2585.0+2605.0+2625.0 MHz		2625.0+2645.0+2665.0 MHz		
NR	6	20 MHz	2525.0+2545.0+2565.0+		2565.0+2585.0+2605.0+
			2585.0+2605.0+2625.0 MHz		2625.0+2645.0+2665.0 MHz
LTE (4) + NR (2)	6	L20 MHz + NR 40 MHz	2525.0+2545.0+2565.0+	2525.0+2545.0+2565.0+	2525.0+2545.0+2565.0+
			2585.0+2615.0+2655.0 MHz	2585.0+2615.0+2655.0 MHz	2585.0+2615.0+2655.0 MHz



1.5 DECLARATION OF BUILD STATUS

MAIN EUT	
MANUFACTURING DESCRIPTION	Radio Dot
MANUFACTURER	Ericsson
TYPE	Remote Radio Base Station
PART NUMBER	KRY 901 502/1 and KRY 901 502/2
SERIAL NUMBER	TD3W150451
HARDWARE VERSION	R1C
SOFTWARE VERSION	CXP 203 0045/26 R10B285
TRANSMITTER OPERATING RANGE	2515 – 2675 MHz
RECEIVER OPERATING RANGE	2515 – 2675 MHz
COUNTRY OF ORIGIN	China
INTERMEDIATE FREQUENCIES	None
EMISSION DESIGNATOR(S): (i.e. G1D, GXW)	LTE: 5M00W7D, 10M0W7D, 15M0W7D, 20M0W7D NR: 20M0F9W, 40M0F9W, 50M0F9W, 60M0F9W, 80M0F9W, 100M0F9W
MODULATION TYPES: (i.e. GMSK, QPSK)	LTE: QPSK, 16QAM, 64QAM, 256QAM NR: QPSK, 16QAM, 64QAM, 256QAM
HIGHEST INTERNALLY GENERATED FREQUENCY	2.7 GHz
OUTPUT POWER (W or dBm)	4 x 0.4W (26dBm)
Antenna gain (dBi)	5.5 dBi
FCC ID	TABAKRY901502-1 & TABAKRY901502-2
INDUSTRY CANADA ID	NA
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	The Dot 4459 B41K (KRY 901 502/1) and the Dot 4469 B41K (KRY 901 502/2) are Remote Radio Units forming part of the Ericsson Radio Base Station (RBS) equipment. The Dot provides radio access for mobile and fixed devices and is intended for the indoor environment. The radio operates over 4 Transmit ports in MRO (LTE and NR); Single, Multi-Carrier, and MIMO transmission with a maximum rated RF Output of 0.4W per port over an operational temperature of 5°C to +40°C. The unit is designed to be ceiling or wall mounted. The 4459 and 4469 radios are identical except that Dot 4459 has internal antennas and Dot 4469 has external ports.

Signature:

.....  
Denis Lalonde

Date: 21 September 2021

Declaration of Build Status Serial Number: TD3W150451

No responsibility will be accepted by TÜV SÜD as to the accuracy of the information declared in this document by the manufacturer.

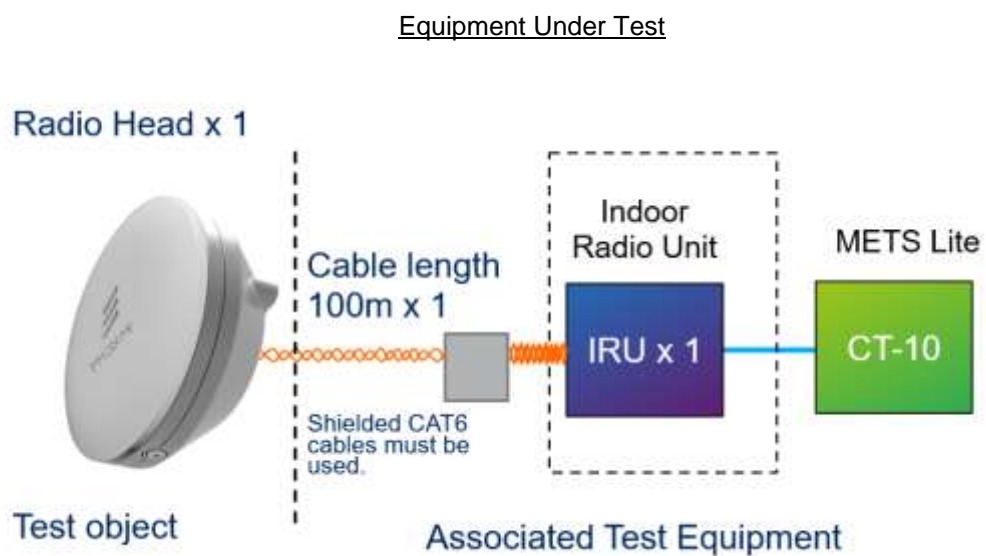


## 1.6 PRODUCT INFORMATION

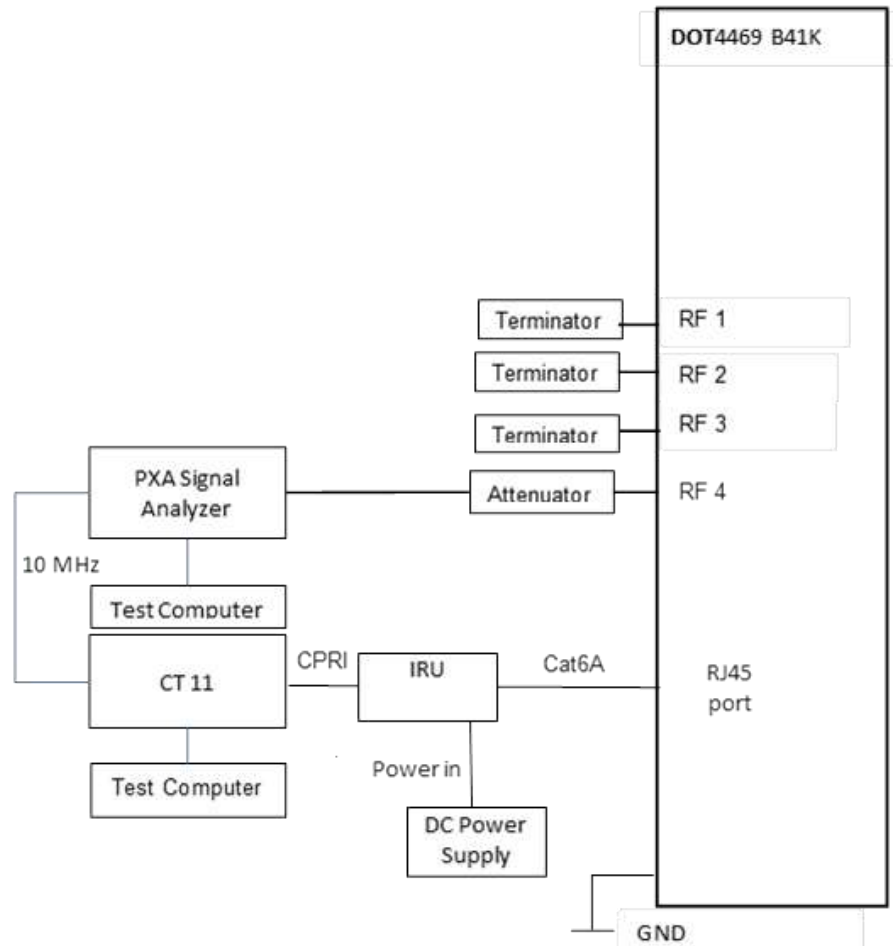
### 1.6.1 Technical Description

The Equipment Under Test (EUT) Dot 4469 B41KB1B3 using IRU 1648 - KRY 901 502/2 using KRC 161 842/1 is an Ericsson AB Radio Unit working in the public mobile service 2515-2675MHz band which provides communication connections to 2515-2675MHz network. The EUT operates from a -48V DC supply.

The Equipment Under Test (EUT) is shown in the photograph below. A full technical description can be found in the Manufacturer's documentation.



## 1.7 TEST SETUP





## 1.8 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated as described in the Test Method for each Test.

The EUT was powered from a -48V DC supply.

FCC Measurement Facility Registration Number  
CA4810 TUV SUD Ottawa, Canada

ISED Accreditation  
IC#24015 TUV SUD Ottawa, Canada.

Under our A2LA Accreditation, TÜV SÜD Canada conducted the following tests at Ericsson's, Ottawa Laboratory: 349 Terry Fox Dr, Kanata, ON.

Test Name	Name of Engineer(s)
Maximum Peak Output Power and Peak to Average Ratio - Conducted	Glen Westwell
Occupied Bandwidth	Glen Westwell
Band Edge	Glen Westwell
Transceiver Spurious Emissions	Glen Westwell
Freq. Stab.	Glen Westwell

## 1.9 DEVIATION FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

## 1.10 MODIFICATION RECORD

No modifications were made to the EUT during testing.

## 1.11 ADDITIONAL INFORMATION

Ericsson will limit this product through the software from operating across the whole of Band 41, it will be limited to Band 41K 2515-2675MHz.

1. This filing is for a Radio Certification for use in the USA under the following ID's:

FCC ID: TA8AKRY901502-1 & TA8AKRY901502-2

2. Transmitter performance was measured for top, mid & bottom channels, where applicable, across all antenna ports as presented in the average power measurement tables. Typical performance is presented.



## **SECTION 2**

### **TEST DETAILS**



## **2.1 MAXIMUM PEAK OUTPUT POWER AND PEAK TO AVERAGE RATIO - CONDUCTED**

### **2.1.1 Specification Reference**

FCC CFR 47 Part 27, Clause 27.50  
FCC CFR 47 Part 2, Clause 2.1046

### **2.1.2 Date of Test and Modification State**

14 and 15 September 2021 - Modification State 0

### **2.1.3 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

### **2.1.4 Environmental Conditions**

Ambient Temperature	24.5 - 25.0°C
Relative Humidity	30.4 - 31.7%

### **2.1.5 Test Method**

All measurements were made in accordance with FCC KDB 971168 D01, clause 5.2.1 and summed in accordance with FCC KDB 662911 D01.

### **2.1.6 Test Results**

#### Remarks

1. Transmitter performance has been presented for top, mid, bottom channels across all antenna ports as represented in the following tables.
2. Typical performance and measurement plot data has been presented for reference.
3. All plot data is on file and available upon request.



Configuration A

Maximum Output Power 26.00 dBm / Port

Antenna Gain (dBi)	Modulation	Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power				
			PAR (dB)	Channel Position B			
				Average Power			
5.50				dBm	EIRP (dBm)	dBm/MHz	EIRP dBm/MHz
Antenna Port							
A	LTE: QPSK	5.0 MHz	9.89	25.19	30.69	19.10	24.60
B	LTE: QPSK	5.0 MHz	-	24.91	30.41	19.10	24.60
C	LTE: QPSK	5.0 MHz	-	25.13	30.63	19.10	24.60
D	LTE: QPSK	5.0 MHz	-	24.83	30.33	19.10	24.60
Total			-	31.04	36.54	25.12	30.62
A	LTE: QPSK	10.0 MHz	9.65	25.45	30.95	16.37	21.87
B	LTE: QPSK	10.0 MHz	-	24.97	30.47	16.37	21.87
C	LTE: QPSK	10.0 MHz	-	25.25	30.75	16.37	21.87
D	LTE: QPSK	10.0 MHz	-	25.14	30.64	16.37	21.87
Total			-	31.23	36.73	22.39	27.89
A	LTE: QPSK	15.0 MHz	9.55	25.23	30.73	14.84	20.34
B	LTE: QPSK	15.0 MHz	-	25.29	30.79	14.84	20.34
C	LTE: QPSK	15.0 MHz	-	25.37	30.87	14.84	20.34
D	LTE: QPSK	15.0 MHz	-	25.04	30.54	14.84	20.34
Total			-	31.25	36.75	20.86	26.36
A	LTE: QPSK	20.0 MHz	9.78	25.51	31.01	14.27	19.77
B	LTE: QPSK	20.0 MHz	-	25.33	30.83	14.27	19.77
C	LTE: QPSK	20.0 MHz	-	26.03	31.53	14.27	19.77
D	LTE: QPSK	20.0 MHz	-	25.33	30.83	14.27	19.77
Total			-	31.58	37.08	20.29	25.79
A	NR: QPSK	20.0 MHz	10.28	25.45	30.95	13.62	19.12
B	NR: QPSK	20.0 MHz	-	25.04	30.54	13.62	19.12
C	NR: QPSK	20.0 MHz	-	25.41	30.91	13.62	19.12
D	NR: QPSK	20.0 MHz	-	25.23	30.73	13.62	19.12
Total			-	31.31	36.81	19.64	25.14
A	NR: QPSK	40.0 MHz	9.42	26.14	31.64	11.44	16.94
B	NR: QPSK	40.0 MHz	-	25.88	31.38	11.44	16.94
C	NR: QPSK	40.0 MHz	-	25.83	31.33	11.44	16.94
D	NR: QPSK	40.0 MHz	-	25.88	31.38	11.44	16.94
Total			-	31.95	37.45	17.46	22.96
A	NR: QPSK	50.0 MHz	9.87	26.02	31.52	10.42	15.92
B	NR: QPSK	50.0 MHz	-	25.78	31.28	10.42	15.92
C	NR: QPSK	50.0 MHz	-	25.99	31.49	10.42	15.92
D	NR: QPSK	50.0 MHz	-	25.91	31.41	10.42	15.92
Total			-	31.95	37.45	16.44	21.94
A	NR: QPSK	60.0 MHz	9.39	25.93	31.43	9.69	15.19
B	NR: QPSK	60.0 MHz	-	25.83	31.33	9.69	15.19
C	NR: QPSK	60.0 MHz	-	25.90	31.40	9.69	15.19
D	NR: QPSK	60.0 MHz	-	25.94	31.44	9.69	15.19
Total			-	31.92	37.42	15.71	21.21
A	NR: QPSK	80.0 MHz	9.30	26.02	31.52	8.41	13.91
B	NR: QPSK	80.0 MHz	-	25.84	31.34	8.41	13.91
C	NR: QPSK	80.0 MHz	-	26.10	31.60	8.41	13.91
D	NR: QPSK	80.0 MHz	-	25.89	31.39	8.41	13.91
Total			-	31.98	37.48	14.43	19.93
A	NR: QPSK	100.0 MHz	9.98	25.33	30.83	6.67	12.17
B	NR: QPSK	100.0 MHz	-	25.01	30.51	6.67	12.17
C	NR: QPSK	100.0 MHz	-	25.27	30.77	6.67	12.17
D	NR: QPSK	100.0 MHz	-	24.98	30.48	6.67	12.17
Total			-	31.17	36.67	12.69	18.19



Maximum Output Power 26.00 dBm / Port

Antenna Gain (dBi)	Modulation	Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power				
			PAR (dB)	Channel Position M			
				Average Power			
5.50				dBm	EIRP (dBm)	dBm/MHz	EIRP dBm/MHz
Antenna Port							
A	LTE: QPSK	5.0 MHz	9.86	25.63	31.13	19.53	25.03
B	LTE: QPSK	5.0 MHz	-	25.29	30.79	19.53	25.03
C	LTE: QPSK	5.0 MHz	-	25.47	30.97	19.53	25.03
D	LTE: QPSK	5.0 MHz	-	25.32	30.82	19.53	25.03
Total			-	31.45	36.95	25.55	31.05
A	LTE: QPSK	10.0 MHz	9.88	25.68	31.18	16.80	22.30
B	LTE: QPSK	10.0 MHz	-	25.33	30.83	16.80	22.30
C	LTE: QPSK	10.0 MHz	-	25.63	31.13	16.80	22.30
D	LTE: QPSK	10.0 MHz	-	25.59	31.09	16.80	22.30
Total			-	31.58	37.08	22.82	28.32
A	LTE: QPSK	15.0 MHz	9.60	26.00	31.50	14.95	20.45
B	LTE: QPSK	15.0 MHz	-	25.30	30.80	14.95	20.45
C	LTE: QPSK	15.0 MHz	-	25.87	31.37	14.95	20.45
D	LTE: QPSK	15.0 MHz	-	25.50	31.00	14.95	20.45
Total			-	31.70	37.20	20.97	26.47
A	LTE: QPSK	20.0 MHz	9.93	25.82	31.32	13.78	19.28
B	LTE: QPSK	20.0 MHz	-	25.71	31.21	13.78	19.28
C	LTE: QPSK	20.0 MHz	-	25.77	31.27	13.78	19.28
D	LTE: QPSK	20.0 MHz	-	25.64	31.14	13.78	19.28
Total			-	31.76	37.26	19.80	25.30
A	NR: QPSK	20.0 MHz	10.49	25.60	31.10	14.08	19.58
B	NR: QPSK	20.0 MHz	-	25.38	30.88	14.08	19.58
C	NR: QPSK	20.0 MHz	-	25.40	30.90	14.08	19.58
D	NR: QPSK	20.0 MHz	-	25.39	30.89	14.08	19.58
Total			-	31.46	36.96	20.10	25.60
A	NR: QPSK	40.0 MHz	9.94	26.28	31.78	11.13	16.63
B	NR: QPSK	40.0 MHz	-	26.22	31.72	11.13	16.63
C	NR: QPSK	40.0 MHz	-	26.14	31.64	11.13	16.63
D	NR: QPSK	40.0 MHz	-	26.03	31.53	11.13	16.63
Total			-	32.19	37.69	17.15	22.65
A	NR: QPSK	50.0 MHz	9.82	26.23	31.73	10.71	16.21
B	NR: QPSK	50.0 MHz	-	26.15	31.65	10.71	16.21
C	NR: QPSK	50.0 MHz	-	26.12	31.62	10.71	16.21
D	NR: QPSK	50.0 MHz	-	25.95	31.45	10.71	16.21
Total			-	32.13	37.63	16.73	22.23
A	NR: QPSK	60.0 MHz	9.74	26.22	31.72	9.80	15.30
B	NR: QPSK	60.0 MHz	-	26.03	31.53	9.80	15.30
C	NR: QPSK	60.0 MHz	-	26.07	31.57	9.80	15.30
D	NR: QPSK	60.0 MHz	-	26.01	31.51	9.80	15.30
Total			-	32.10	37.60	15.82	21.32
A	NR: QPSK	80.0 MHz	9.63	26.18	31.68	8.22	13.72
B	NR: QPSK	80.0 MHz	-	25.79	31.29	8.22	13.72
C	NR: QPSK	80.0 MHz	-	26.05	31.55	8.22	13.72
D	NR: QPSK	80.0 MHz	-	25.96	31.46	8.22	13.72
Total			-	32.02	37.52	14.24	19.74
A	NR: QPSK	100.0 MHz	10.09	25.29	30.79	6.48	11.98
B	NR: QPSK	100.0 MHz	-	25.17	30.67	6.48	11.98
C	NR: QPSK	100.0 MHz	-	25.34	30.84	6.48	11.98
D	NR: QPSK	100.0 MHz	-	25.14	30.64	6.48	11.98
Total			-	31.26	36.76	12.50	18.00



Maximum Output Power 26.00 dBm / Port

Antenna Gain (dBi)	Modulation	Carrier Bandwidth	Peak to Average Ratio (PAR) / Output Power				
			PAR (dB)	Channel Position T			
				Average Power			
5.50				dBm	EIRP (dBm)	dBm/MHz	EIRP dBm/MHz
Antenna Port							
A	LTE: QPSK	5.0 MHz	10.11	25.49	30.99	19.71	25.21
B	LTE: QPSK	5.0 MHz	-	25.41	30.91	19.71	25.21
C	LTE: QPSK	5.0 MHz	-	25.21	30.71	19.71	25.21
D	LTE: QPSK	5.0 MHz	-	25.36	30.86	19.71	25.21
Total			-	31.39	36.89	25.73	31.23
A	LTE: QPSK	10.0 MHz	10.00	25.72	31.22	17.19	22.69
B	LTE: QPSK	10.0 MHz	-	25.45	30.95	17.19	22.69
C	LTE: QPSK	10.0 MHz	-	25.68	31.18	17.19	22.69
D	LTE: QPSK	10.0 MHz	-	25.74	31.24	17.19	22.69
Total			-	31.67	37.17	23.21	28.71
A	LTE: QPSK	15.0 MHz	9.83	25.73	31.23	15.48	20.98
B	LTE: QPSK	15.0 MHz	-	25.48	30.98	15.48	20.98
C	LTE: QPSK	15.0 MHz	-	24.66	30.16	15.48	20.98
D	LTE: QPSK	15.0 MHz	-	24.83	30.33	15.48	20.98
Total			-	31.22	36.72	21.50	27.00
A	LTE: QPSK	20.0 MHz	9.67	26.16	31.66	14.28	19.78
B	LTE: QPSK	20.0 MHz	-	25.75	31.25	14.28	19.78
C	LTE: QPSK	20.0 MHz	-	24.86	30.36	14.28	19.78
D	LTE: QPSK	20.0 MHz	-	26.02	31.52	14.28	19.78
Total			-	31.75	37.25	20.30	25.80
A	NR: QPSK	20.0 MHz	10.30	25.54	31.04	14.13	19.63
B	NR: QPSK	20.0 MHz	-	25.42	30.92	14.13	19.63
C	NR: QPSK	20.0 MHz	-	25.49	30.99	14.13	19.63
D	NR: QPSK	20.0 MHz	-	25.72	31.22	14.13	19.63
Total			-	31.56	37.06	20.15	25.65
A	NR: QPSK	40.0 MHz	9.83	26.44	31.94	11.43	16.93
B	NR: QPSK	40.0 MHz	-	26.26	31.76	11.43	16.93
C	NR: QPSK	40.0 MHz	-	26.25	31.75	11.43	16.93
D	NR: QPSK	40.0 MHz	-	26.36	31.86	11.43	16.93
Total			-	32.35	37.85	17.45	22.95
A	NR: QPSK	50.0 MHz	9.40	26.34	31.84	10.50	16.00
B	NR: QPSK	50.0 MHz	-	25.92	31.42	10.50	16.00
C	NR: QPSK	50.0 MHz	-	26.07	31.57	10.50	16.00
D	NR: QPSK	50.0 MHz	-	25.98	31.48	10.50	16.00
Total			-	32.10	37.60	16.52	22.02
A	NR: QPSK	60.0 MHz	9.40	26.26	31.76	9.76	15.26
B	NR: QPSK	60.0 MHz	-	26.17	31.67	9.76	15.26
C	NR: QPSK	60.0 MHz	-	26.12	31.62	9.76	15.26
D	NR: QPSK	60.0 MHz	-	26.17	31.67	9.76	15.26
Total			-	32.20	37.70	15.78	21.28
A	NR: QPSK	80.0 MHz	9.62	26.40	31.90	8.86	14.36
B	NR: QPSK	80.0 MHz	-	26.12	31.62	8.86	14.36
C	NR: QPSK	80.0 MHz	-	26.21	31.71	8.86	14.36
D	NR: QPSK	80.0 MHz	-	26.17	31.67	8.86	14.36
Total			-	32.25	37.75	14.88	20.38
A	NR: QPSK	100.0 MHz	10.01	25.41	30.91	6.67	12.17
B	NR: QPSK	100.0 MHz	-	25.22	30.72	6.67	12.17
C	NR: QPSK	100.0 MHz	-	25.39	30.89	6.67	12.17
D	NR: QPSK	100.0 MHz	-	25.37	30.87	6.67	12.17
Total			-	31.37	36.87	12.69	18.19

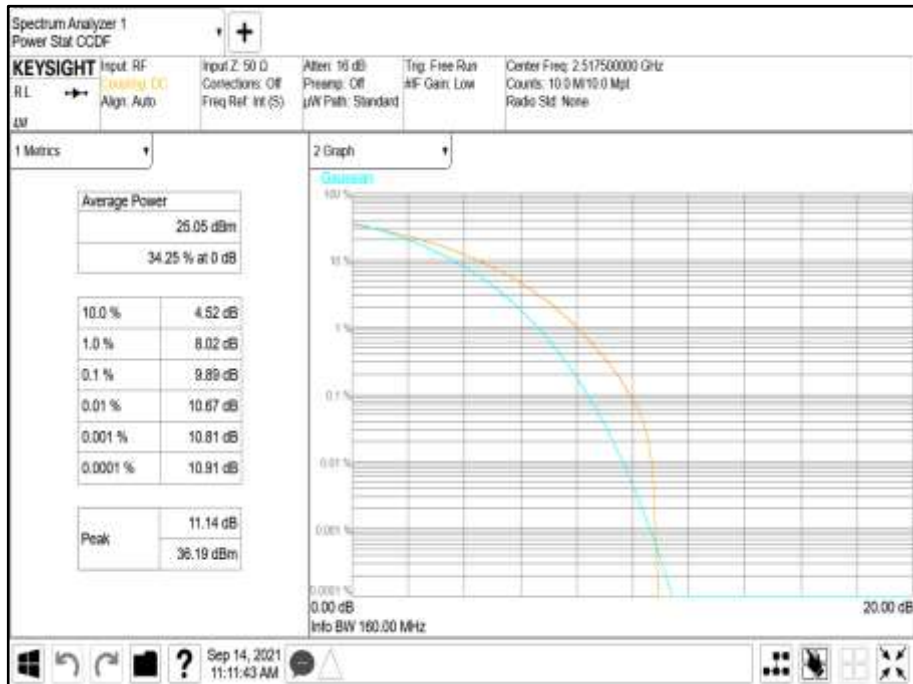




Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 5.0 MHz - Channel Position B



Antenna Port A Pk-Av Ratio - Modulation LTE: QPSK - Carrier Bandwidth 5.0 MHz - Channel Position B





Antenna Port A PSD - Modulation LTE: QPSK - Carrier Bandwidth 5.0 MHz - Channel Position B

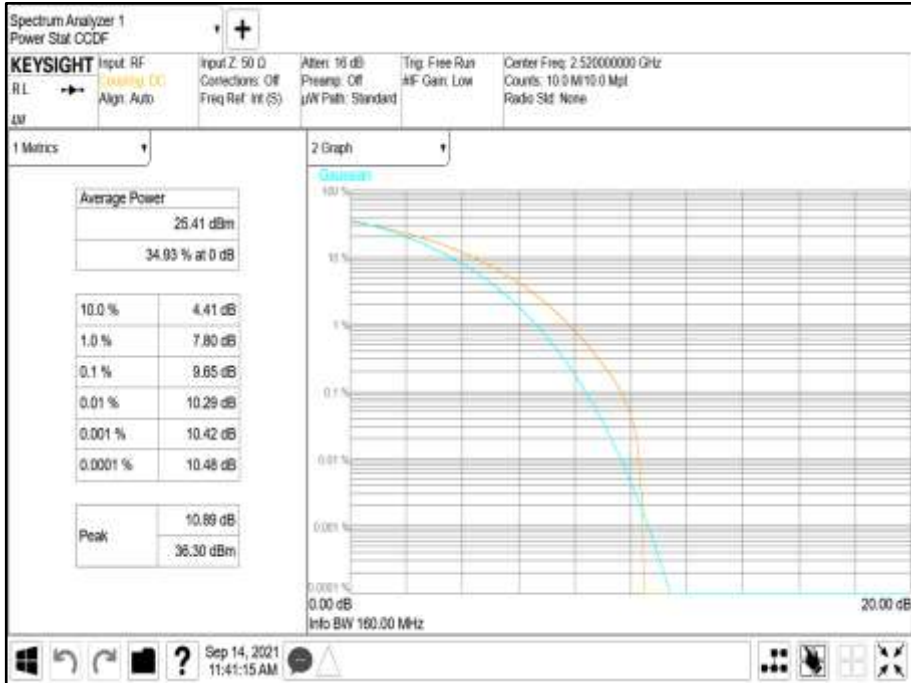


Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 10.0 MHz - Channel Position B





Antenna Port A Pk-Av Ratio - Modulation LTE: QPSK - Carrier Bandwidth 10.0 MHz - Channel Position B



Antenna Port A PSD - Modulation LTE: QPSK - Carrier Bandwidth 10.0 MHz - Channel Position B

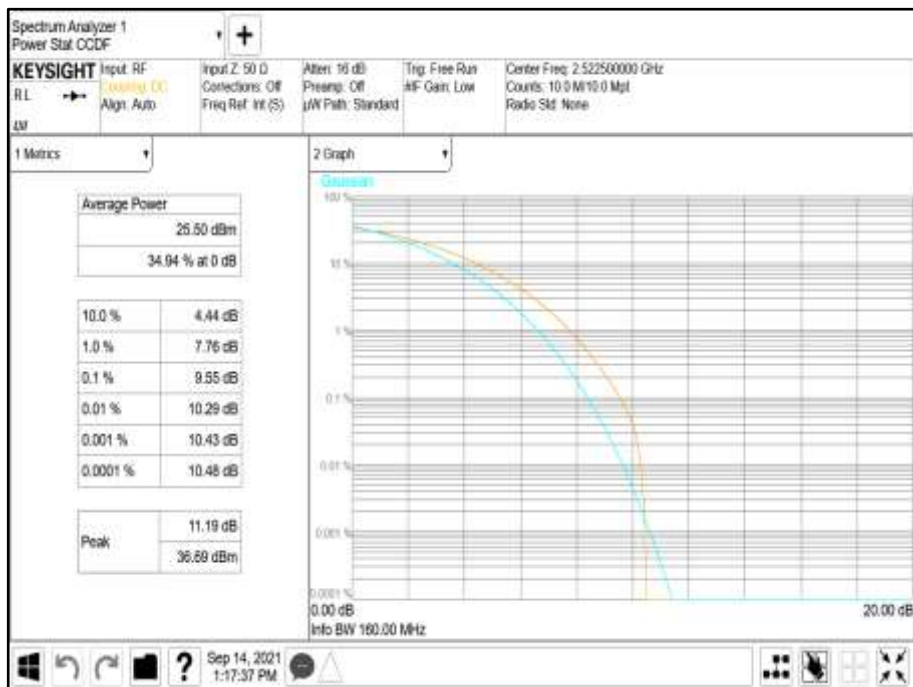




Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 15.0 MHz - Channel Position B



Antenna Port A Pk-Av Ratio - Modulation LTE: QPSK - Carrier Bandwidth 15.0 MHz - Channel Position B





Antenna Port A PSD - Modulation LTE: QPSK - Carrier Bandwidth 15.0 MHz - Channel Position B



Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B





Antenna Port A Pk-Av Ratio - Modulation LTE: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B



Antenna Port A PSD - Modulation LTE: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B

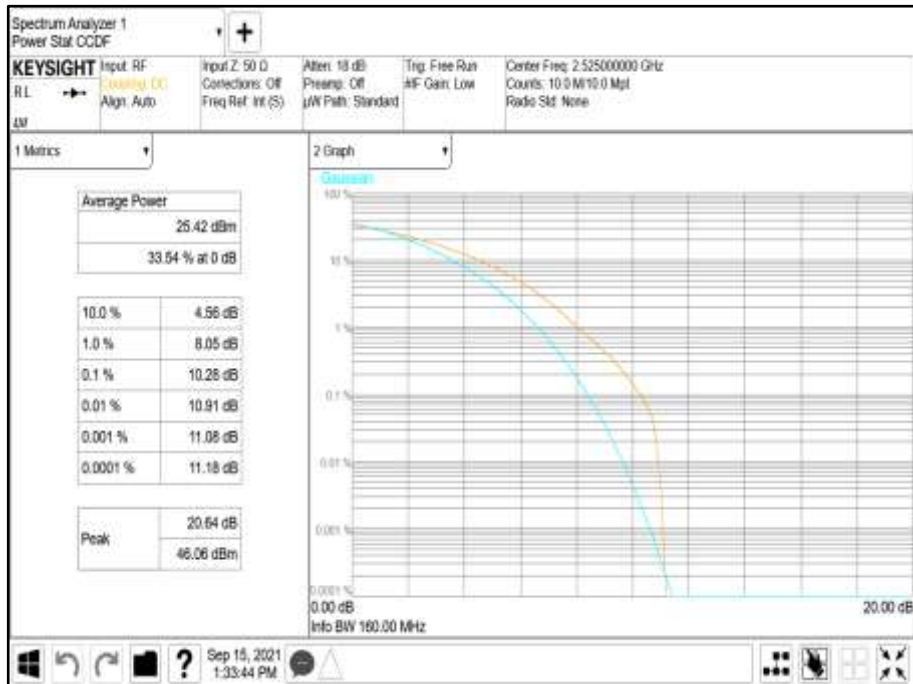




Antenna Port A Carrier Power - Modulation NR: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B



Antenna Port A Pk-Av Ratio - Modulation NR: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B

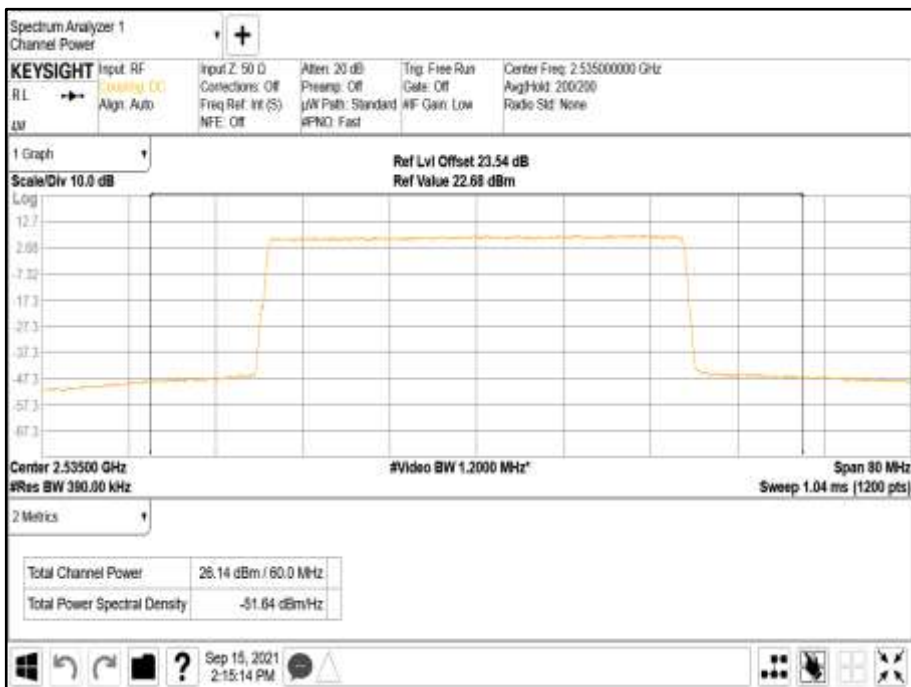




Antenna Port A PSD - Modulation NR: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B



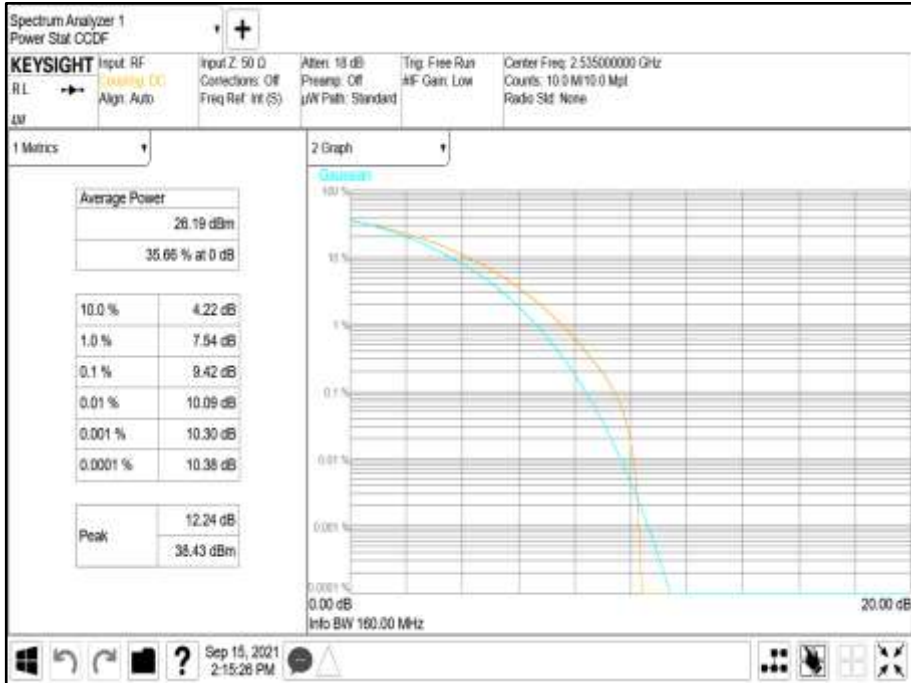
Antenna Port A Carrier Power - Modulation NR: QPSK - Carrier Bandwidth 40.0 MHz - Channel Position B







Antenna Port A Pk-Av Ratio - Modulation NR: QPSK - Carrier Bandwidth 40.0 MHz - Channel Position B



Antenna Port A PSD - Modulation NR: QPSK - Carrier Bandwidth 40.0 MHz - Channel Position B

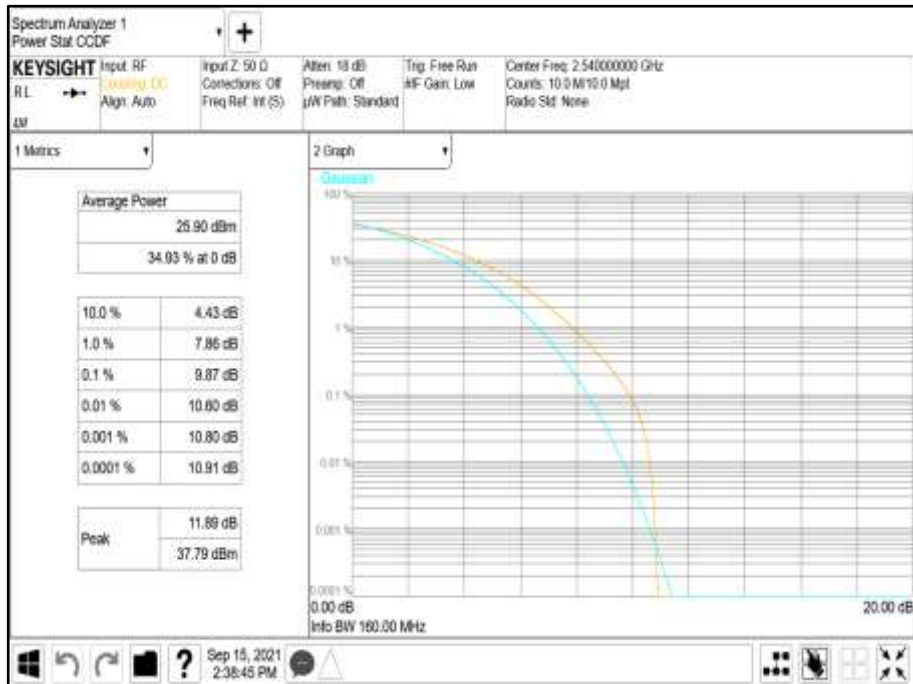




Antenna Port A Carrier Power - Modulation NR: QPSK - Carrier Bandwidth 50.0 MHz - Channel Position B



Antenna Port A Pk-Av Ratio - Modulation NR: QPSK - Carrier Bandwidth 50.0 MHz - Channel Position B





Antenna Port A PSD - Modulation NR: QPSK - Carrier Bandwidth 50.0 MHz - Channel Position B



Antenna Port A Carrier Power - Modulation NR: QPSK - Carrier Bandwidth 60.0 MHz - Channel Position B





Antenna Port A Pk-Av Ratio - Modulation NR: QPSK - Carrier Bandwidth 60.0 MHz - Channel Position B



Antenna Port A PSD - Modulation NR: QPSK - Carrier Bandwidth 60.0 MHz - Channel Position B

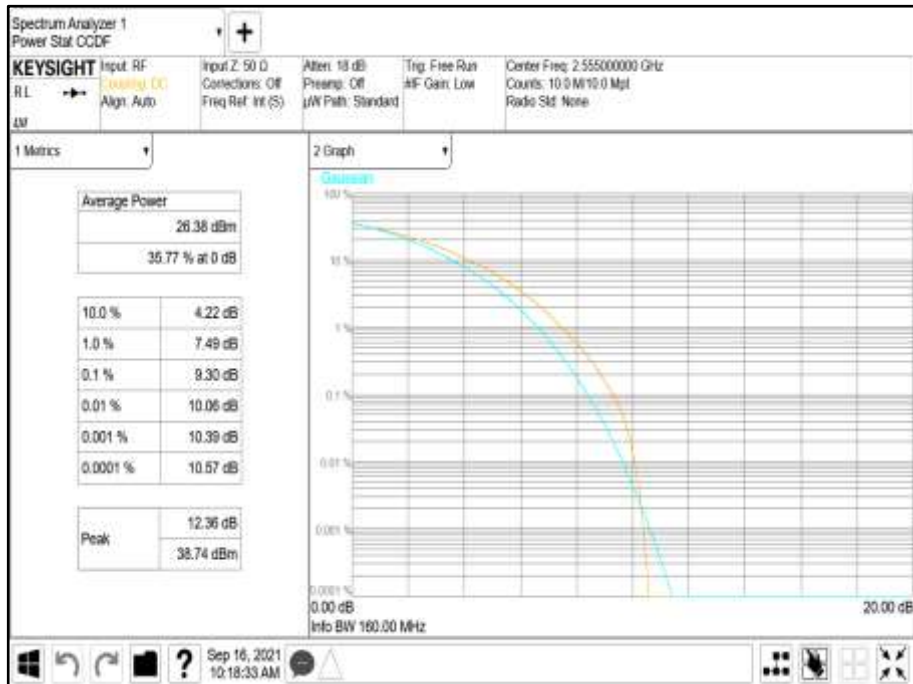




Antenna Port A Carrier Power - Modulation NR: QPSK - Carrier Bandwidth 80.0 MHz - Channel Position B



Antenna Port A Pk-Av Ratio - Modulation NR: QPSK - Carrier Bandwidth 80.0 MHz - Channel Position B





Antenna Port A PSD - Modulation NR: QPSK - Carrier Bandwidth 80.0 MHz - Channel Position B

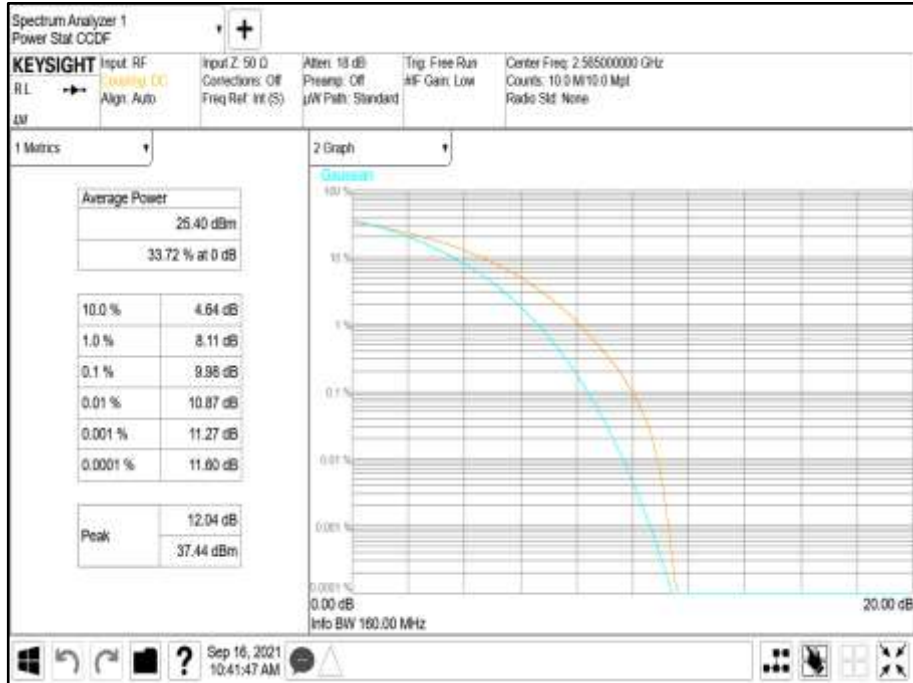


Antenna Port A Carrier Power - Modulation NR: QPSK - Carrier Bandwidth 100.0 MHz - Channel Position B





Antenna Port A Pk-Av Ratio - Modulation NR: QPSK - Carrier Bandwidth 100.0 MHz - Channel Position B



Antenna Port A PSD - Modulation NR: QPSK - Carrier Bandwidth 100.0 MHz - Channel Position B





Configuration B

Maximum Output Power 26.00 dBm / Port

Antenna Gain (dBi)	Modulation	Carrier Bandwidth	Output Power	
			Channel Position M	Average Power (dBm)
Antenna Port			dBm	EIRP (dBm)
5.50				
A	LTE5+NR20: QPSK	L5.0+NR20.0 MHz	25.38	30.88
B	LTE5+NR20: QPSK	L5.0+NR20.0 MHz	25.19	30.69
C	LTE5+NR20: QPSK	L5.0+NR20.0 MHz	25.03	30.53
D	LTE5+NR20: QPSK	L5.0+NR20.0 MHz	25.09	30.59
Total			31.20	36.70

Remarks

1. The table results are measured at all antenna ports, worst-case performance presented.
2. The plot results represent typical radio performance across all channels.
3. Plot data performance for all transmitter ports and channels are available on request.

Antenna Port A Carrier Power - Modulation LTE5+NR20: QPSK - Carrier Bandwidth L5.0+NR20.0 MHz - Channel Position M







Configuration C

Maximum Output Power 26.00 dBm / Port

Antenna Gain (dBi)	Modulation	Carrier Bandwidth	Output Power	
			Channel Position M	
Antenna Port			Average Power (dBm)	
			dBm	EIRP (dBm)
5.50				
A	LTE: QPSK	5+5+5+5+5+5 MHz	26.63	32.13
B	LTE: QPSK	5+5+5+5+5+5 MHz	25.43	30.93
C	LTE: QPSK	5+5+5+5+5+5 MHz	24.74	30.24
D	LTE: QPSK	5+5+5+5+5+5 MHz	25.17	30.67
Total			31.57	37.07
A	LTE: QPSK	10+10+10+10+10+10 MHz	26.07	31.57
B	LTE: QPSK	10+10+10+10+10+10 MHz	25.90	31.40
C	LTE: QPSK	10+10+10+10+10+10 MHz	26.18	31.68
D	LTE: QPSK	10+10+10+10+10+10 MHz	25.97	31.47
Total			32.05	37.55
A	LTE: QPSK	15+15+15+15+15+15 MHz	26.01	31.51
B	LTE: QPSK	15+15+15+15+15+15 MHz	25.93	31.43
C	LTE: QPSK	15+15+15+15+15+15 MHz	26.03	31.53
D	LTE: QPSK	15+15+15+15+15+15 MHz	26.10	31.60
Total			32.04	37.54
A	LTE: QPSK	20+20+20+20+20+20 MHz	25.78	31.28
B	LTE: QPSK	20+20+20+20+20+20 MHz	25.95	31.45
C	LTE: QPSK	20+20+20+20+20+20 MHz	25.89	31.39
D	LTE: QPSK	20+20+20+20+20+20 MHz	25.90	31.40
Total			31.90	37.40
A	NR: QPSK	20+20+20+20+20+20 MHz	25.71	31.21
B	NR: QPSK	20+20+20+20+20+20 MHz	25.60	31.10
C	NR: QPSK	20+20+20+20+20+20 MHz	25.81	31.31
D	NR: QPSK	20+20+20+20+20+20 MHz	25.77	31.27
Total			31.74	37.24
A	LTE20+NR40: QPSK	20+20+20+20+40+40 MHz	25.54	31.04
B	LTE20+NR40: QPSK	20+20+20+20+40+40 MHz	25.22	30.72
C	LTE20+NR40: QPSK	20+20+20+20+40+40 MHz	25.34	30.84
D	LTE20+NR40: QPSK	20+20+20+20+40+40 MHz	25.36	30.86
Total			31.39	36.89

Remarks

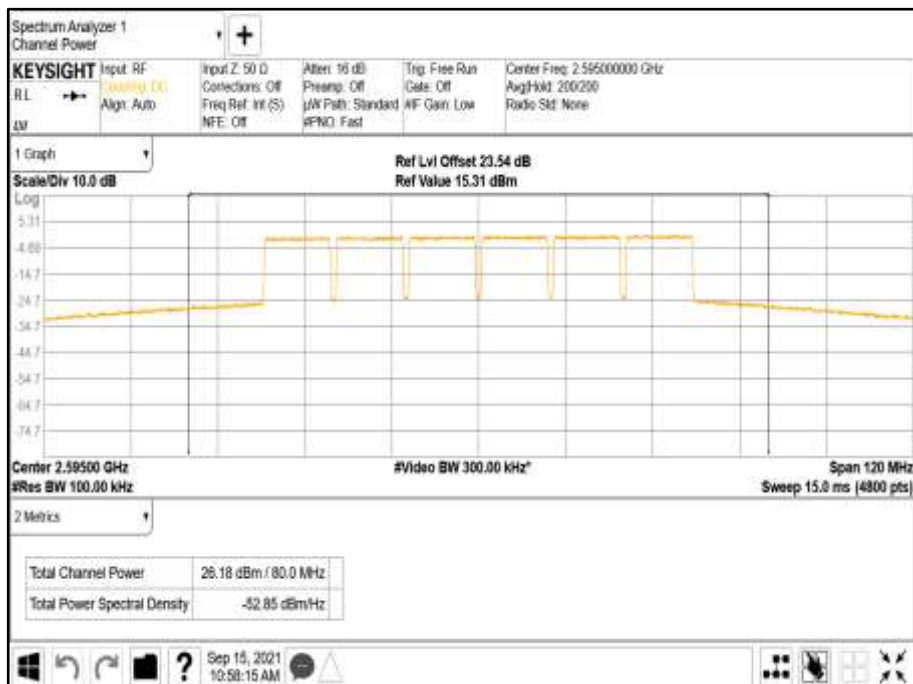
1. The plot results represent typical radio performance across the transmit pass band.
2. The highest power transmitter configuration is presented for compliance.



Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 5+5+5+5+5+5 MHz - Channel Position M



Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 10+10+10+10+10+10 MHz - Channel Position M

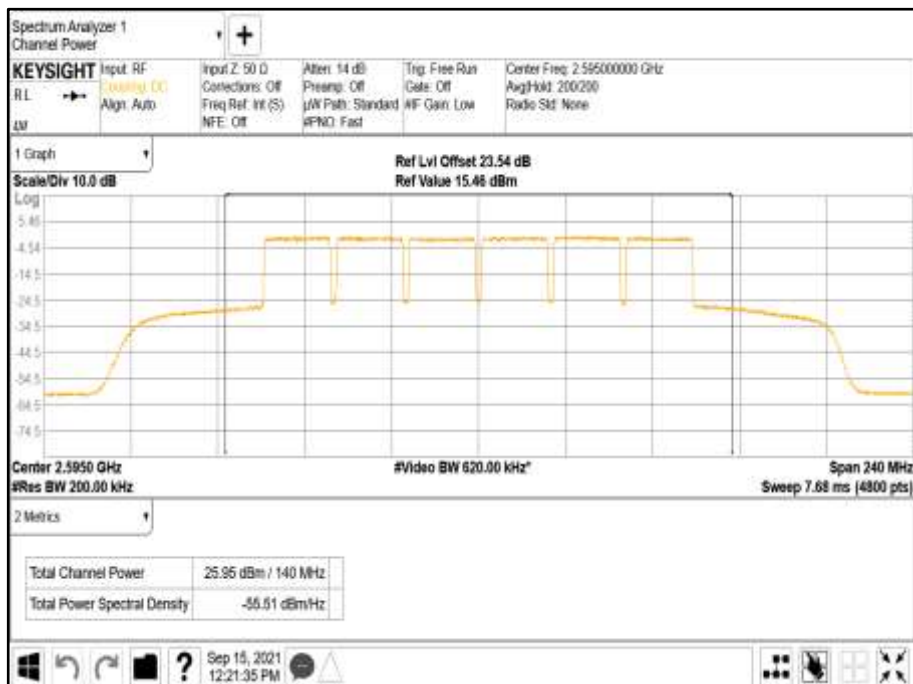




Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 15+15+15+15+15+15 MHz - Channel Position M



Antenna Port A Carrier Power - Modulation LTE: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position M

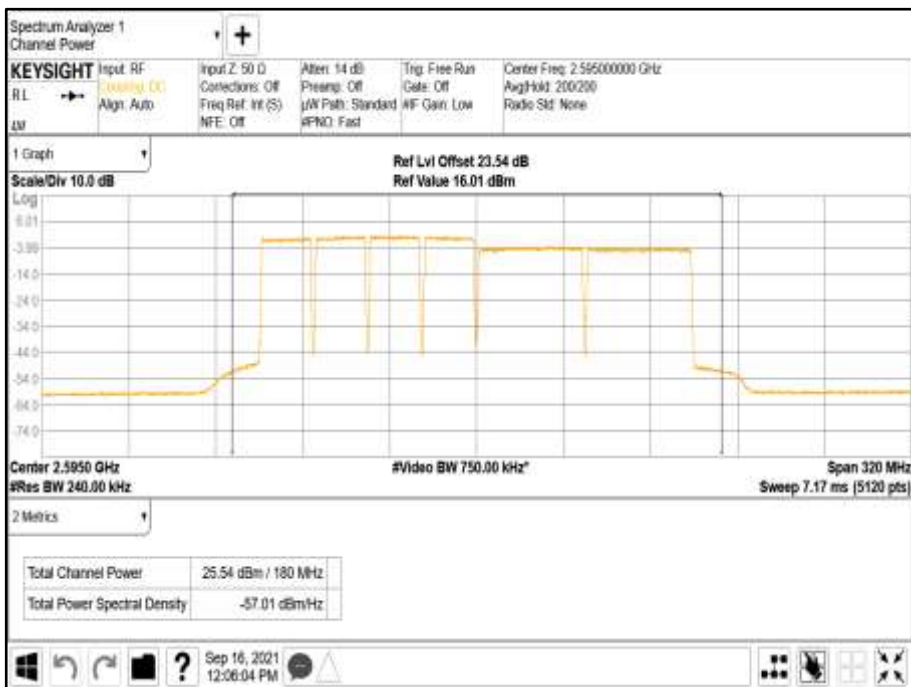




Antenna Port A Carrier Power - Modulation NR: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position M



Antenna Port A Carrier Power - Modulation LTE20+NR40: QPSK - Carrier Bandwidth 20+20+20+20+40+40 MHz - Channel Position M



Limit	
Maximum rated output power (27.5(h))	≤ 33 dBW + 10log (X/Y) dBW



**2.2 OCCUPIED BANDWIDTH**

**2.2.1 Specification Reference**

FCC CFR 47 Part 27, Clause 27.53  
 FCC CFR 47 Part 2, Clause 2.1049

**2.2.2 Date of Test and Modification State**

15 September 2021 - Modification State 0

**2.2.3 Test Equipment Used**

The major items of test equipment used for the above tests are identified in Section 3.1.

**2.2.4 Environmental Conditions**

Ambient Temperature 24.5°C  
 Relative Humidity 30.4%

**2.2.5 Test Method**

All measurements were made in accordance with FCC KDB 971168 D01.

**2.2.6 Test Results**

Configuration A

Maximum Output Power 26.00 dBm /Port

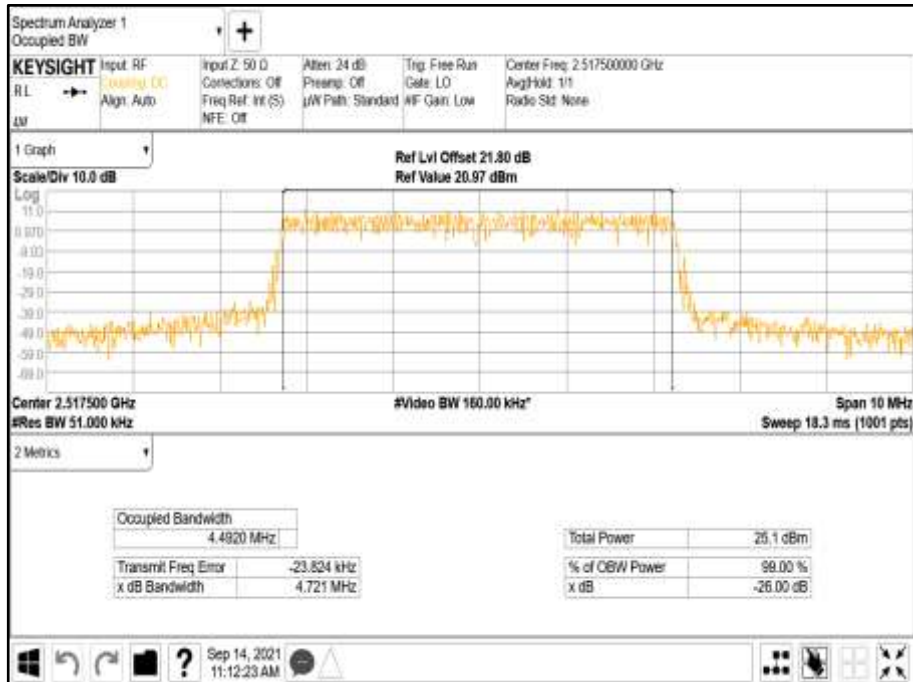
Modulation	Carrier Bandwidth	Result (MHz)	
		Channel Bandwidth	
		Occupied Bandwidth	-26 dB Bandwidth
LTE: QPSK	LTE: 5.0 MHz	4.49	4.72
LTE: QPSK	LTE: 10.0 MHz	8.91	9.42
LTE: QPSK	LTE: 15.0 MHz	13.39	14.02
LTE: QPSK	LTE: 20.0 MHz	17.84	18.42
NR: QPSK	NR: 20.0 MHz	18.30	19.25
NR: QPSK	NR: 40.0 MHz	37.46	39.02
NR: QPSK	NR: 50.0 MHz	47.43	48.75
NR: QPSK	NR: 60.0 MHz	57.62	59.65
NR: QPSK	NR: 80.0 MHz	77.03	79.62
NR: QPSK	NR: 100.0 MHz	97.47	100.30

Remarks

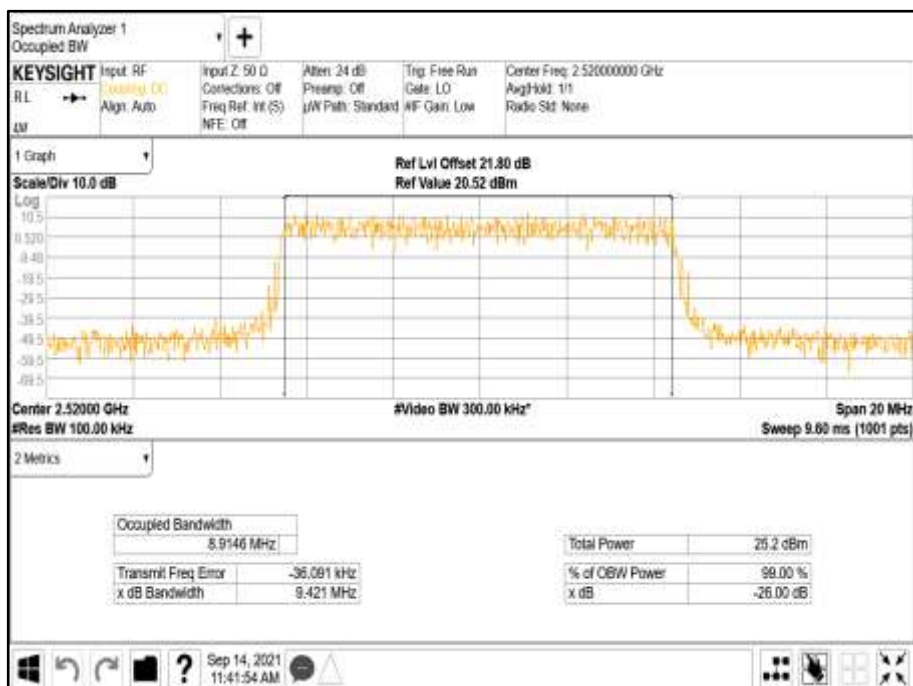
Representative occupied bandwidth performance results presented. Plot data performance for all transmitter ports and channel positions are on file and available on request.



Antenna A - Modulation LTE: QPSK - LTE Carrier Bandwidth LTE: 5.0 MHz - Channel Position B

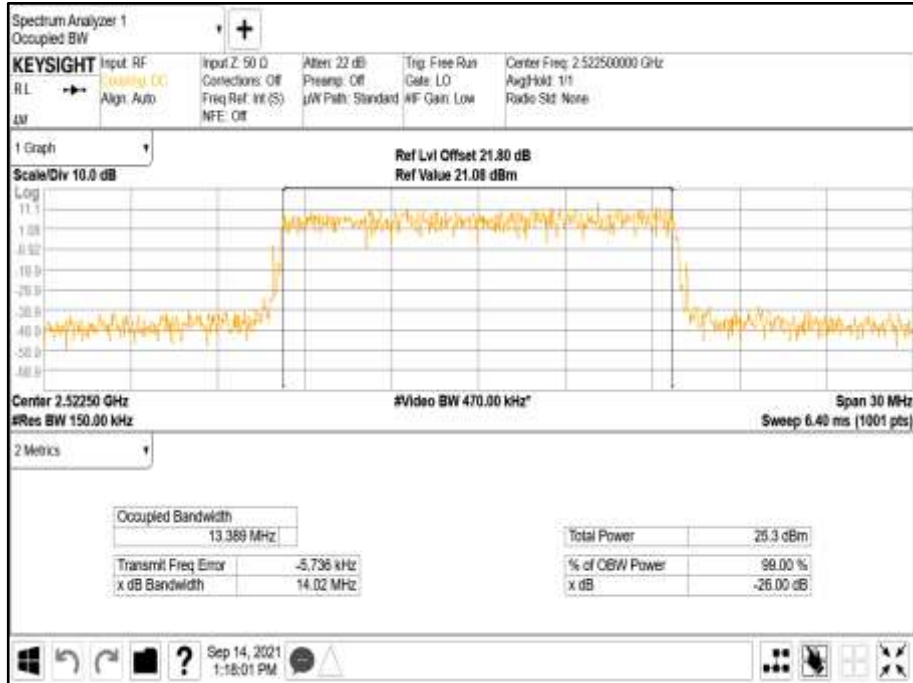


Antenna A - Modulation LTE: QPSK - LTE Carrier Bandwidth LTE: 10.0 MHz - Channel Position B

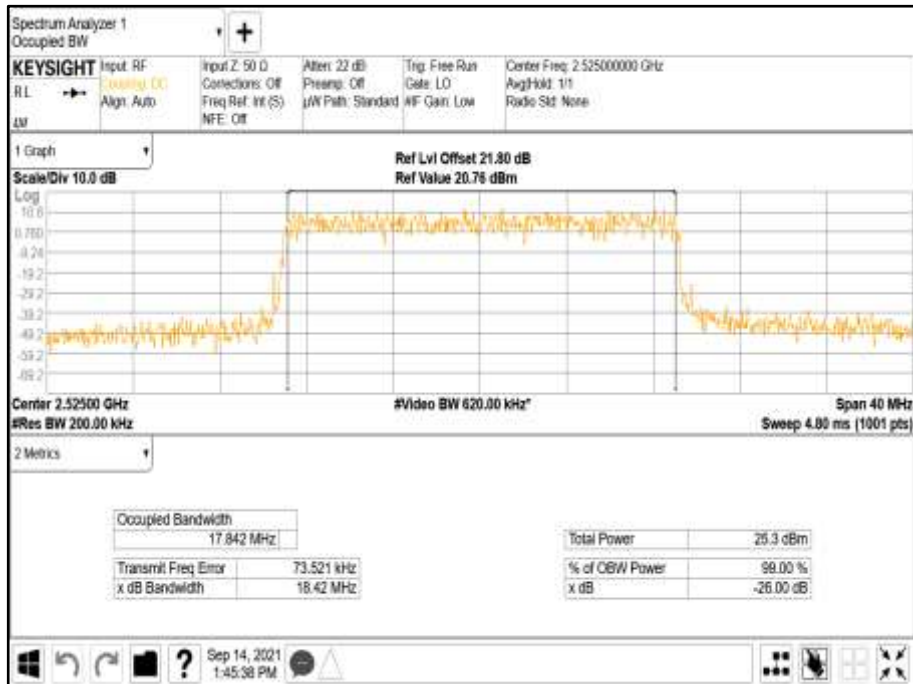




Antenna A - Modulation LTE: QPSK - LTE Carrier Bandwidth LTE: 15.0 MHz - Channel Position B

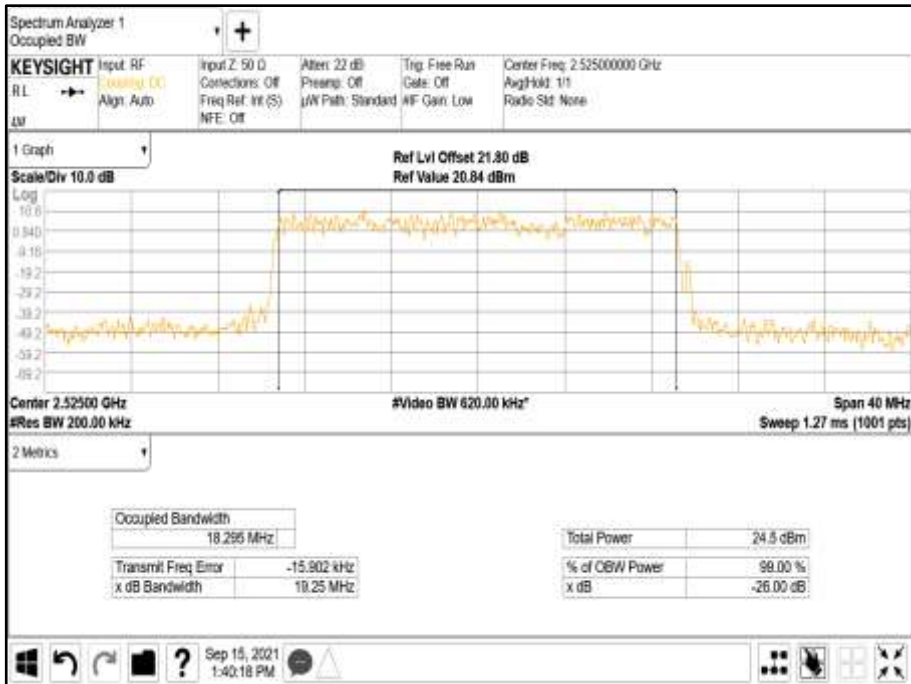


Antenna A - Modulation LTE: QPSK - LTE Carrier Bandwidth LTE: 20.0 MHz - Channel Position B

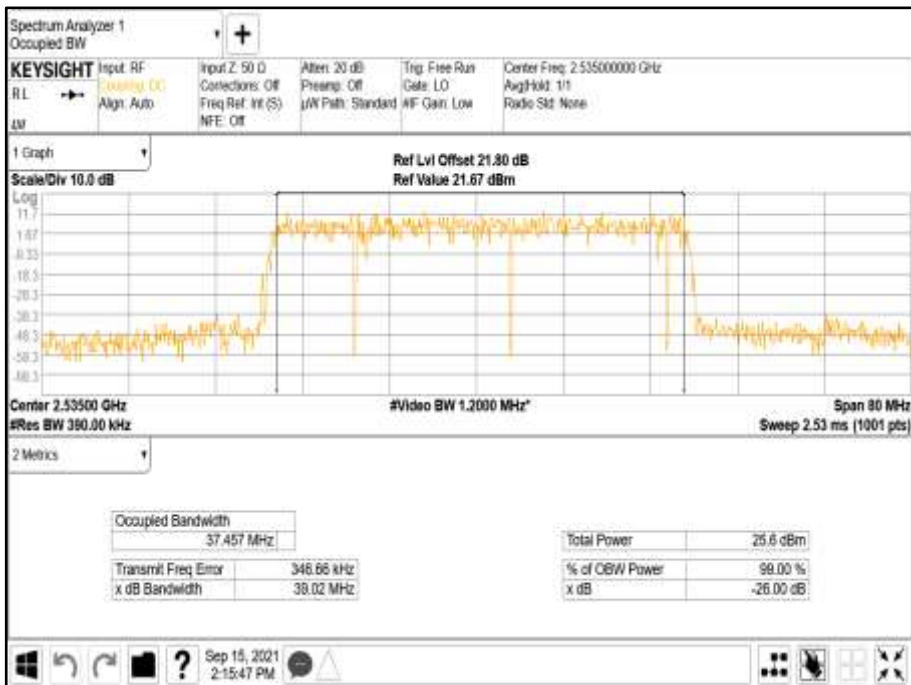




Antenna A - Modulation NR: QPSK -Carrier Bandwidth NR: 20.0 MHz - Channel Position B



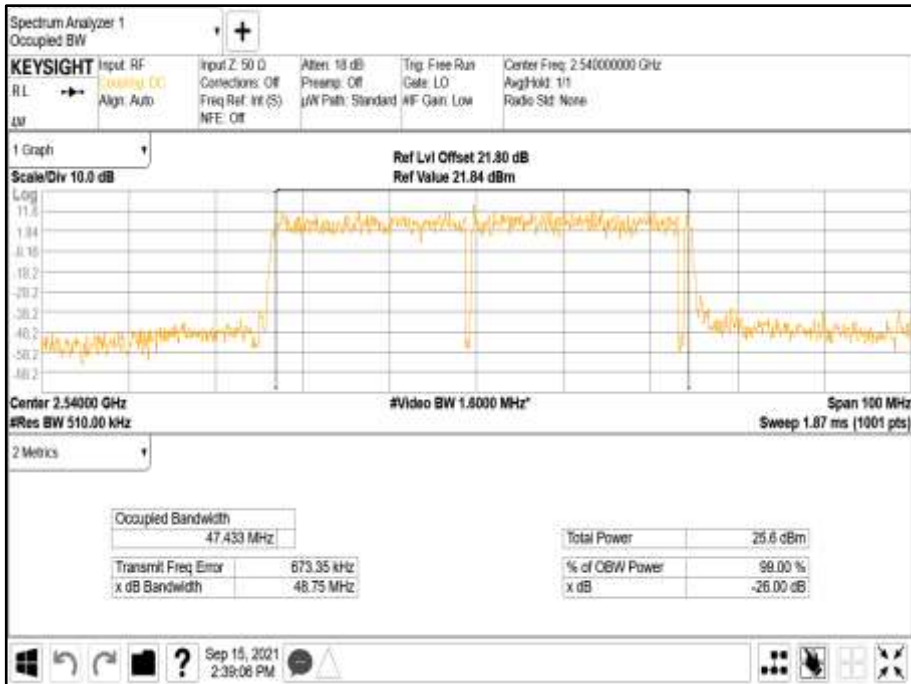
Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 40.0 MHz - Channel Position B



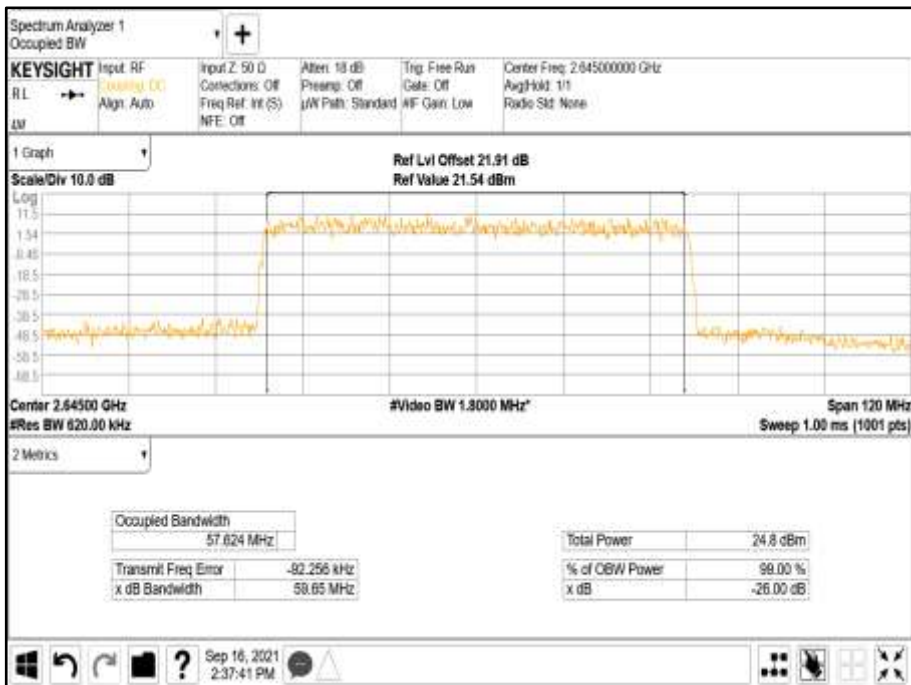




Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B

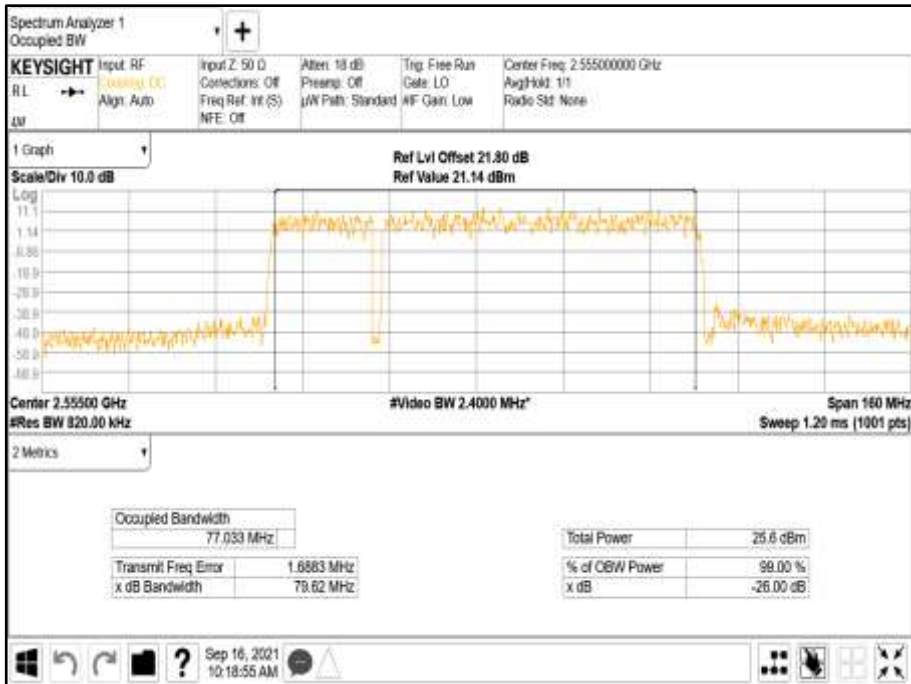


Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 60.0 MHz - Channel Position T

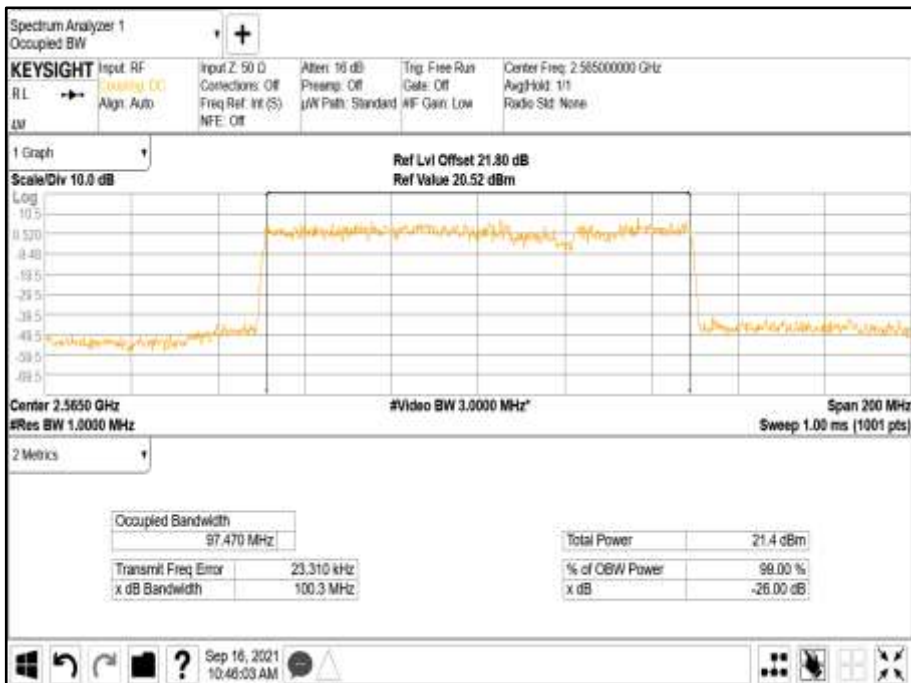




Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 80.0 MHz - Channel Position B



Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 100.0 MHz - Channel Position B





## 2.3 BAND EDGE

### 2.3.1 Specification Reference

FCC CFR 47 Part 27, Clause 27.53  
 FCC CFR 47 Part 2, Clause 2.1051

### 2.3.2 Date of Test and Modification State

15 and 16 September 2021 - Modification State 0

### 2.3.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

### 2.3.4 Environmental Conditions

Ambient Temperature 24.5 - 24.9°C  
 Relative Humidity 30.4 - 31.1%

### 2.3.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01, Clause 6.0.

Band Edge measurements were used an Integration Bandwidth of at least 1% of the measured 26dB Bandwidth.

Each antenna port has been declared as being equivalent, therefore measurements were made on one antenna port only. To account for this, the limit was tightened by  $10 * \text{Log}(N)$ , where N is equal to the number of MIMO antenna ports.

For 4 port, the limit was calculated as being  $-13 \text{ dBm} - 10 * \text{Log}(4) = -19 \text{ dBm}$ .

### 2.3.6 Test Results

Configuration A

Maximum Output Power 26.00 dBm / Port

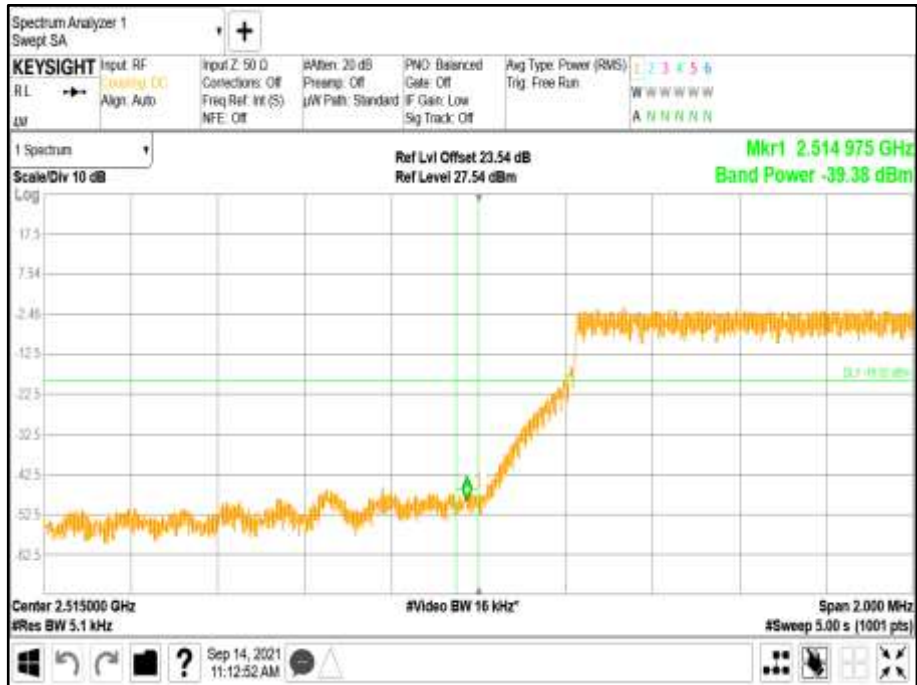
Modulation	Carrier Bandwidth	Band Edge (MHz)	
		Channel Position B	Channel Position T
LTE: QPSK	LTE: 5.0 MHz	2,517.5	2,672.5
LTE: QPSK	LTE: 10.0 MHz	2,520.0	2,670.0
LTE: QPSK	LTE: 15.0 MHz	2,522.5	2,667.5
LTE: QPSK	LTE: 20.0 MHz	2,525.0	2,665.0
NR: QPSK	NR: 20.0 MHz	2,525.0	2,665.0
NR: QPSK	NR: 40.0 MHz	2,535.0	2,655.0
NR: QPSK	NR: 50.0 MHz	2,540.0	2,650.0
NR: QPSK	NR: 60.0 MHz	2,545.0	2,645.0
NR: QPSK	NR: 80.0 MHz	2,555.0	2,635.0
NR: QPSK	NR: 100.0 MHz	2,565.0	2,625.0

#### Remarks

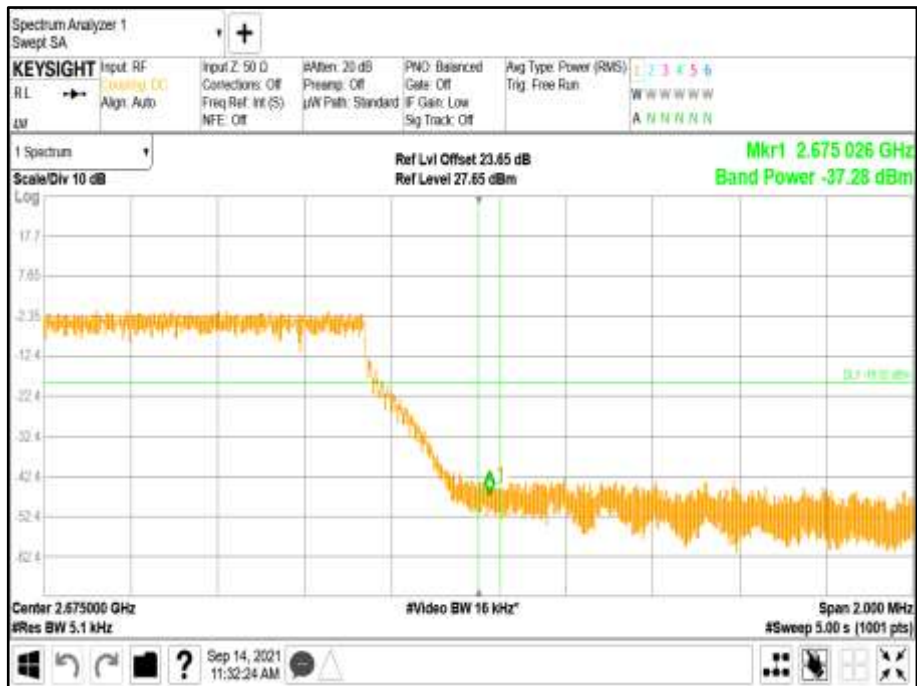
1. Bandedge data was captured from the transmit port with maximum measured power.
2. Worst case bandedge data presented.



Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 5.0 MHz - Channel Position B

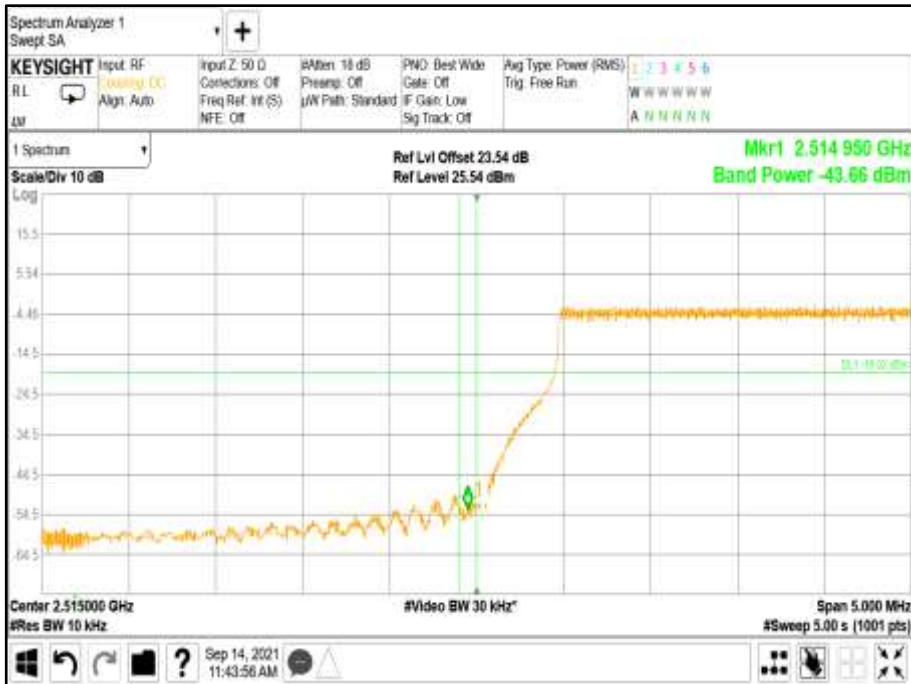


Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 5.0 MHz - Channel Position T





Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 10.0 MHz - Channel Position B

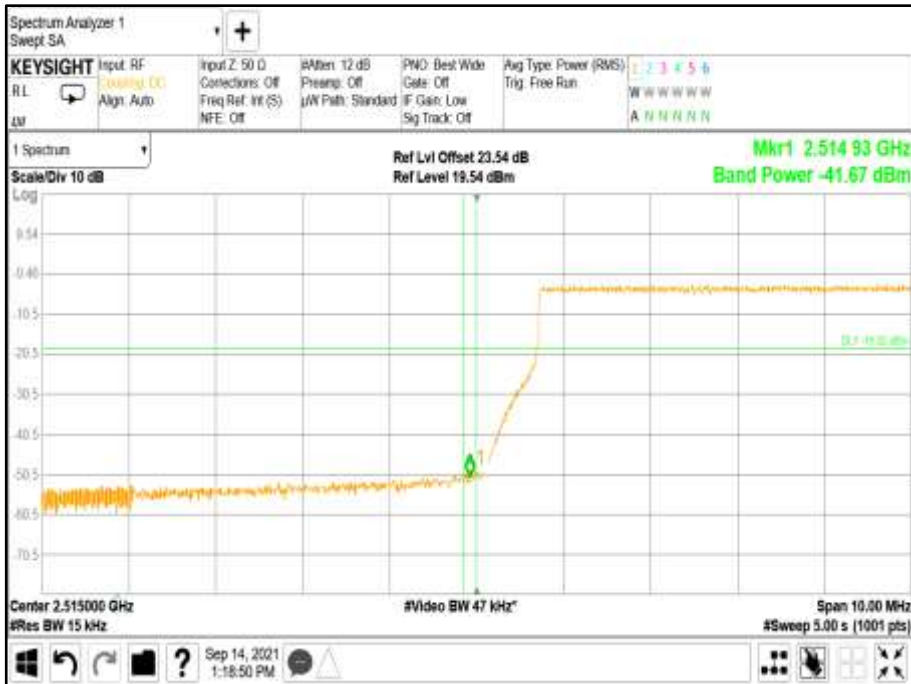


Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 10.0 MHz - Channel Position T

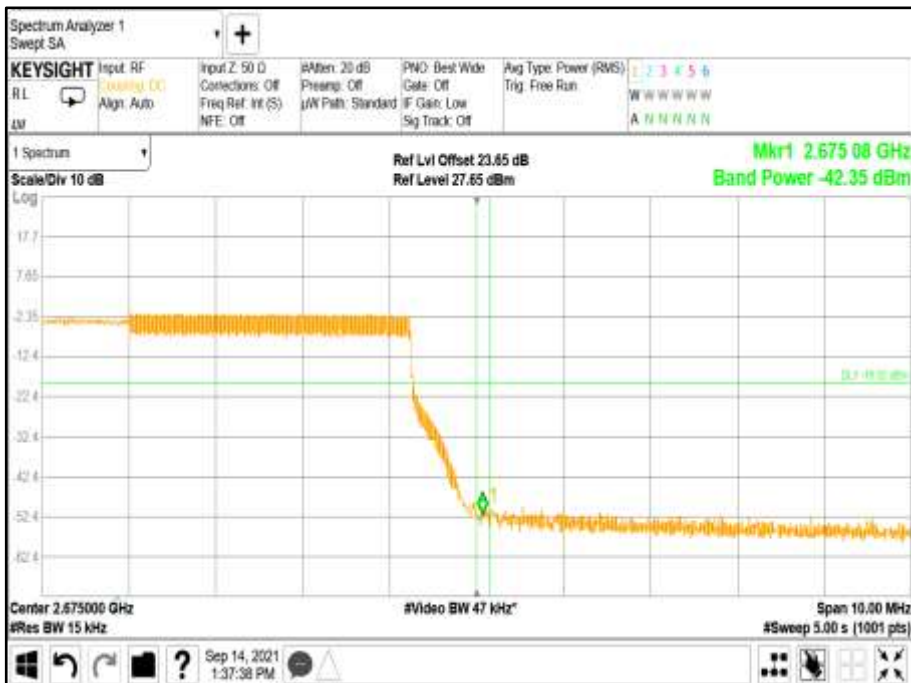




Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 15.0 MHz - Channel Position B

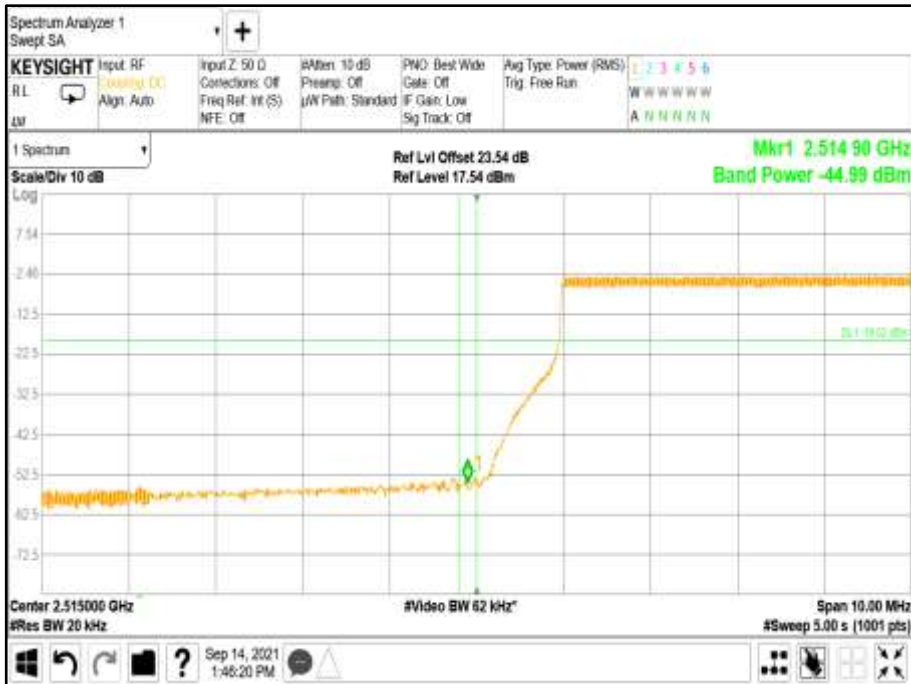


Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 15.0 MHz - Channel Position T

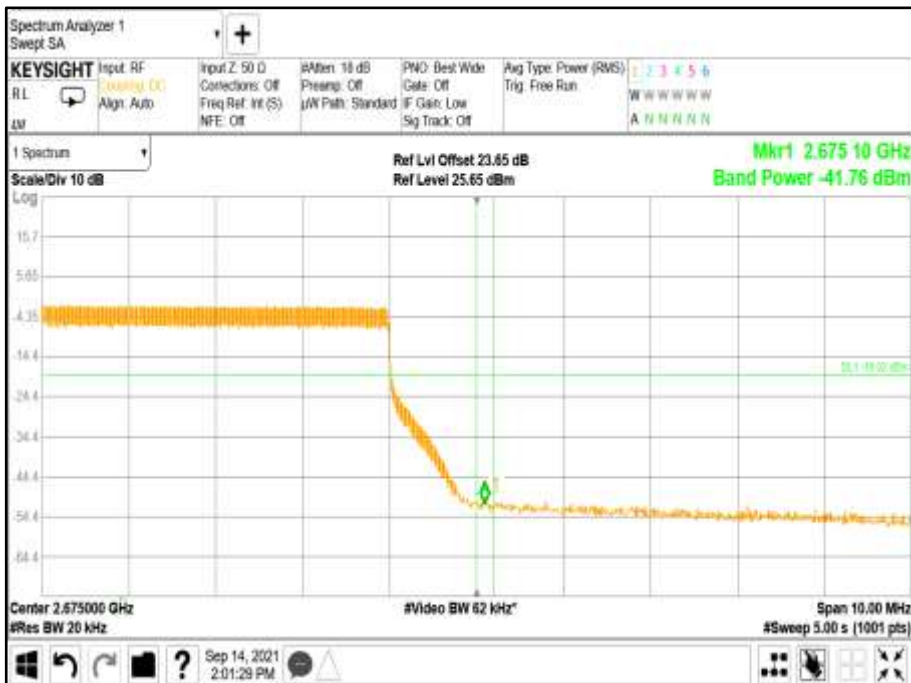




Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 20.0 MHz - Channel Position B

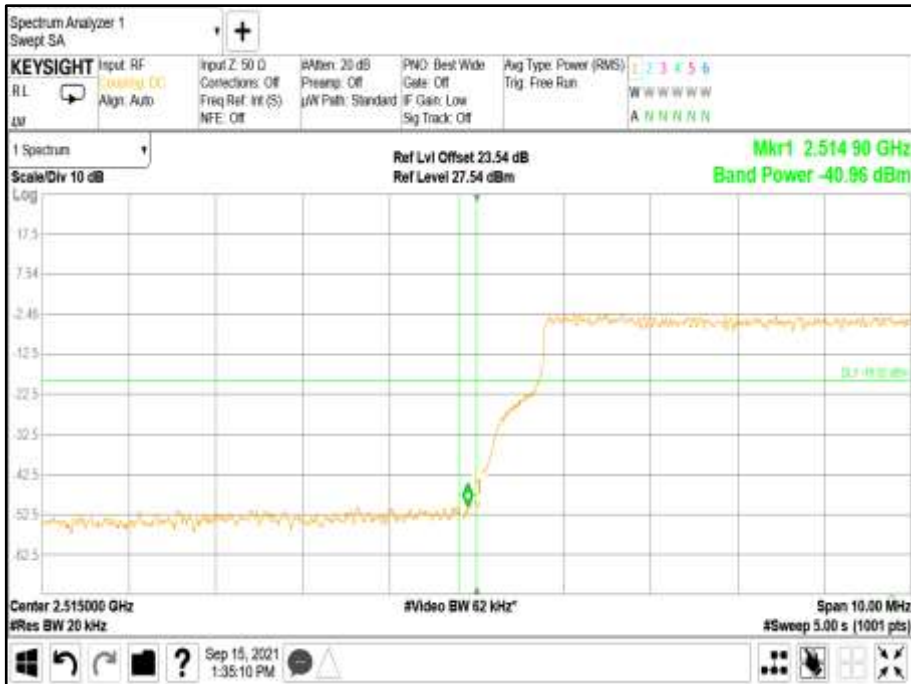


Antenna A - Modulation LTE: QPSK - Carrier Bandwidth LTE: 20.0 MHz - Channel Position T





Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 20.0 MHz - Channel Position B



Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 20.0 MHz - Channel Position T







Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 40.0 MHz - Channel Position B



Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 40.0 MHz - Channel Position T





Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position B

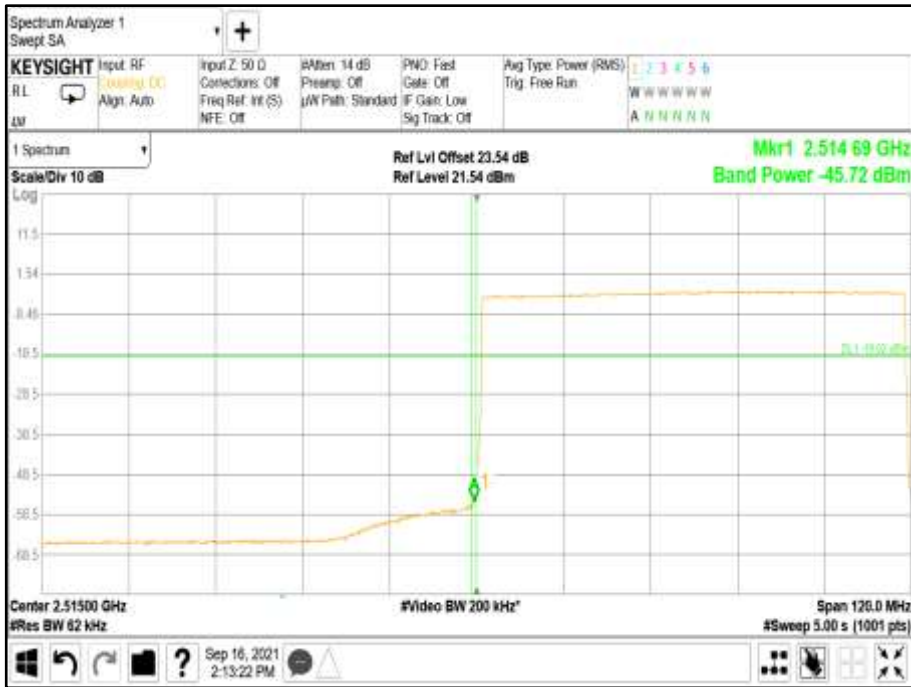


Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 50.0 MHz - Channel Position T





Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 60.0 MHz - Channel Position B



Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 60.0 MHz - Channel Position T





Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 80.0 MHz - Channel Position B



Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 80.0 MHz - Channel Position T





Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 100.0 MHz - Channel Position B



Antenna A - Modulation NR: QPSK - Carrier Bandwidth NR: 100.0 MHz - Channel Position T





Configuration B

Maximum Output Power 26.00 dBm / Port

Antenna	Modulation	Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B	Channel Position T
A	LTE5+NR20: QPSK	L5.0+NR20.0 MHz	2517.5+2530.0	2652.5+2665.0

Remarks

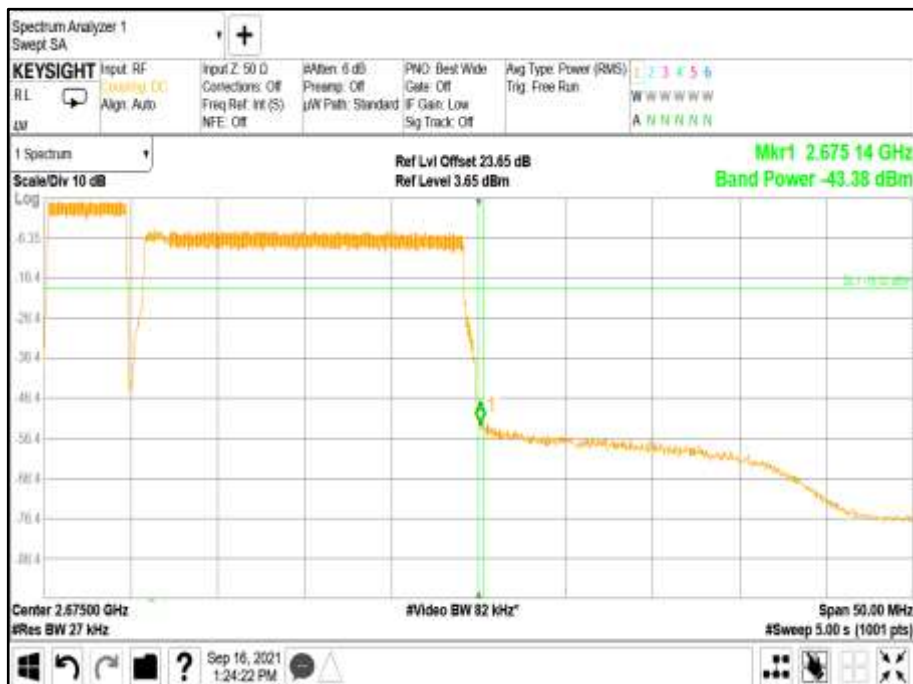
The plot results represent typical radio performance.



Antenna A - Modulation LTE5+NR20: QPSK - Carrier Bandwidth L5.0+NR20.0 MHz - Channel Position B



Antenna A - Modulation LTE5+NR20: QPSK - Carrier Bandwidth L5.0+NR20.0 MHz - Channel Position T





Configuration C

Maximum Output Power 26.00 dBm / Port

Antenna	Modulation	Carrier Bandwidth	Band Edge (MHz)	
			Channel Position B	Channel Position T
A	LTE: QPSK	5+5+5+5+5+5 MHz	2517.5+2522.5+2527.5+2532.5+2537.5+2542.5 MHz	2647.5+2652.5+2657.5+2662.5+2667.5+2672.5 MHz
A	LTE: QPSK	10+10+10+10+10+10 MHz	2520.0+2530.0+2540.0+2550.0+2560.0+2570.0 MHz	2620.0+2630.0+2640.0+2650.0+2660.0+2670.0 MHz
A	LTE: QPSK	15+15+15+15+15+15 MHz	2522.5+2537.5+2552.2+2567.5+2582.5+2597.5 MHz	2592.5+2607.5+2622.5+2637.5+2652.5+2667.5 MHz
A	LTE: QPSK	20+20+20+20+20+20 MHz	2525.0+2545.0+2565.0+2585.0+2605.0+2625.0 MHz	2565.0+2585.0+2605.0+2625.0+2645.0+2665.0 MHz
A	NR: QPSK	20+20+20+20+20+20 MHz	2525.0+2545.0+2565.0+2585.0+2605.0+2625.0 MHz	2565.0+2585.0+2605.0+2625.0+2645.0+2665.0 MHz
A	LTE20+NR40 : QPSK	20+20+20+20+40 MHz	2525.0+2545.0+2565.0+2585.0+2605.0+2625.0 MHz	2525.0+2545.0+2565.0+2585.0+2605.0+2625.0 MHz

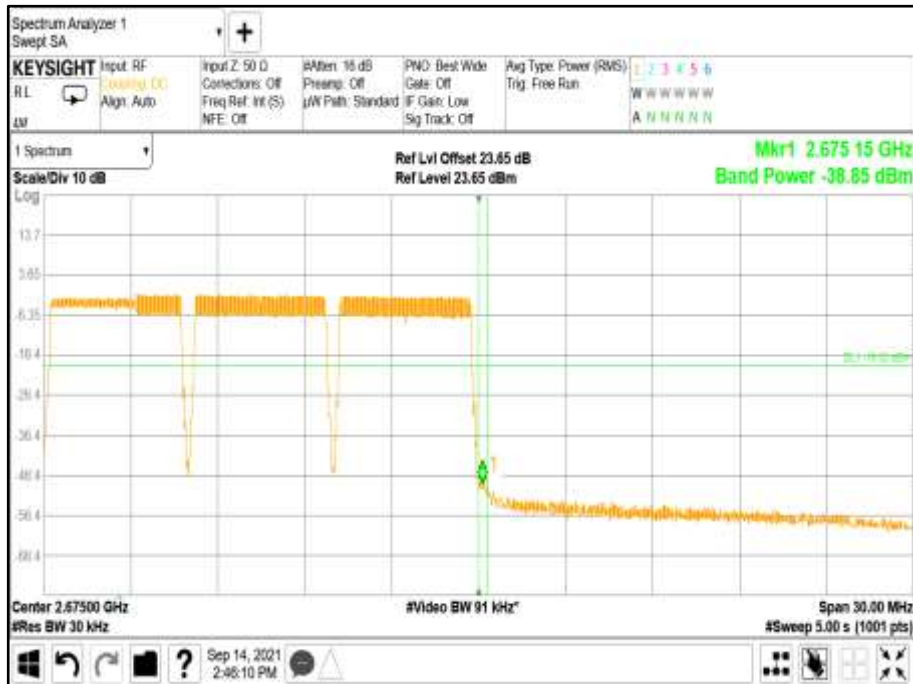




Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5+5+5+5+5+5 MHz - Channel Position B



Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5+5+5+5+5+5 MHz - Channel Position I





Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 10+10+10+10+10+10 MHz - Channel Position B



Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 10+10+10+10+10+10 MHz - Channel Position T





Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 15+15+15+15+15+15 MHz - Channel Position B



Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 15+15+15+15+15+15 MHz - Channel Position T





Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position B



Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position T





Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position B



Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position T





Antenna A - Modulation LTE20+NR40: QPSK - Carrier Bandwidth 20+20+20+20+40+40 MHz - Channel Position B



Antenna A - Modulation LTE20+NR40: QPSK - Carrier Bandwidth 20+20+20+20+40+40 MHz - Channel Position T





FCC Part 27.50 Clauses (m)(2)(v)

Limit	
Emission Limits	$\leq -19$ dBm/MHz (4 TX ports)



## 2.4 TRANSMITTER SPURIOUS EMISSIONS

### 2.4.1 Specification Reference

FCC CFR 47 Part 27, Clause 27.53  
FCC CFR 47 Part 2, Clause 2.1051

### 2.4.2 Date of Test and Modification State

15 and 16 September 2021 - Modification State 0

### 2.4.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

### 2.4.4 Environmental Conditions

Ambient Temperature	24.5 - 24.9°C
Relative Humidity	30.4 - 31.1%

### 2.4.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01, Clause 6.1.

Each antenna port has been declared as being equivalent, therefore measurements were made on one antenna port only. To account for this, the limit was tightened by  $10 * \text{Log}(N)$ , where N is equal to the number of MIMO antenna ports.

For 4 port, the limit was calculated as being  $-13 \text{ dBm} - 10 * \text{Log}(4) = -19 \text{ dBm}$ .

### 2.4.6 Test Results

Configuration A

Maximum Output Power 26.00 dBm / Port

#### Remarks

1. Transceiver spurious emissions have been searched for all channel bandwidths and antenna ports.
2. Representative spurious emissions performance using the most narrow channel bandwidth has been presented for all modulations. The smallest Ch BW has been found to result in the worst case performance.
3. Plot data performance for all channel bandwidths, and channel positions are on file and available on request.

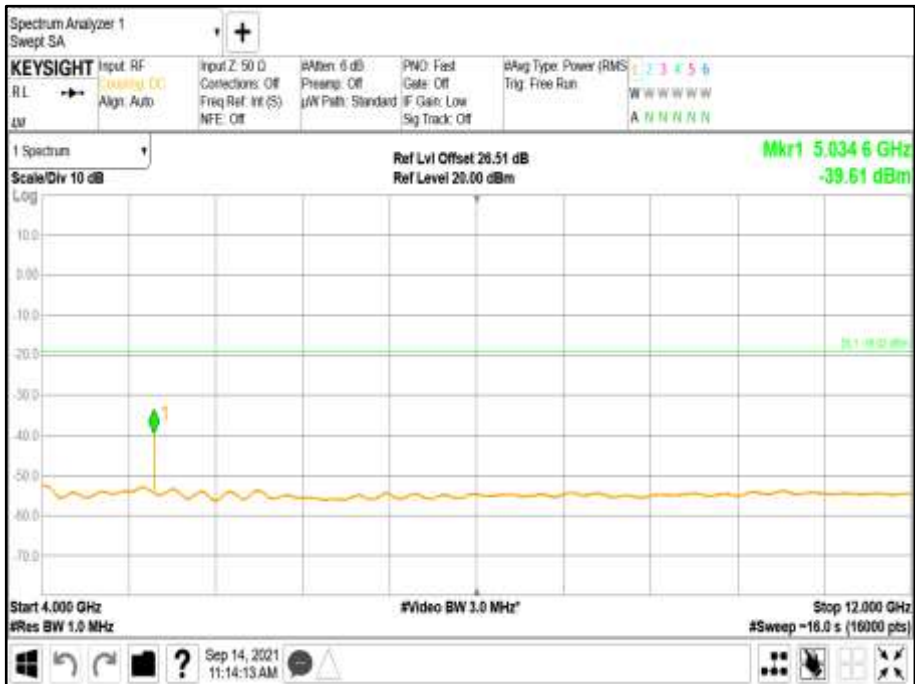




Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5.0 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz





Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5.0 MHz - Channel Position B - Band 3  
- Range 12000 to 18000 MHz

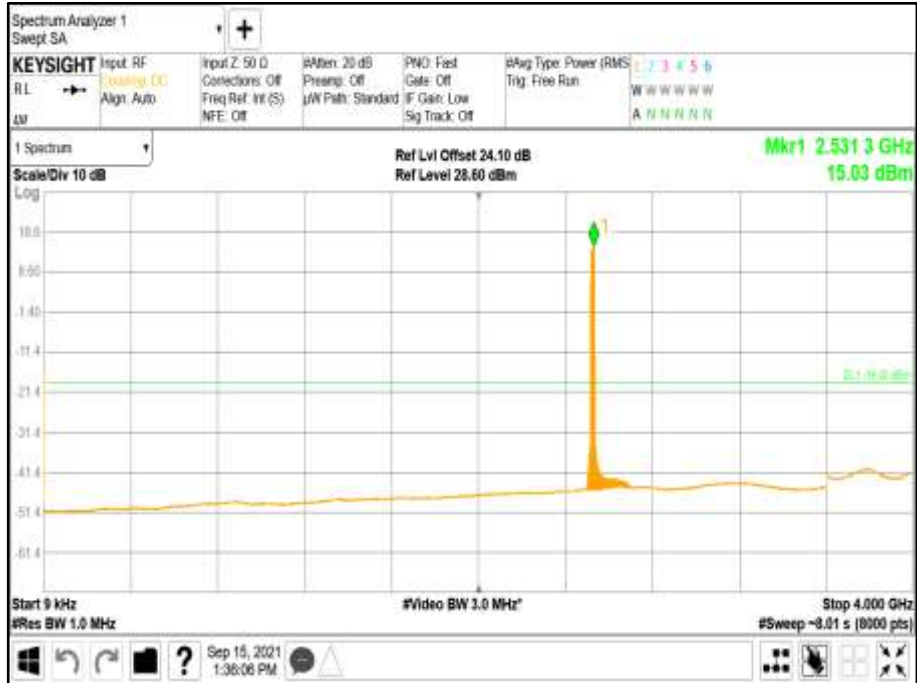


Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5.0 MHz - Channel Position B - Band 4  
- Range 18000 to 27000 MHz

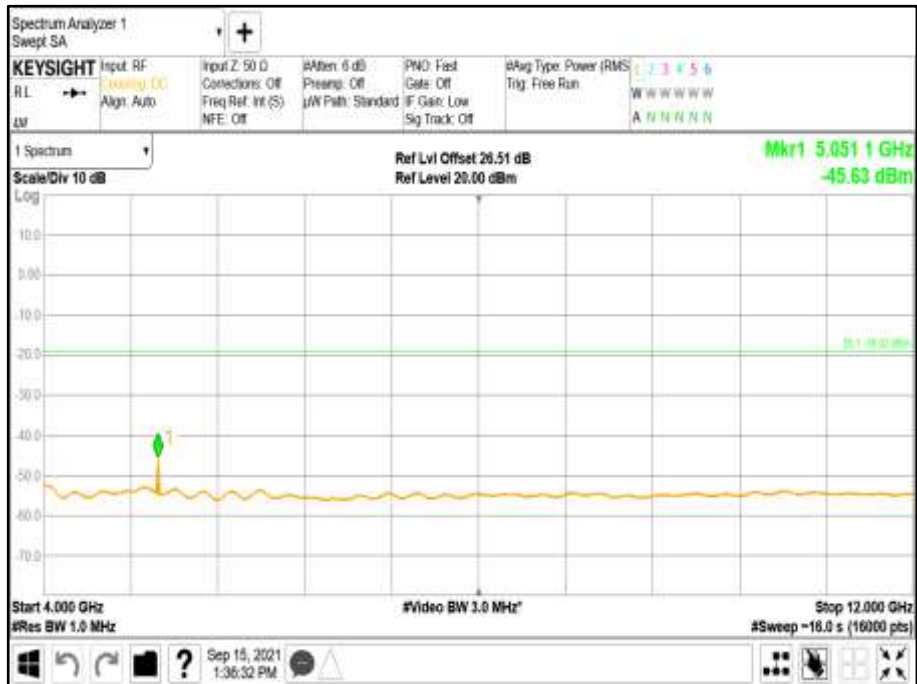




Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz

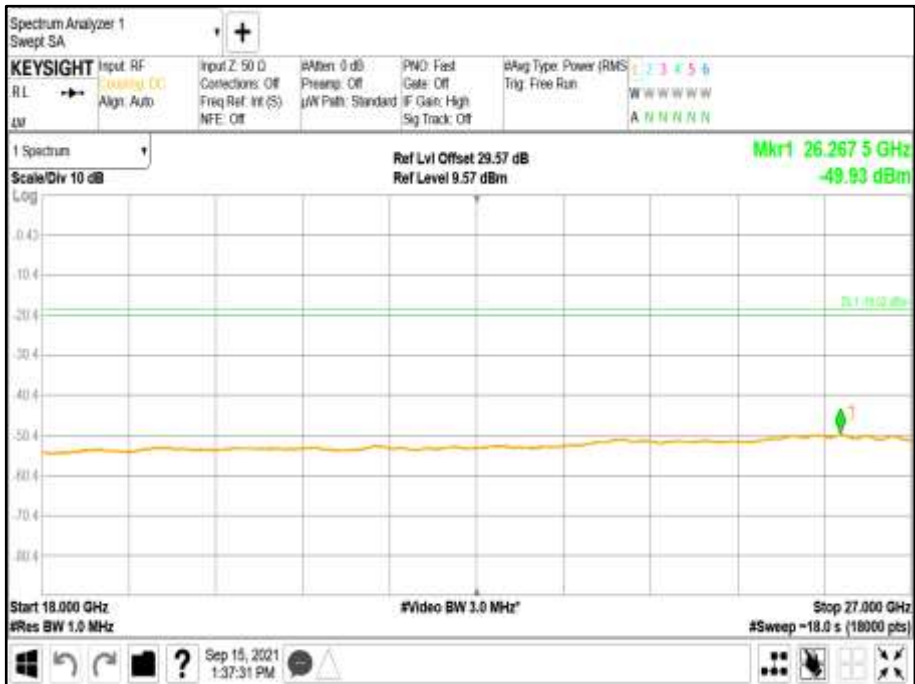




Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz





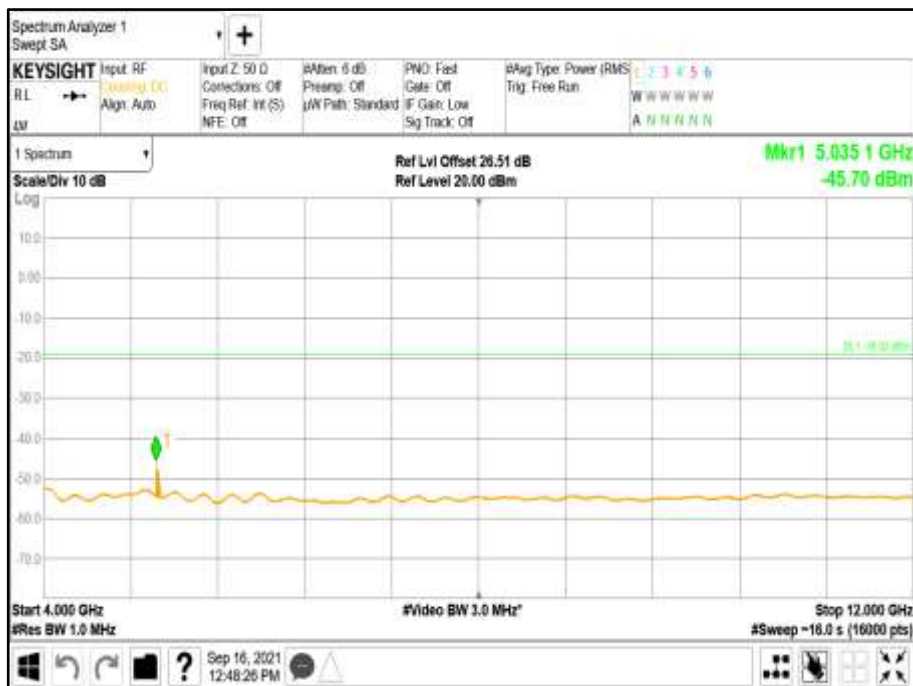
Configuration B

Maximum Output Power 26.00 dBm / Port

Antenna A - Modulation LTE5+NR20: QPSK - Carrier Bandwidth L5.0+NR20.0 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



Antenna A - Modulation LTE5+NR20: QPSK - Carrier Bandwidth L5.0+NR20.0 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz





Antenna A - Modulation LTE5+NR20: QPSK - Carrier Bandwidth L5.0+NR20.0 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



Antenna A - Modulation LTE5+NR20: QPSK - Carrier Bandwidth L5.0+NR20.0 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz





Configuration C

Maximum Output Power 26.00 dBm / Port

Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5+5+5+5+5 MHz - Channel Position  
B - Band 1.00 - Range 0.009 to 4000 MHz



Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5+5+5+5+5 MHz - Channel Position  
B - Band 2 - Range 4000 to 12000 MHz





Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5+5+5+5+5+5 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



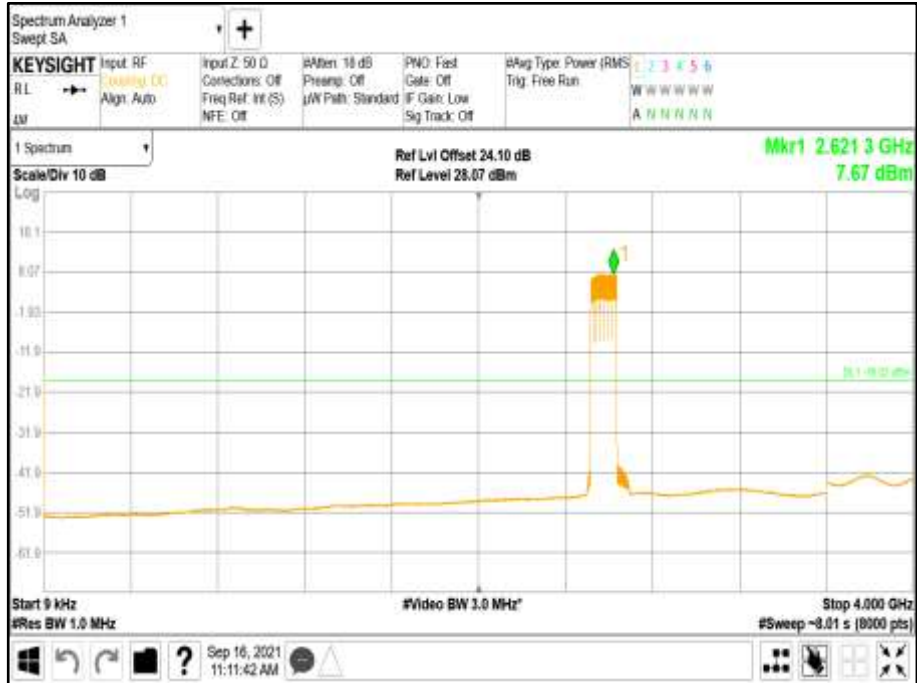
Antenna A - Modulation LTE: QPSK - Carrier Bandwidth 5+5+5+5+5+5 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



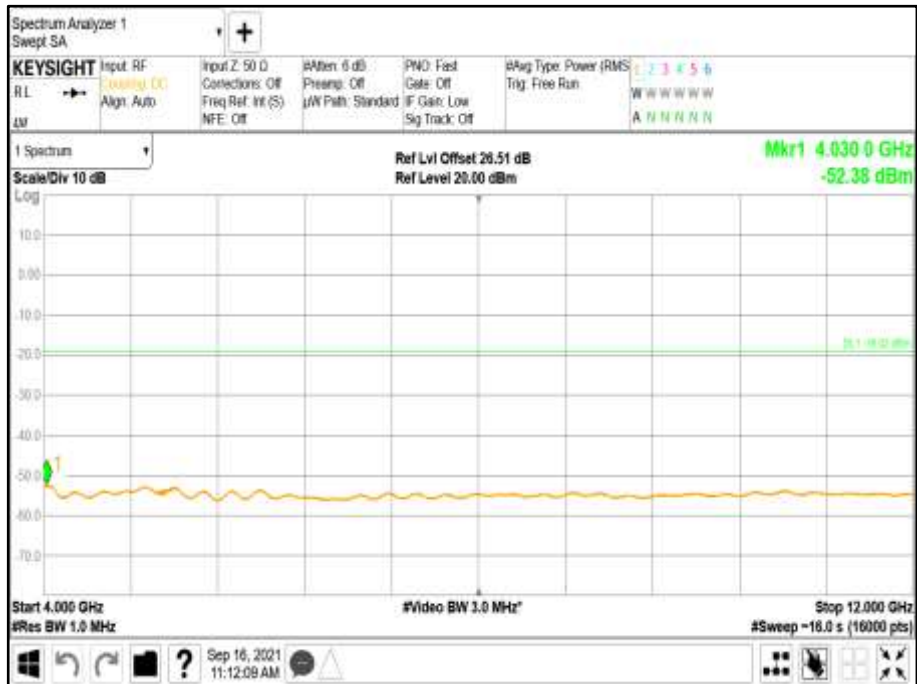




Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz





Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



Antenna A - Modulation NR: QPSK - Carrier Bandwidth 20+20+20+20+20+20 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz





Antenna A - Modulation LTE20+NR40: QPSK - Carrier Bandwidth 20+20+20+20+40+40 MHz - Channel Position B - Band 1.00 - Range 0.009 to 4000 MHz



Antenna A - Modulation LTE20+NR40: QPSK - Carrier Bandwidth 20+20+20+20+40+40 MHz - Channel Position B - Band 2 - Range 4000 to 12000 MHz





Antenna A - Modulation LTE20+NR40: QPSK - Carrier Bandwidth 20+20+20+20+40+40 MHz - Channel Position B - Band 3 - Range 12000 to 18000 MHz



Antenna A - Modulation LTE20+NR40: QPSK - Carrier Bandwidth 20+20+20+20+40+40 MHz - Channel Position B - Band 4 - Range 18000 to 27000 MHz



Limit	The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ db. < -19dBm / MHz
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## 2.5 FREQUENCY STABILITY

### 2.5.1 Specification Reference

FCC CFR 47 Part 27.54  
FCC CFR 47 Part 2, Clause 2.1055

### 2.5.2 Date of Test and Modification State

17 Sept 2021 - Modification State 0

### 2.5.3 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

### 2.5.4 Environmental Conditions

Ambient Temperature 25.3°C  
Relative Humidity 30.1%

### 2.5.5 Test Method

All measurements were made in accordance with FCC KDB 971168 D01, Clause 9 and ANSI C63.26 Clause 5.6

### 2.5.6 Test Results

Configuration A

Maximum Output Power 26.00 dBm / Port

Temperature	Voltage	B41K Frequency Error (Hz)
		Channel Position B (2 595 000 000 Hz)
-30°C	-48.0 V DC	1.6459
-20°C	-48.0 V DC	1.3314
-10°C	-48.0 V DC	1.2002
0°C	-48.0 V DC	2.0804
+10°C	-48.0 V DC	1.2391
+20°C	-40.5 V DC	1.1567
+20°C	-48.0 V DC	1.7245
+20°C	-57.5 V DC	1.6345
+30°C	-48.0 V DC	1.0722
+40°C	-48.0 V DC	-2.2251
+50°C	-48.0 V DC	1.2272

- Worst Case deviation = -0.00085746 ppm



Limit	The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.
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### **SECTION 3**

#### **TEST EQUIPMENT USED**



### 3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Due
Spectrum Analyzer	Keysight	PXA N9030B	MY57144347	24	24/04/2022
Thermometer	VWR	61161-364	192595396.00	24	25-10-2021
PSU	Xantrex	XKW60-50	E00109862	-	O/P Mon
Attenuator (20dB)	Mini-Circuits	BW-K10-2W44+	-	-	O/P Mon
Climate Chamber	Burnsco	RTC-37P-3-3	-07-07	-	O/P Mon

N/A – Not Applicable

O/P Mon – Output Monitored with Calibrated Equipment





### 3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter	MU	
Conducted Maximum Peak Output Power	30 MHz to 20 GHz Amplitude	± 0.7 dB	
Conducted Emissions	30 MHz to 20 GHz Amplitude	± 2.1 dB	
Frequency Stability	30 MHz to 2 GHz	± 5.0 Hz	
Occupied Bandwidth	Up to 20 MHz Bandwidth	5 MHz Bandwidth	± 11547 Hz
		10 MHz Bandwidth	± 23094 Hz
		15 MHz Bandwidth	± 34641 Hz
		20 MHz Bandwidth	± 46188 Hz
Band Edge	30 MHz to 20 GHz Amplitude	±0.8 dB	
Radiated Spurious Emissions	30 MHz to 1 GHz	± 5.2 dB	
	1 GHz to 40GHz	± 6.3 dB	

#### Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115:2007, Clause 4.4.3 and 4.5.1. (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8



## **SECTION 4**

### **ACCREDITATION, DISCLAIMERS AND COPYRIGHT**



#### 4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT



This report relates only to the actual item/items tested.

This report does not imply product endorsement by any government, accreditation agency, or TÜV SÜD Canada Inc.

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This report relates only to the actual item/items tested

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**ANNEX A**

**MODULE LIST**

Configuration A/B/C			
Product	Product No	R-State	Serial No
CT11	LPC 102 494/1	R2A	T01G495060
IRU 1648	KRC 161 842/1	R1D	TD3F105272
DOT 4469 B41K (EUT)	KRY 901 502/2	R1C	TD3W150451
Software Version:	CXP 203 0045/26	Revision:	R10B285