

Ericsson AB

RF TEST REPORT

Report Type:
FCC Part 96 RF report

PRODUCT NAME:
Radio 4408 B48

REPORT NUMBER:
230501092SHA-001

ISSUE DATE:
May 18, 2023

DOCUMENT CONTROL NUMBER:
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FCC ID: TA8AKRC161746-1

SUMMARY:

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

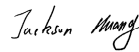
FCC CFR 47 Part 96: CITIZENS BROADBAND RADIO SERVICE

PREPARED BY:

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Reviewer
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TEST REPORT

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Revision History

Report No.	Version	Description	Issued Date
230501092SHA-001	Rev. 01	Initial issue of report	May 18, 2023

Measurement result summary

TEST ITEM	FCC REFERANCE	RESULT
Power, PSD and Peak to Average Power Ratio	96.41(b)(c)(g) 2.1046	Pass
Occupied Bandwidth	96.41(e)(3) 2.1049	Pass
Unwanted Emissions at Band Edge	96.41(e)(1) 2.1051	Pass
Conducted Unwanted Emission	96.41(e)(2) 2.1051	Pass

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Description:	Remote Radio Unit
Product name:	Radio 4408 B48
Product number:	KRC 161 746/1
Serial Number(s)	CF8B621241
Rating:	36V DC
Software Version:	ngr2_app-CXP9013268_15-R94BX.xlf
Hardware Version:	R1D
Sample received date:	May 8, 2023
Date of test:	May 8, 2023 ~ May 12, 2023

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1.2 Technical Specification

Frequency Range:	3550MHz - 3700MHz
Number of Antenna ports:	4 TX/RX
Supported RAT:	TDD LTE, TDD NR
Max RF bandwidth (IBW):	150MHz
Supported Number of Carriers:	Maximum 6 carriers
Supported modulation:	QPSK, 16QAM, 64QAM, 256QAM
Supported Channel Bandwidth:	LTE: 10MHz, 20MHz NR: 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, 50MHz, 60MHz, 70MHz, 80MHz, 90MHz, 100MHz
Output power without integrated antenna:	Maximum 37dBm (5W) per port
Output power with integrated antenna:	<p>Maximum per port:</p> <p>LTE:</p> <p>Single carrier: 24.9dBm for 10MHz BW, 27.9dBm for 20MHz BW. Two carrier: 27.9dBm for 10MHz BW, 30.9dBm for 20MHz BW. Three carrier: 29.7dBm for 10MHz BW, 32.7dBm for 20MHz BW. Four carrier: 30.9dBm for 10MHz BW, 34.0dBm for 20MHz BW. Five carrier: 31.9dBm for 10MHz BW, 34.9dBm for 20MHz BW. Six carrier: 32.7dBm for 10MHz BW, 36.5dBm for 20MHz BW.</p> <p>NR:</p> <p>Single carrier: 26.4dBm for 10MHz BW, 28.2dBm for 15MHz BW, 28.0dBm for 20MHz BW, 29.9dBm for 30MHz BW, 31.2dBm for 40MHz BW, 32.2dBm for 50MHz BW, 33.0dBm for 60MHz BW, 33.7dBm for 70MHz BW, 34.3dBm for 80MHz BW, 34.8dBm for 90MHz BW, 35.3dBm for 100MHz BW. Two carrier: 29.4dBm for 10MHz BW, 31.2dBm for 15MHz BW, 31.0dBm for 20MHz BW, 32.9dBm for 30MHz BW, 34.2dBm for 40MHz BW, 35.2dBm for 50MHz BW, 36.5dBm for 60MHz BW, 36.5dBm for 70MHz BW. Three carrier: 31.2dBm for 10MHz BW, 33.0dBm for 15MHz BW, 32.8dBm for 20MHz BW, 34.6dBm for 30MHz BW, 36.5dBm for 40MHz BW, 36.5dBm for 50MHz BW. Four carrier: 32.4dBm for 10MHz BW, 34.2dBm for 15MHz BW, 34.0dBm for 20MHz BW, 36.5dBm for 30MHz BW. Five carrier: 33.4dBm for 10MHz BW, 35.2dBm for 15MHz BW, 35.0dBm for 20MHz BW, 36.5dBm for 30MHz BW. Six carrier: 34.2dBm for 10MHz BW, 36.0dBm for 15MHz BW, 36.5dBm for 20MHz BW.</p>
Antenna Gain:	12.5dBi

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1.3 Description of Test Facility

Conducted testing:

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, High-tech 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 96 (2021)

FCC Part 2 (2021)

ANSI C63.26:2015

KDB 971168 D01 v03r01

KDB 662911 D01 v02r01

KDB 940660 D01 v02

2.2 Product Information

The Equipment Under Test (EUT) Radio 4408 B48 is an Ericsson Radio Unit working in the public mobile services 3550-3700MHz band which provides communication connections to 3550-3700MHz network. The Radio 4408 B48 operates from a -48V DC or a 120V AC power supply.

EUT has two configurations: Configuration A and Configuration B. Configuration A is the Radio Unit with integrated antenna, Configuration B is the Radio Unit without integrated antenna.

The EUT includes 4 TX/RX ports. It can be configured to transmit in MIMO mode, and the 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.

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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 64QAM 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 4 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:

Configuration	Carrier	Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-1C-10	1C	10MHz	3555.00	3625.02	3695.01
NR-1C-15	1C	15MHz	3557.52	3625.02	3692.52
NR-2C-10	2C	10MHz	-	3620.01+3630.00	-
NR-2C-15	2C	15MHz	-	3617.52+3632.52	-
NR-6C-10	6C	10MHz	-	3600.00+3610.02+3620.01 +3630.00+3640.02+3650.01	-
NR-6C-15	6C	15MHz	-	3587.52+3602.52+3617.52 +3632.52+3647.52+3662.52	-

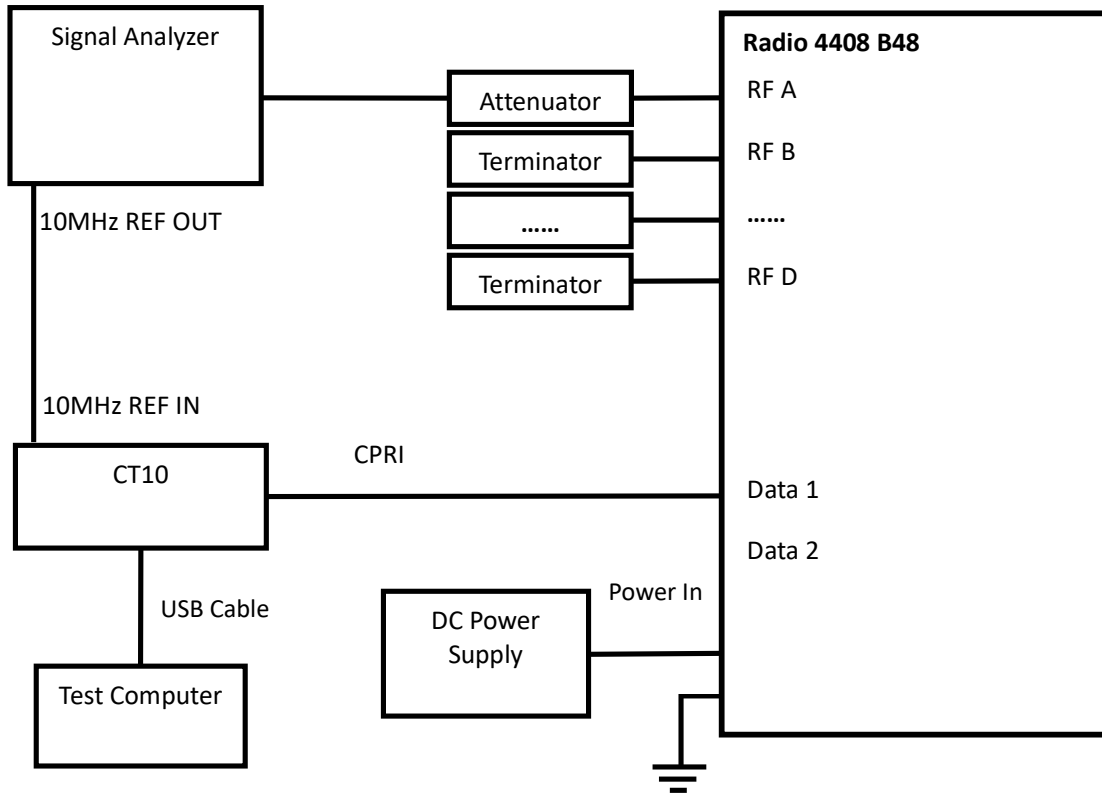
Configuration	Carrier	Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-1C-10-BE	1C	10MHz	3555.00	-	3695.01
NR-1C-15-BE	1C	15MHz	3557.52	-	3692.52
NR-2C-10-BE	2C	10MHz	3555.00+3565.02	-	3685.02+3695.01
NR-2C-15-BE	2C	15MHz	3557.52+3572.52	-	3677.52+3692.52
NR-6C-10-BE	6C	10MHz	3555.00+3565.02+3575.01 +3585.00+3595.02+3605.01	-	3645.00+3655.02+3665.01 +3675.00+3685.02+3695.01
NR-6C-15-BE	6C	15MHz	3557.52+3572.52+3587.52 +3602.52+3617.52+3632.52	-	3617.52+3632.52+3647.52 +3662.52+3677.52+3692.52

Configuration	Carrier	Carrier Bandwidth	Carrier Frequency Configuration (MHz)		
			Bottom	Middle	Top
NR-1C-10-CE	1C	10MHz	3555.00	3625.02	3695.01
NR-1C-15-CE	1C	15MHz	3557.52	3625.02	3692.52
NR-2C-10-CE	2C	10MHz	-	3555.00+3695.01	-
NR-2C-15-CE	2C	15MHz	-	3557.52+3692.52	-
NR-6C-10-CE	6C	10MHz	-	3555.00+3565.02+3575.01 +3675.00+3685.02+3695.01	-
NR-6C-15-CE	6C	15MHz	-	3557.52+3590.52+3605.52 +3662.52+3677.52+3692.52	-

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2.4 Test Setup

Conducted Measurement:



No.	Auxiliary Equipment	Product Number / Model Type	Version
1	Test computer	DELL DESKTOP-M3JEA0E	-
2	CT10	LPC 102 487/1	-
3	Power supply	N8737A	-
4	Terminator	WTF100-6G-A-NJ	-
5	Attenuator	Rosberg 20dB@3G	-
6	Network Analyzer	N5230A	-

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2.5 Test environment condition:

Test items	Temperature	Humidity
Power, PSD and Peak to Average Power Ratio	22°C	56% RH
Occupied Bandwidth		
Unwanted Emissions at Band Edge		
Conducted Unwanted Emission		
Radiated Unwanted Emissions	22°C	56% RH
Frequency Stability	Please refer to clause 8	

2.6 Instrument list

Intertek Testing Services Shanghai					
Used	Equipment	Manufacturer	Type	S/N	Due date
<input checked="" type="checkbox"/>	Signal Analyzer	Rohde & Schwarz	FSVA3044	101087	2023-07-09
<input checked="" type="checkbox"/>	Signal Analyzer	Rohde & Schwarz	N9030B	MY57140894	2023-07-09
<input checked="" type="checkbox"/>	Signal Generator	Rohde & Schwarz	SMW200A	105850	2023-12-09
<input type="checkbox"/>	Signal Generator	Rohde & Schwarz	Signal Generator	Rohde & Schwarz	2023-12-09
<input type="checkbox"/>	Climatic Chamber	Chongqing Yinhe	Climatic Chamber	Chongqing Yinhe	2023-06-30
<input type="checkbox"/>	Climatic Chamber	Chongqing Yinhe	Climatic Chamber	Chongqing Yinhe	2023-12-09
<input type="checkbox"/>	TRUE RMS CLAMP METER	FLUKE	TRUE RMS CLAMP METER	FLUKE	2023-07-22
<input type="checkbox"/>	Hygrometer	TESTO	Hygrometer	TESTO	2023-12-09
<input type="checkbox"/>	Hygrometer	TESTO	Hygrometer	TESTO	2023-12-09

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

3 Power, PSD and Peak to Average Power Ratio

Test result: Pass

3.1 Limit

Power limits:

Maximum effective isotropic radiated power (EIRP): 47dBm/10MHz

Maximum Power Spectral Density (PSD): 37dBm/MHz

Peak to Average Ratio: ≤ 13 dB

3.2 Measurement Procedure

The EUT was configured to transmit on maximum power and proper modulation. Measurements were performed with a Spectrum Analyzer using the Band Power measurement function. The detector was set to RMS with an RBW of at least 1% of the carrier bandwidth and a VBW of at least 3 times the RBW. The integration bandwidth was configured to be 10MHz as defined in 96.41(b). Where the carrier width was greater than 10MHz, the integration bandwidth was moved to the region with the highest PSD to find the maximum band power.

For PSD measurements in a 1MHz bandwidth, an RMS detector was used with a single sweep. The highest PSD was established over the entire emission bandwidth and the result recorded.

The measured results were summed in accordance with FCC KDB 662911 to account for 4 ports MIMO operation.

CCDF measurements were carried out in accordance with ANSI C63.26 Clause 5.2.3.4.

TEST REPORT

3.3 Measurement result

Configuration B:

NR-1C-10:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position B			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	35.92	27.06	37.06	8.34
B	64QAM	10	36.04	27.16	37.16	8.62
C	64QAM	10	35.94	27.08	37.08	8.51
D	64QAM	10	35.83	27.03	37.03	8.46
Total A-D			41.95	33.10	43.10	-

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	35.90	26.99	36.99	8.71
B	64QAM	10	35.93	26.99	36.99	8.61
C	64QAM	10	35.81	26.86	36.86	8.60
D	64QAM	10	35.92	27.13	37.13	8.95
Total A-D			41.91	33.01	43.01	-

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position T			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	35.69	26.82	36.82	8.46
B	64QAM	10	35.72	26.84	36.84	8.53
C	64QAM	10	35.64	26.74	36.74	8.95
D	64QAM	10	35.81	27.01	37.01	8.71
Total A-D			41.74	32.87	42.87	-

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NR-1C-15:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position B			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	36.00	25.10	35.10	9.06
B	64QAM	15	36.07	25.16	35.16	8.12
C	64QAM	15	36.00	25.07	35.07	8.58
D	64QAM	15	35.92	25.08	35.08	8.37
Total A-D			42.02	31.12	41.12	-

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	35.92	25.01	35.01	8.81
B	64QAM	15	35.89	25.02	35.02	8.90
C	64QAM	15	35.77	24.89	34.89	8.65
D	64QAM	15	36.04	25.06	35.06	8.83
Total A-D			41.93	31.02	41.02	-

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position T			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	35.77	24.96	34.96	8.60
B	64QAM	15	35.81	24.95	34.95	8.61
C	64QAM	15	35.71	24.86	34.86	8.36
D	64QAM	15	35.97	25.12	35.12	8.54
Total A-D			41.84	30.99	40.99	-

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NR-2C-10:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	35.96	24.02	34.02	-
B	64QAM	10	35.93	24.02	34.02	-
C	64QAM	10	35.85	23.92	33.92	-
D	64QAM	10	36.02	24.10	34.10	-
Total A-D			41.96	30.04	40.04	-

NR-2C-15:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	35.97	22.08	32.08	-
B	64QAM	15	35.92	22.01	32.01	-
C	64QAM	15	35.89	21.93	31.93	-
D	64QAM	15	36.04	22.08	32.08	-
Total A-D			41.98	28.05	38.05	-

NR-6C-10:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	35.89	19.18	29.18	-
B	64QAM	10	35.88	19.21	29.21	-
C	64QAM	10	35.91	19.24	29.24	-
D	64QAM	10	35.96	19.29	29.29	-
Total A-D			41.93	25.25	35.25	-

NR-6C-15:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	35.87	17.24	27.24	-
B	64QAM	15	35.90	17.23	27.23	-
C	64QAM	15	35.89	17.24	27.24	-
D	64QAM	15	35.95	17.28	27.28	-
Total A-D			41.92	23.27	33.27	-

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EIRP Compliance

The maximum allowable antenna gain + cable loss cannot exceed the values in the table below when the radio operating at the maximum output power in order to be compliant with the EIRP requirements in Part 96.41.

RF exposure compliance for the external antenna shall be addressed at the time of licensing, as required by the responsible FCC Bureau(s), including antenna co-location requirements of Part 1.1307(b)(3).

	Maximum Total output power dBm/MHz	Maximum Antenna gain + cable loss dBi	PSD dBm/MHz	EIRP dBm/10MHz
NR-1C-10	33.10	3.90	37	47
NR-1C-15	31.12	5.88	37	47
NR-2C-10	30.04	6.96	37	47
NR-2C-15	28.05	8.95	37	47
NR-6C-10	25.25	11.75	37	47
NR-6C-15	23.27	13.73	37	47

Configuration A:

NR-1C-10:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position B			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	25.16	16.31	26.31	9.40
B	64QAM	10	25.44	16.57	26.57	9.57
C	64QAM	10	25.20	16.32	26.32	9.43
D	64QAM	10	25.08	16.24	26.24	9.53
Total A-D			31.24	22.38	32.38	-
Antenna gain			12.5			-
EIRP			43.74	34.88	44.88	-

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	25.12	16.18	26.18	9.31
B	64QAM	10	25.32	16.40	26.40	9.40
C	64QAM	10	25.07	16.10	26.10	9.38
D	64QAM	10	25.26	16.31	26.31	9.36
Total A-D			31.21	22.27	32.27	-
Antenna gain			12.5			-
EIRP			43.71	34.77	44.77	-

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Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position T			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	25.06	16.08	26.08	9.58
B	64QAM	10	25.14	16.26	26.26	9.49
C	64QAM	10	25.03	16.12	26.12	9.33
D	64QAM	10	25.25	16.34	26.34	9.35
Total A-D			31.14	22.22	32.22	-
Antenna gain			12.5			-
EIRP			43.64	34.72	44.72	-

NR-1C-15:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position B			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	26.98	16.02	26.02	9.33
B	64QAM	15	27.25	16.33	26.33	9.27
C	64QAM	15	27.06	16.16	26.16	9.36
D	64QAM	15	26.98	16.12	26.12	9.40
Total A-D			33.09	22.18	32.18	-
Antenna gain			12.5			-
EIRP			45.59	34.68	44.68	-

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	26.94	16.02	26.02	9.22
B	64QAM	15	27.12	16.24	26.24	9.32
C	64QAM	15	26.92	15.99	25.99	9.27
D	64QAM	15	27.03	16.11	26.11	9.31
Total A-D			33.02	22.11	32.11	-
Antenna gain			12.5			-
EIRP			45.52	34.61	44.61	-

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position T			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	26.81	15.96	25.96	9.35
B	64QAM	15	27.00	16.18	26.18	9.28
C	64QAM	15	26.95	16.03	26.03	9.29
D	64QAM	15	27.06	16.23	26.23	9.45
Total A-D			32.98	22.12	32.12	-
Antenna gain			12.5			-
EIRP			45.48	34.62	44.62	-

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NR-2C-10:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	28.15	16.18	26.18	-
B	64QAM	10	28.38	16.40	26.40	-
C	64QAM	10	28.14	16.19	26.19	-
D	64QAM	10	28.25	16.28	26.28	-
Total A-D			34.25	22.28	32.28	-
Antenna gain			12.5			-
EIRP			46.75	34.78	44.78	-

NR-2C-15:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	29.90	15.98	25.98	-
B	64QAM	15	30.06	16.16	26.16	-
C	64QAM	15	29.89	15.96	25.96	-
D	64QAM	15	30.06	16.08	26.08	-
Total A-D			36.00	22.07	32.07	-
Antenna gain			12.5			-
EIRP			48.50	34.57	44.57	-

NR-6C-10:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	10	32.87	16.12	26.12	-
B	64QAM	10	33.06	16.39	26.39	-
C	64QAM	10	32.95	16.25	26.25	-
D	64QAM	10	33.04	16.29	26.29	-
Total A-D			39.00	22.28	32.28	-
Antenna gain			12.5			-
EIRP			51.50	34.78	44.78	-

TEST REPORT

NR-6C-15:

Antenna Port	Modulation	Carrier Bandwidth (MHz)	Power / PSD / Peak-to-Average Ratio (PAR)			
			Channel position M			
			Power (dBm)	PSD (dBm/MHz)	Power (dBm/10MHz)	PAR (dB)
A	64QAM	15	34.73	16.06	26.06	-
B	64QAM	15	34.91	16.24	26.24	-
C	64QAM	15	34.83	16.15	26.15	-
D	64QAM	15	34.90	16.22	26.22	-
Total A-D			40.86	22.19	32.19	-
Antenna gain			12.5			-
EIRP			53.36	34.69	44.69	-

TEST REPORT**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 99% and 26dB bandwidth was measured in accordance with FCC KDB 971168 D01 Clause 4.2.

TEST REPORT

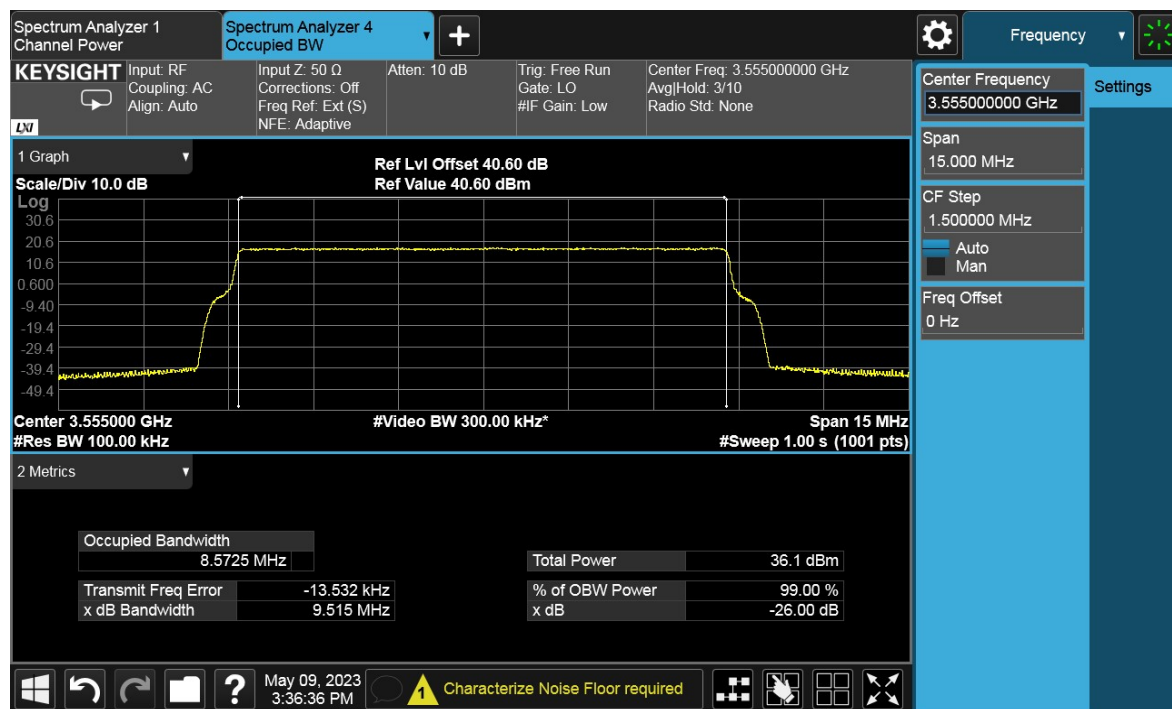
4.2 Measurement result

Configuration B:

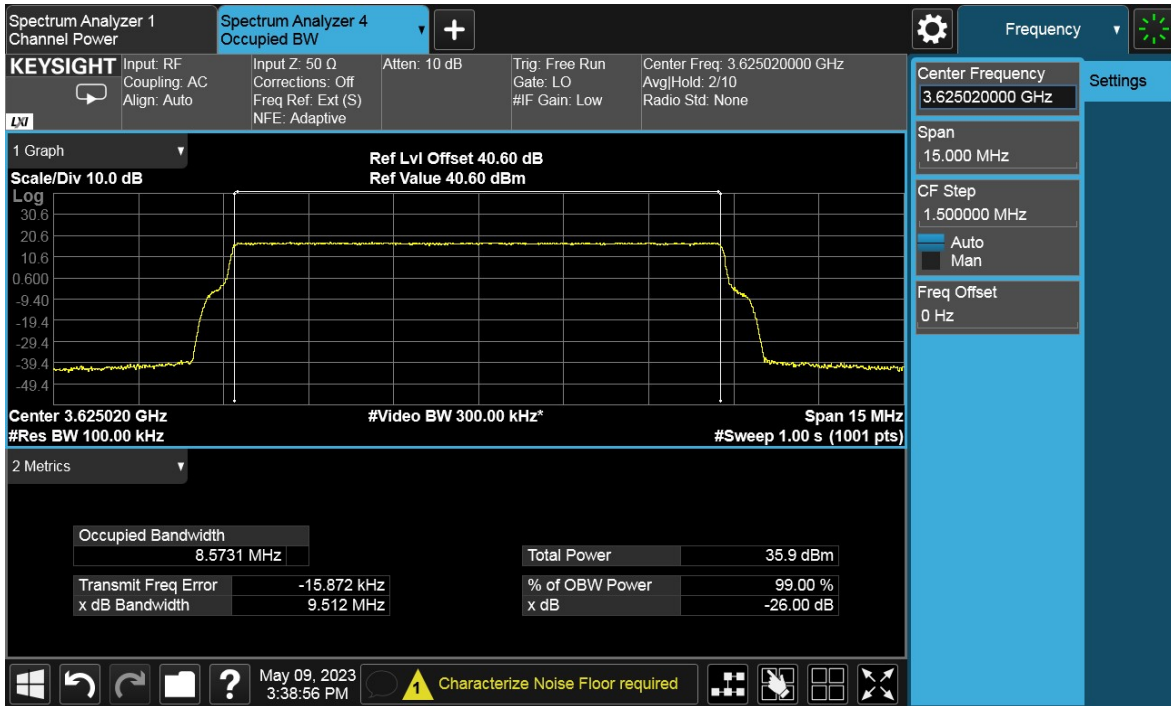
NR-1C-10:

Antenna Port	Modulation	Bandwidth	Channel Position B	Channel Position M	Channel Position T
B	64QAM	10MHz	99% Occupied Bandwidth (MHz)		
			8.5725	8.5731	8.5722
			26dB Occupied Bandwidth (MHz)		
			9.515	9.512	9.492

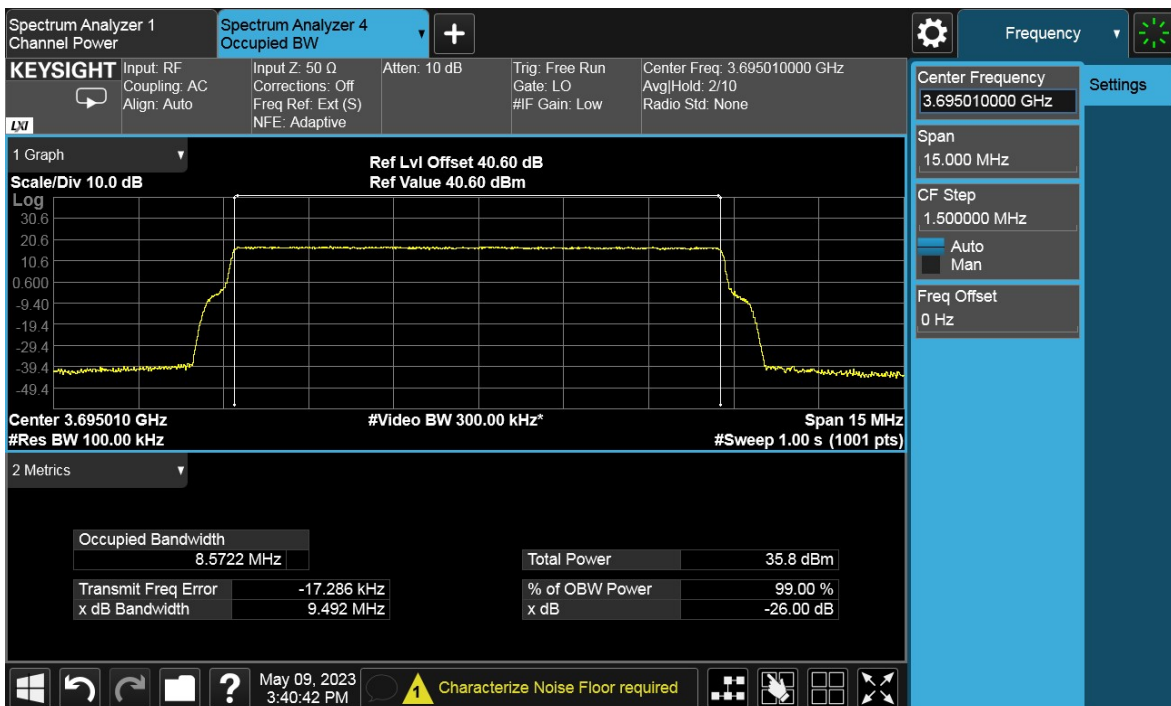
Channel position B



Channel position M



Channel position T

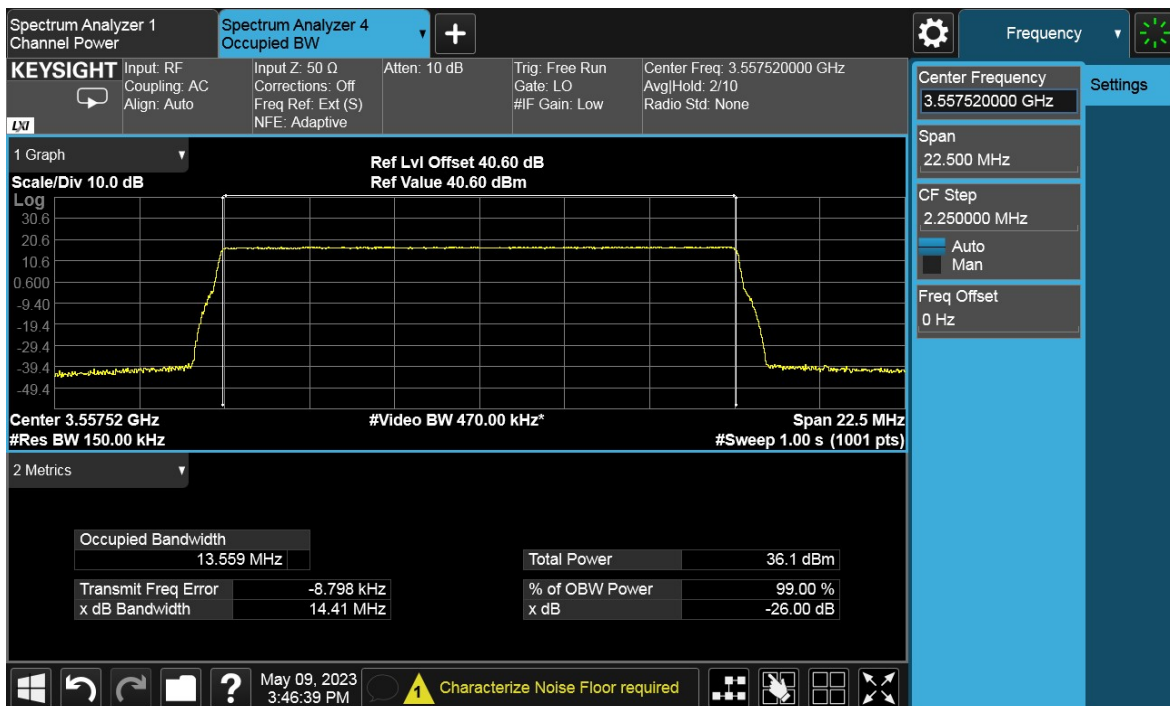


TEST REPORT

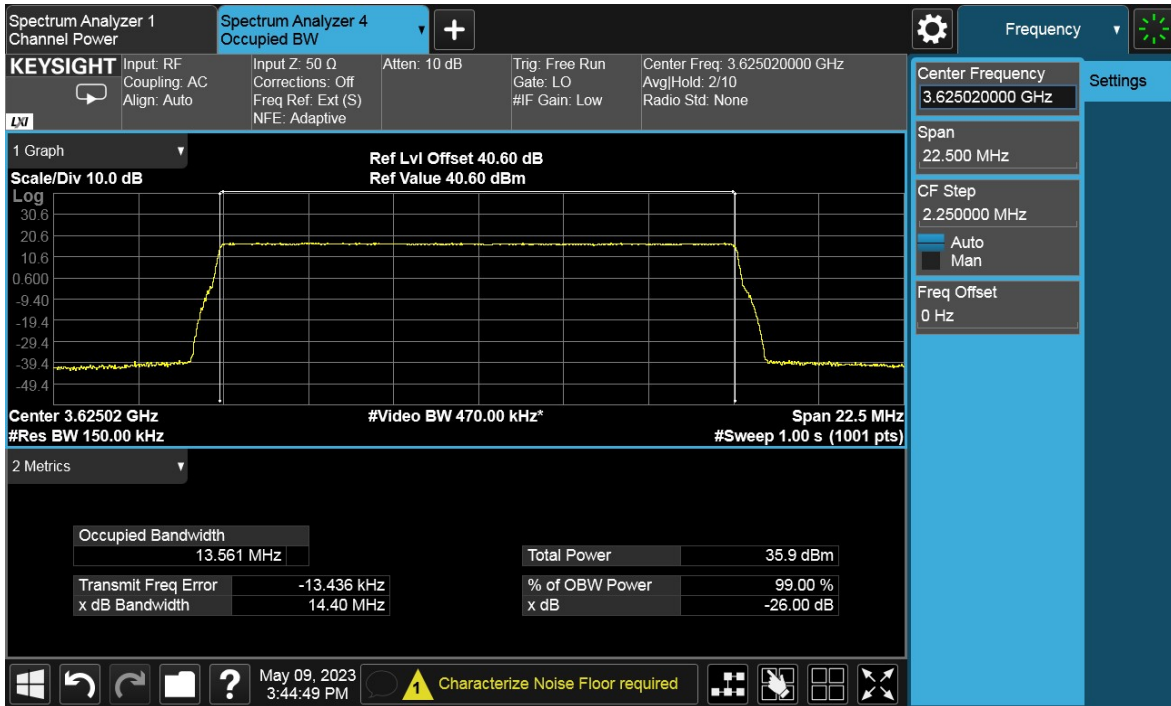
NR-1C-15:

Antenna Port	Modulation	Bandwidth	Channel Position B	Channel Position M	Channel Position T
B	64QAM	15MHz	99% Occupied Bandwidth (MHz)		
			13.559	13.561	13.560
			26dB Occupied Bandwidth (MHz)		
			14.41	14.40	14.40

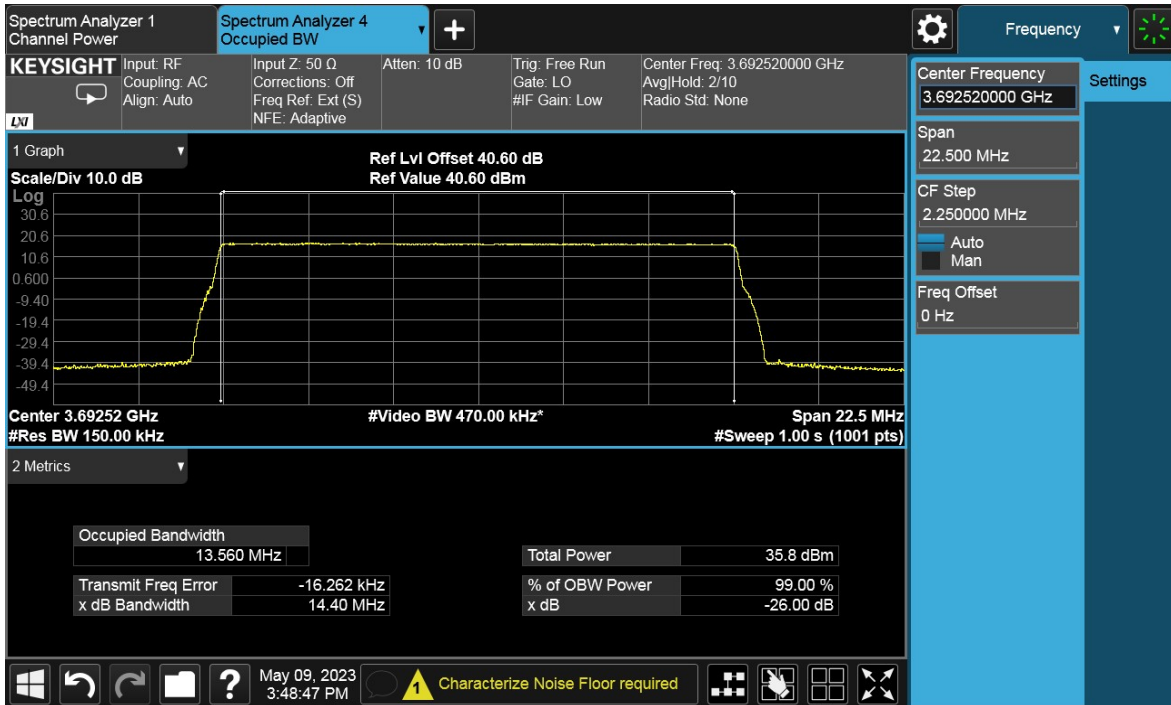
Channel position B



Channel position M



Channel position T



TEST REPORT**5 Unwanted Emissions at Band Edge****Test result: Pass****5.1 Limit**

Except as otherwise specified in paragraph (e)(2) of this section, for channel and frequency assignments made by the SAS to CBSDs, the conducted power of any emission outside the fundamental emission (whether in or outside of the authorized band) shall not exceed -13 dBm/MHz within 0-10 megahertz above the upper SAS-assigned channel edge and within 0-10 megahertz below the lower SAS-assigned channel edge. At all frequencies greater than 10 megahertz above the upper SAS assigned channel edge and less than 10 MHz below the lower SAS assigned channel edge, the conducted power of any emission shall not exceed -25 dBm/MHz.

5.2 Measurement Procedure

All measurements were made according with KDB 971168 D01.

For MIMO mode configurations, the limit was adjusted with a correction of -6.02 dB $[10\text{Log}(1/4)]$ by using the Measure and Add $10\text{Log}(N)$ dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports .

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed and a RBW of 1MHz for measurements of emissions > 1 MHz away from the band edges.

Spectrum analyzer detector was set as RMS.

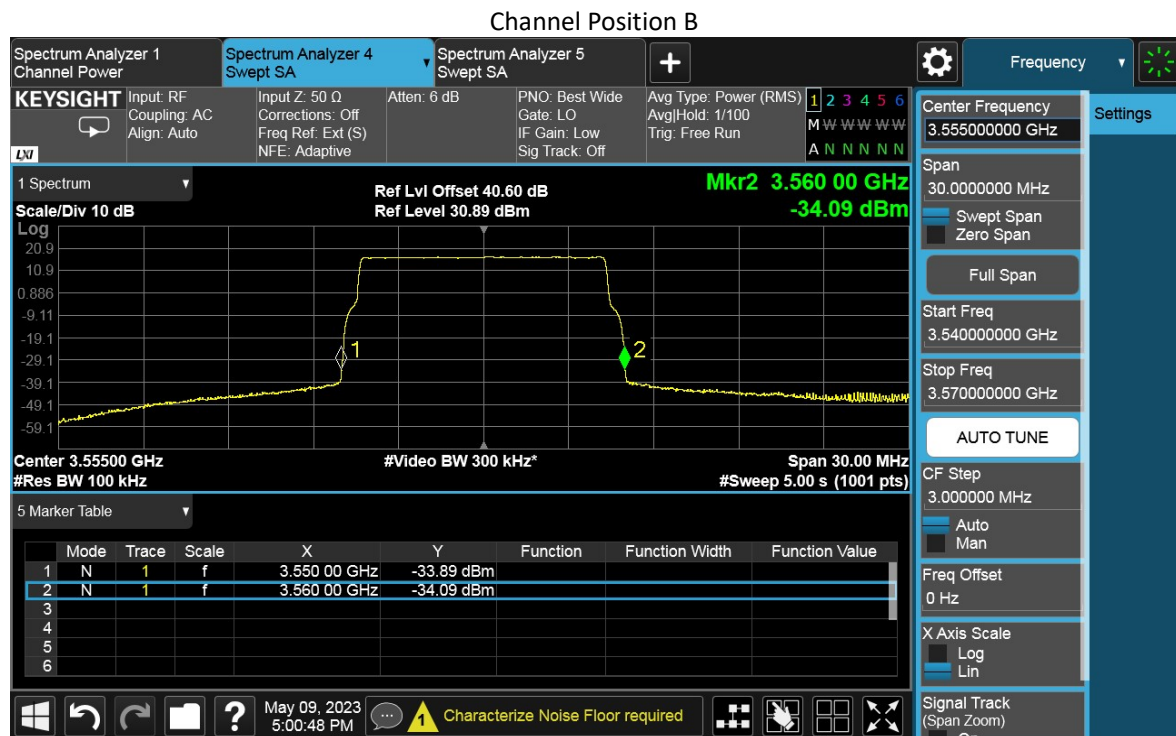
TEST REPORT

5.3 Measurement result

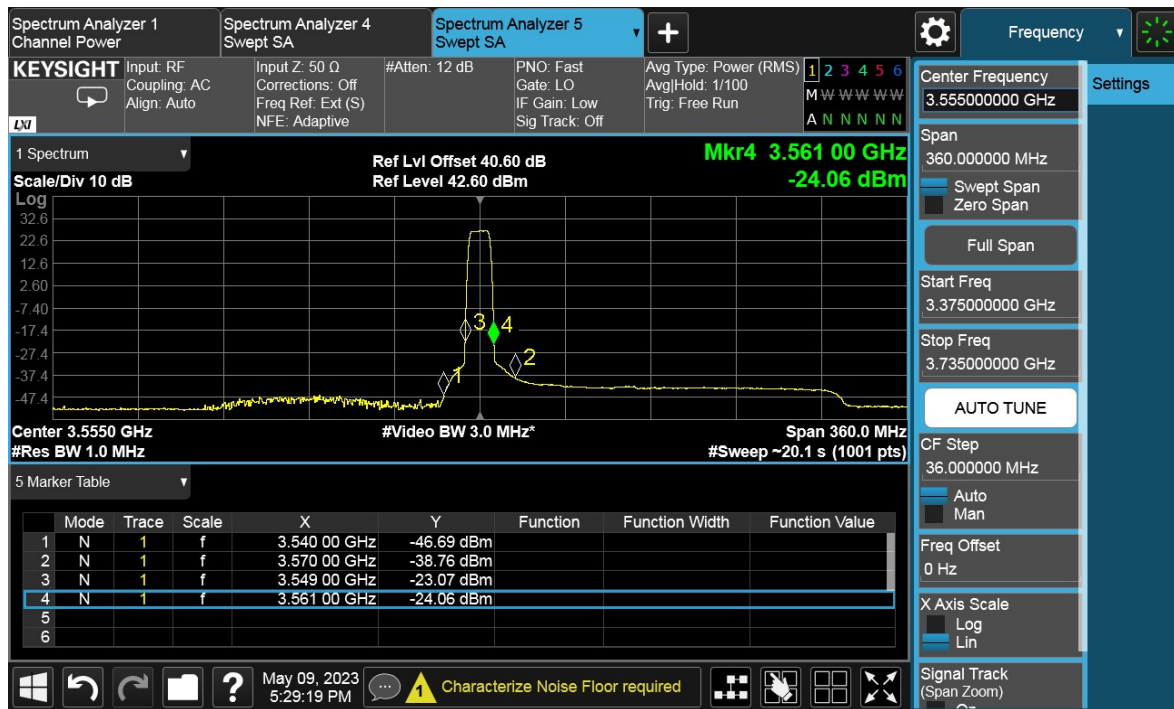
Configuration B:

NR-1C-10-BE:

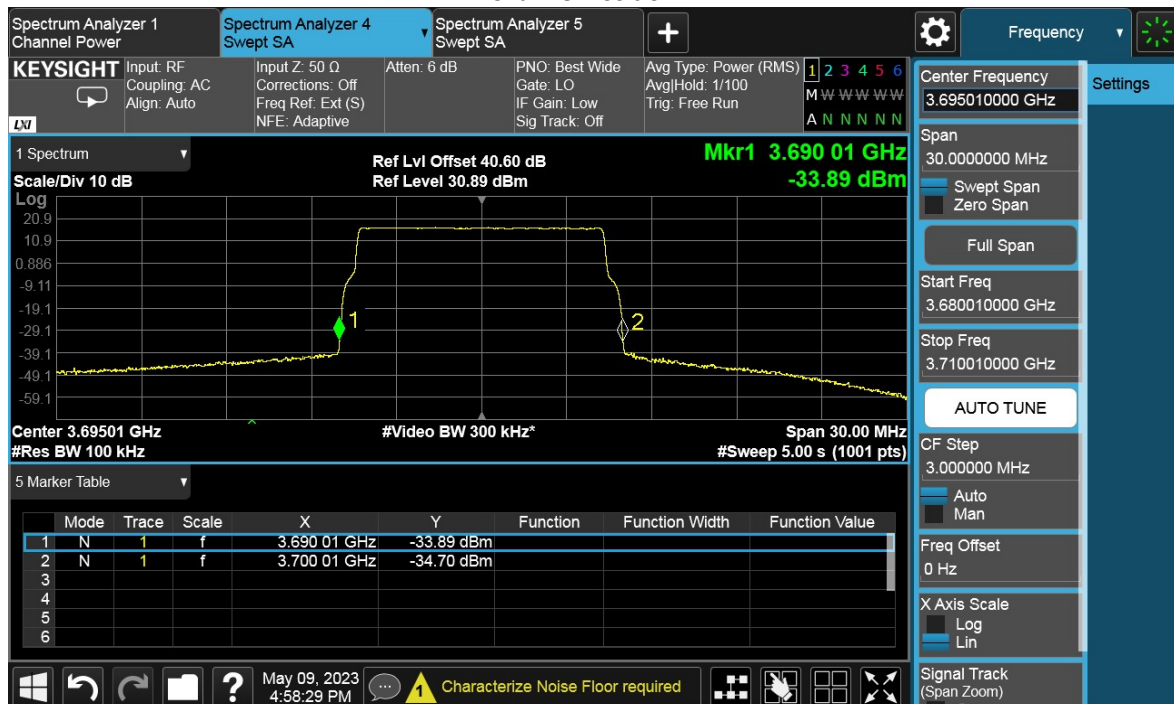
Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)
B	B	64QAM	10
B	T	64QAM	10



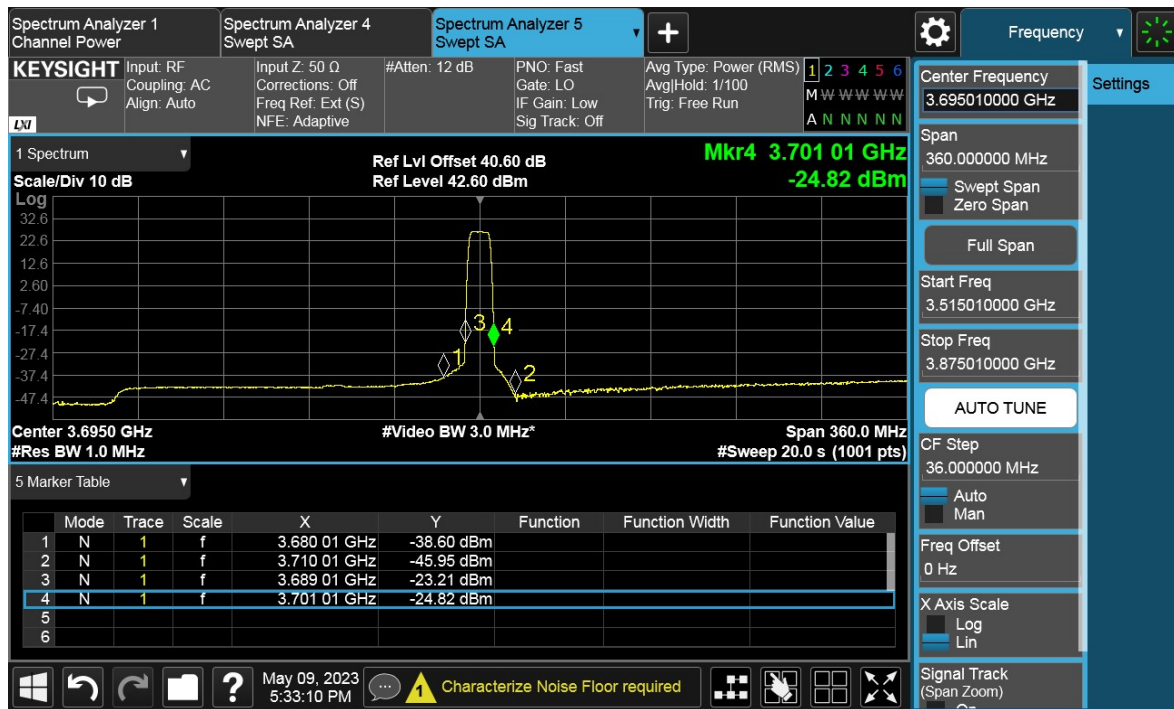
TEST REPORT



Channel Position T



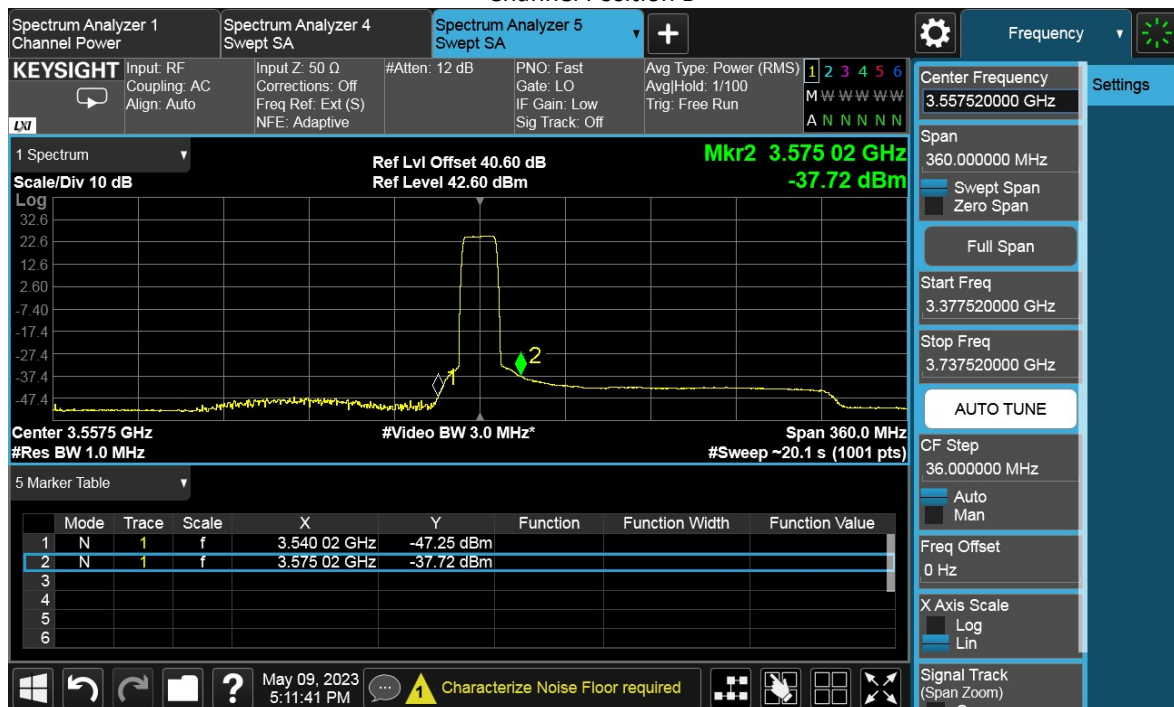
TEST REPORT



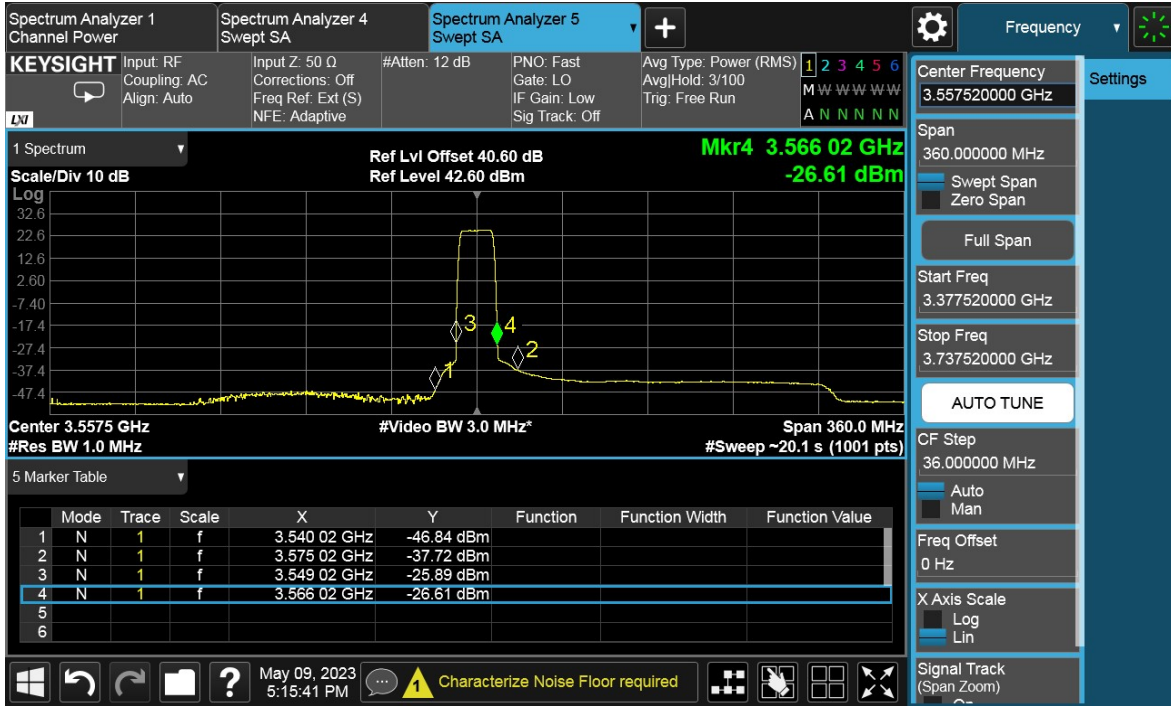
NR-1C-15-UE:

Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)
B	B	64QAM	15
B	T	64QAM	15

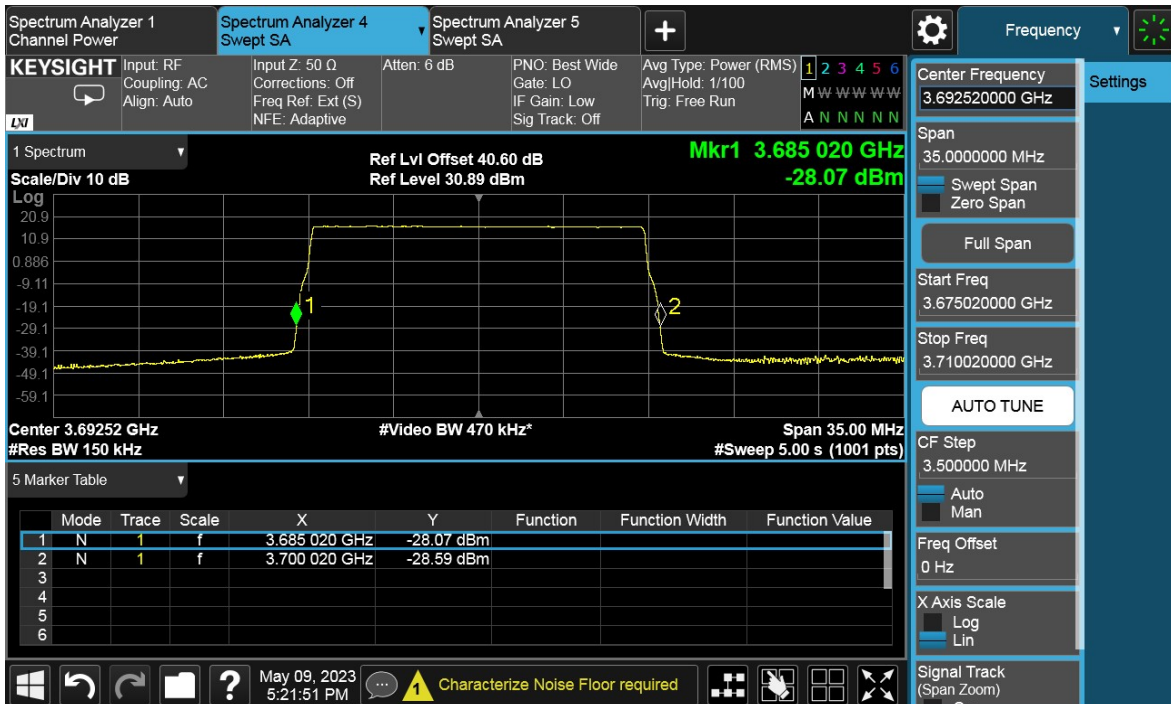
Channel Position B



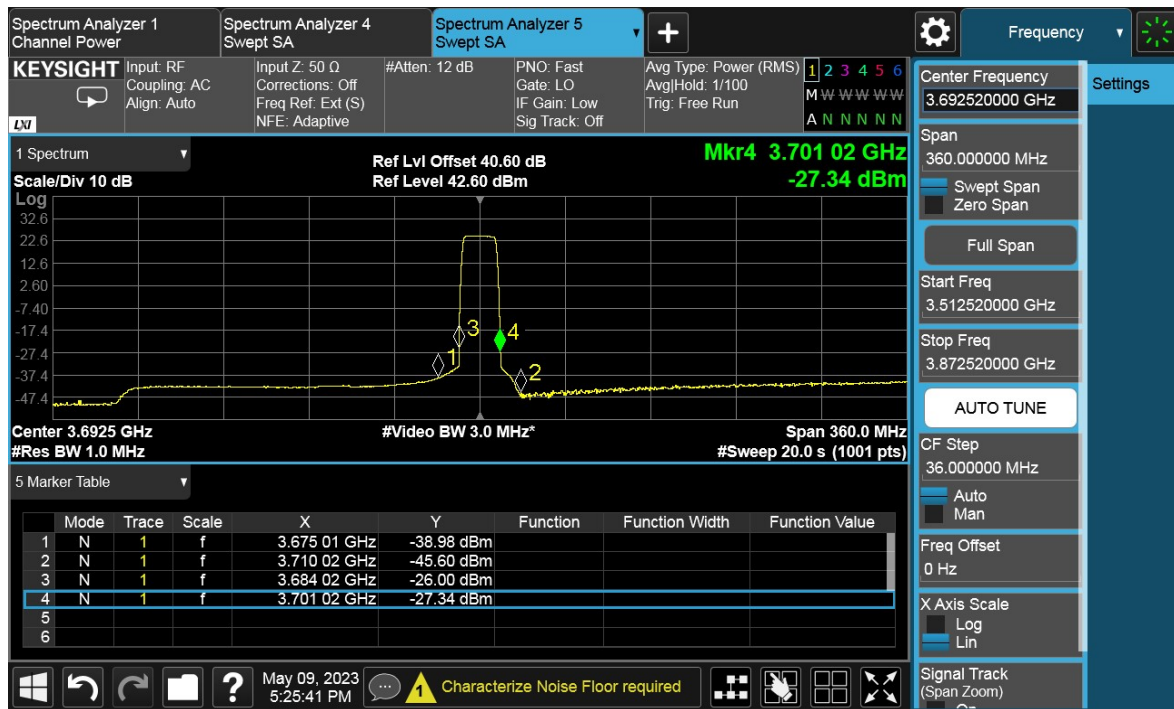
TEST REPORT



Channel Position T



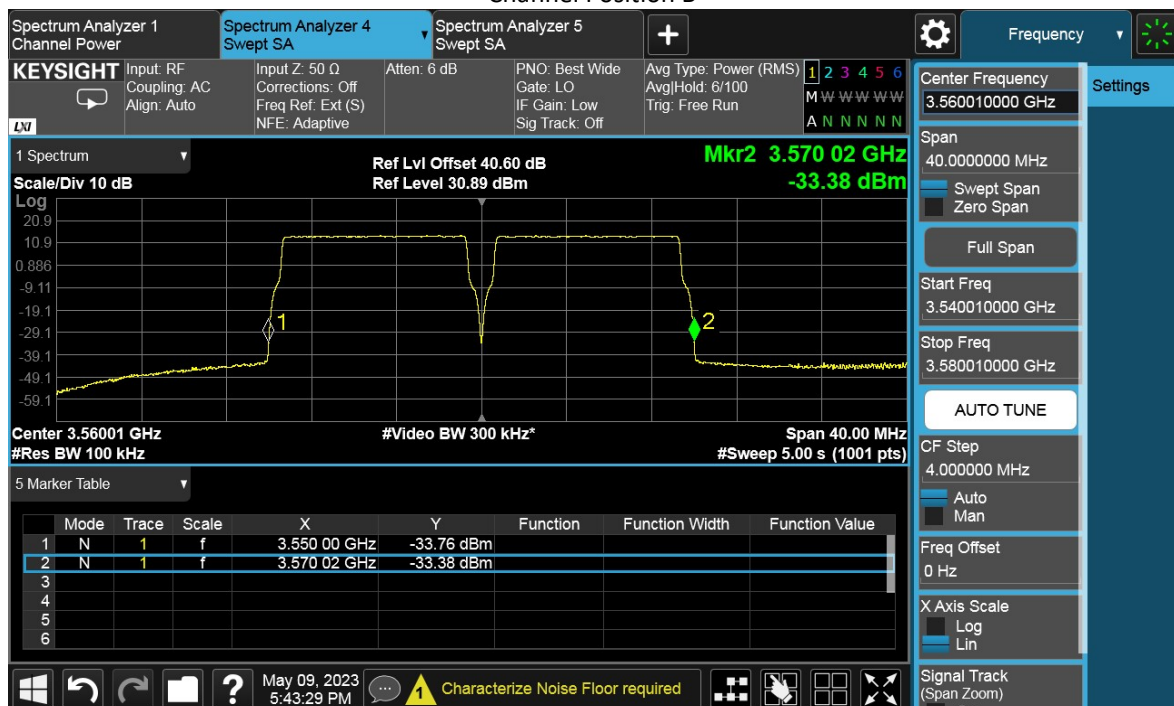
TEST REPORT



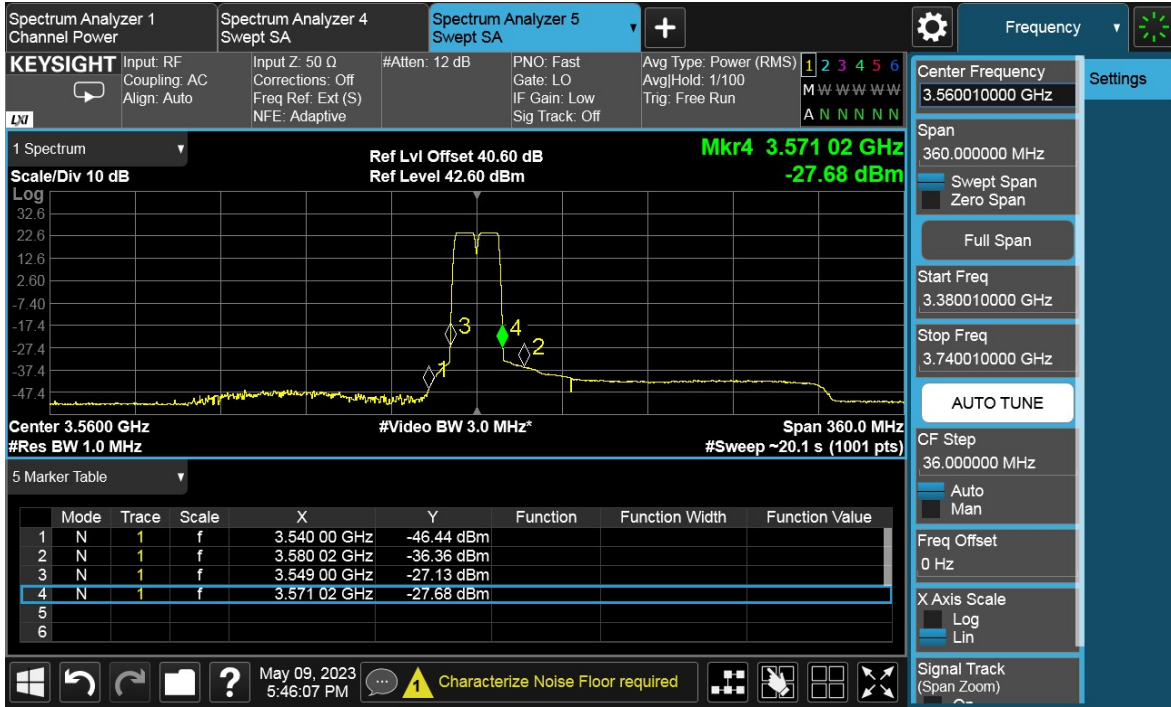
NR-2C-10-BE:

Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)
B	B	64QAM	10
B	T	64QAM	10

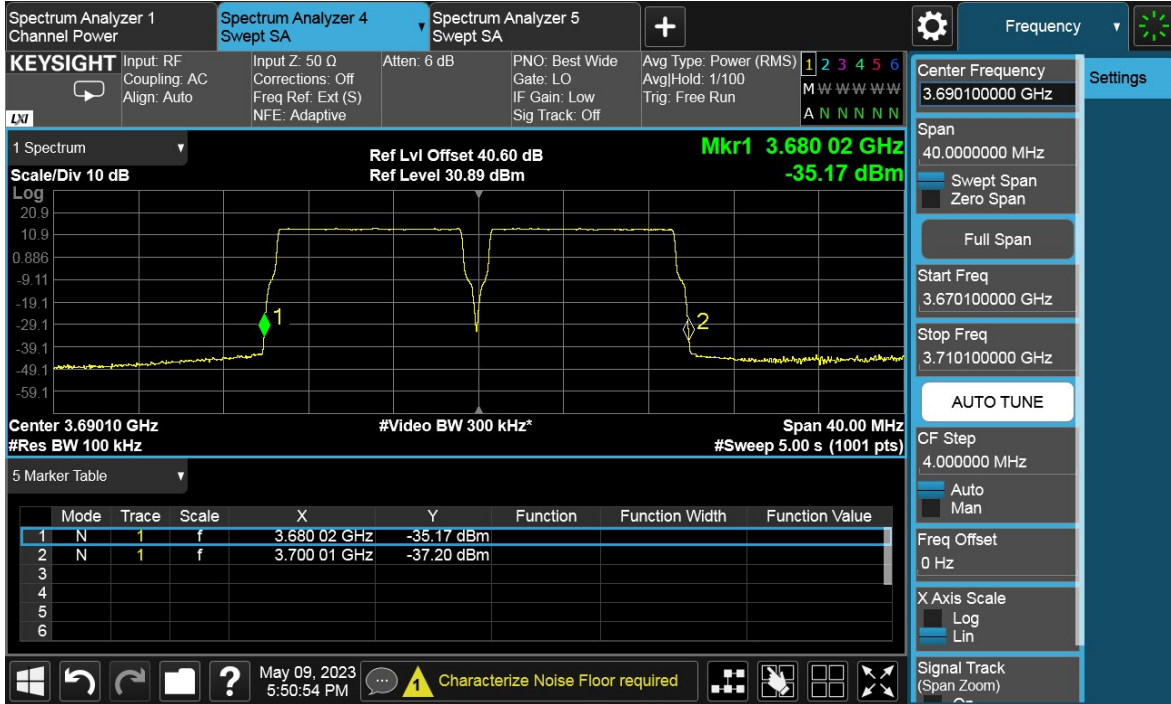
Channel Position B



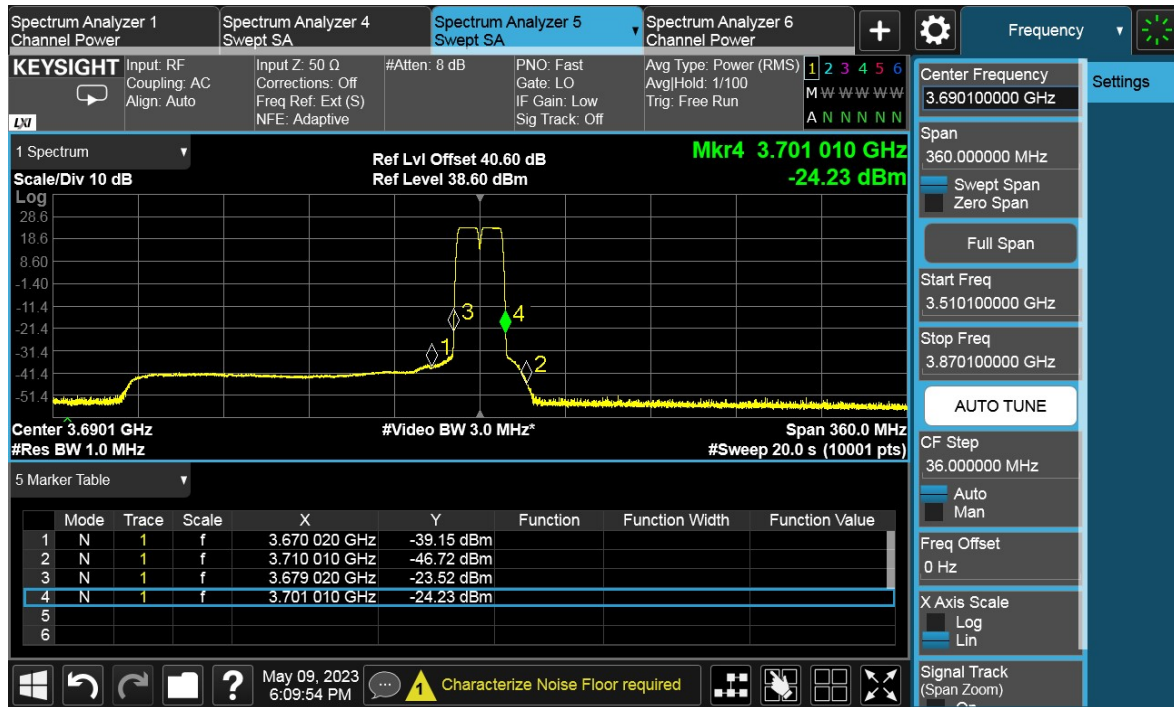
TEST REPORT



Channel Position T



TEST REPORT



NR-2C-15-BE:

Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)
B	B	64QAM	15
B	T	64QAM	15

Channel Position B

