Ericsson AB

RF TEST REPORT

Report Type:
RF report

PRODUCT NAME:
Radio 2203 B66A

REPORT NUMBER:
231000272SHA-001

ISSUE DATE:
October 12, 2023

DOCUMENT CONTROL NUMBER:
TTRFFCC Part 27_V1 © 2018 Intertek

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Total Quality. Assured.

TEST REPORT

Report no.: 231000272SHA-001

Applicant:	Ericsson AB
	Isafjordsgatan 10 SE-164 80 Stockholm 16480 Sweden
Manufacturer:	Ericsson AB
	Isafjordsgatan 10 SE-164 80 Stockholm 16480 Sweden
FCC ID:	TA8AKRC161553-1
IC:	287AB-AS1615531

SUMMARY:

The equipment is tested according to the following standard(s) or Specification:

FCC CFR 47 Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

ISED RSS-139 Issue 4: Advanced Wireless Services Equipment Operating in the Bands 1710-1780 MHz and 2110-2200 MHz

PREPARED BY:	**REVIEWED BY:**
Yang Xu	Jackson Huang
Project Engineer Yang Xu	Reviewer Jackson Huang

Content

TEST REPORT

Revision History

Report No.	Version	Description	Issued Date
231000272SHA-001	Rev. 01	Initial issue of report	October 12, 2023

TEST REPORT

Measurement result summary

TEST ITEM	FCC REFERANCE	IC REFERANCE	RESULT
Max Output Power and Peak to Average Power Ratio and EIRP	27.50(d)	RSS-139 5.5	Pass
Occupied Bandwidth	27.53(h) 2.1049	RSS-GEN 6.7	Pass
Unwanted Emissions at Band Edge	27.53(h)	RSS-139 5.6	Pass
Conducted Unwanted Emission	27.53(h)	RSS-139 5.6	Pass
Frequency Stability	27.54	RSS-139 5.4	Pass

TEST REPORT

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Description:	Remote Radio Unit
Product name:	Radio 2203 B66A
Product number:	KRC 161 553/1
HVIN	AS1615531
Serial Number(s)	E390000FKR
Rating:	36V DC
Software Version:	CXP9013268%9_R91DE
Hardware Version:	R1F
Sample received date:	September 26, 2023
Date of test:	September 26, 2023 ~ October 8, 2023

1.2 Technical Specification

Frequency Range:	RX:1710 -1780MHz,TX:2110-2180MHz
Number of Antenna ports:	2 TX/RX
Supported RAT:	LTE, WCDMA, NR, NB-IoT In-band/Guard-band/Standalone
Supported other mode:	/
Max RF bandwidth (IBW):	WCDMA SR: 45MHz LTE/NR SR, MR: 45MHz NB-IoT Standalone: 20MHz
Supported Number of Carriers:	Maximum 6 carriers per port for all configuration
Supported modulation:	WCDMA: QPSK, 16QAM, 64QAM NR/LTE: QPSK, 16QAM, 64QAM, 256QAM NB_IoT: QPSK
Supported Channel Bandwidth:	NB-IoT Standalone: 200kHz WCDMA: 5MHz LTE:1.4,3, 5, 10, 15, 20 MHz NR: 5, 10, 15, 20, 25, 30, 35,40 MHz
Declaration output power:	Maximum 37.0 dBm (5W) per port

1.3 Description of Test Facility

Name:	Intertek Testing Services Shanghai
Address 1:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Address 2:	F9&F8&F7, Tianfu Software Park E7 Tower, No. 1366 Tianfu Avenue Middle, Hightech Zone, Chengdu City, Sichuan Province, P.R. of China
Telephone:	+86 21 61278200
Telefax:	+86 21 54262353
The test facility is recognized, certified, or accredited by these organizations:	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	A2LA Accreditation Lab Certificate Number: 3309.02

2 TEST SPECIFICATIONS

2.1 Related documents

FCC Part 27 (2021)
FCC Part 2 (2021)
ISED RSS-139 issue 4 September 29, 2022
ISED RSS-Gen issue 5 March 2019 Amendment 1
ANSI C63.26:2015
KDB 971168 D01 v03r01
KDB 662911 D01 v02r01

2.2 Product Information

The Equipment Under Test (EUT) is an Ericsson Remote Radio Unit working in the wireless communications services 2100MHz band which provides communication connections to network in WCDMA / LTE / NB-IoT / NR modes and MSR modes. Radio 2203 B66A operates from a -48V DC.

The EUT includes 2 TX/RX ports and it can be configured to transmit in MIMO mode, and MIMO mode was used for measurements as the worst configuration. The complete testing was performed with the EUT transmitting at maximum RF power unless otherwise stated.

A full technical description can be found in the Manufacturer’s documentation.

2.3 Configuration Description

Initial pre-testing was carried out to determine the worst case modulation scheme by measuring the output power from QPSK, 16QAM, 64QAM and 256QAM on the middle channel of one antenna port. From these tests, it was determined that 256QAM was the worst case modulation scheme and was used for all testing.
Complete testing was carried out on the worst case antenna port which was determined by the highest output power from the 2 measured ports on worst case modulation scheme and worst bandwidth. The worst antenna port was antenna B.
The settings below were used for all measurements unless otherwise noted:

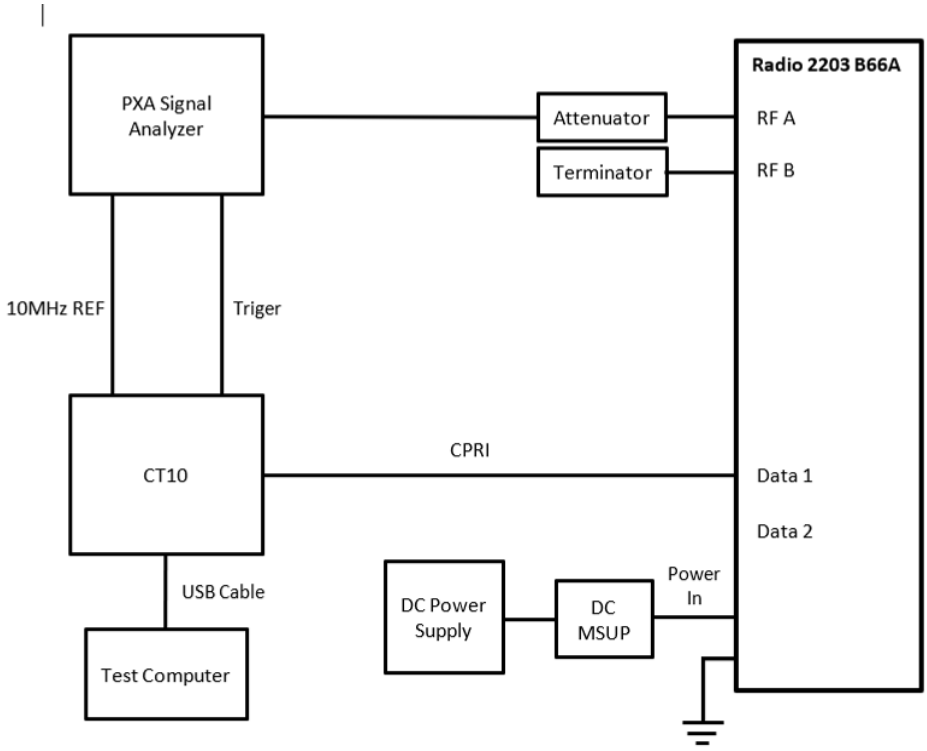
NR

Configuration	No. of Carriers	NR Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-1C	1NR	25	2122.5	2145	2167.5
		30	2125	2145	2165
		35	2127.5	2145	2162.5
		40	2130	2145	2160

Configuration	No. of Carriers	NR Carrier Bandwidth (MHz)	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-1C-BE	1NR	25	2122.5	-	2167.5
		30	2125	-	2165
		35	2127.5	-	2162.5
		40	2130	-	2160

2.4 Test Setup

Conducted Measurement:



No.	Auxiliary Equipment	Product Number / Model Type	Version
1	Test computer	DELL OptiPlex 3050	-
2	CT10	LPC 102487/1	R1C
3	DC MSUP	Support 6502	-
4	GNSS Rubidium clock	HJ5418A-V1	-
5	Terminator	TFZ50-3R	

2.5 Test environment condition:

Test items	Temperature	Humidity
Max Output Power and Peak to Average Power Ratio and EIRP	23°C	54% RH
Occupied Bandwidth		
Unwanted Emissions at Band Edge		
Conducted Unwanted Emission		
Frequency Stability	Please refer to clause 8	

2.6 Instrument list

RF test					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☐	Signal Analyzer	Rohde & Schwarz	FSVA3044	101087	2024-07-09
☒	Signal Analyzer	Keysight	N9030B	MY57140894	2024-07-09
☐	Signal Generator	Rohde & Schwarz	SMW200A	105850	2023-12-09
☐	Signal Generator	Rohde & Schwarz	SMU200A	103211	2023-12-09
☐	Climatic Chamber	Chongqing Yinhe	SDJ61F	201700266	2024-07-09
☒	Climatic Chamber	Chongqing Yinhe	SDJ61F	201700268	2023-12-09
☐	TRUE RMS CLAMP METER	FLUKE	317	40500136WS	2024-07-22
☒	Hygrometer	TESTO	608-H1	1745127471	2023-12-09
☒	Hygrometer	TESTO	608-H1	1745127476	2023-12-09
☒	NWA	Keysight	N5230A	MY46400786	2024-07-09
☒	DC Power Supply	Keysight	N8737A	US21E7359S	2024-07-09
☒	10dB Attenuator	SHX	2.92TS100-10-26.5-A	220323411	NA
☒	10dB Attenuator	SHX	2.92TS100-10-26.5-A	220323412	NA
☒	20dB Attenuator	SHX	2.92TS100-20-26.5-A	220323413	NA
☒	20dB Attenuator	SHX	2.92TS100-20-26.5-B	220323418	NA

2.7 Measurement uncertainty

The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Test item	Measurement uncertainty
Maximum output power	0.73dB
Occupied Bandwidth	0.88%
Unwanted Emissions at Band Edge	3.03dB
Conducted Unwanted Emission	3.03dB
Frequency stability	0.77×10^{-7}

3 Maximum Output Power and Peak to Average Power Ratio and EIRP

Test result: Pass

3.1 Limit

Output Power:

(EIRP) 1640 W(62.15dBm) or 3280W(65.16dBm) for emission bandwidth ≤ 1MHz

1640 W/MHz(62.15dBm/MHz) or 3280W/MHz(65.16dBm/MHz) for emission bandwidth > 1MHz

Peak to Average Ratio: ≤13 dB

3.2 Measurement Procedure

The EUT was configured to transmit on maximum power and proper modulation. The transmitter power shall be measured in terms of a root-mean-square (RMS) average value. In case of the EUT was configured to MIMO mode, since the EUT transmits on all antennas simultaneously in the same frequency range, using the Measure-and-Sum approach, the output power at all antennas were tested, and the total output power were then summed mathematically in linear power units according to FCC KDB 662911 D01.

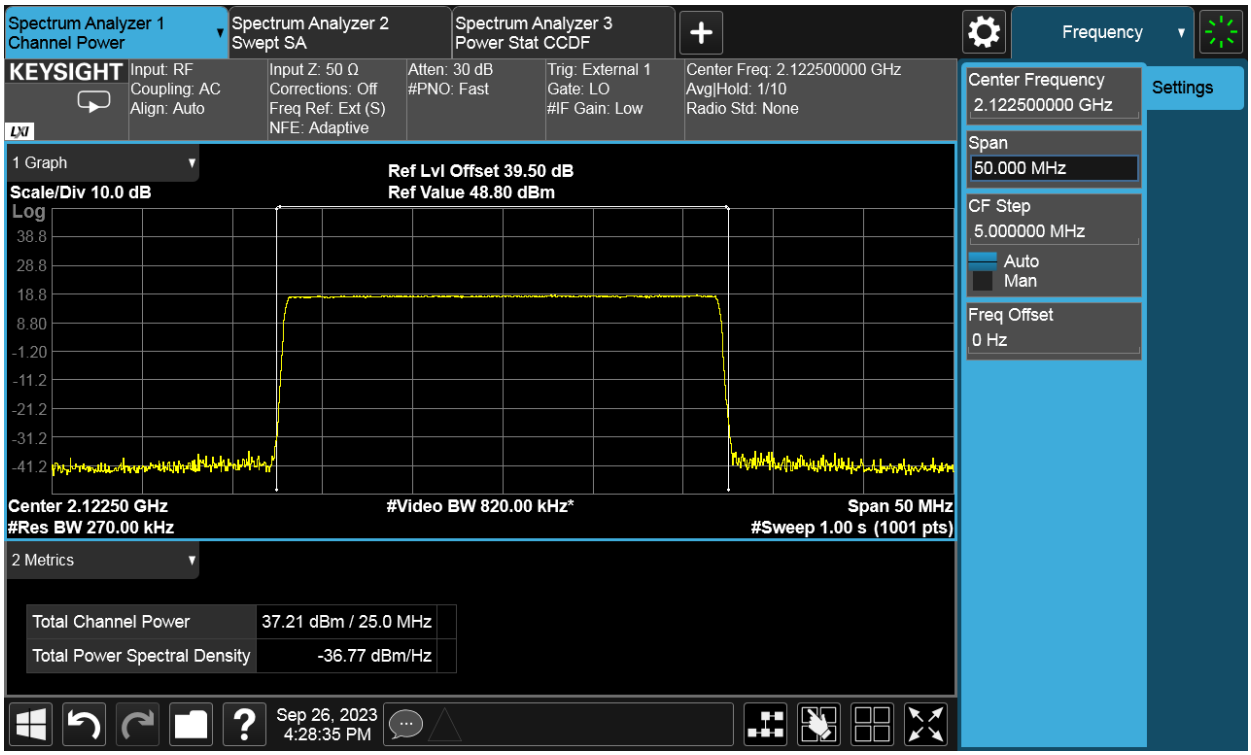
A peak to average ratio measurement is performed at the conducted ports of the EUT for single carrier for single RAT mode. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) was used and 0.1% probability value recorded.

3.3 Measurement result

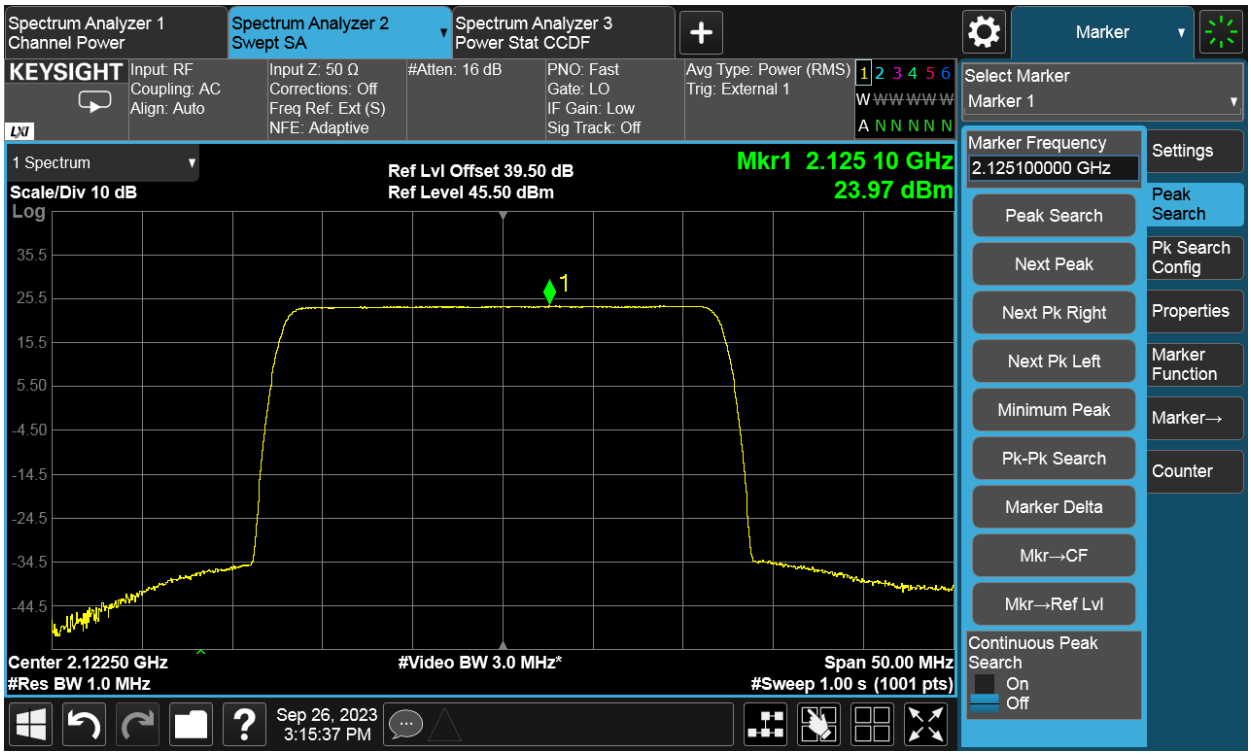
NR-1C

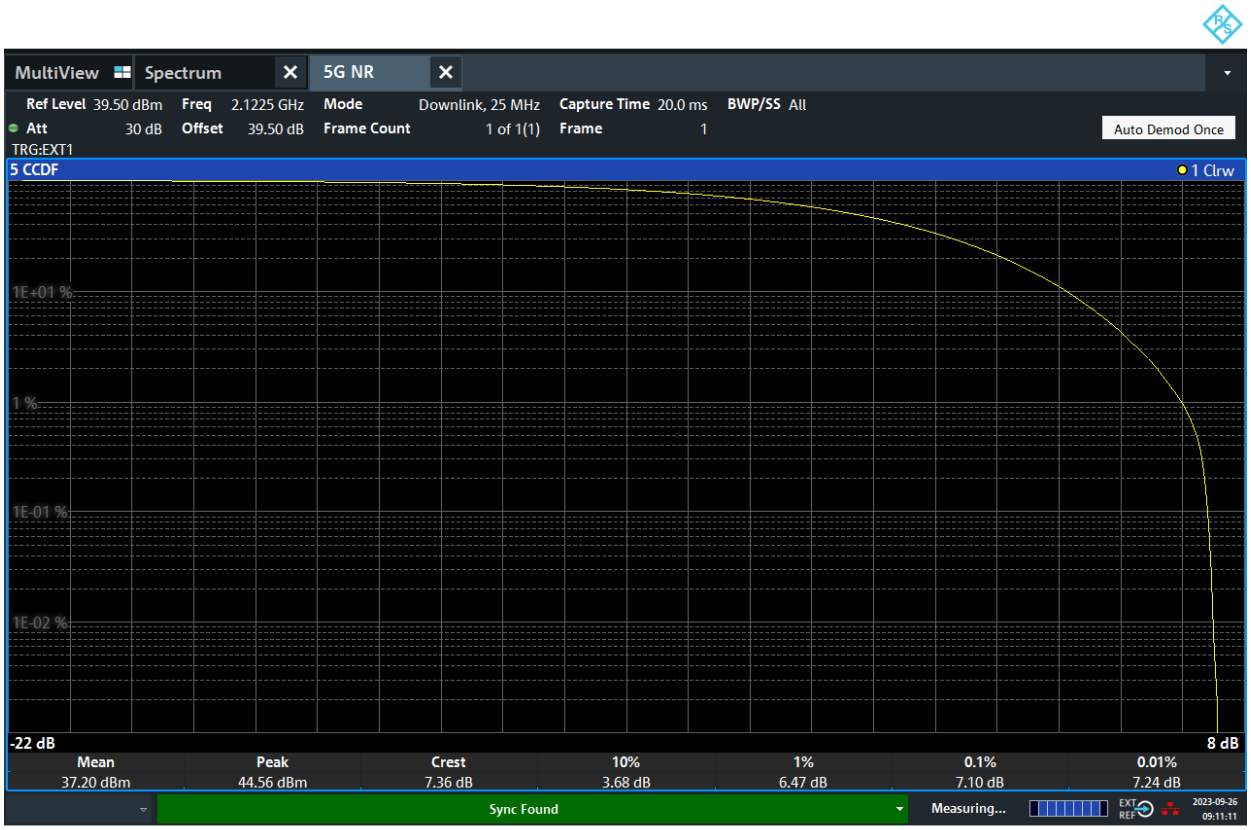
Antenna Port	NR Modulation	NR Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	256QAM	25	37.21	23.96	7.11	37.24	23.94	7.11	37.18	23.95	7.28
B	256QAM	25	37.21	23.97	7.10	37.26	24.02	7.10	37.16	24.01	7.29
Total conducted power			40.22	26.98	-	40.26	26.99	-	40.18	26.99	-
EIRP limit			-	62.15	13.00	-	62.15	13.00	-	62.15	13.00
Max antenna gain			-	35.17	-	-	35.16	-	-	35.16	-

Channel B



TEST REPORT





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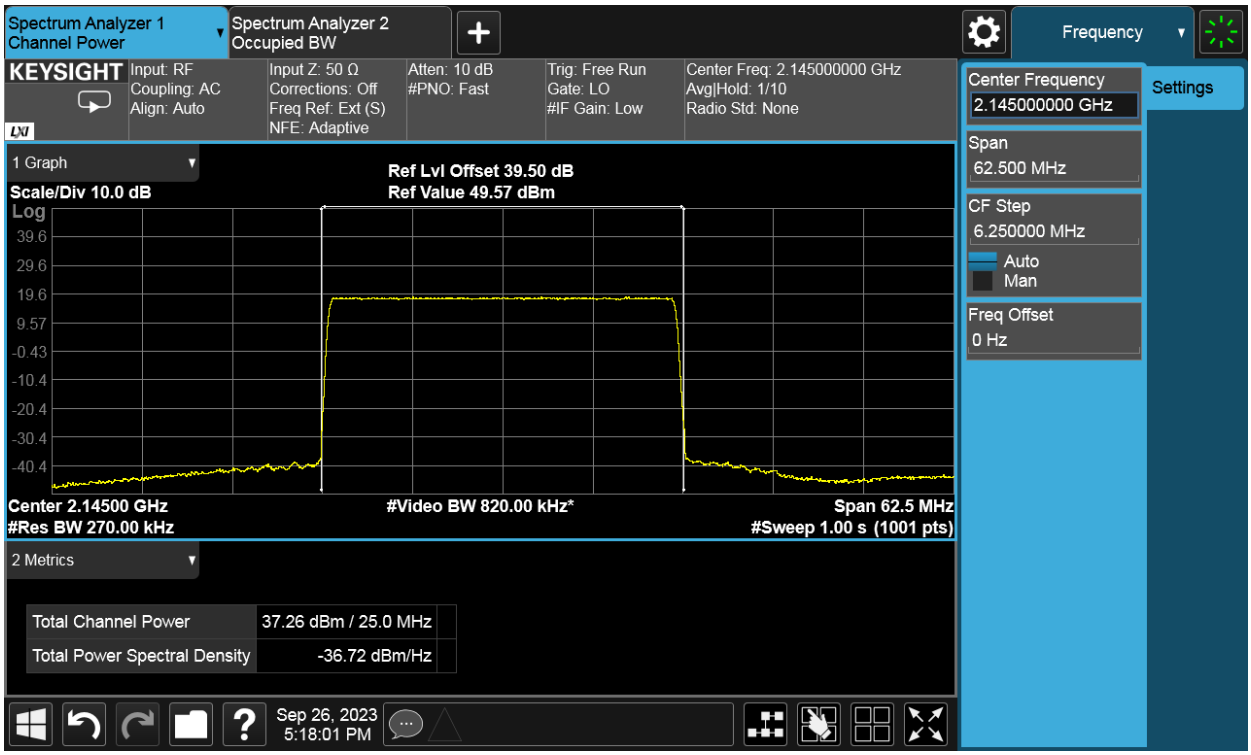
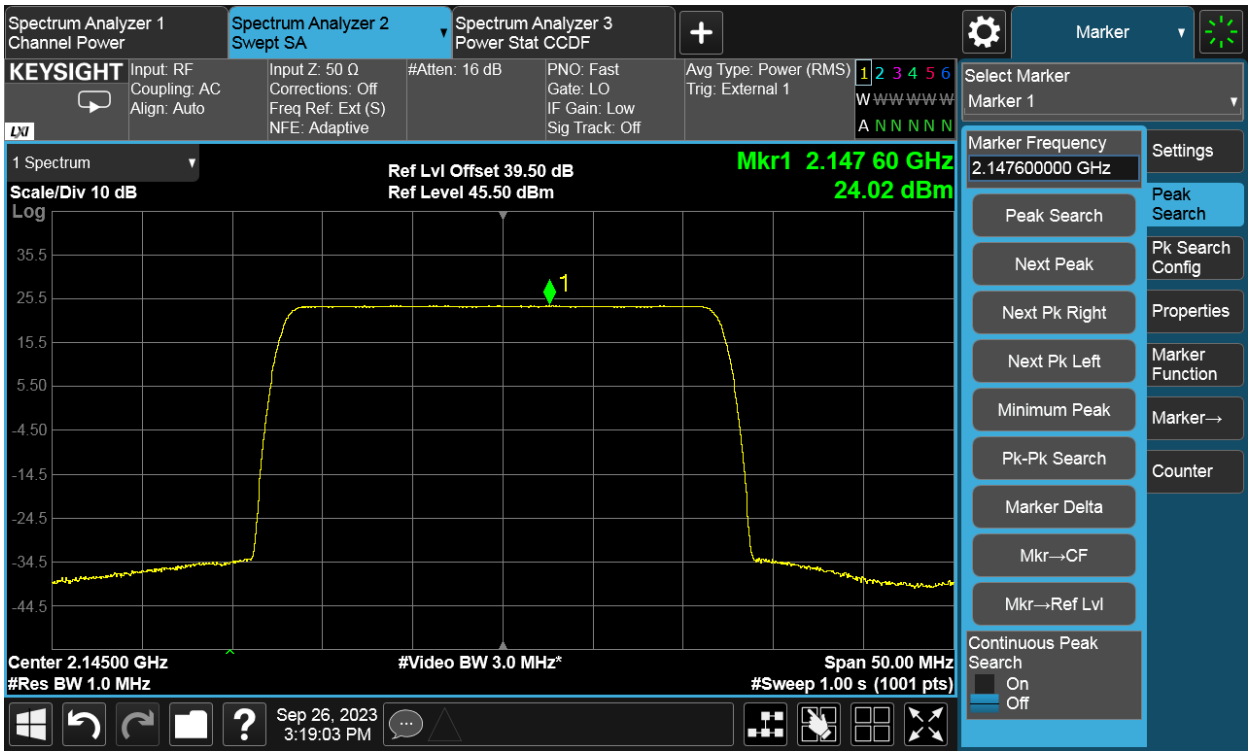
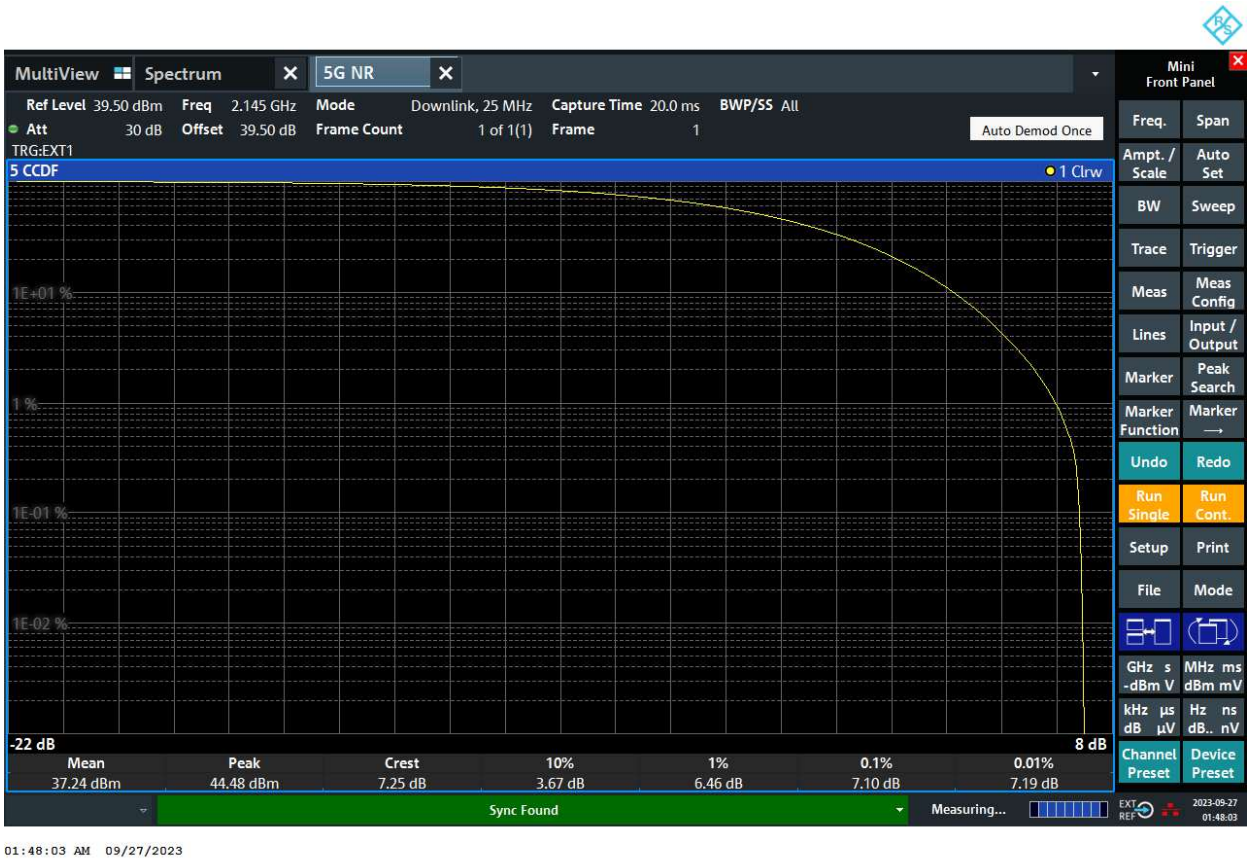
Channel M

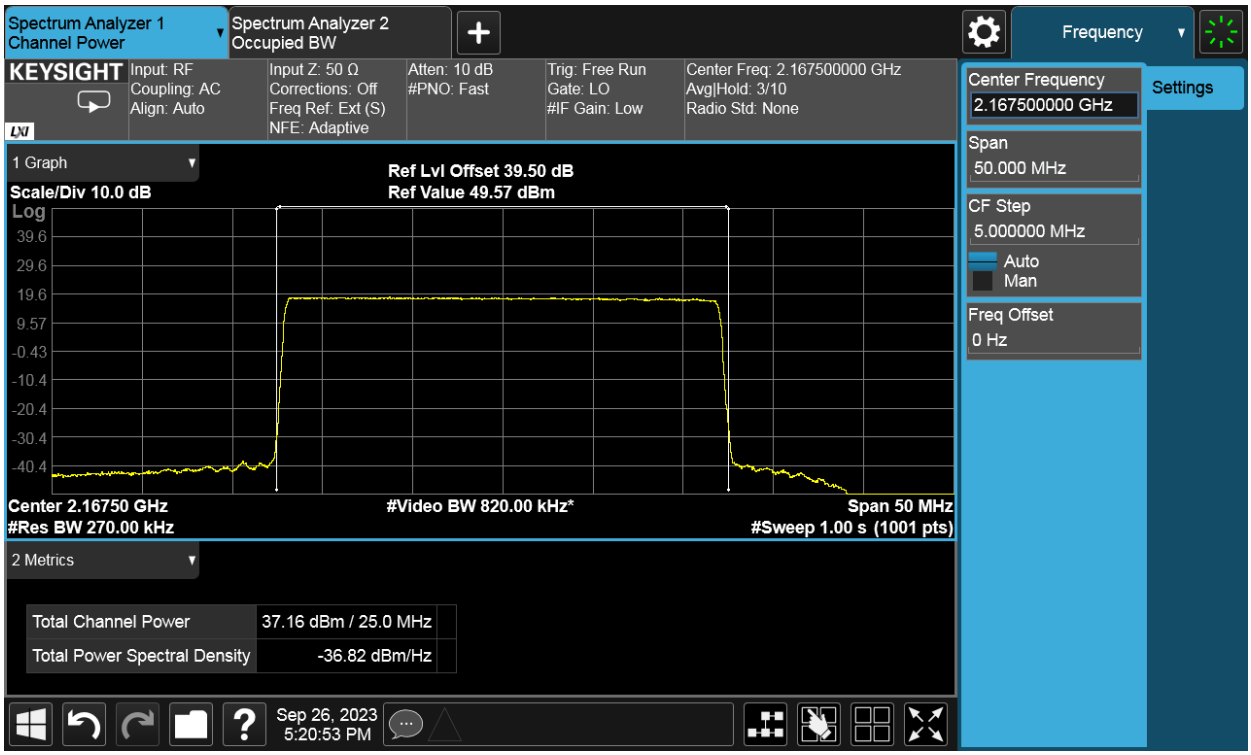

Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Occupied BW
Frequency
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Ext (S)
NFE: Adaptive
Atten: 10 dB
#PNO: Fast
Trig: Free Run
Gate: LO
#IF Gain: Low
Center Freq: 2.145000000 GHz
Avg|Hold: 1/10
Radio Std: None
Center Frequency
2.145000000 GHz
Settings
Span
62.500 MHz
CF Step
6.250000 MHz
Auto
Man
Freq Offset
0 Hz
1 Graph
Scale/Div 10.0 dB
Ref Lvl Offset 39.50 dB
Ref Value 49.57 dBm
Log
39.6
29.6
19.6
9.57
-0.43
-10.4
-20.4
-30.4
-40.4
Center 2.14500 GHz
#Res BW 270.00 kHz
#Video BW 820.00 kHz*
Span 62.5 MHz
#Sweep 1.00 s (1001 pts)
2 Metrics
Total Channel Power
37.26 dBm / 25.0 MHz
Total Power Spectral Density
-36.72 dBm/Hz
Sep 26, 2023
5:18:01 PM


Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Swept SA
Spectrum Analyzer 3
Power Stat CCDF
Marker
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Ext (S)
NFE: Adaptive
#Atten: 16 dB
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
Marker Frequency
2.147600000 GHz
Settings
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Pk Search Config
Properties
Marker Function
Marker→
Counter
Continuous Peak Search
On
Off
1 Spectrum
Scale/Div 10 dB
Ref Lvl Offset 39.50 dB
Ref Level 45.50 dBm
Mkr1 2.147 60 GHz
24.02 dBm
Log
35.5
25.5
15.5
5.50
-4.50
-14.5
-24.5
-34.5
-44.5
Center 2.14500 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 50.00 MHz
#Sweep 1.00 s (1001 pts)
Sep 26, 2023
3:19:03 PM

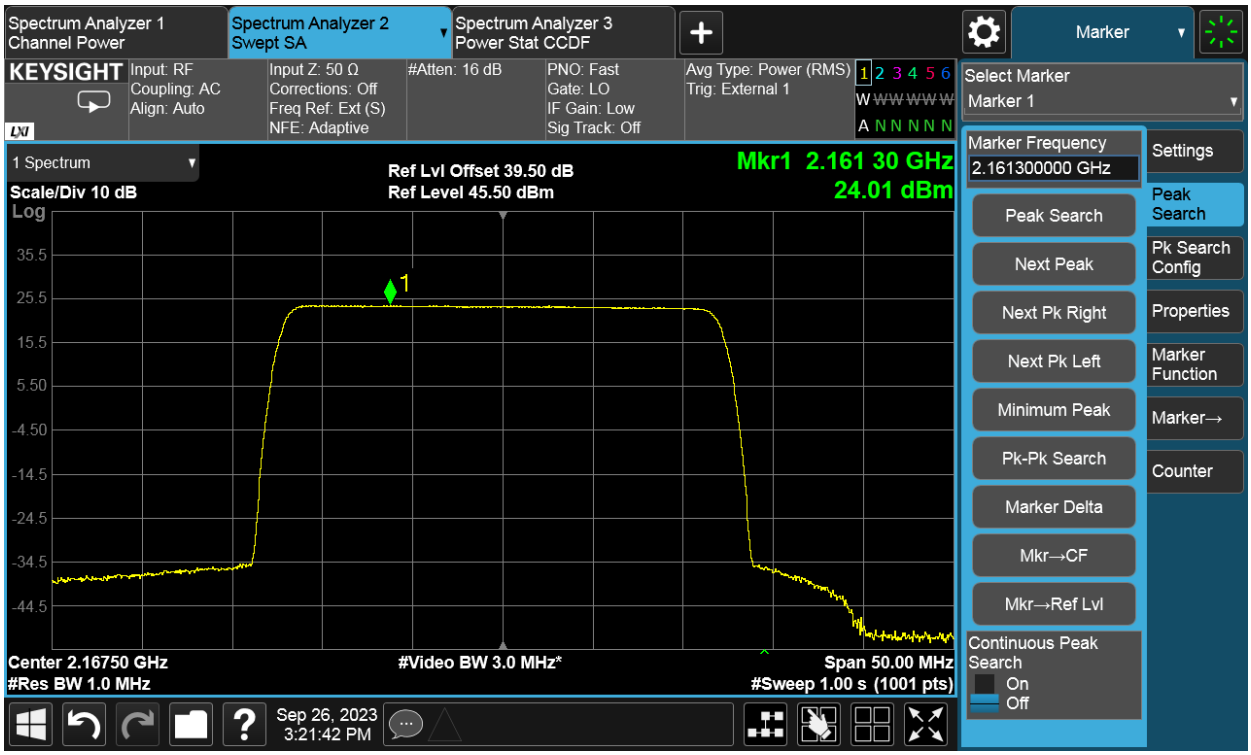
TEST REPORT

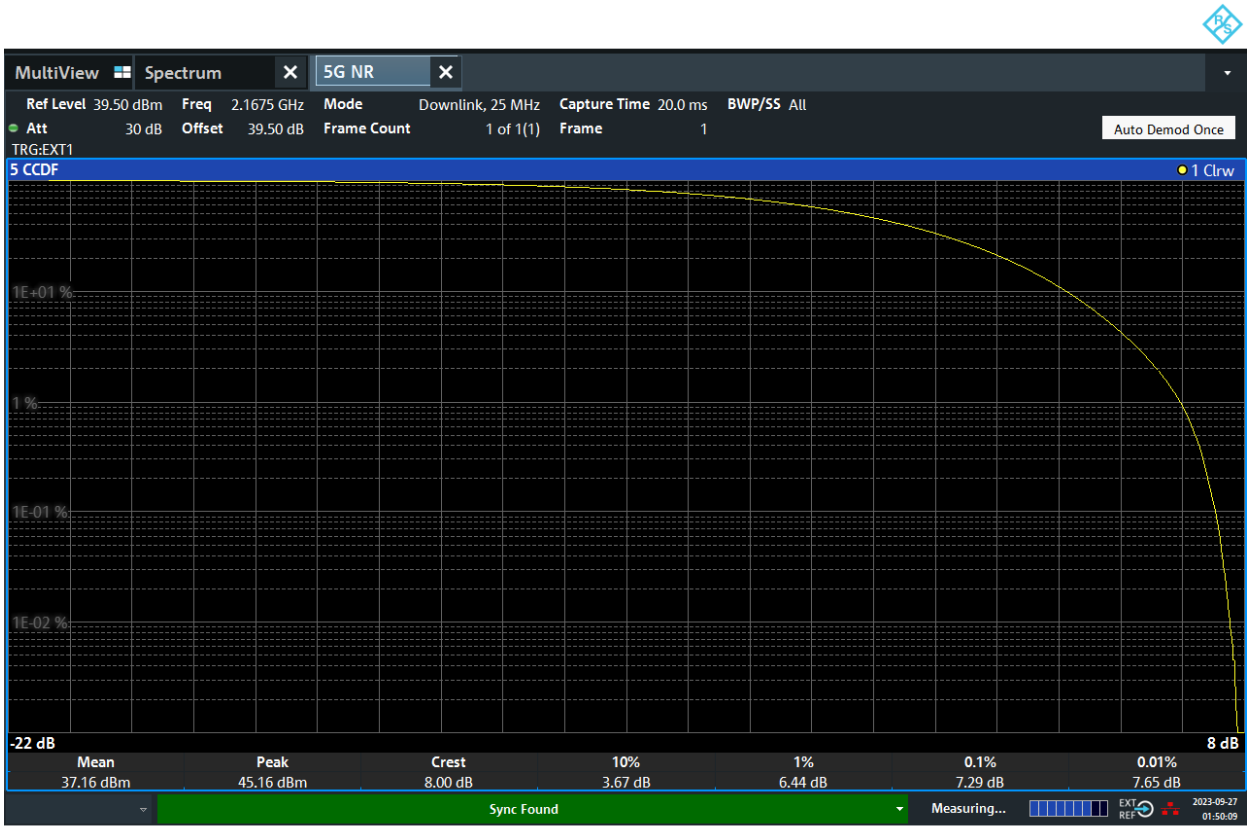


Channel T



TEST REPORT



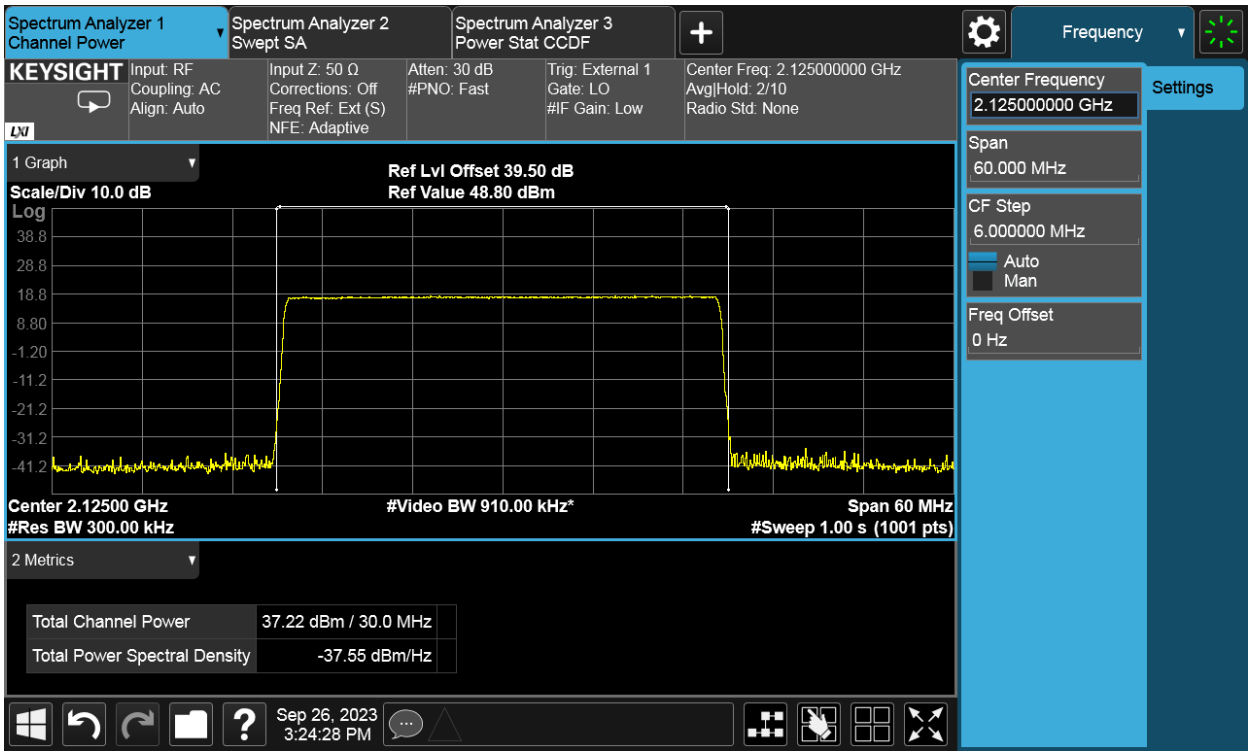


01:50:09 AM 09/27/2023

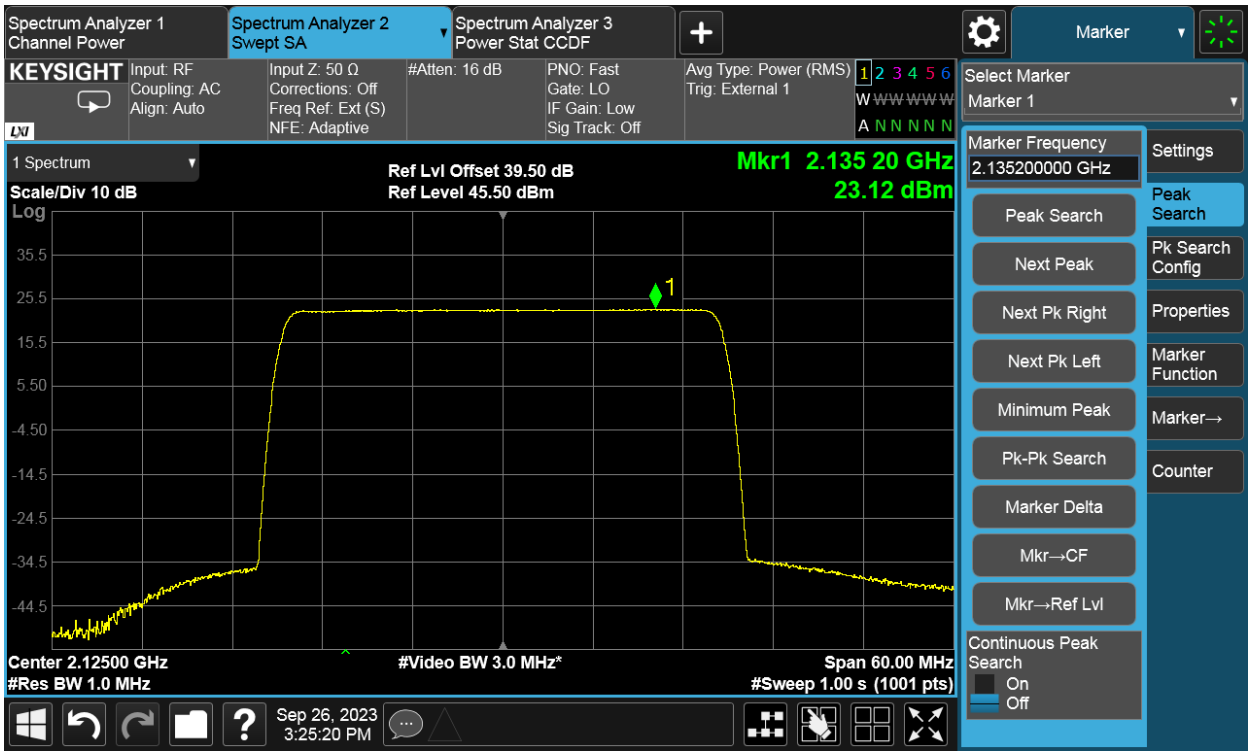
TEST REPORT

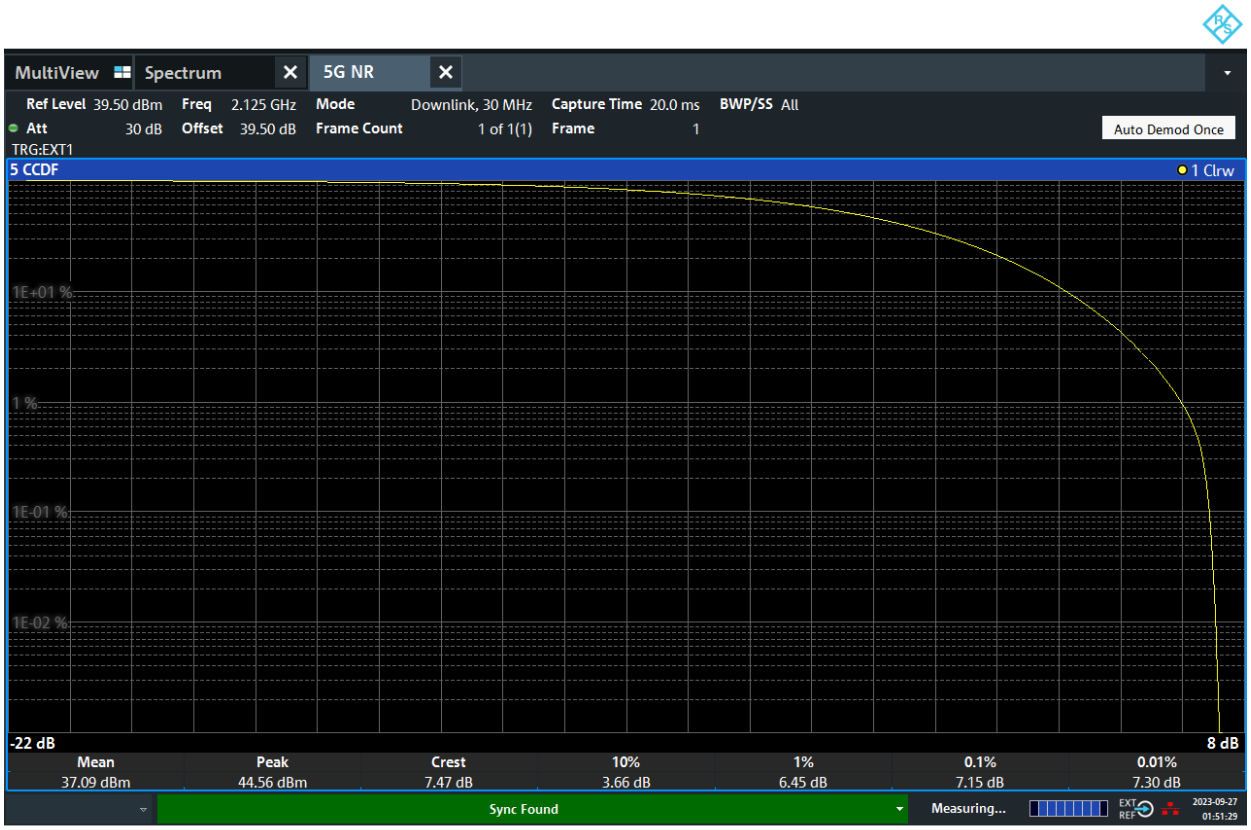
Antenna Port	NR Modulation	NR Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	256QAM	30	37.20	23.09	7.14	37.20	23.13	7.12	37.18	23.17	7.33
B	256QAM	30	37.22	23.12	7.15	37.32	23.23	7.14	37.22	23.20	7.34
Total conducted power			40.22	26.12	-	40.27	26.19	-	40.21	26.20	-
EIRP limit			-	62.15	13.00	-	62.15	13.00	-	62.15	13.00
Max antenna gain			-	36.03	-	-	35.96	-	-	35.95	-

Channel B



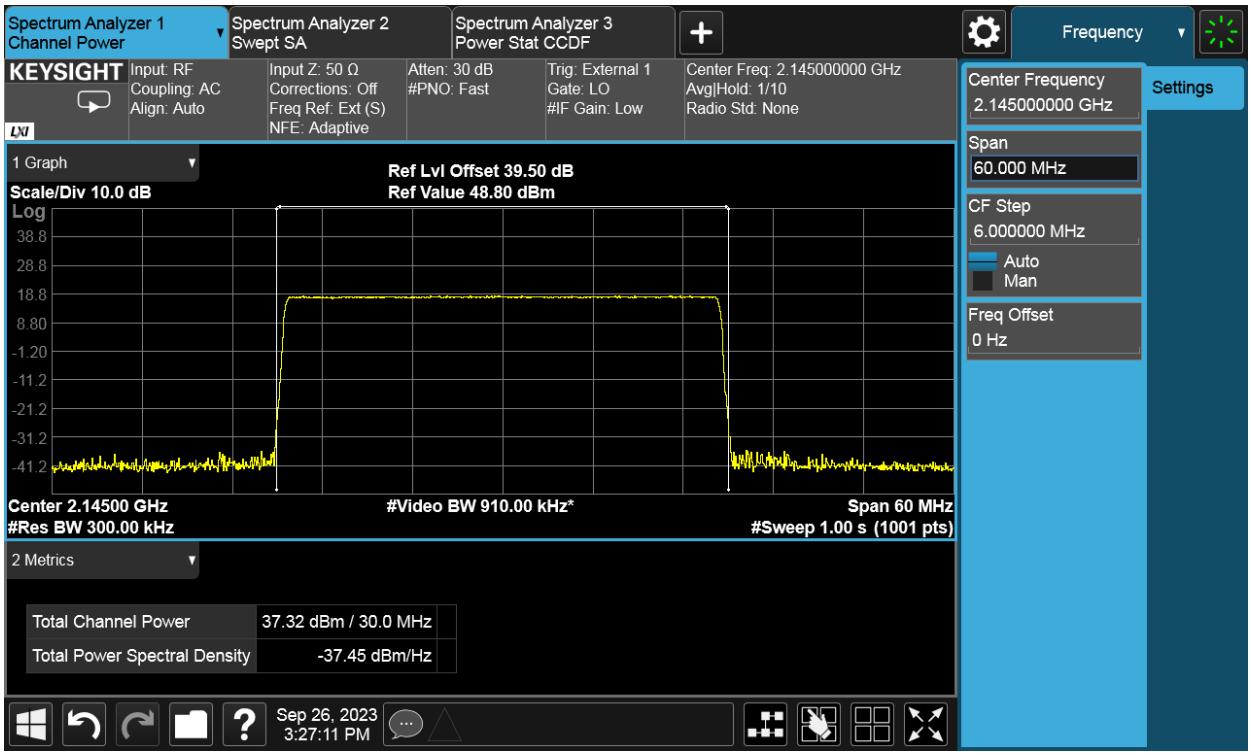
TEST REPORT

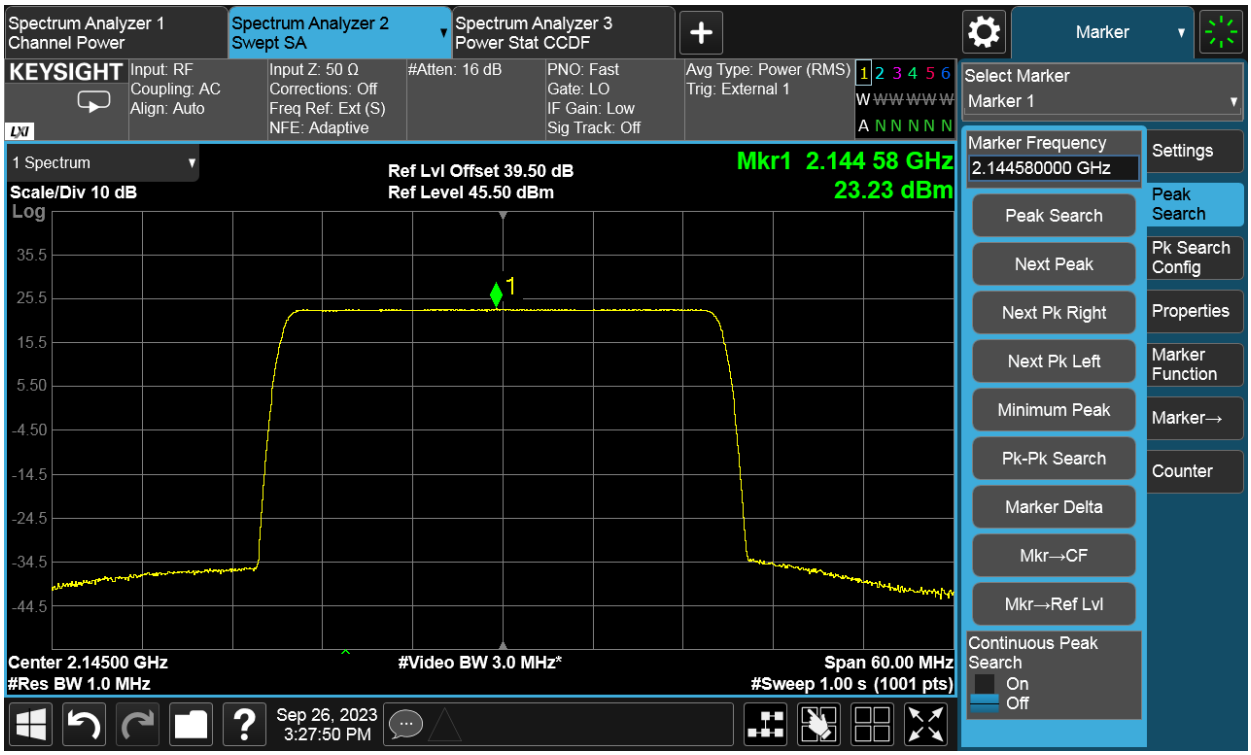

Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Swept SA
Spectrum Analyzer 3
Power Stat CCDF
Marker
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Ext (S)
NFE: Adaptive
#Atten: 16 dB
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Scale/Div 10 dB
Log
Ref Lvl Offset 39.50 dB
Ref Level 45.50 dBm
Mkr1 2.135 20 GHz
23.12 dBm
35.5
25.5
15.5
5.50
-4.50
-14.5
-24.5
-34.5
-44.5
Center 2.12500 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 60.00 MHz
#Sweep 1.00 s (1001 pts)
Marker Frequency
2.135200000 GHz
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Settings
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Sep 26, 2023
3:25:20 PM


MultiView
Spectrum
5G NR
Ref Level 39.50 dBm
Freq 2.125 GHz
Mode Downlink, 30 MHz
Capture Time 20.0 ms
BWP/SS All
Att 30 dB
Offset 39.50 dB
Frame Count 1 of 1(1)
Frame 1
TRG:EXT1
Auto Demod Once
5 CCDF
1 Clrw
1E+01 %
1 %
1E-01 %
1E-02 %
-22 dB
8 dB
Mean
37.09 dBm
Peak
44.56 dBm
Crest
7.47 dB
10%
3.66 dB
1%
6.45 dB
0.1%
7.15 dB
0.01%
7.30 dB
Sync Found
Measuring...
01:51:29 AM 09/27/2023

TEST REPORT

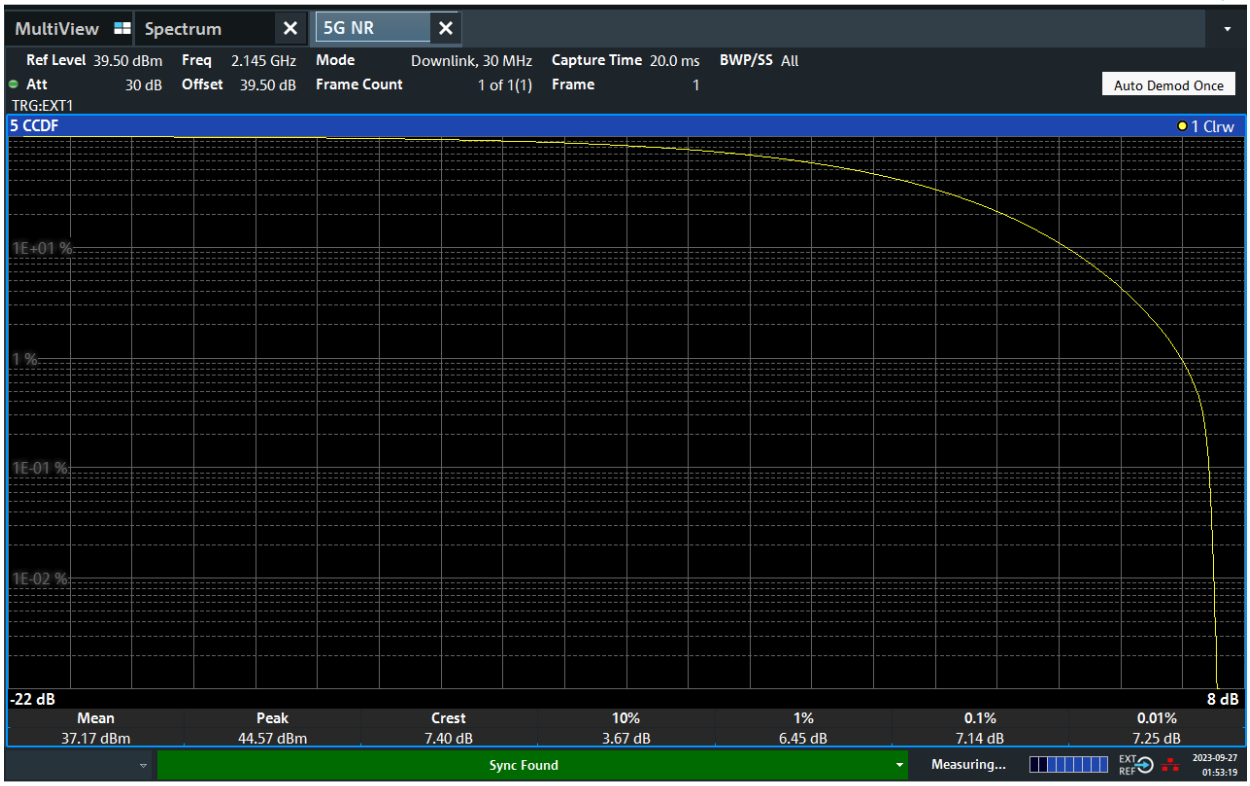
Channel M





Total Quality. Assured.

TEST REPORT



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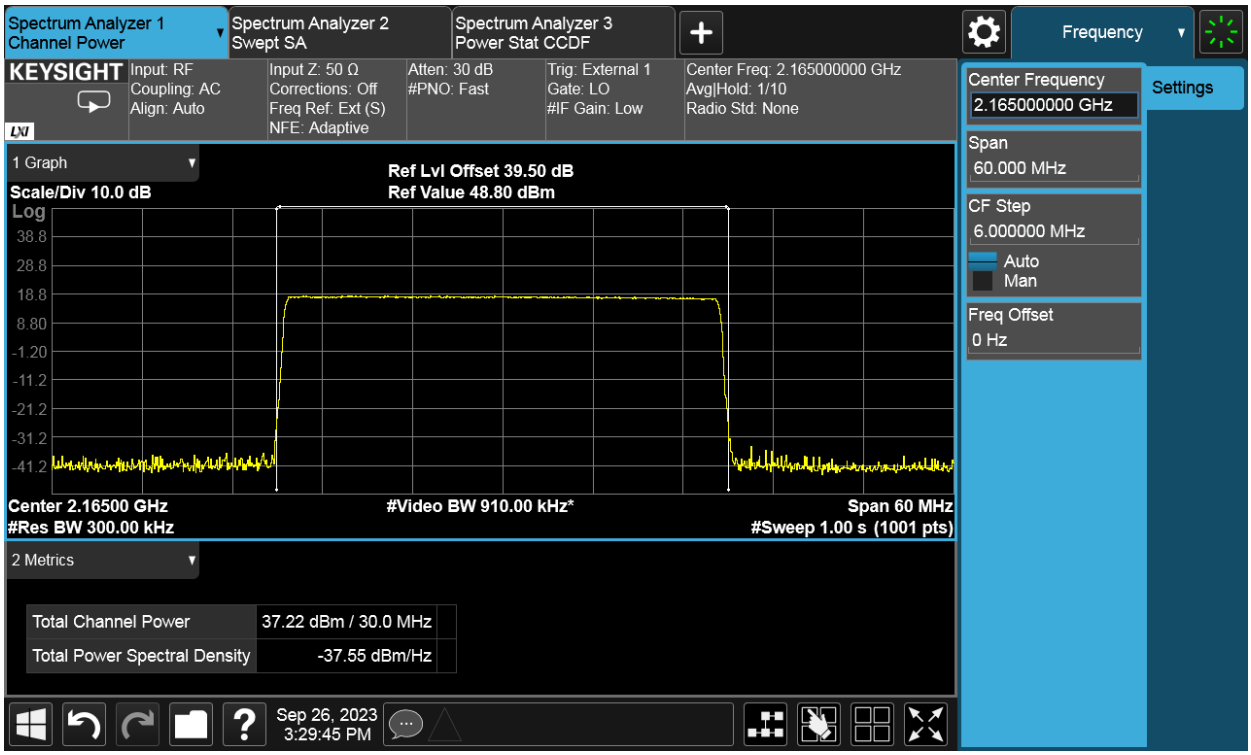
Channel T



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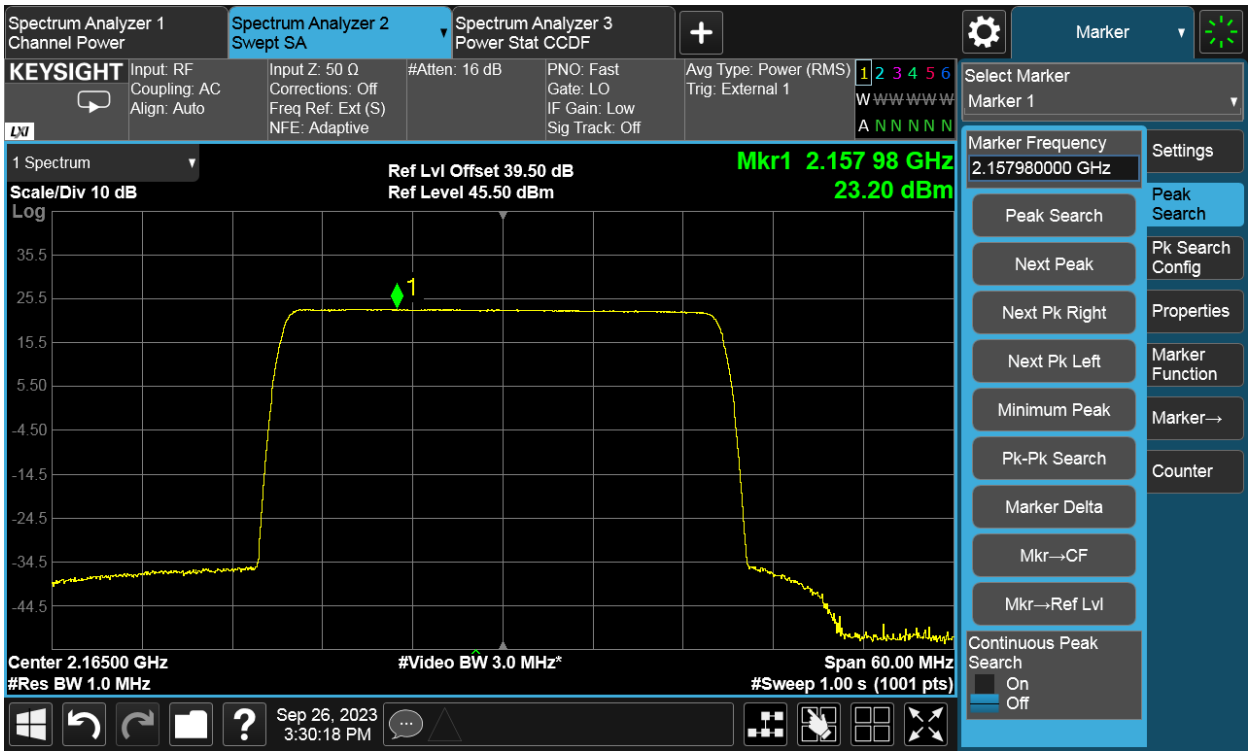
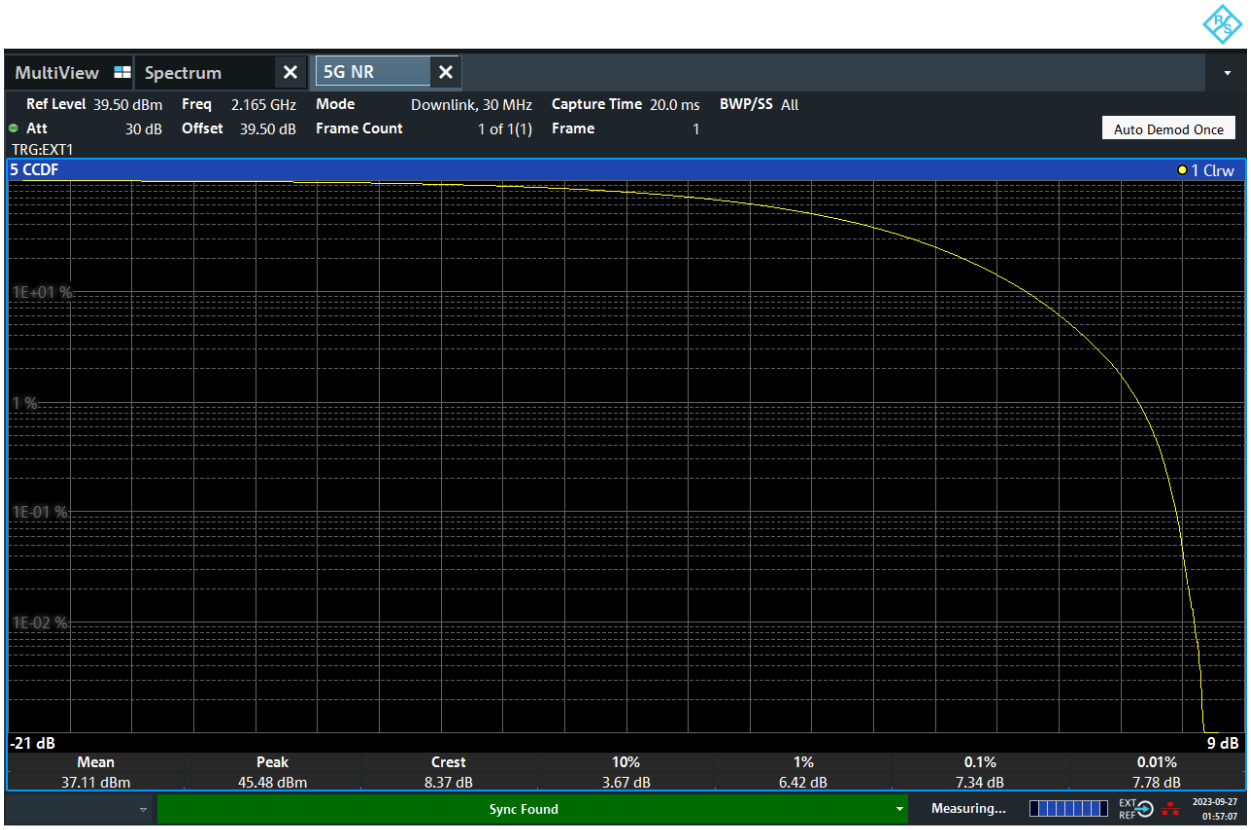


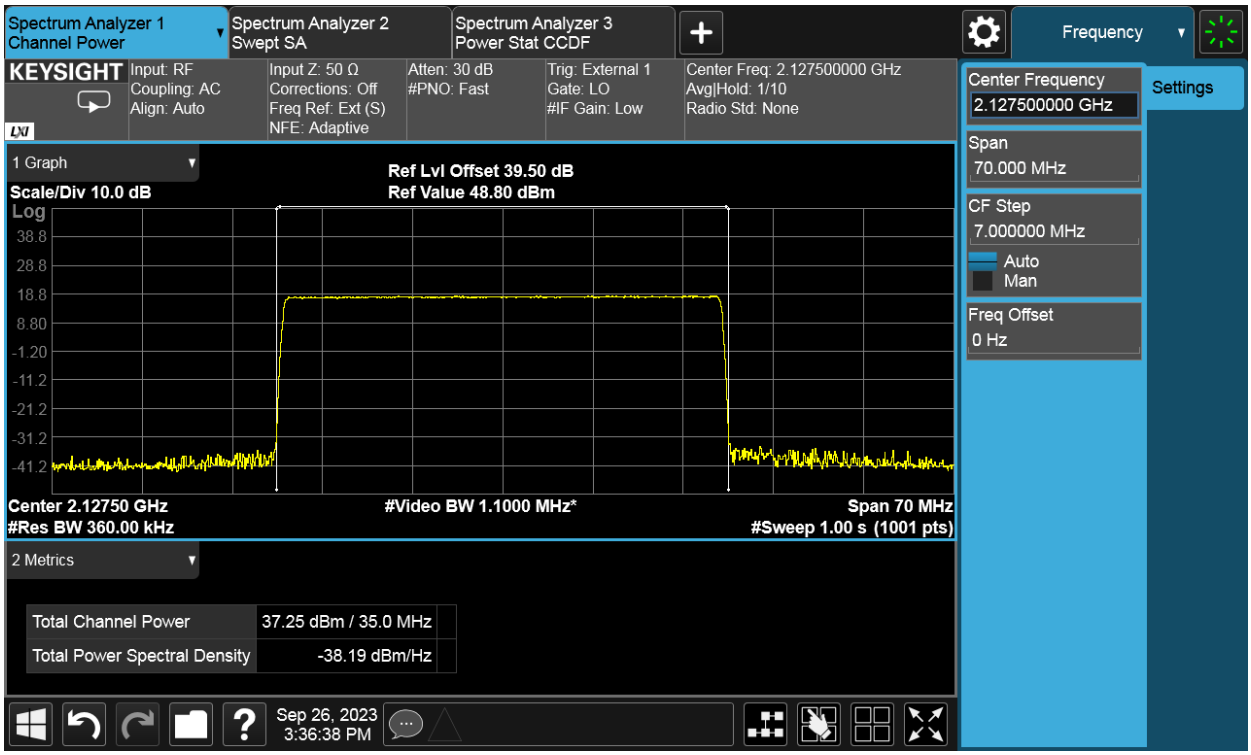


01:57:08 AM 09/27/2023

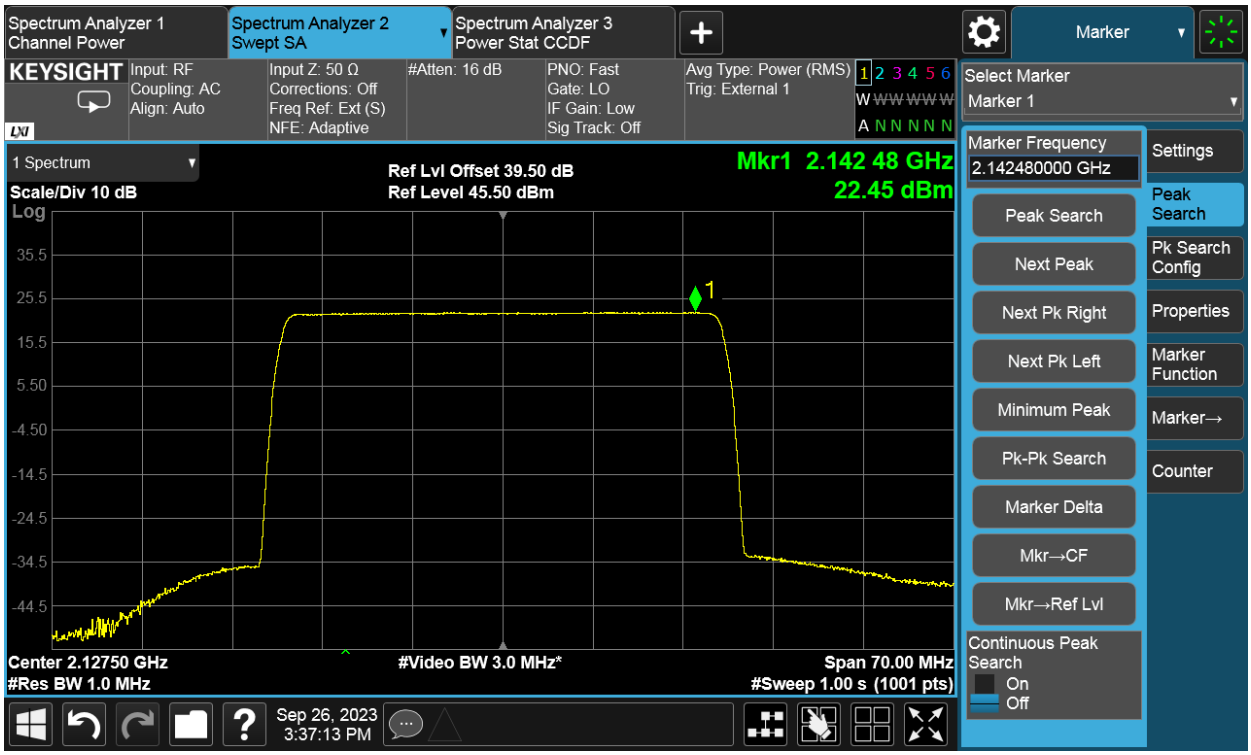
TEST REPORT

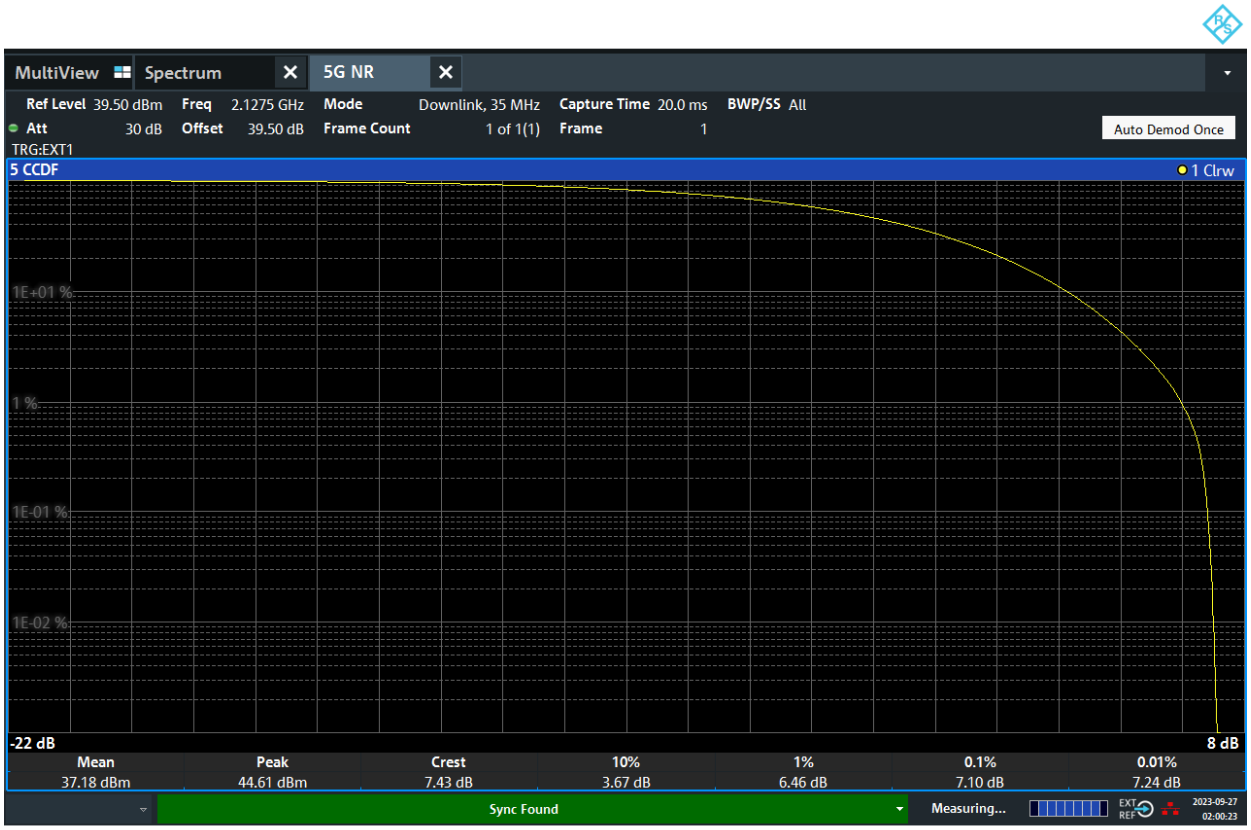
Antenna Port	NR Modulation	NR Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	256QAM	35	37.28	22.46	7.09	37.26	22.44	7.10	37.26	22.52	7.38
B	256QAM	35	37.25	22.45	7.10	37.36	22.53	7.11	37.23	22.53	7.38
Total conducted power			40.28	25.47	-	40.32	25.50	-	40.26	25.54	-
EIRP limit			-	62.15	13.00	-	62.15	13.00	-	62.15	13.00
Max antenna gain			-	36.68	-	-	36.65	-	-	36.61	-

Channel B



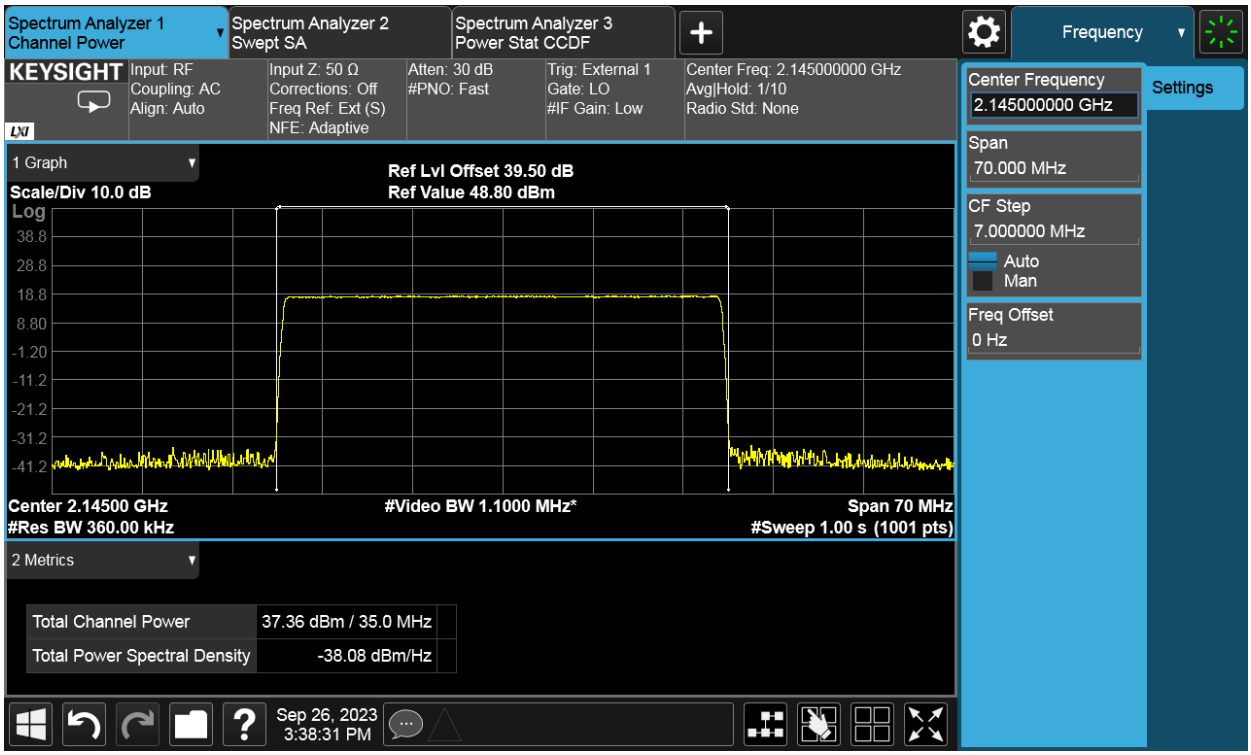
TEST REPORT

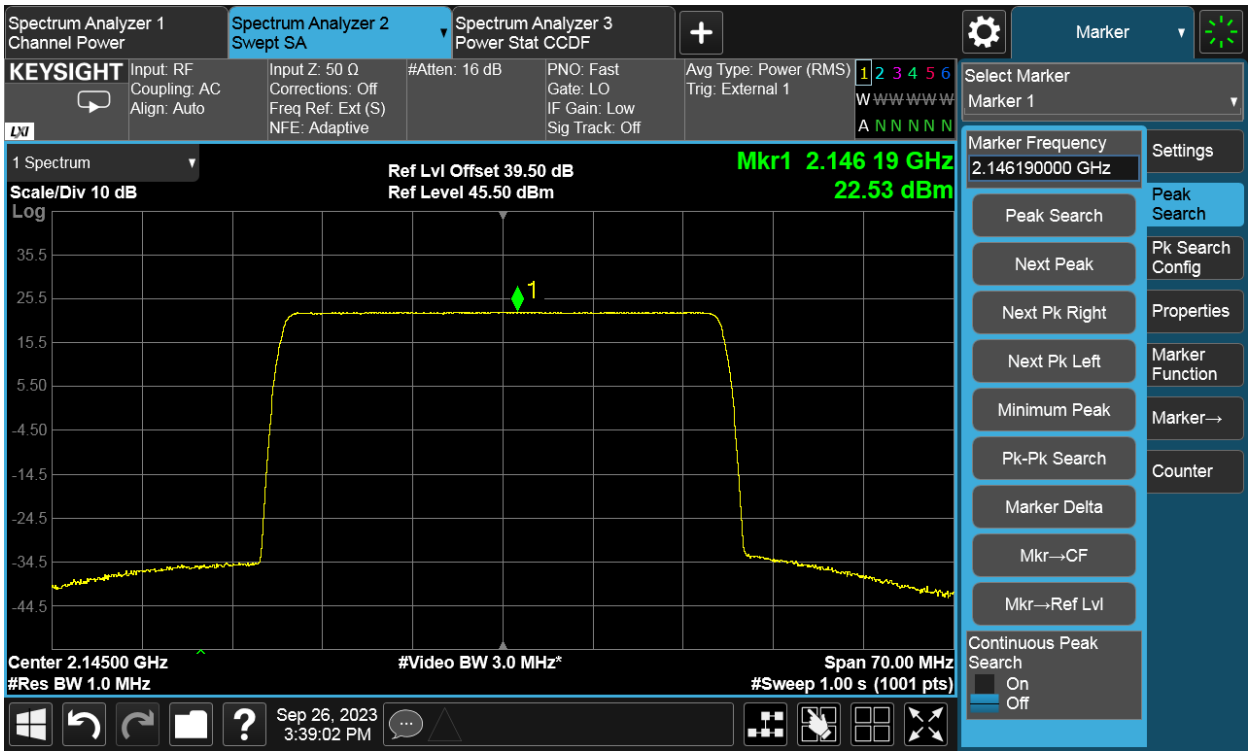

Spectrum Analyzer 1
Channel Power
Spectrum Analyzer 2
Swept SA
Spectrum Analyzer 3
Power Stat CCDF
Marker
KEYSIGHT
Input: RF
Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Ext (S)
NFE: Adaptive
#Atten: 16 dB
PNO: Fast
Gate: LO
IF Gain: Low
Sig Track: Off
Avg Type: Power (RMS)
Trig: External 1
Select Marker
Marker 1
1 Spectrum
Ref Lvl Offset 39.50 dB
Ref Level 45.50 dBm
Mkr1 2.142 48 GHz
22.45 dBm
Scale/Div 10 dB
Log
35.5
25.5
15.5
5.50
-4.50
-14.5
-24.5
-34.5
-44.5
Center 2.12750 GHz
#Res BW 1.0 MHz
#Video BW 3.0 MHz*
Span 70.00 MHz
#Sweep 1.00 s (1001 pts)
Marker Frequency
2.142480000 GHz
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Minimum Peak
Pk-Pk Search
Marker Delta
Mkr→CF
Mkr→Ref Lvl
Continuous Peak Search
On
Off
Settings
Peak Search
Pk Search Config
Properties
Marker Function
Marker→
Counter
Sep 26, 2023
3:37:13 PM


MultiView
Spectrum
5G NR
Ref Level 39.50 dBm
Freq 2.1275 GHz
Mode Downlink, 35 MHz
Capture Time 20.0 ms
BWP/SS All
Att 30 dB
Offset 39.50 dB
Frame Count 1 of 1(1)
Frame 1
TRG:EXT1
Auto Demod Once
5 CCDF
1 Clrw
1E+01 %
1 %
1E-01 %
1E-02 %
-22 dB
8 dB
Mean
37.18 dBm
Peak
44.61 dBm
Crest
7.43 dB
10%
3.67 dB
1%
6.46 dB
0.1%
7.10 dB
0.01%
7.24 dB
Sync Found
Measuring...
02:00:23 AM 09/27/2023

TEST REPORT

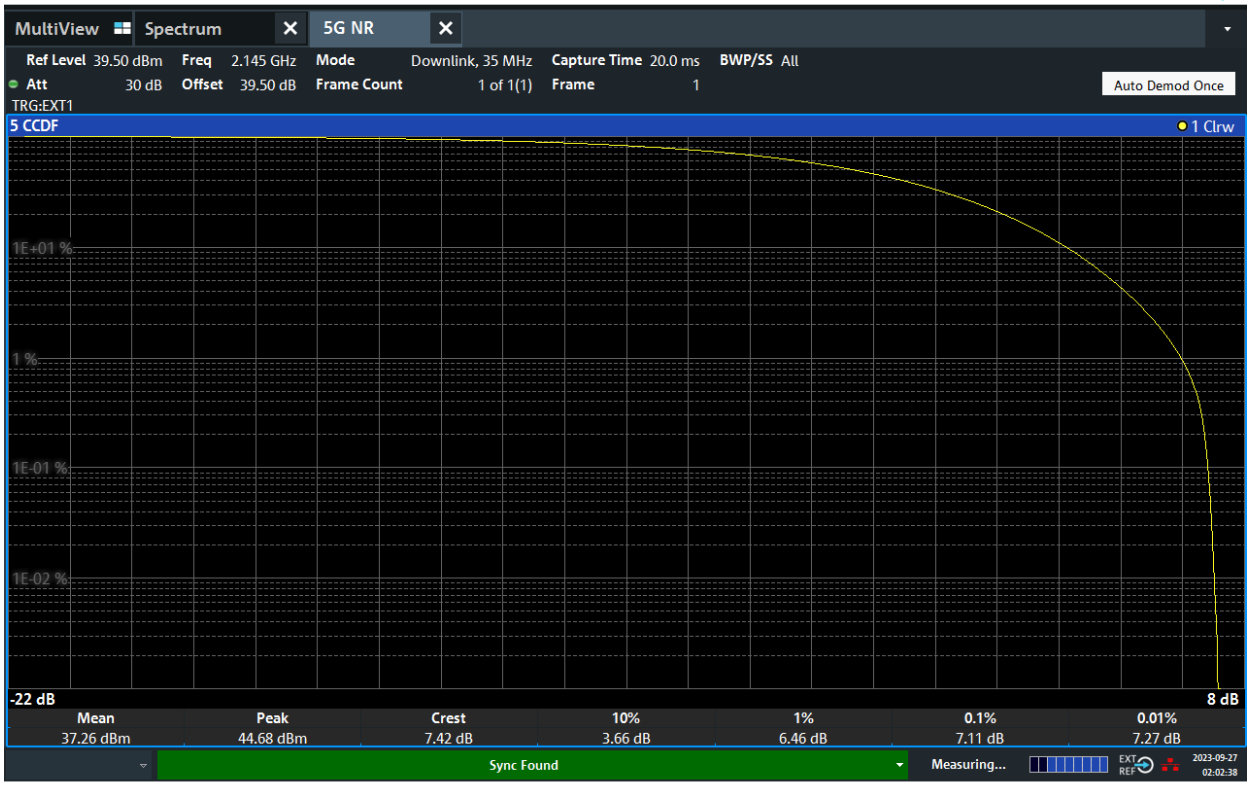
Channel M





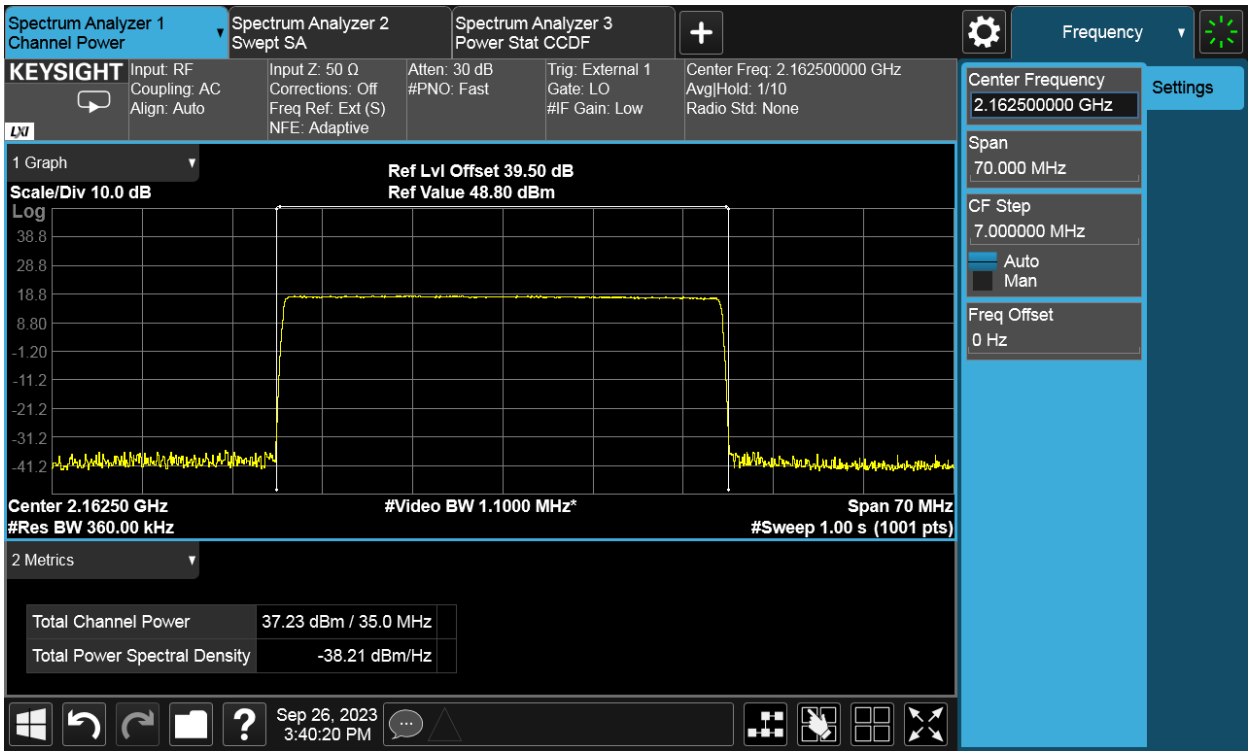
Total Quality. Assured.

TEST REPORT

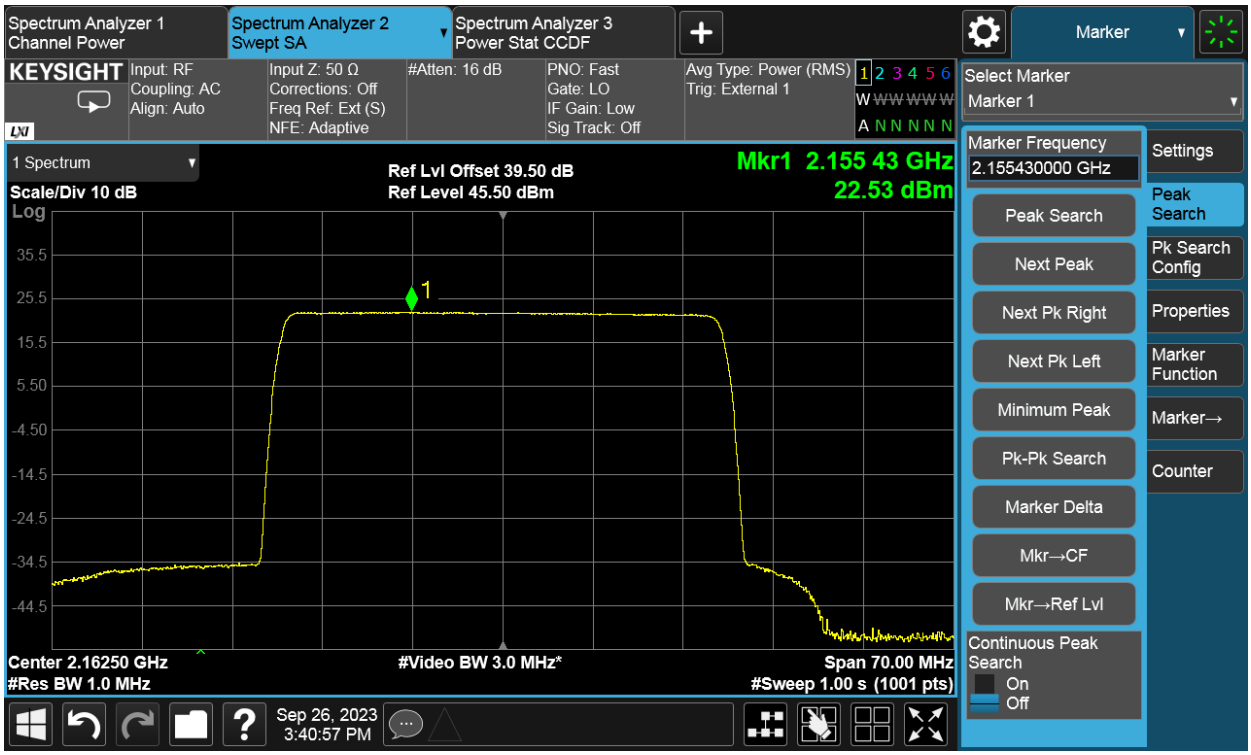


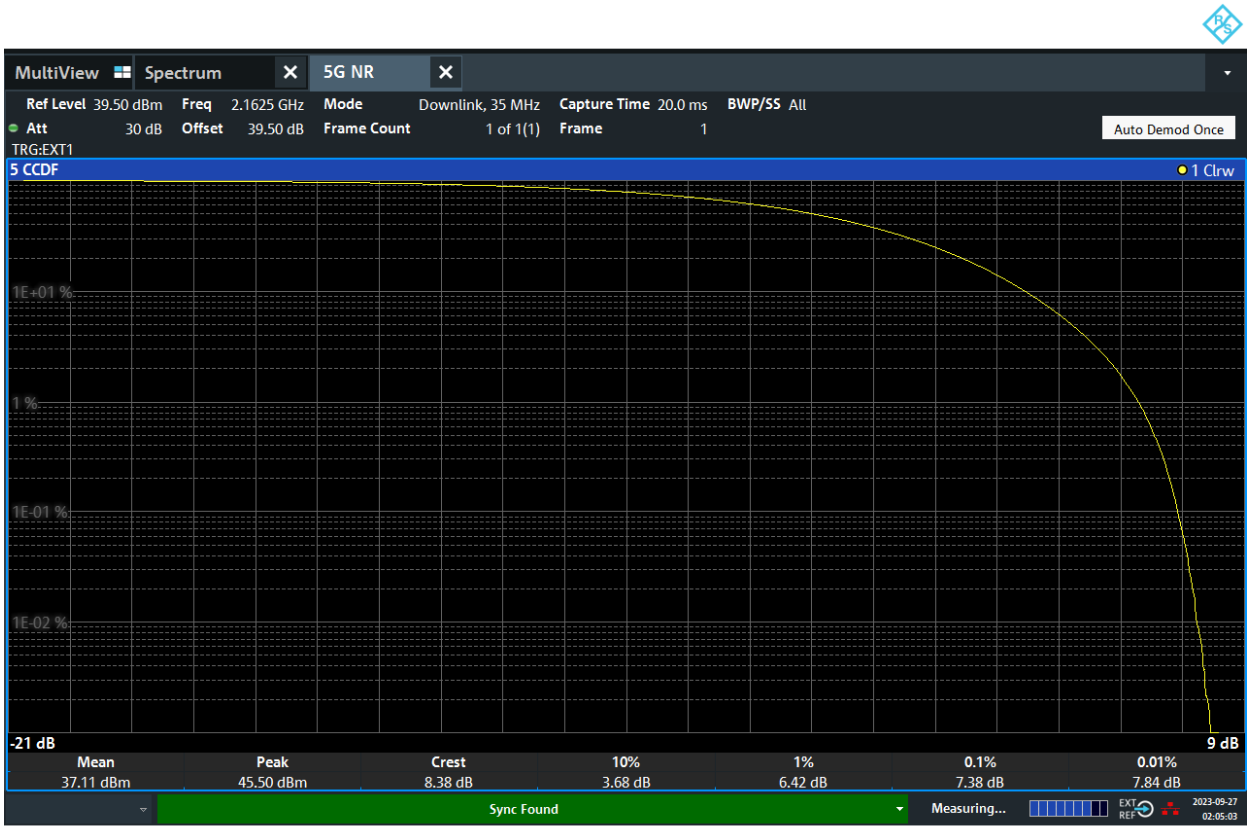
02:02:39 AM 09/27/2023

Channel T



TEST REPORT



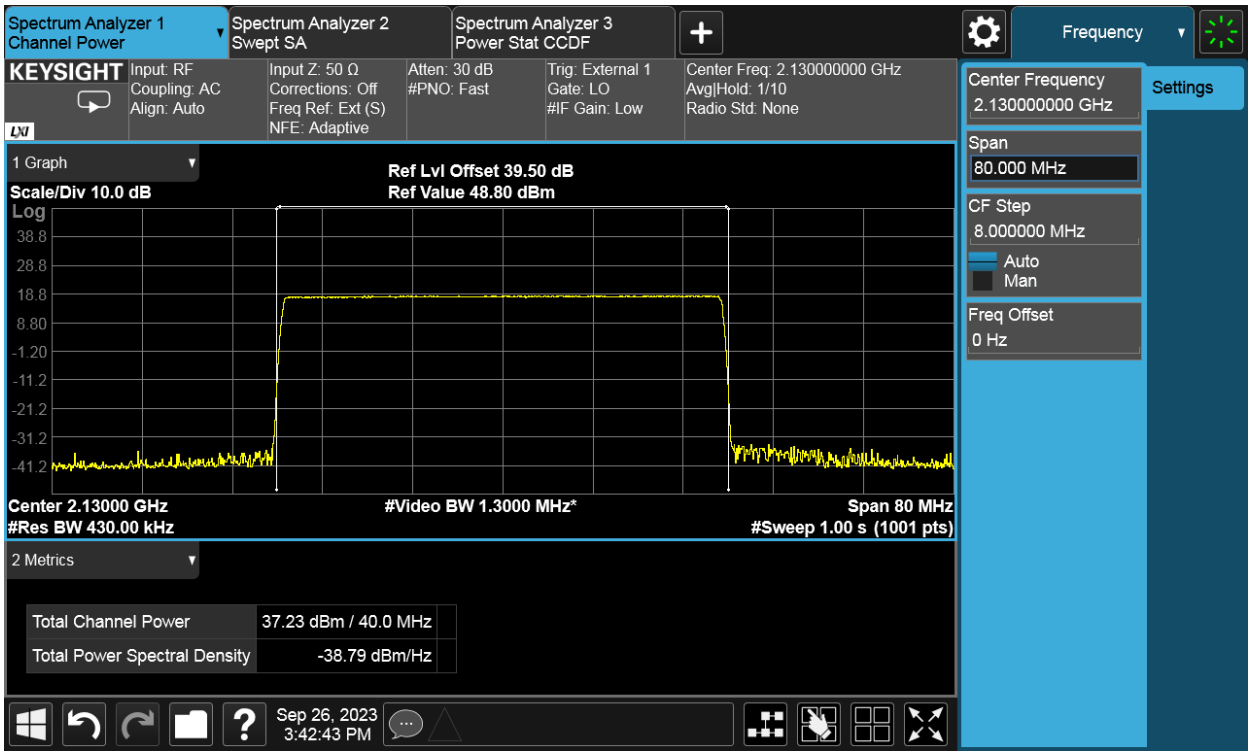


02:05:04 AM 09/27/2023

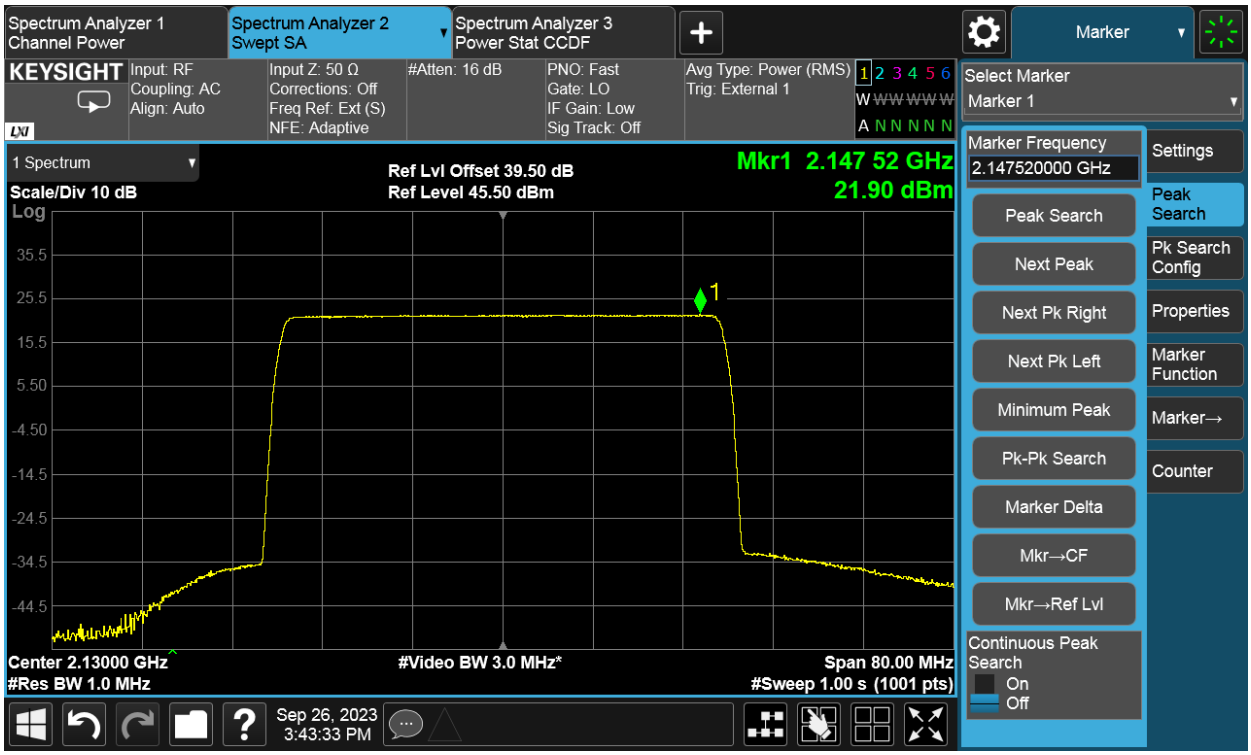
TEST REPORT

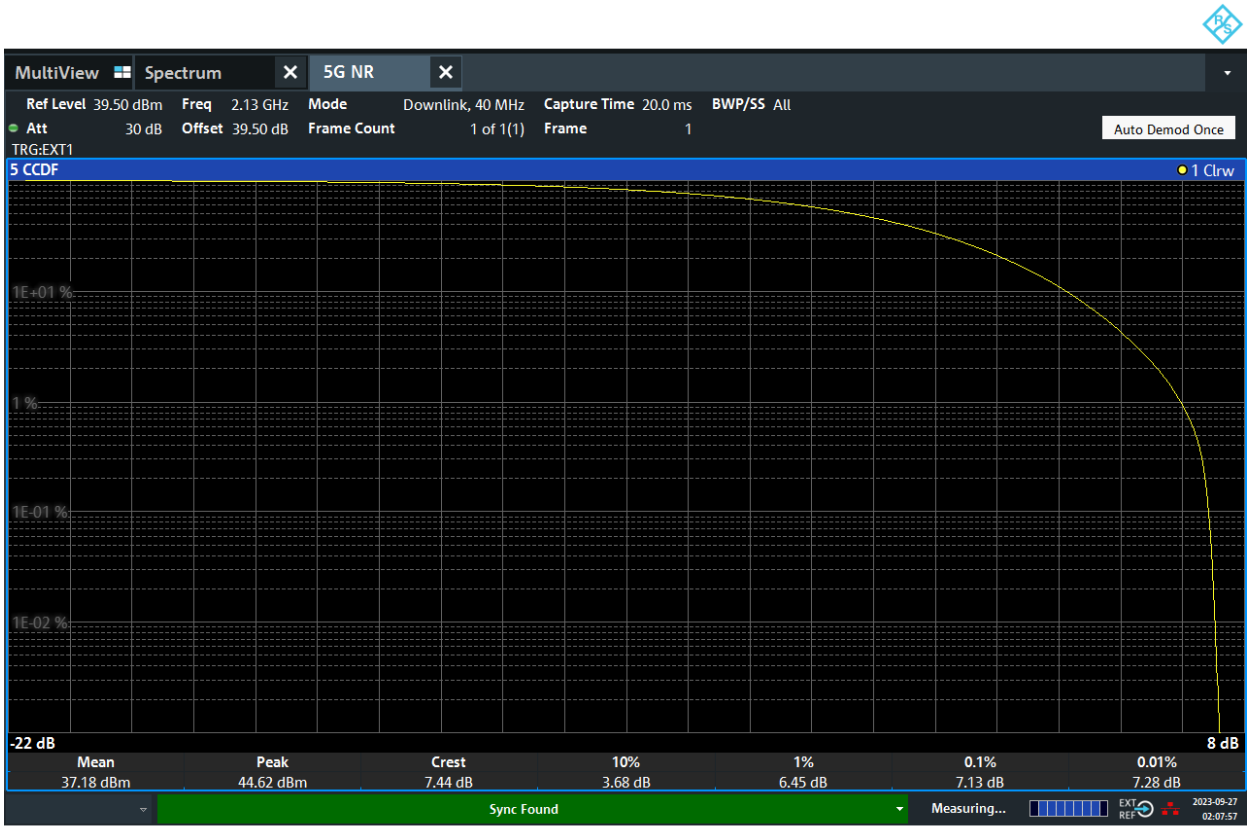
Antenna Port	NR Modulation	NR Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	256QAM	40	37.26	21.91	7.12	37.22	21.93	7.14	37.21	21.92	7.42
B	256QAM	40	37.23	21.90	7.13	37.35	22.05	7.14	37.24	21.89	7.42
Total conducted power			40.26	24.92	-	40.30	25.00	-	40.24	24.92	-
EIRP limit			-	62.15	13.00	-	62.15	13.00	-	62.15	13.00
Max antenna gain			-	37.23	-	-	37.15	-	-	37.23	-

Channel B



TEST REPORT

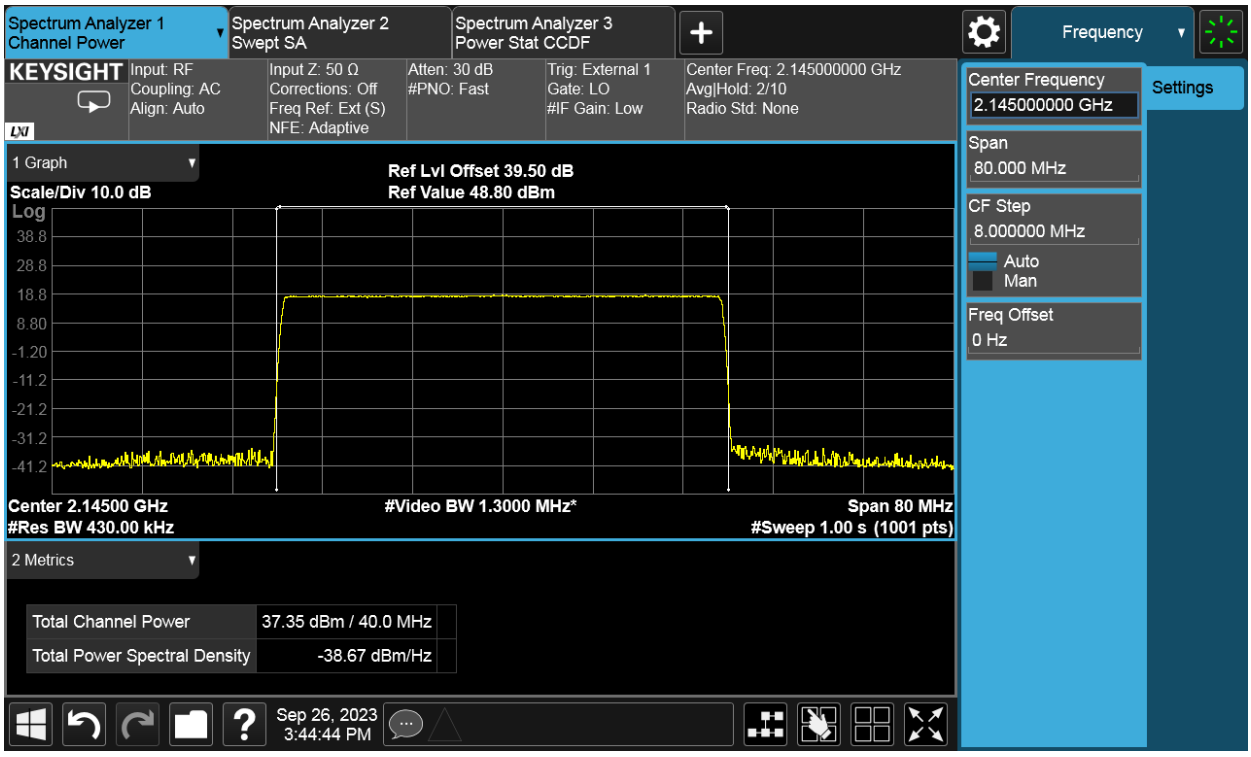


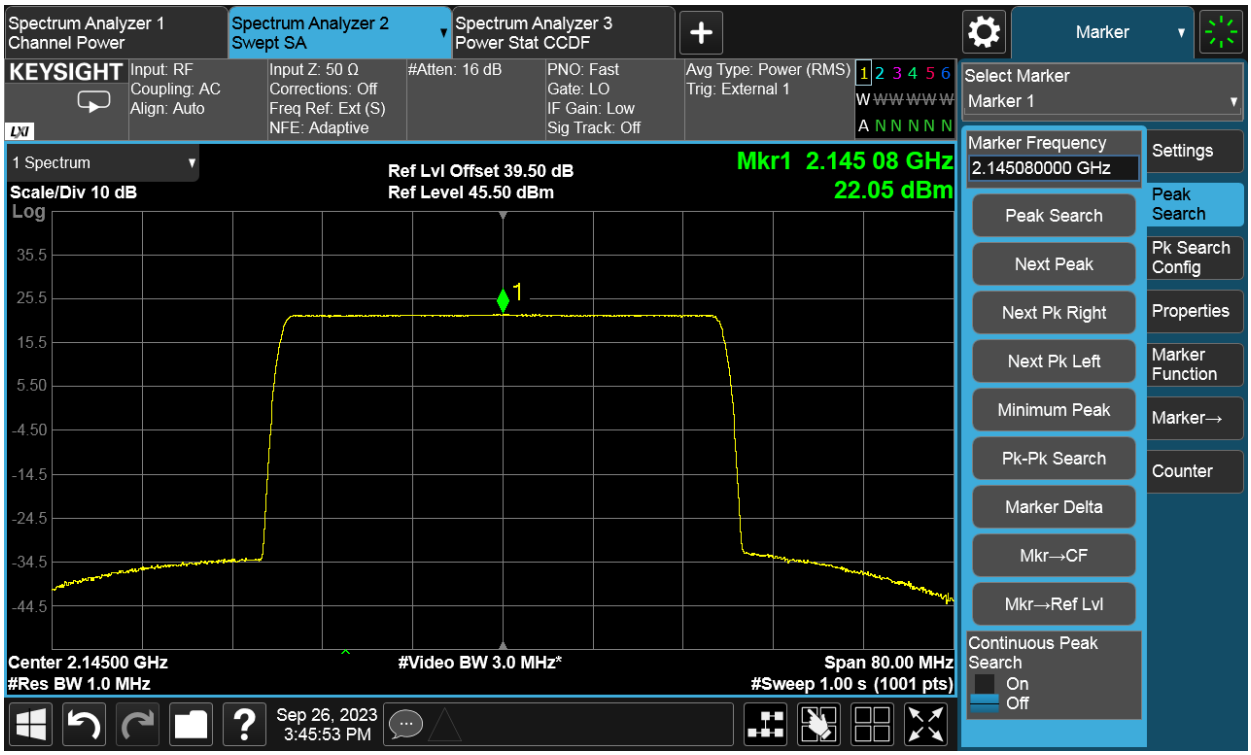


02:07:57 AM 09/27/2023

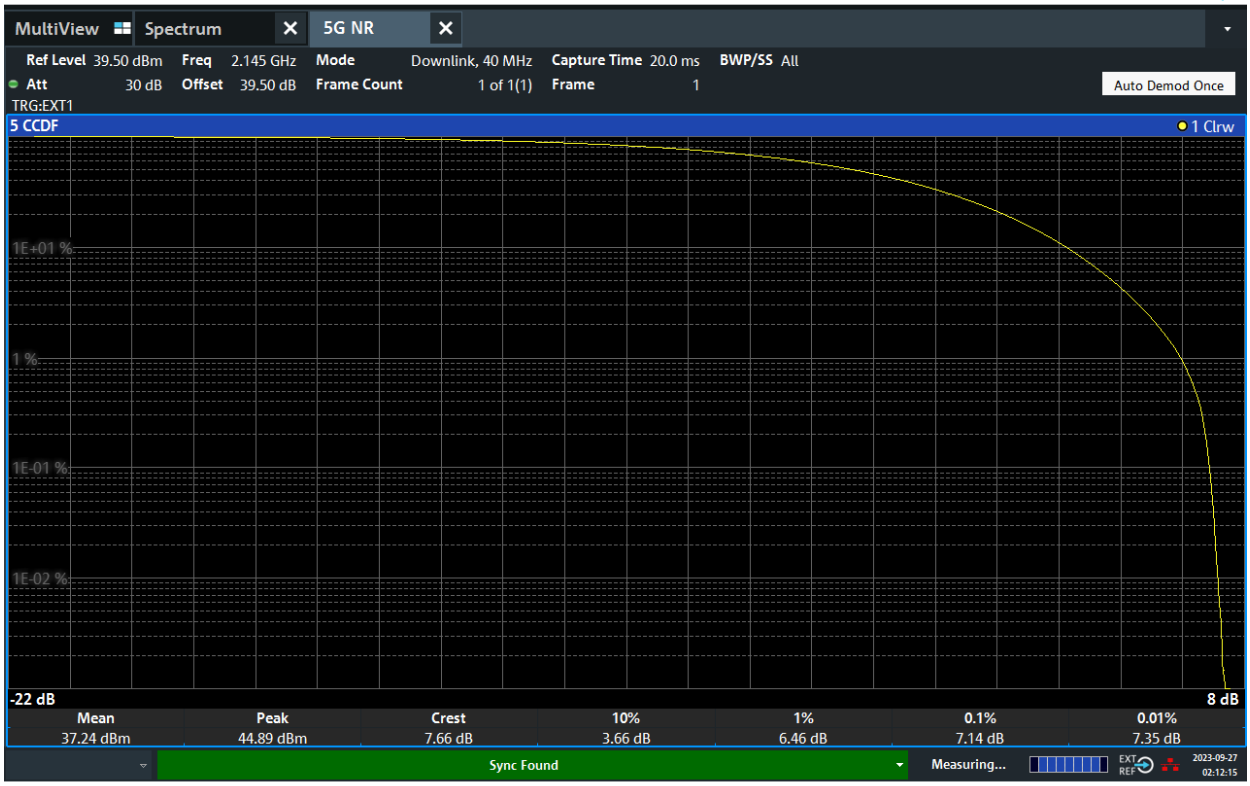
TEST REPORT

Channel M

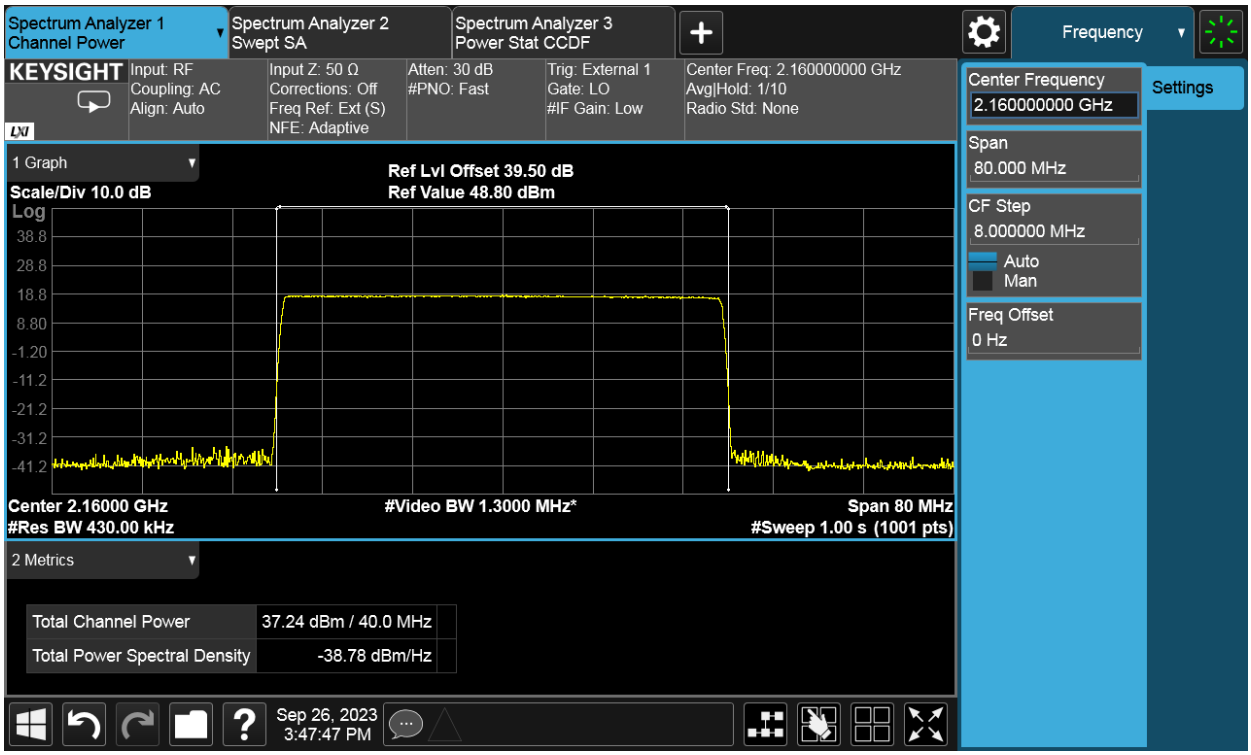




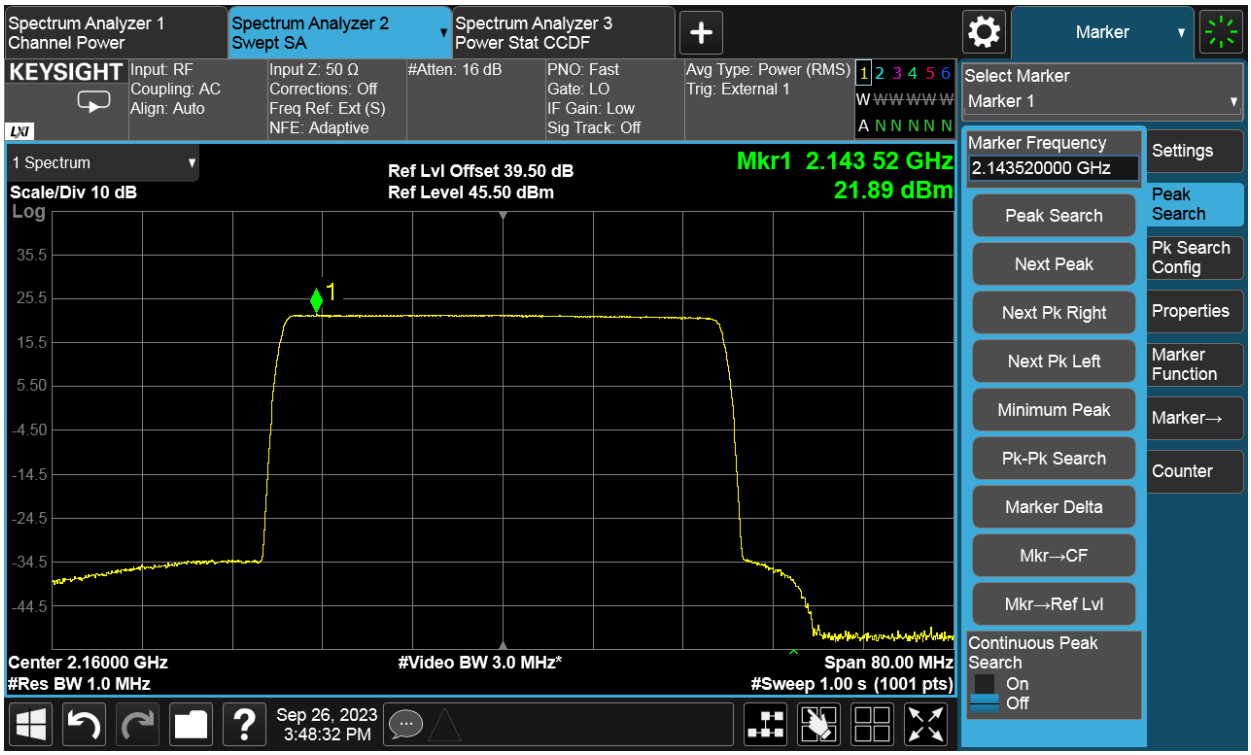
TEST REPORT

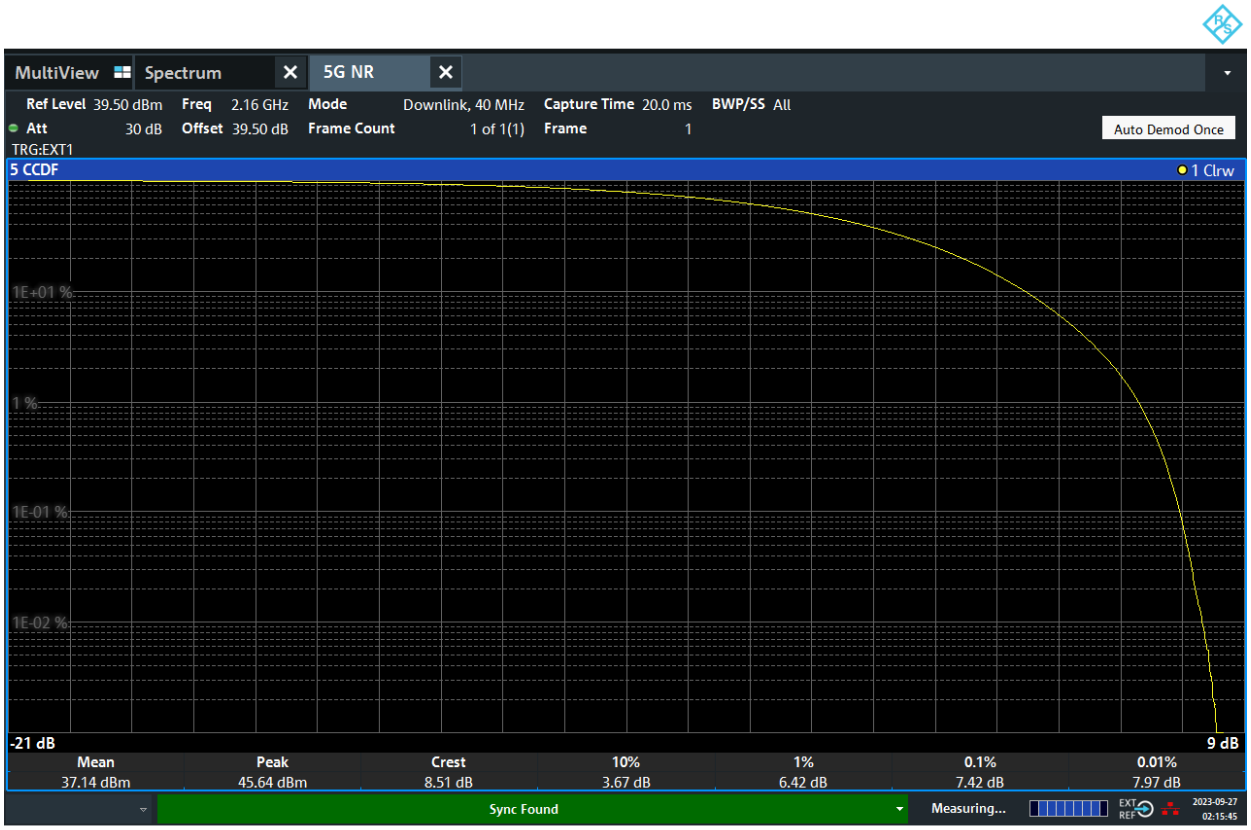


Channel T



TEST REPORT





02:15:46 AM 09/27/2023

4 Occupied Bandwidth

Test result: Pass

4.1 Measurement Procedure

The EUT was set to transmit at maximum power and testing was carried out on bottom, middle and top channels. Using the Occupied Bandwidth measurement function in the spectrum analyzer, the 26dB bandwidth was measured in accordance with FCC KDB 971168 D01 Clause 4.2.

The measurement method is from KDB 971168 4.2:
a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation product s including the emission skirts (i.e., two to five times the OBW).
b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least 10log (OBW / RBW) below the reference level.
d) Set the detection mode to peak, and the trace mode to max hold.
e) Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

4.2 Measurement result

NR-MIMO-1C

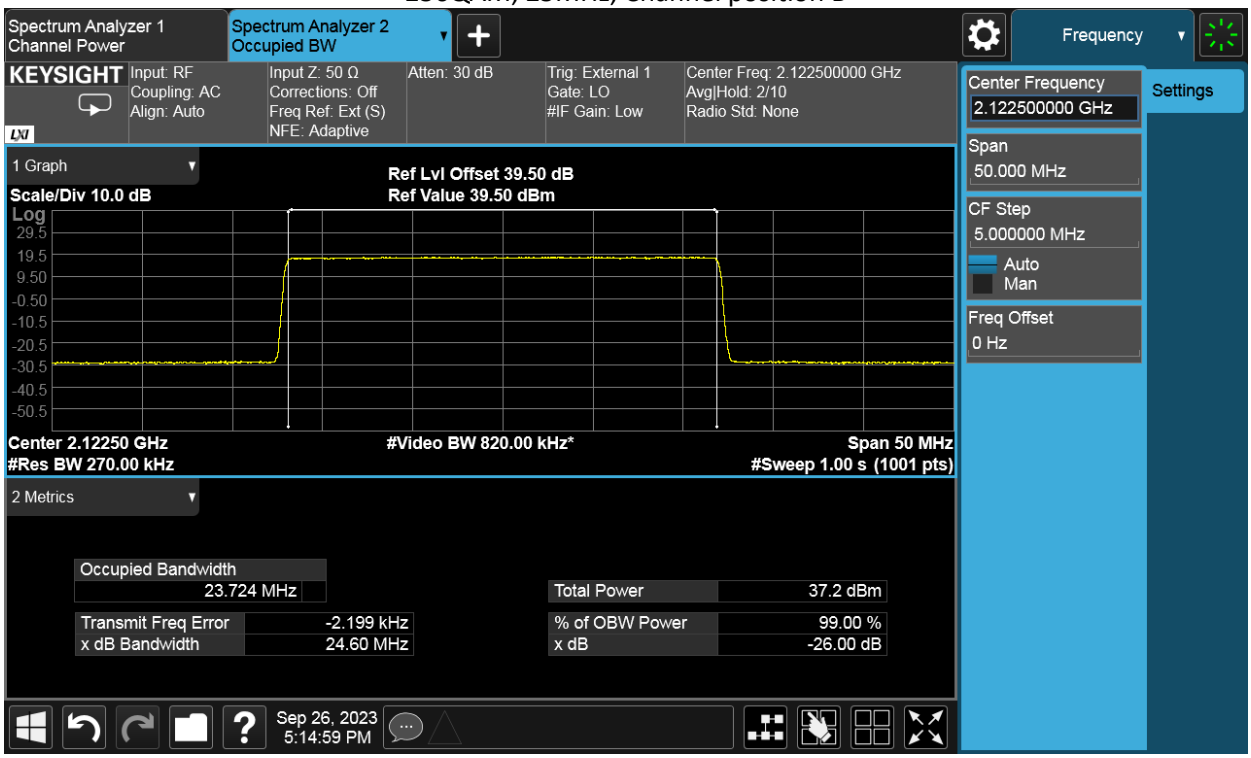
99% Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	256QAM	25MHz	23.724	23.726	23.711
B	256QAM	30MHz	28.530	28.534	28.516
B	256QAM	35MHz	33.523	33.526	33.507
B	256QAM	40MHz	38.506	38.511	38.484

-26dBc Occupied Bandwidth

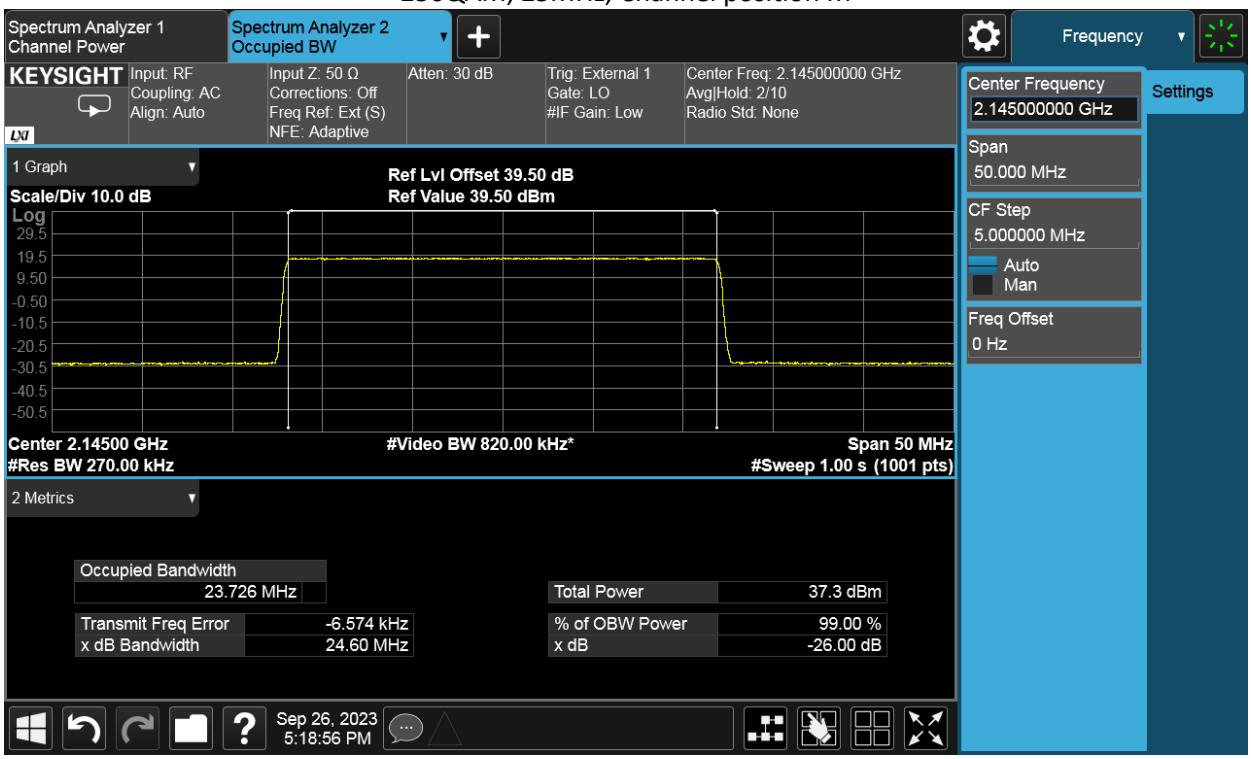
Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
B	256QAM	25MHz	24.60	24.60	24.59
B	256QAM	30MHz	29.53	29.53	29.52
B	256QAM	35MHz	34.56	34.56	34.55
B	256QAM	40MHz	39.63	39.63	39.62

256QAM, 25MHz, Channel position B

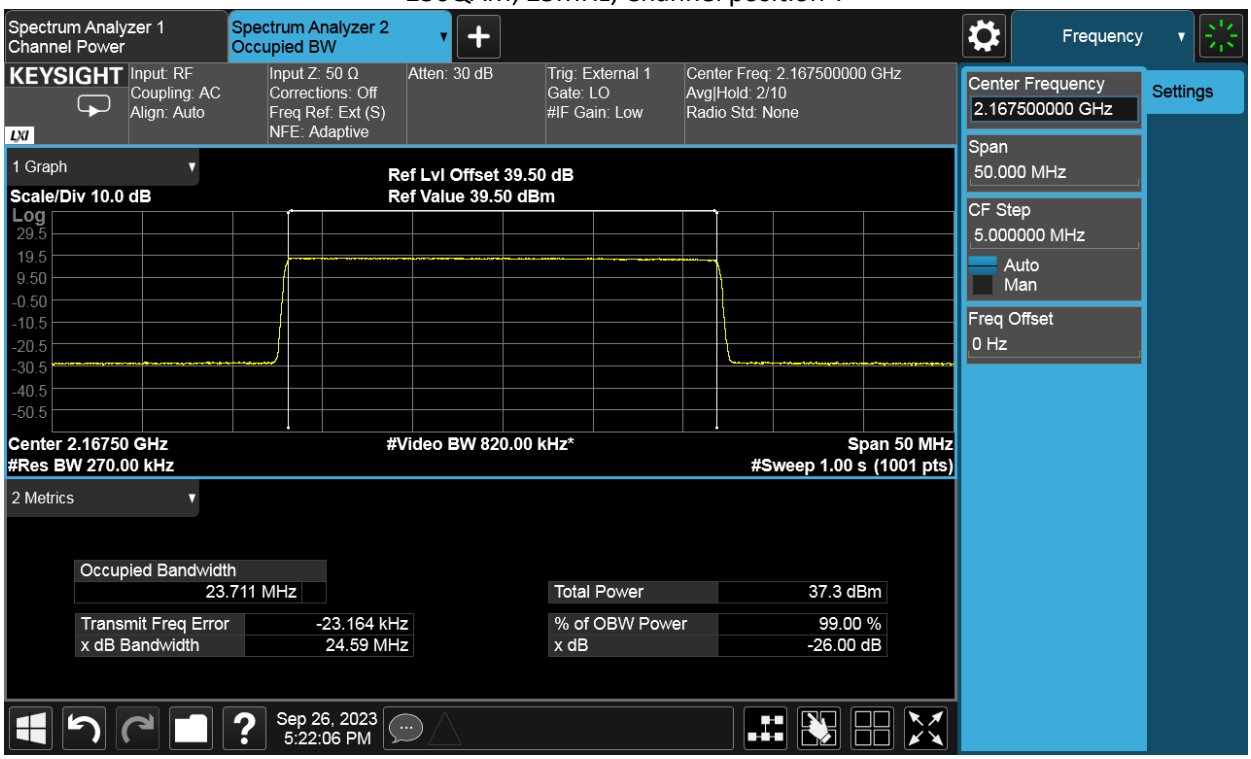


TEST REPORT

256QAM, 25MHz, Channel position M

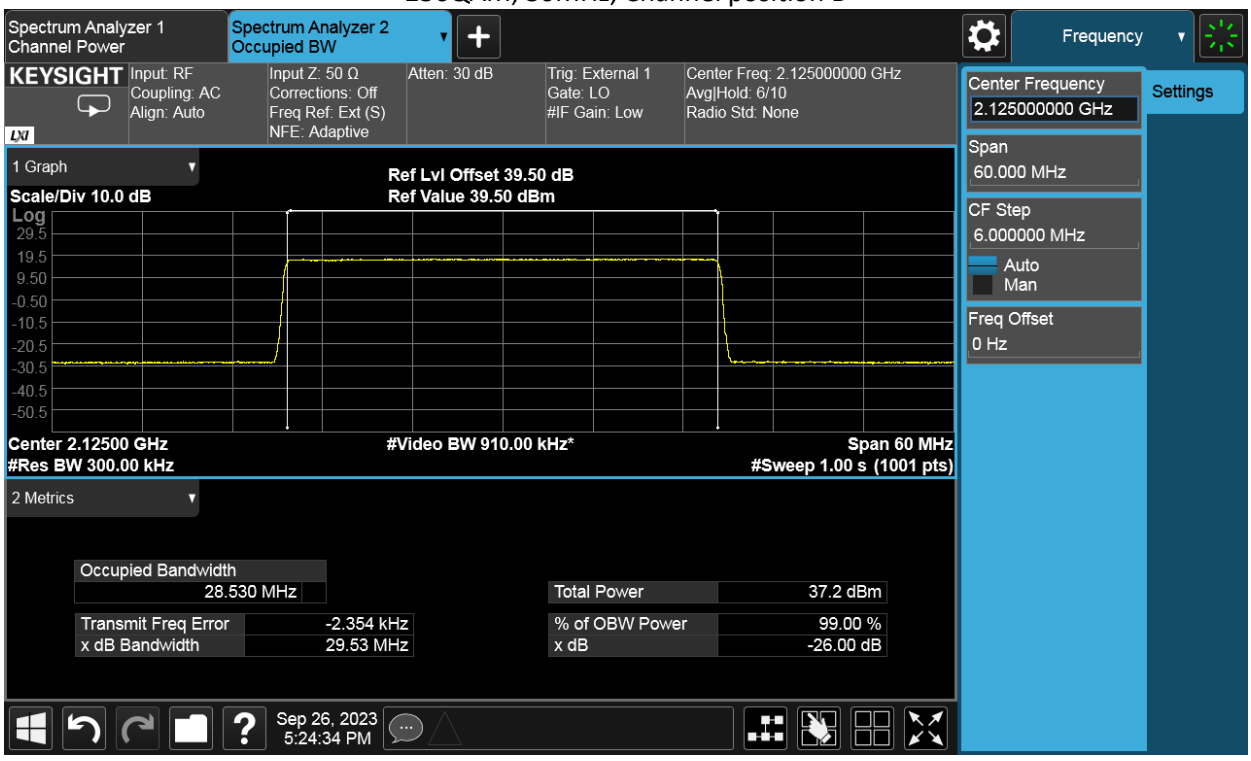


256QAM, 25MHz, Channel position T

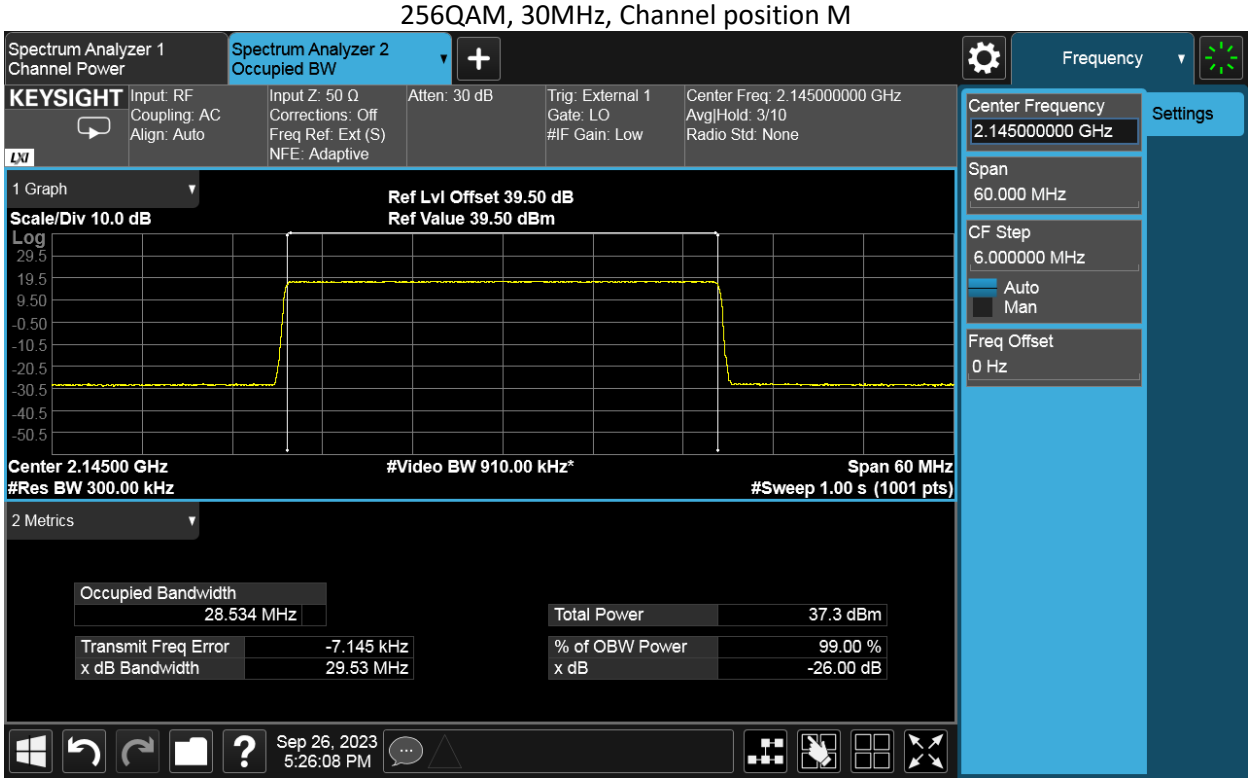


TEST REPORT

256QAM, 30MHz, Channel position B

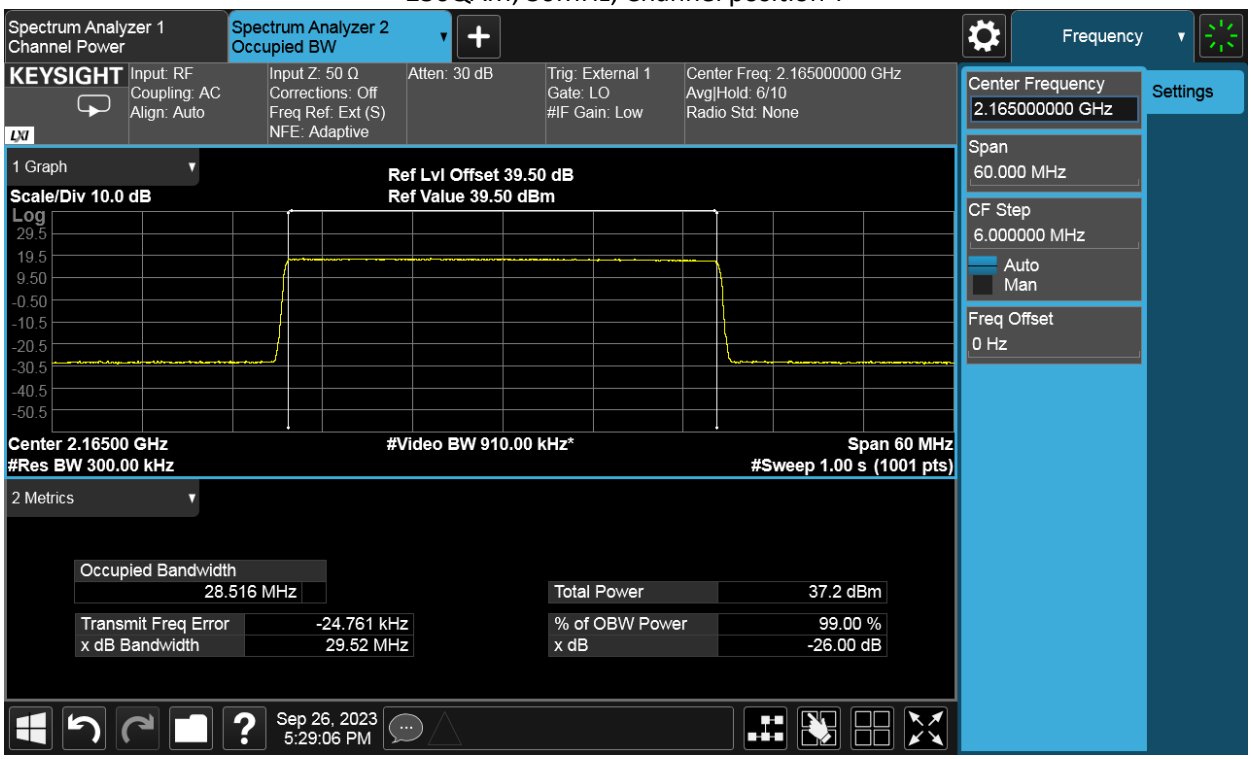


256QAM, 30MHz, Channel position M

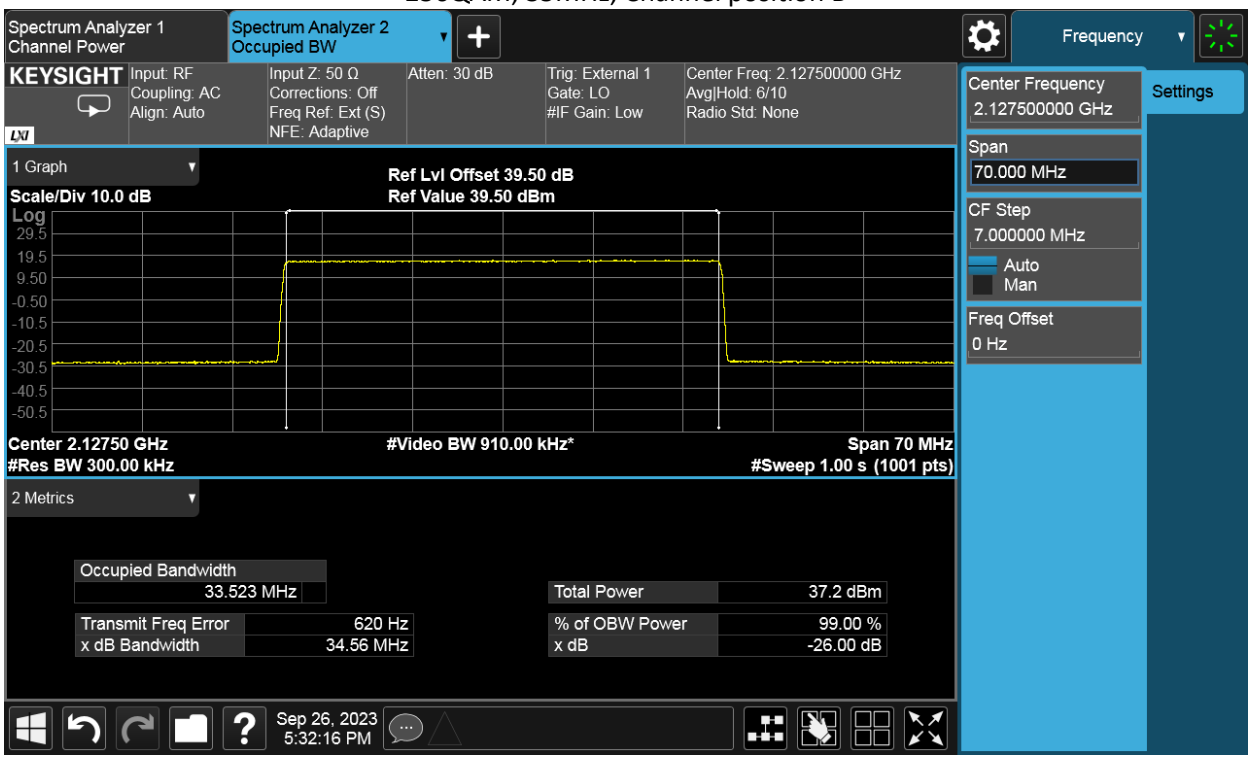


TEST REPORT

256QAM, 30MHz, Channel position T

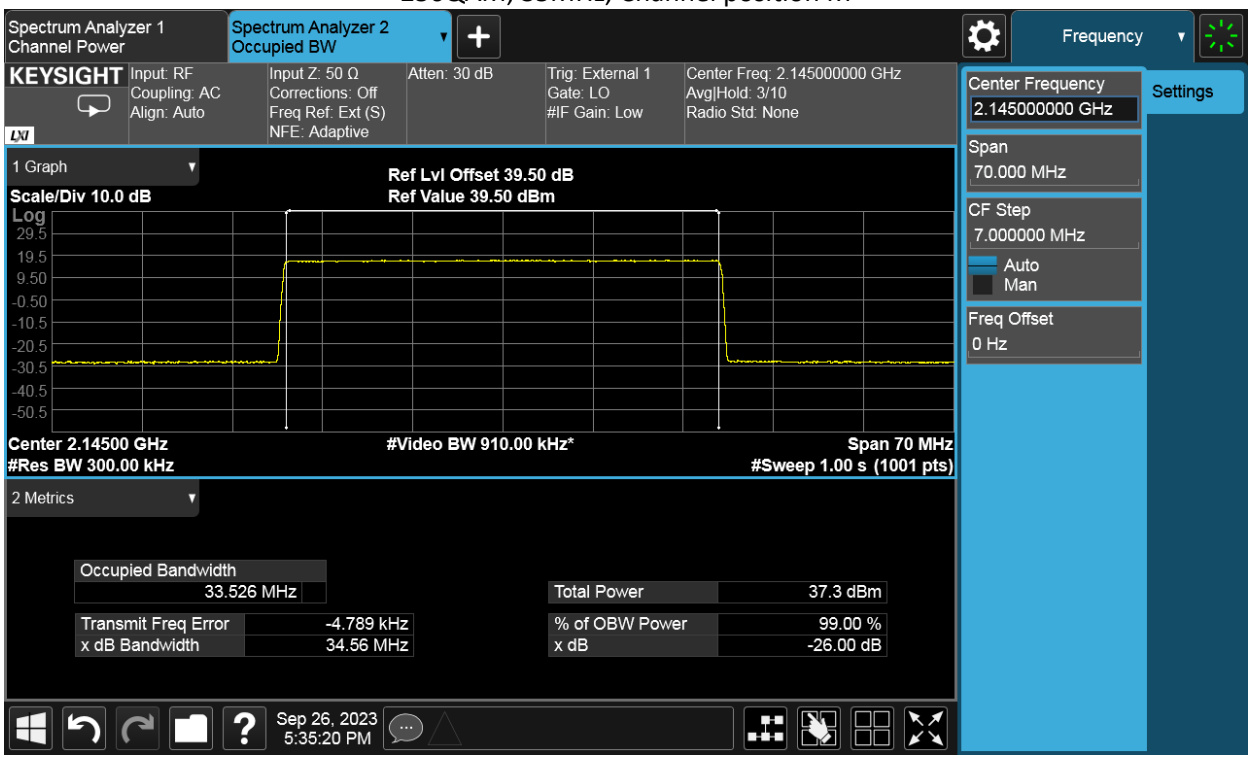


256QAM, 35MHz, Channel position B

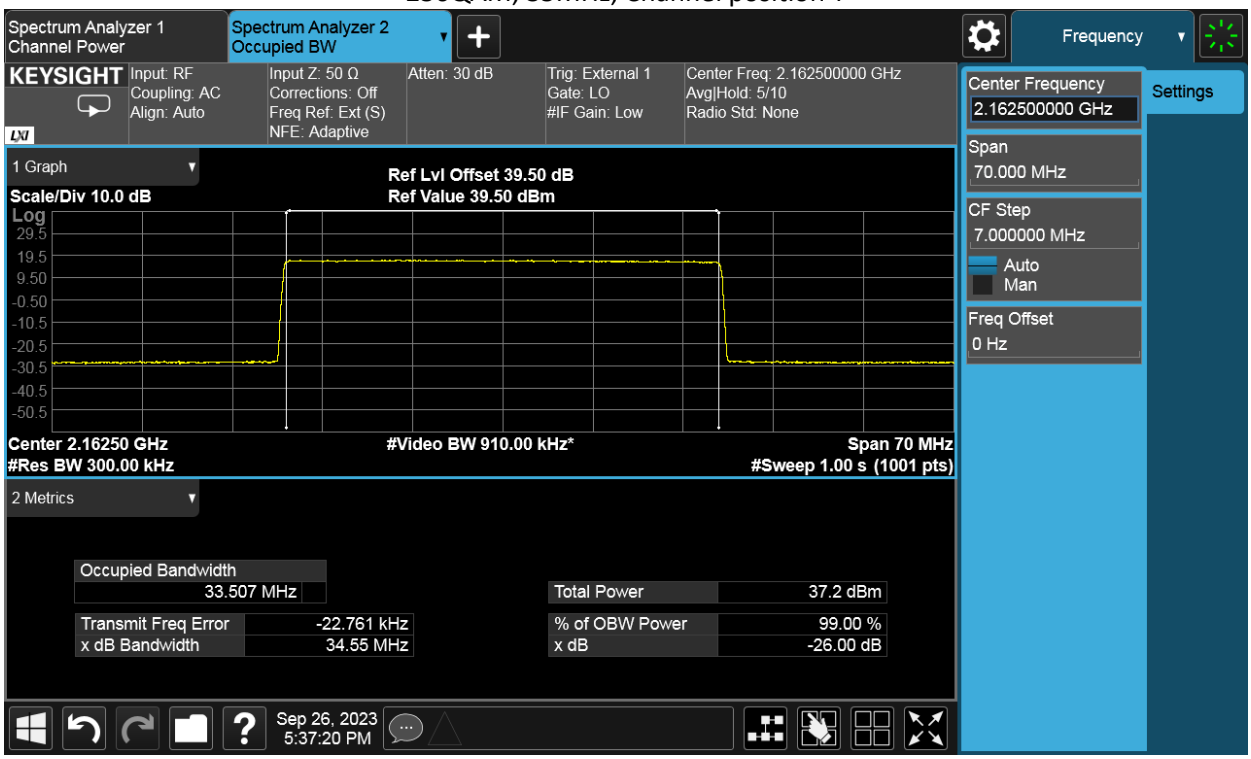


TEST REPORT

256QAM, 35MHz, Channel position M

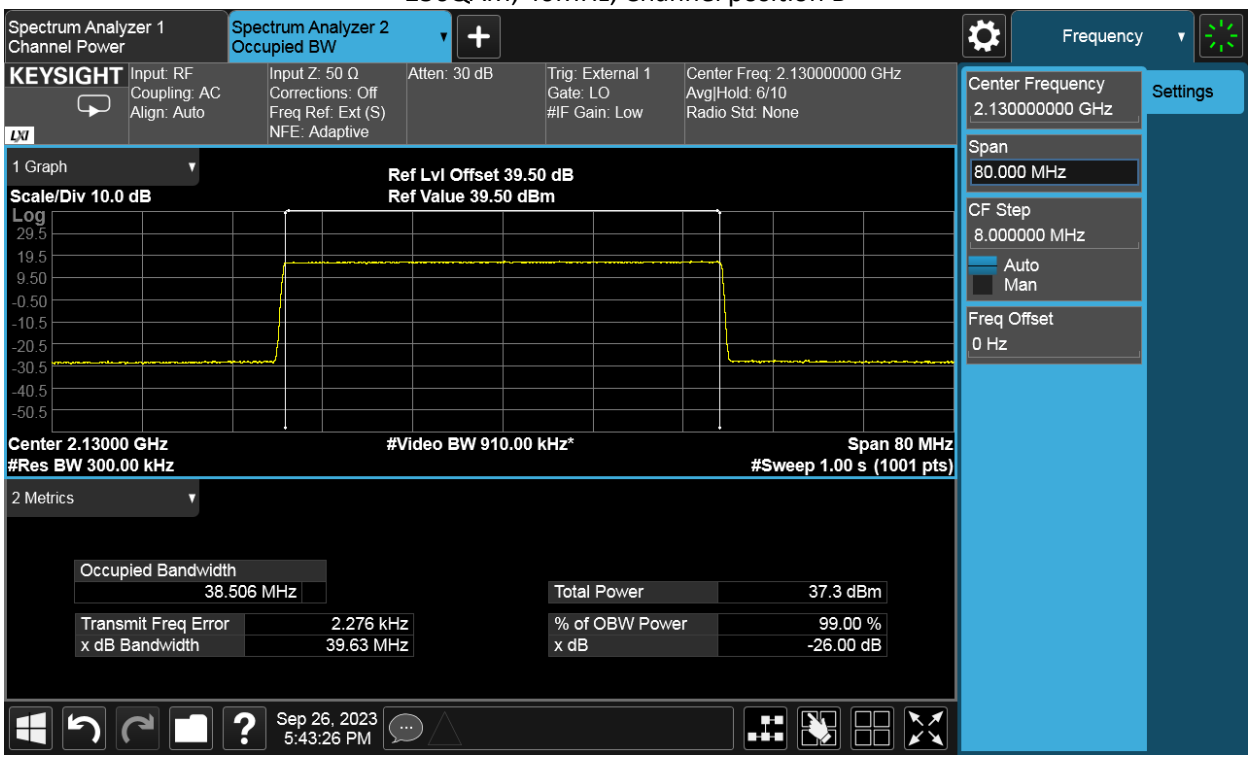


256QAM, 35MHz, Channel position T

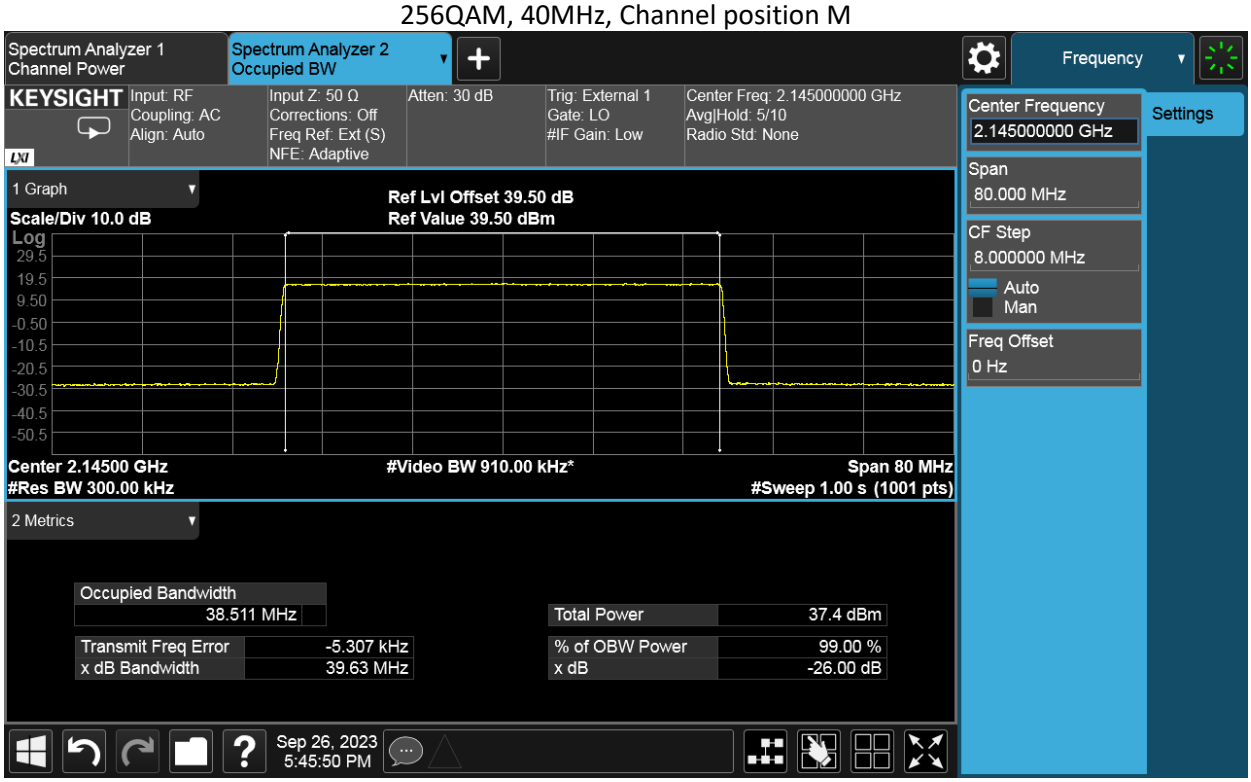


TEST REPORT

256QAM, 40MHz, Channel position B

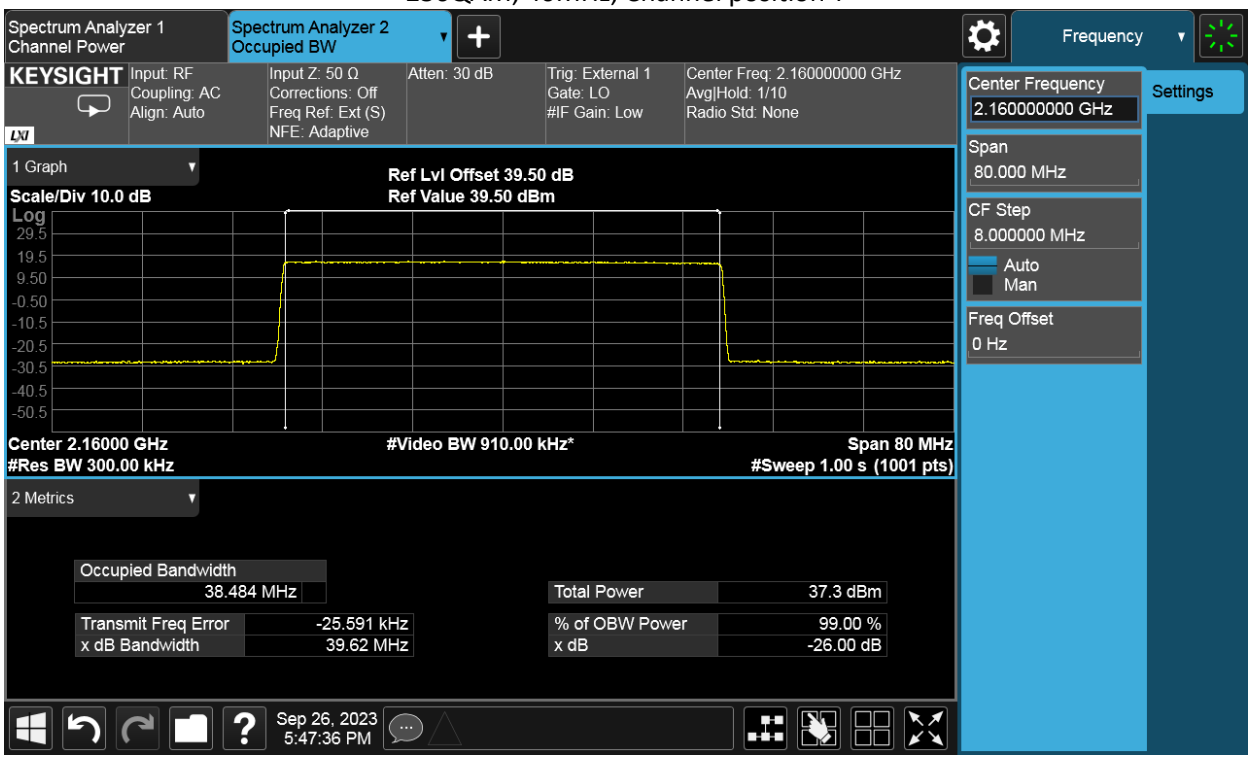


256QAM, 40MHz, Channel position M



TEST REPORT

256QAM, 40MHz, Channel position T



5 Unwanted Emissions at Band Edge

Test result: **Pass**

5.1 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 + 10log(P) dB.

5.2 Measurement Procedure

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 + 10log(P) dB.

For MIMO mode configurations, the limit was adjusted with a correction of -3.01dB [10Log(1/2)] by using the Measure and Add 10Log(N) dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports . Then the limit was adjusted to -16.01dBm.

Spectrum analyzer detector was set as RMS.

5.3 Measurement result

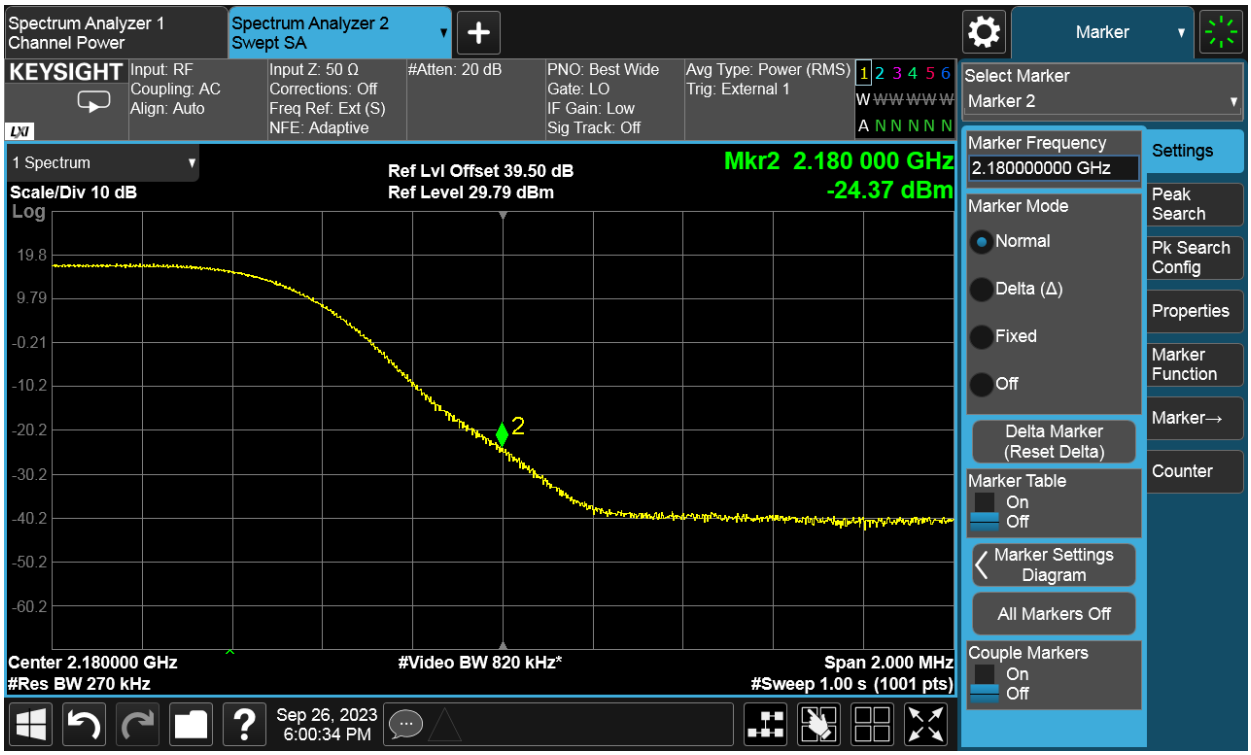
NR-1C-BE

Antenna Port	Channel Position	Modulation	Carrier Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
B	B	256QAM	25	270	-16.01
B	T	256QAM	25	270	-16.01

Channel Position B

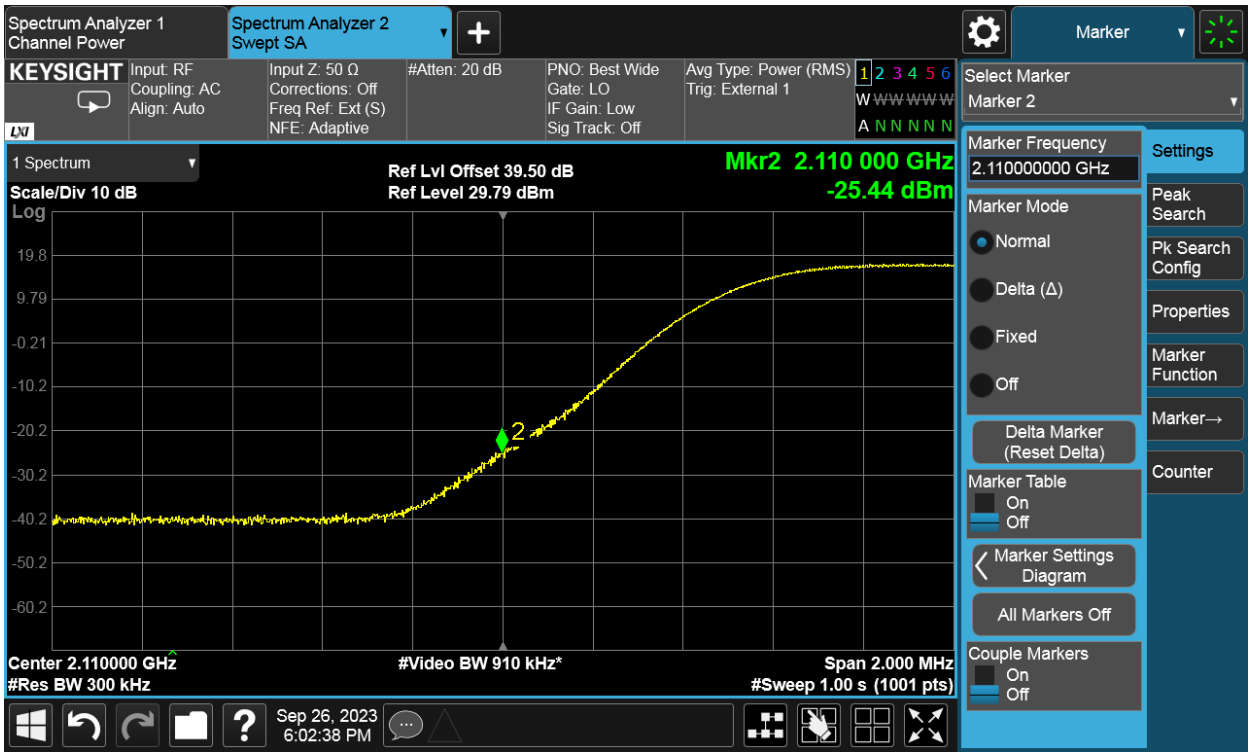
TEST REPORT

Channel Position T



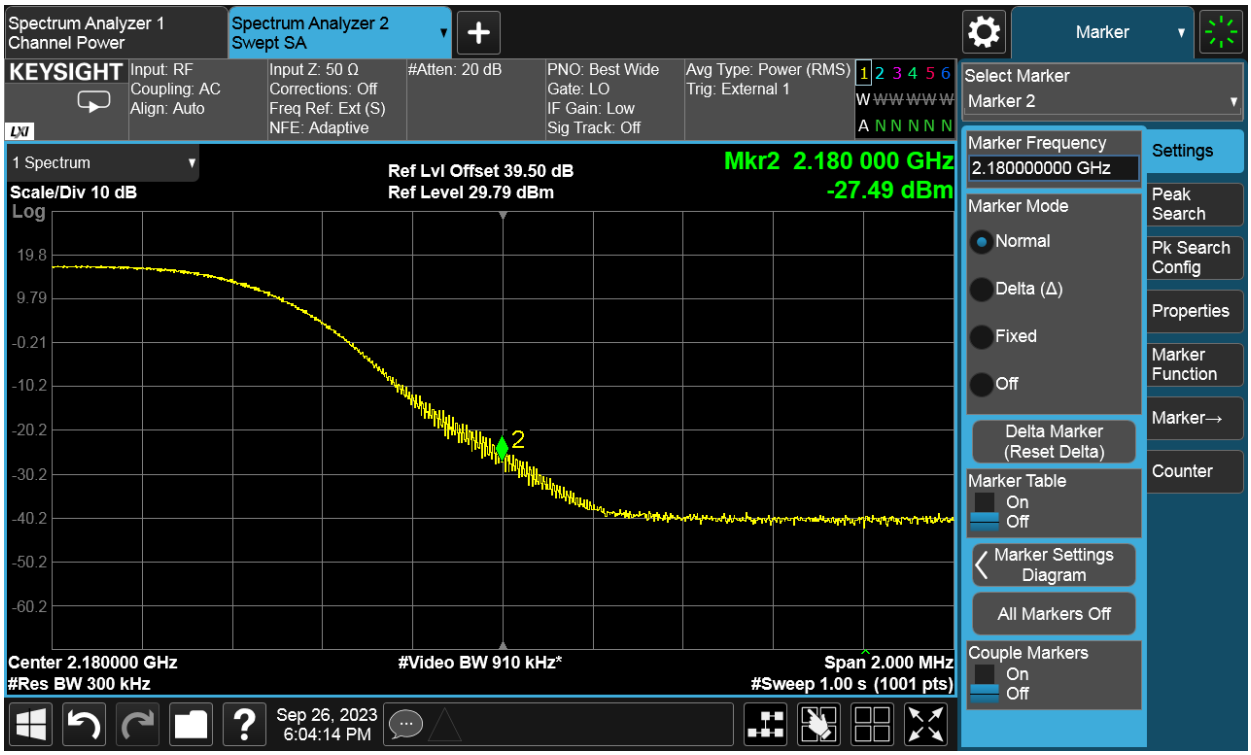
Antenna Port	Channel Position	Modulation	Carrier Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
B	B	256QAM	30	300	-16.01
B	T	256QAM	30	300	-16.01

Channel Position B



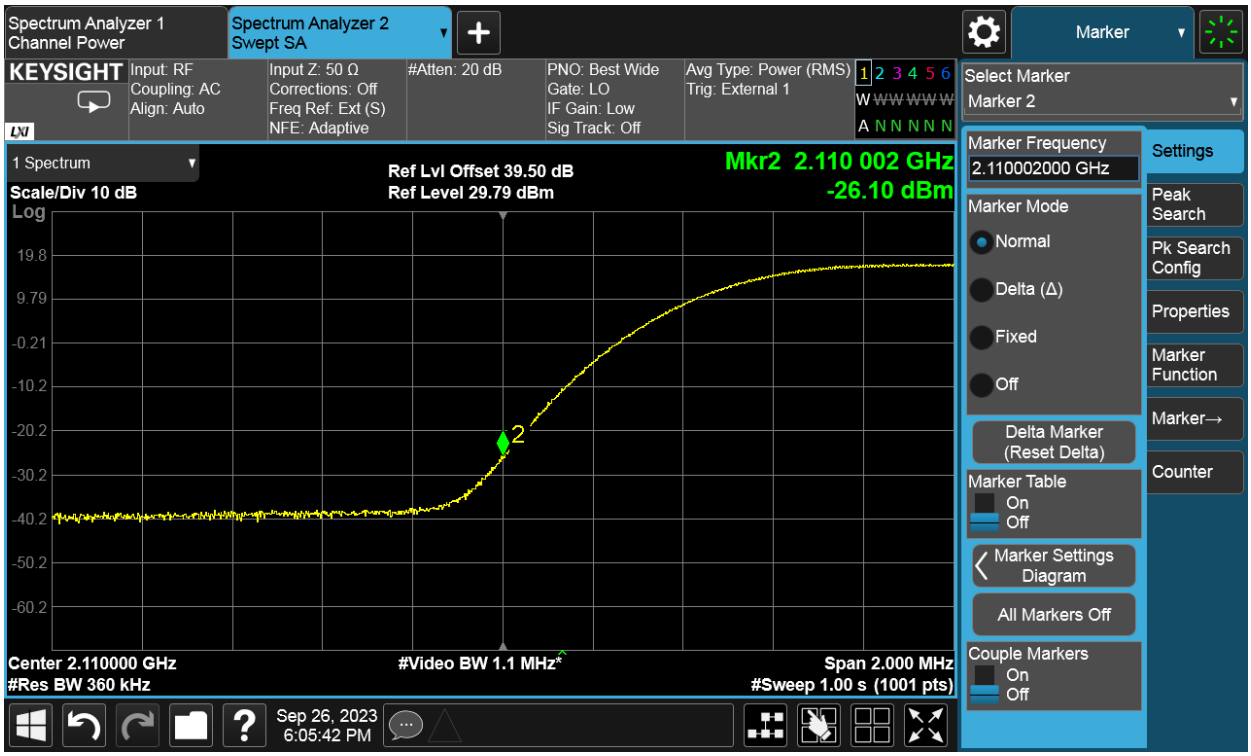
TEST REPORT

Channel Position T



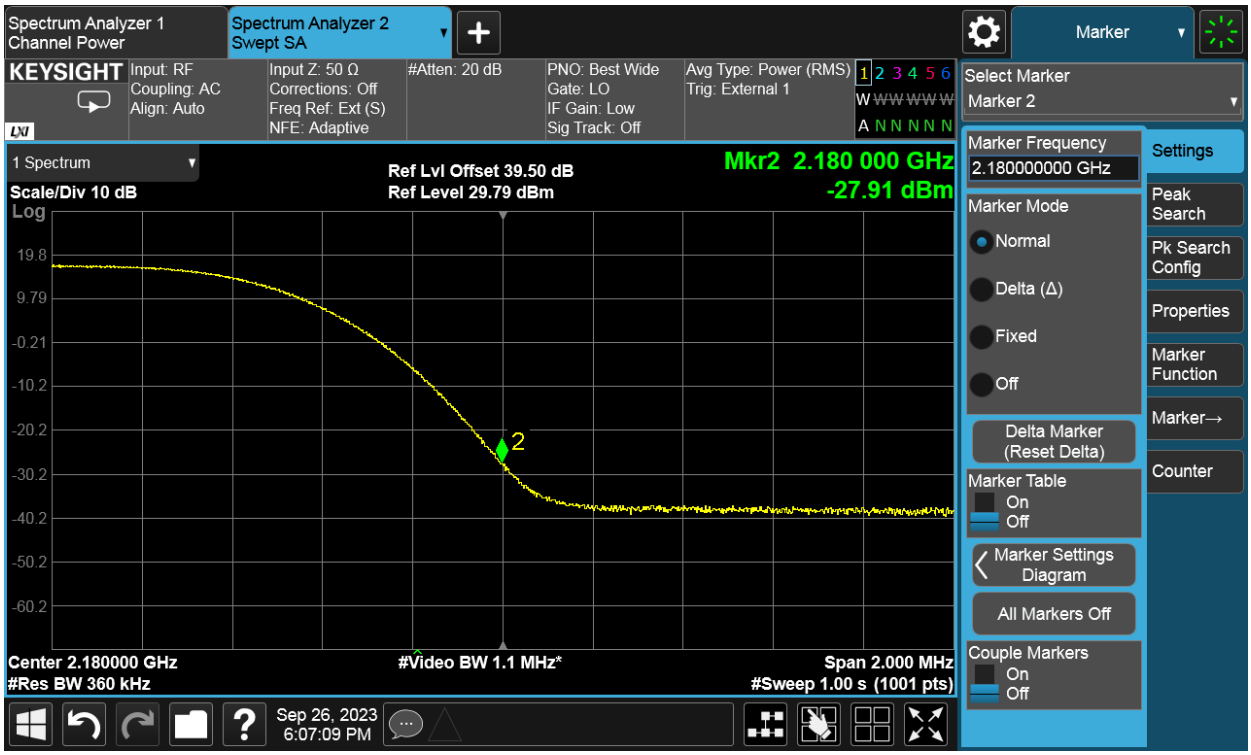
Antenna Port	Channel Position	Modulation	Carrier Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
B	B	256QAM	35	360	-16.01
B	T	256QAM	35	360	-16.01

Channel Position B



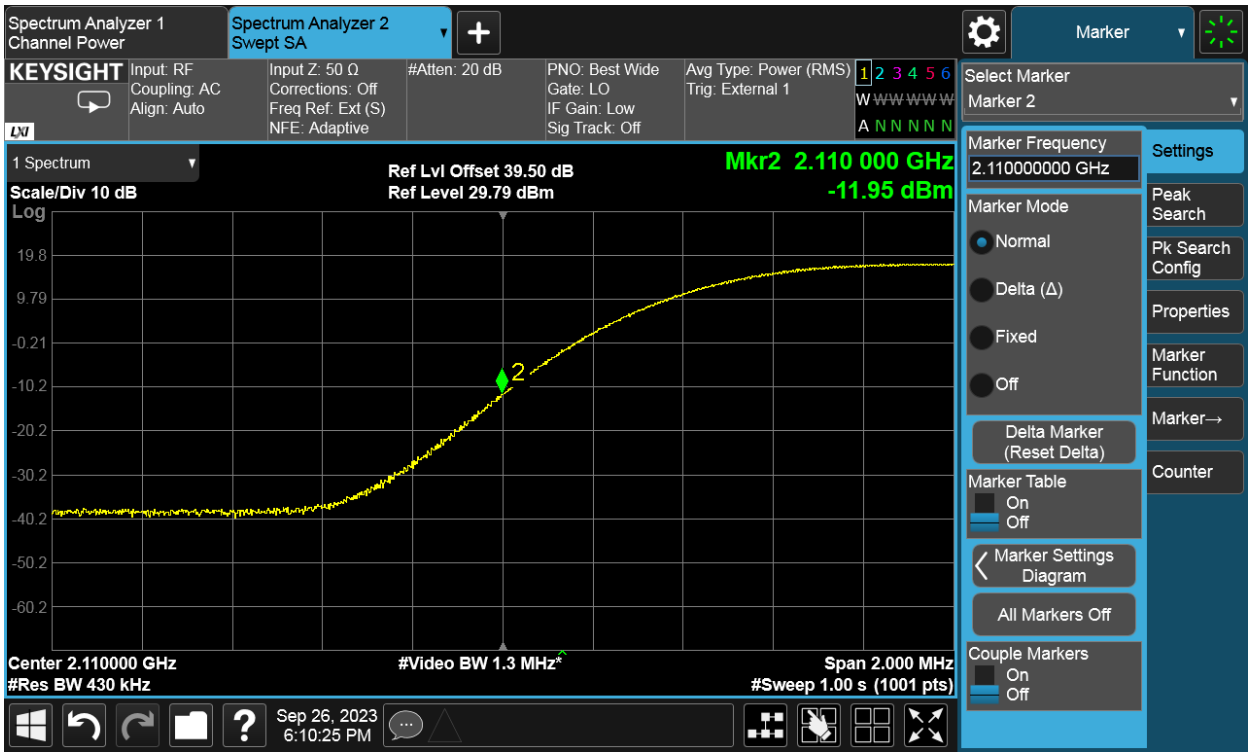
TEST REPORT

Channel Position T

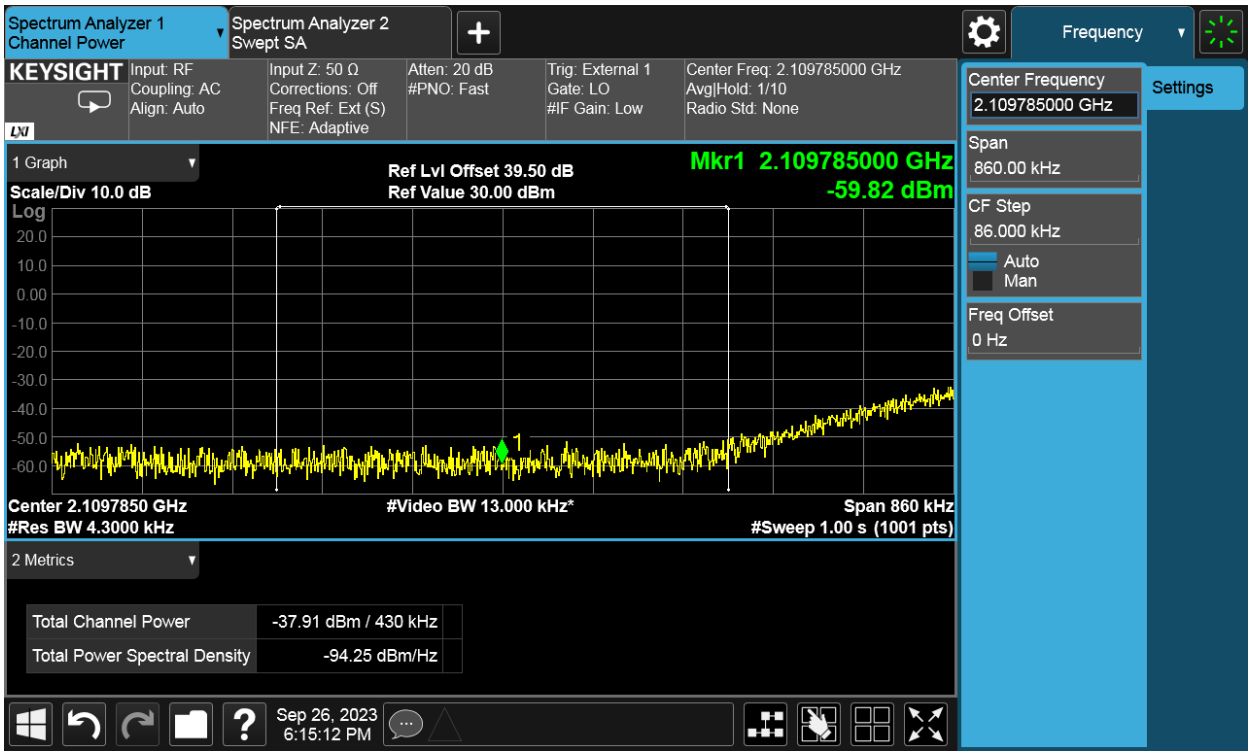


Antenna Port	Channel Position	Modulation	Carrier Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
B	B	256QAM	40	430	-16.01
B	T	256QAM	40	430	-16.01

Channel Position B

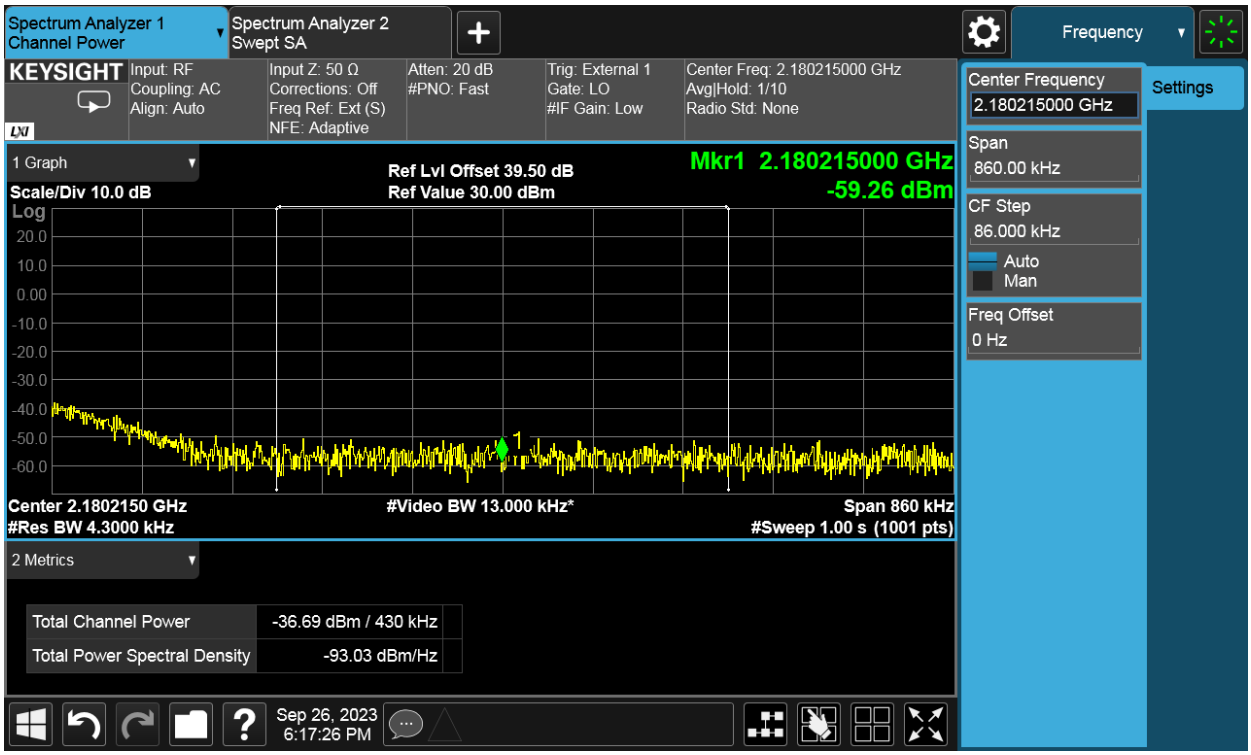


TEST REPORT



Channel Position T

TEST REPORT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Channel Power
Spectrum Analyzer 2
Swept SA
Frequency
KEYSIGHT
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Coupling: AC
Align: Auto
Input Z: 50 Ω
Corrections: Off
Freq Ref: Ext (S)
NFE: Adaptive
Atten: 20 dB
#PNO: Fast
Trig: External 1
Gate: LO
#IF Gain: Low
Center Freq: 2.180215000 GHz
Avg|Hold: 1/10
Radio Std: None
Center Frequency
2.180215000 GHz
Settings
Span
860.00 kHz
CF Step
86.000 kHz
Auto
Man
Freq Offset
0 Hz
1 Graph
Ref Lvl Offset 39.50 dB
Ref Value 30.00 dBm
Mkr1 2.180215000 GHz
-59.26 dBm
Scale/Div 10.0 dB
Log
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
Center 2.1802150 GHz
#Res BW 4.3000 kHz
#Video BW 13.000 kHz*
Span 860 kHz
#Sweep 1.00 s (1001 pts)
2 Metrics
Total Channel Power
-36.69 dBm / 430 kHz
Total Power Spectral Density
-93.03 dBm/Hz
Sep 26, 2023
6:17:26 PM