

Ericsson AB

RF TEST REPORT

Report Type:

RF report

PRODUCT NAME:

Radio 4402 B7

REPORT NUMBER:

230700927SHA-001

ISSUE DATE:

August 17, 2023

DOCUMENT CONTROL NUMBER:

TTRFRSS-199_V1 © 2018 Intertek



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Manufacturing site: Ericsson AB
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FCC ID: TA8AKRC16141-2

IC: 287AB-AS1617412

SUMMARY:

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

FCC CFR 47 Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

RSS-199 Issue 3 (December 2016): Broadband Radio Service (BRS) Equipment Operating in the Band 2500–2690 MHz

PREPARED BY:

REVIEWED BY:

Project Engineer
Victor Yang

Reviewer
Jackson Huang

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TEST REPORT

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Revision History

Report No.	Version	Description	Issued Date
230700927SHA-001	Rev. 01	Initial issue of report	July 25, 2023
230700927SHA-001	Rev. 02	Instrument list is updated	August 17, 2023

Measurement result summary

TEST ITEM	FCC REFERANCE	IC REFERANCE	RESULT
Transmitter output power and Peak to Average Power Ratio	27.50(h) 2.1046	RSS-199 Issue 3 Clause 4.4	Pass
Occupied Bandwidth	27.53(m) 2.1049	RSS-199 Issue 3 Clause 4.5	Pass
Transmitter unwanted emissions at the edge	27.53(m) 2.1051	RSS-199 Issue 3 Clause 4.5	Pass
Transmitter unwanted emissions	27.53(m) 2.1051	RSS-199 Issue 3 Clause 4.5	Pass
Frequency Stability	27.54	RSS-199 Issue 3 Clause 4.3	Pass

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Description:	Radio Unit
Product name:	Radio 4402 B7
Product number:	KRC 161 741/2
HVIN:	AS1617412
Serial Number(s):	E55C180368
Rating:	36VDC
Software Version:	ngr2_app-CXP9013268_15-R94BX.xlf
Hardware Version:	R1D
Sample received date:	July 11, 2023
Date of test:	July 11, 2023 ~ July 14, 2023

1.2 Technical Specification

Frequency Range:	RX:2500-2570MHz, TX:2620-2690MHz
Number of Antenna ports:	4 TX/RX
Supported RAT:	LTE, WCDMA, NR, NB-IoT In-band/Guard-band/Standalone
Max RF bandwidth (IBW):	70MHz (20MHz for LTE less than 5MHz and NB-IoT Standalone)
Supported Number of Carriers per port:	Maximum 6 carriers per port
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, 40, 50 MHz
Declaration output power:	Maximum 5W per port

Note: Information in the 1.2 sheet declared by the manufacturer.

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:	No. 5 Lize East Street, Ericsson Tower, Chaoyang District, Beijing 100102 P.R.C.
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)
RSS-199 Issue 3 December 2016
ISED RSS-Gen issue 5 March 2019 Amendment 1
ANSI C63.26:2015
KDB 971168 D01 v03r01
KDB 662911 D01 v02r01
SRSP-517

2.2 Product Information

The Equipment Under Test (EUT) Radio 4402 B7 is an Ericsson Radio Unit working in the broadband radio service 2620MHz-2690MHz band which provides communication connections to 2620MHz-2690MHz network. Radio 4402 B7 is powered by Support 6502/-48VDC in this report.

The EUT includes 4 TX/RX ports and it can be configured to transmit in MIMO mode for NR carriers, 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.

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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 256QAM was the worst-case modulation scheme for NR 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. The worst antenna port was port A for NR.

The settings below were used for all measurements unless otherwise noted:

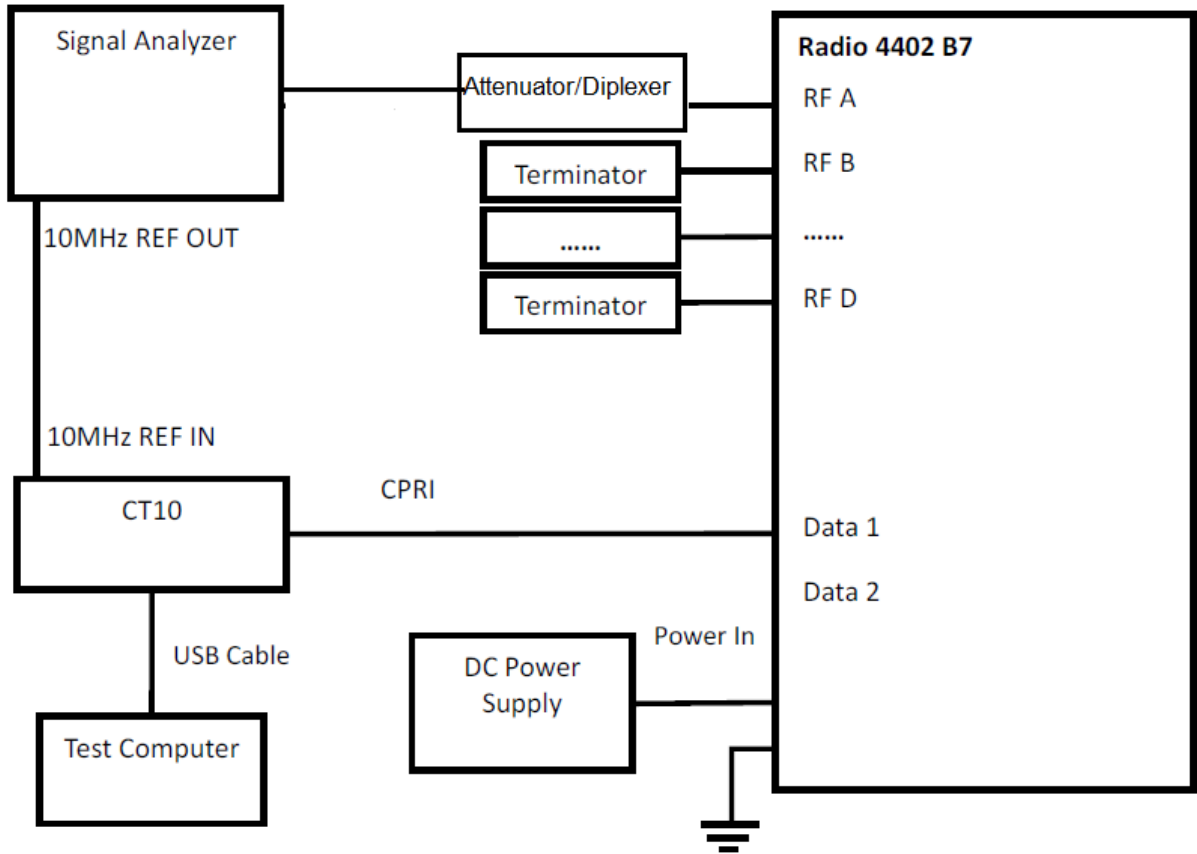
Configuration	Carrier	NR Carrier BW (MHz)	Carrier Frequency Configuration		
			Bottom	Middle	Top
NR-1C	1	25	2632.5	2655	2677.5
		30	2635.0	2655	2675.0
		40	2640.0	2655	2670.0
		50	2645.0	2655	2665.0
NR-2C	2	25	-	2632.5+2677.5	-
		30	-	2635+2675	-

Configuration	Carrier	NR Carrier BW (MHz)	Carrier Frequency Configuration		
			Bottom	Middle	Top
NR-1C-BE	1	25	2632.5	-	2677.5
		30	2635.0	-	2675.0
		40	2640.0	-	2670.0
		50	2645.0	-	2665.0
NR-2C-BE	2	25	2632.5+2657.5	-	2652.5+2677.5
		30	2635+2665	-	2645+2675

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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	Terminator	WTF100-6G-A-NJ	-
4	Support 6502	KRY 901 345/2	R5B

Proper Attenuator/Diplexer will be chosen to use in relative test case. And the cable loss of specified Attenuator/Diplexer with connect cable will be calibrated before test for relative frequency range and the worst reading will be used as offset in the relative test case.

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2.5 Test environment condition:

Test items	Temperature	Humidity
Transmitter output power and Peak to Average Power Ratio	23°C	42% RH
Occupied Bandwidth		
Transmitter unwanted emissions at the edge		
Transmitter unwanted emissions		
Frequency Stability	Please refer to clause 7	

2.6 Instrument list

RF test					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
<input checked="" type="checkbox"/>	PXA Signal Analyzer	Keysight	N9030A	EC1046	2024.4.7
<input type="checkbox"/>	Signal Generator	R&S	SMU200A	EC1050	2024.4.2
<input checked="" type="checkbox"/>	Climatic Chamber	赛宝	117	EC1052	2023.9.19
<input checked="" type="checkbox"/>	Humiture meter	托普	CEEC-WR16H-50W	EC1053	2024.2.21
<input type="checkbox"/>	Power sensor	R&S	TPJ-20	EC1111	2023.7.14
<input type="checkbox"/>	Power sensor	R&S	NRP-Z11	EC1112	2023.7.14
<input type="checkbox"/>	Power meter	R&S	NRP-Z21	EC1113	2023.8.9
<input checked="" type="checkbox"/>	Power supply	Keysight	N8737A	1017047893	NA
<input checked="" type="checkbox"/>	40dB Attenuator	SHX	DTS150	18121935	N/A
<input checked="" type="checkbox"/>	20dB Attenuator	SHX	DTS50G	15092511	N/A
<input checked="" type="checkbox"/>	Diplexer	K&L	WSD-00747-1	35	N/A
<input checked="" type="checkbox"/>	40dB Attenuator	SHX	2.92TS50	21041401	N/A
<input checked="" type="checkbox"/>	Network Analyzer	R&S	ZNA43	100948	2024.3.15
<input checked="" type="checkbox"/>	Network Analyzer	Keysight	E5071C	MY46631193	2023.10.17

TEST REPORT**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%
Conducted Unwanted Emission	3.40dB
Frequency stability	0.77×10^{-7}

3 Transmitter output power and Peak to Average Power Ratio

Test result: Pass

3.1 Limit

FCC:

Output Power:

$$EIRP \leq 33 \text{ dBW} + 10\log(X/Y) \text{ dBW}$$

X = actual channel bandwidth

Y = 5.5 or 6 MHz (Y=6 as declared by manufacturer)

Peak to Average Ratio: ≤ 13 dB

IC:

Fixed and base stations (except fixed subscriber stations) are limited to a maximum permissible equivalent isotropically radiated power (e.i.r.p.) of 1640 W/MHz (i.e. no more than 1640 W e.i.r.p. in any 1 MHz band segment) with an antenna height above average terrain (HAAT) up to 300 metres. For all installations with antenna HAAT in excess of 300 metres, a corresponding reduction in e.i.r.p. according to table below shall be applied.

HAAT (m)	Reduction in maximum e.i.r.p. (dB)
300 < HAAT \leq 500	2
500 < HAAT \leq 1000	5
1000 < HAAT \leq 1500	8
1500 < HAAT \leq 2000	10

In addition, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

3.2 Measurement Procedure

The EUT was configured to transmit on maximum power and worst modulation. The transmitter power shall be measured in terms of a root-mean-square (RMS) average value. The EUT was configured to MIMO mode, since the EUT can transmit on all antennas simultaneously in the same frequency range. The output power at all antennas were tested, and the total output power was 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.

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3.3 Measurement result

NR-1C:

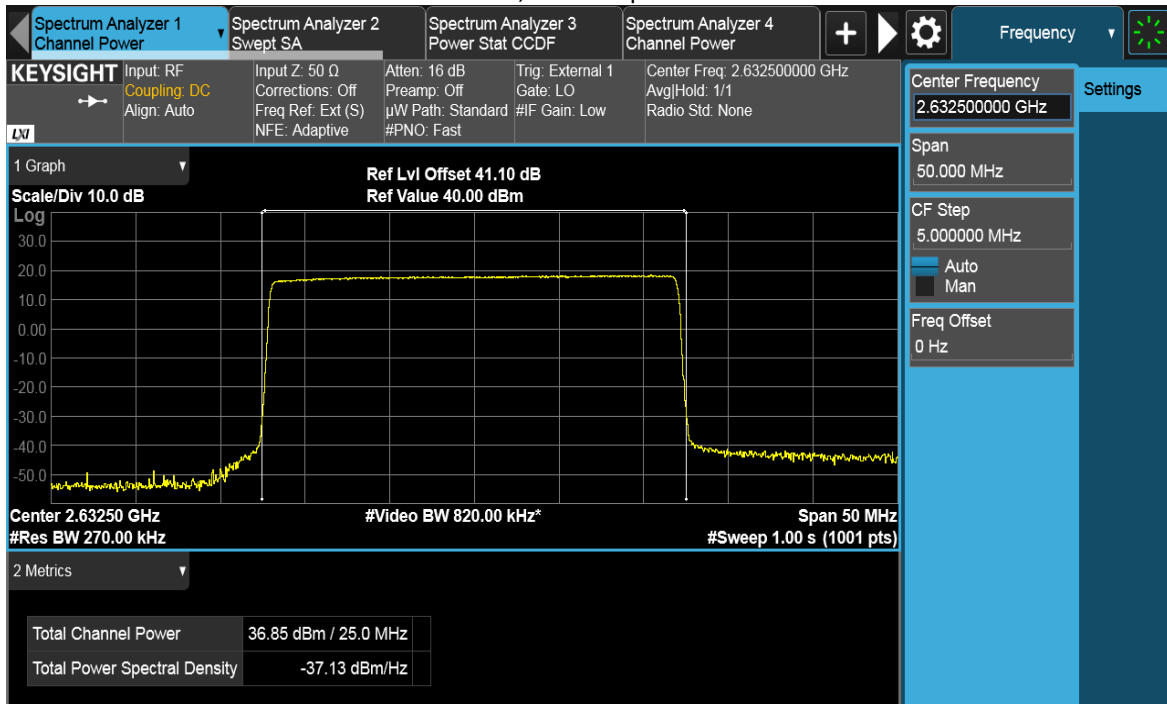
Antenna Port	NR Modulation	NR Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	256QAM	25	36.93	23.98	7.62	36.89	23.66	7.76	36.95	23.86	7.65
B	256QAM	25	36.82	23.74	7.67	36.83	23.57	7.72	36.85	23.73	7.67
C	256QAM	25	36.78	23.71	7.69	36.79	23.46	7.78	36.84	23.67	7.62
D	256QAM	25	36.85	23.90	7.69	36.86	23.50	7.73	36.73	23.67	7.70
Total conducted power			42.87	29.85	-	42.86	29.57	-	42.86	29.75	-
limit			69.20	62.15	13.00	69.20	62.15	13.00	69.20	62.15	13.00
Max antenna gain			26.33	32.30	-	26.33	32.58	-	26.33	32.40	-

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	36.92	22.99	7.73	36.91	22.80	7.73	36.95	23.00	7.63
B	256QAM	30	36.79	22.91	7.69	36.82	22.72	7.73	36.86	22.99	7.69
C	256QAM	30	36.79	22.92	7.74	36.79	22.66	7.80	36.84	22.90	7.67
D	256QAM	30	36.84	22.91	7.72	36.87	22.69	7.78	36.85	23.00	7.71
Total conducted power			42.86	28.95	-	42.87	28.74	-	42.90	28.99	-
limit			69.99	62.15	13.00	69.99	62.15	13.00	69.99	62.15	13.00
Max antenna gain			27.13	33.20	-	27.12	33.41	-	27.09	33.16	-

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	36.93	21.77	7.87	36.84	21.58	7.71	36.92	21.68	7.73
B	256QAM	40	36.79	21.63	7.82	36.83	21.46	7.71	36.86	21.55	7.73
C	256QAM	40	36.82	21.63	7.82	36.81	21.48	7.72	36.85	21.59	7.77
D	256QAM	40	36.90	21.74	7.84	36.87	21.63	7.73	36.92	21.66	7.75
Total conducted power			42.88	27.71	-	42.86	27.56	-	42.91	27.64	-
limit			71.24	62.15	13.00	71.24	62.15	13.00	71.24	62.15	13.00
Max antenna gain			28.36	34.44	-	28.38	34.59	-	28.33	34.51	-

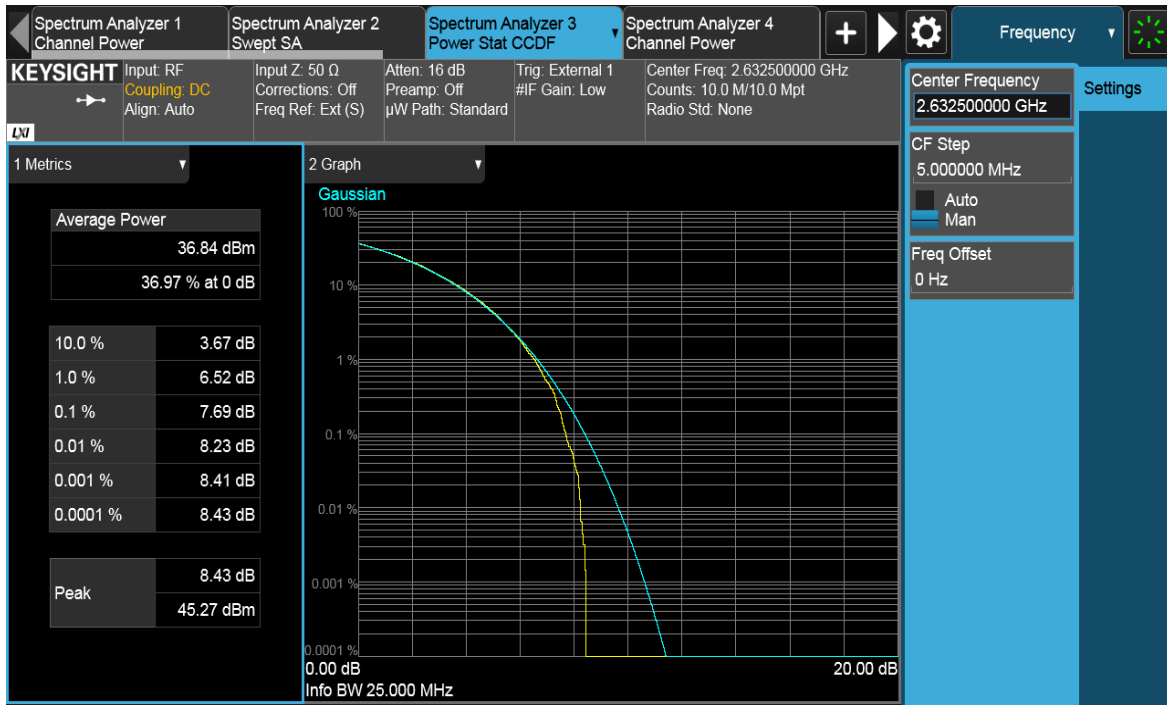
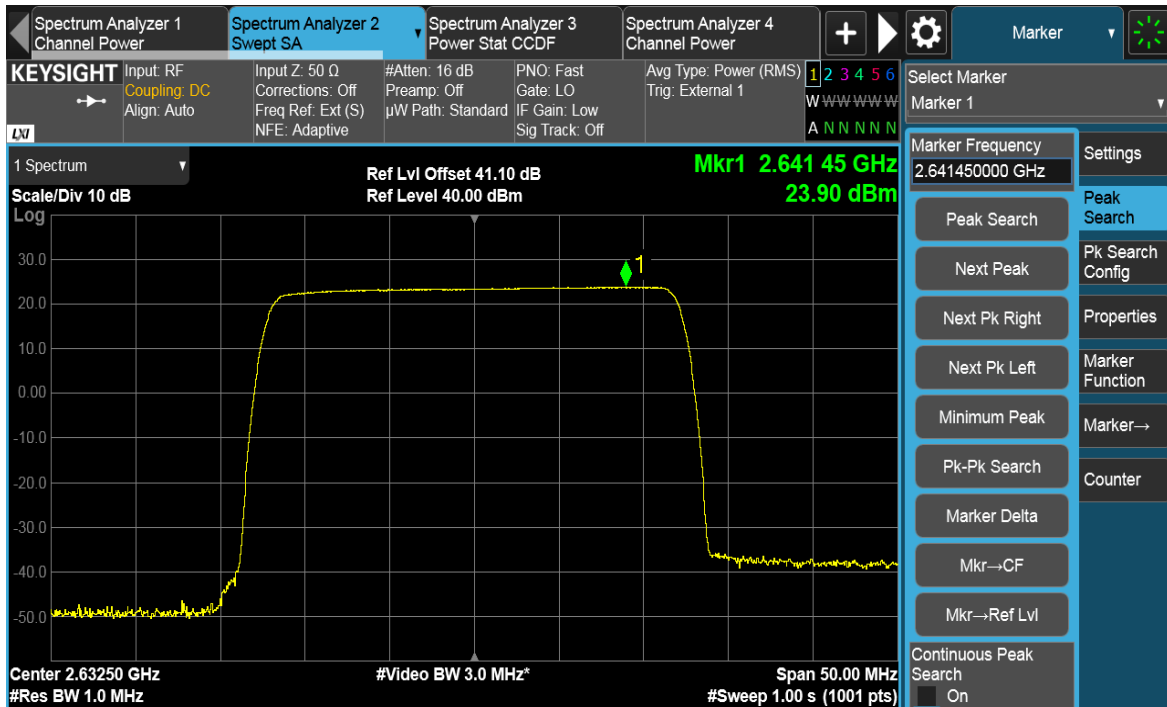
Antenna Port	NR Modulation	NR Carrier Bandwidth (MHz)	Output power / Peak-to-Average Ratio (PAR)								
			Channel position B			Channel position M			Channel position T		
			Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)	Power (dBm)	Power (dBm /MHz)	PAR (dB)
A	256QAM	50	36.91	20.69	7.87	36.85	20.58	7.78	36.91	20.64	7.80
B	256QAM	50	36.81	20.60	7.90	36.81	20.57	7.74	36.84	20.62	7.74
C	256QAM	50	36.80	20.60	7.87	36.82	20.48	7.73	36.83	20.57	7.74
D	256QAM	50	36.82	20.62	7.92	36.81	20.58	7.76	36.81	20.59	7.76
Total conducted power			42.86	26.65	-	42.84	26.57	-	42.87	26.63	-
limit			72.21	62.15	13.00	72.21	62.15	13.00	72.21	62.15	13.00
Max antenna gain			29.35	35.50	-	29.37	35.58	-	29.34	35.52	-

25MHz, Channel position B

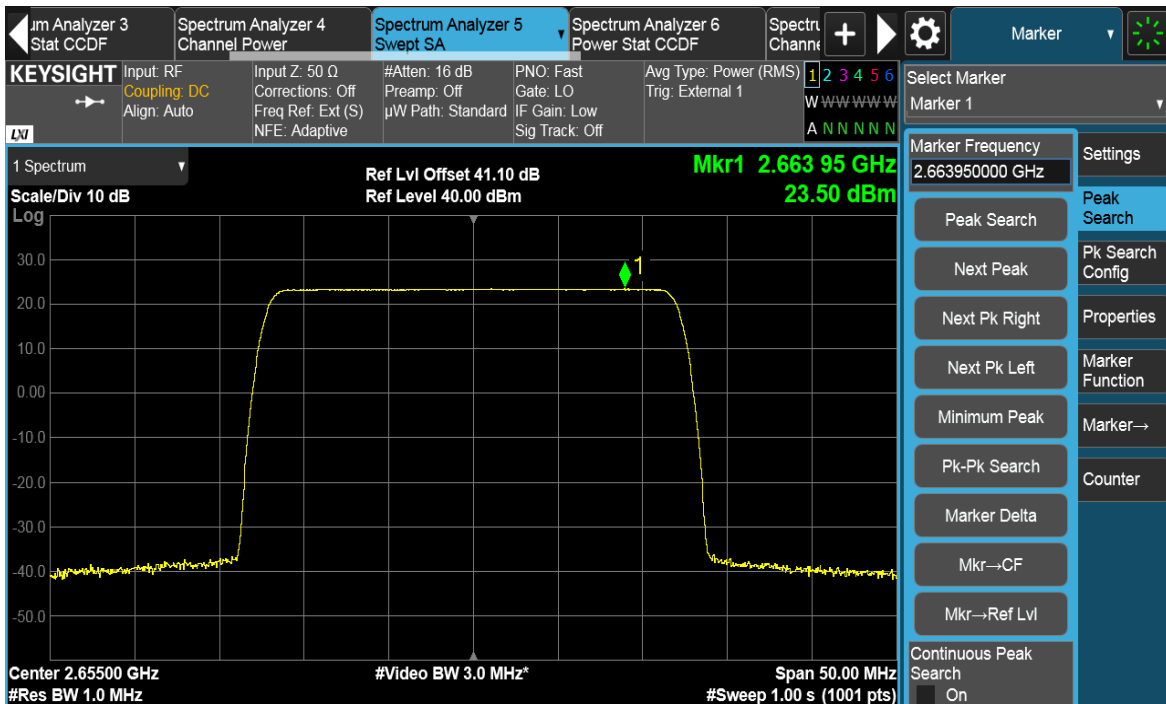
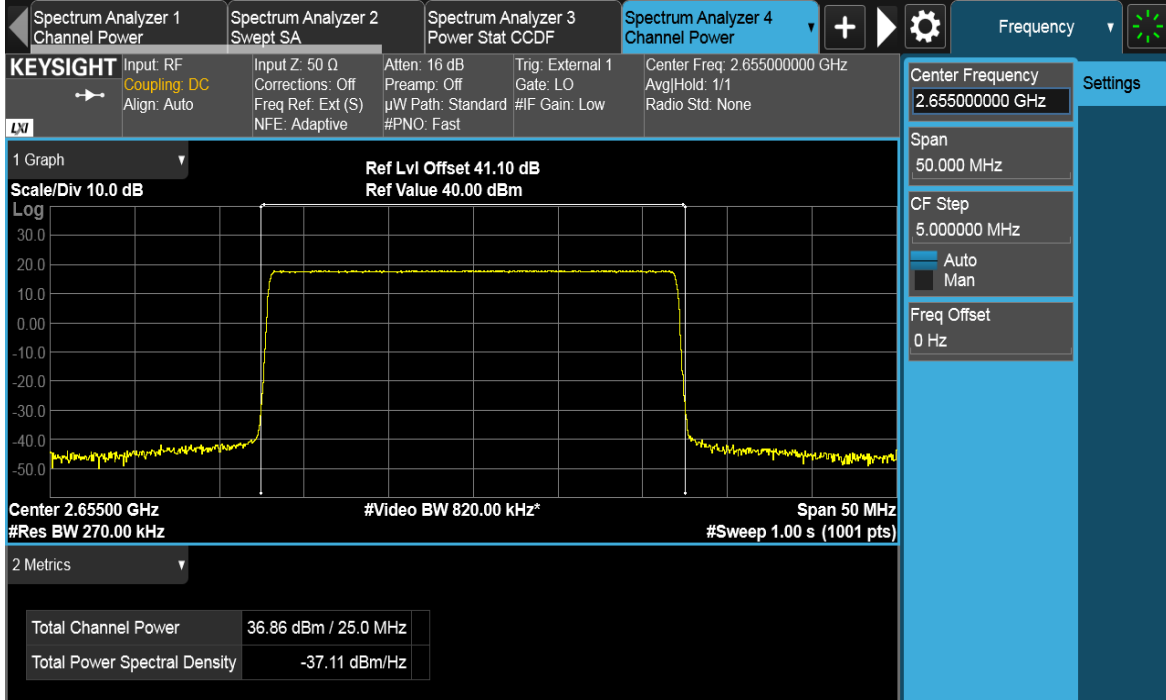


Total Quality. Assured.

TEST REPORT

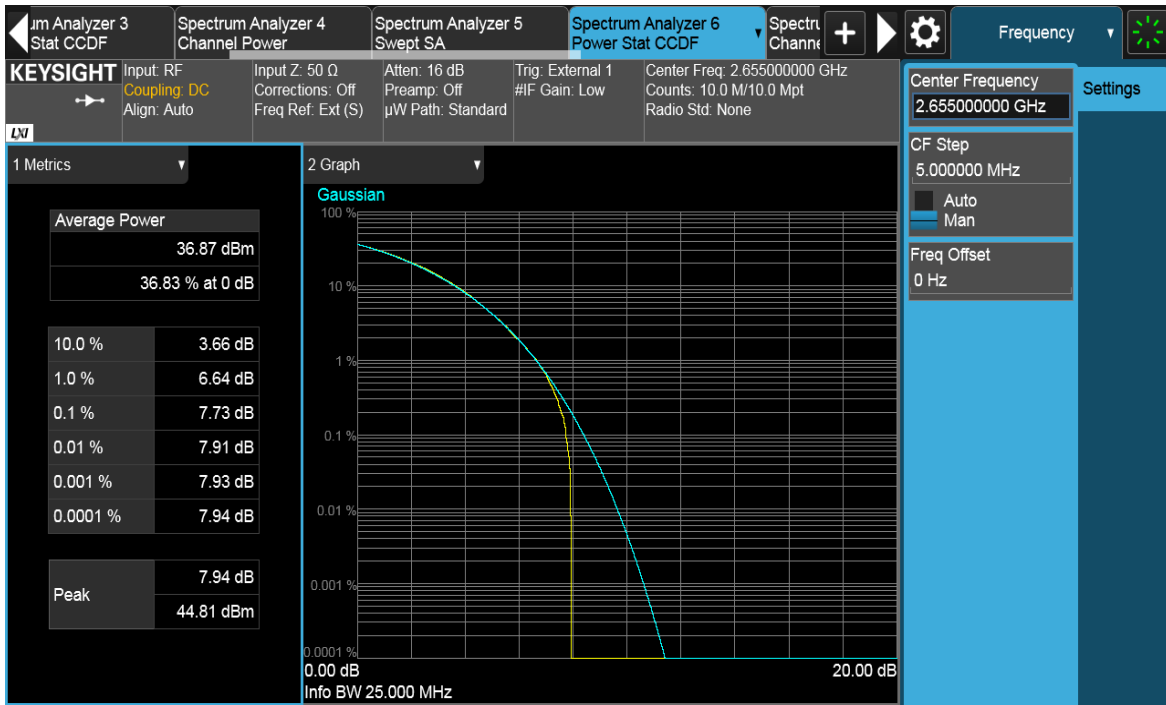


25MHz, Channel position M

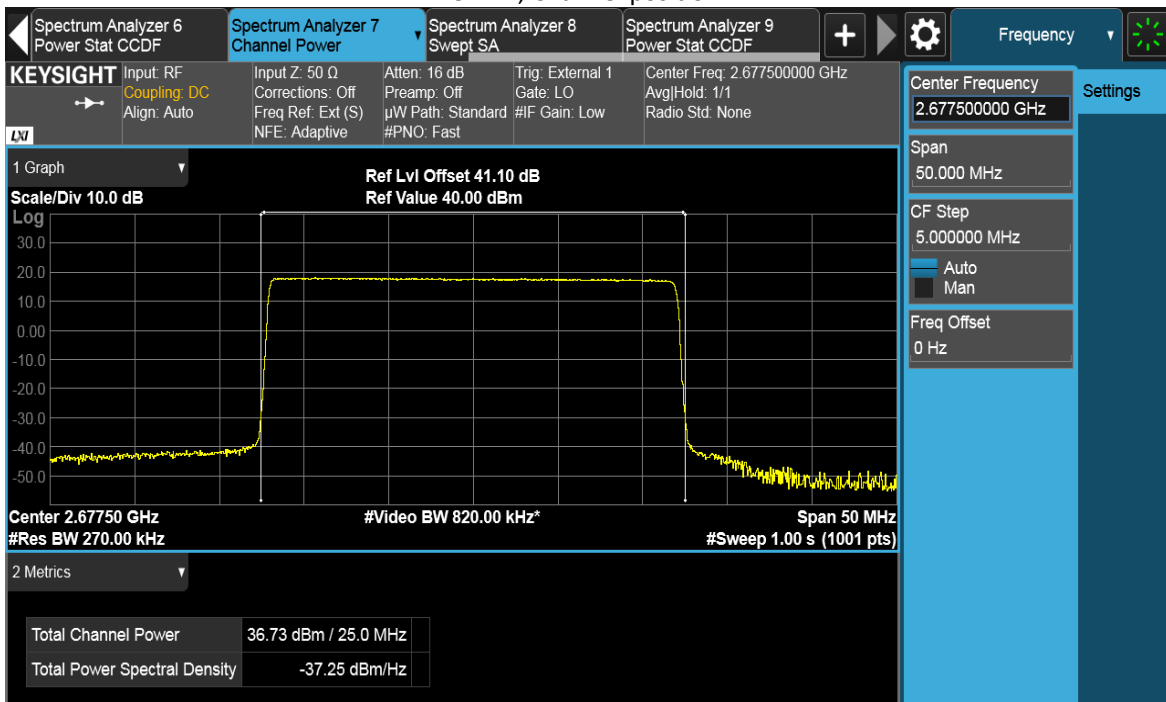


Total Quality. Assured.

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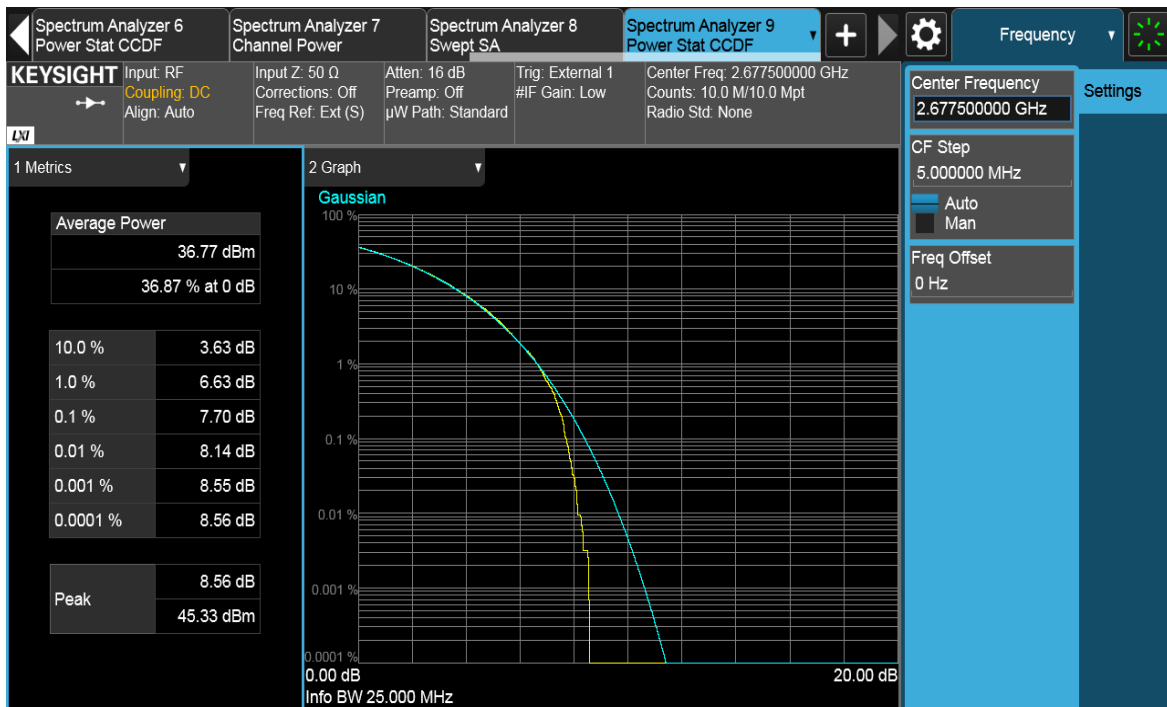
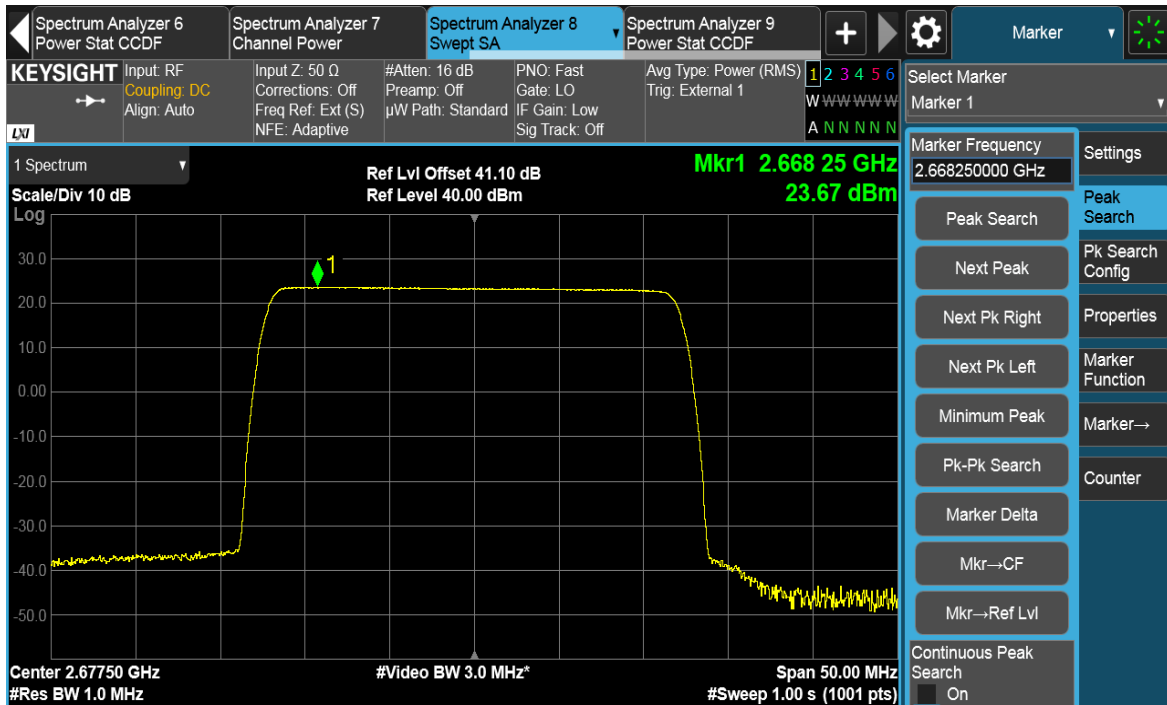


25MHz, Channel position T

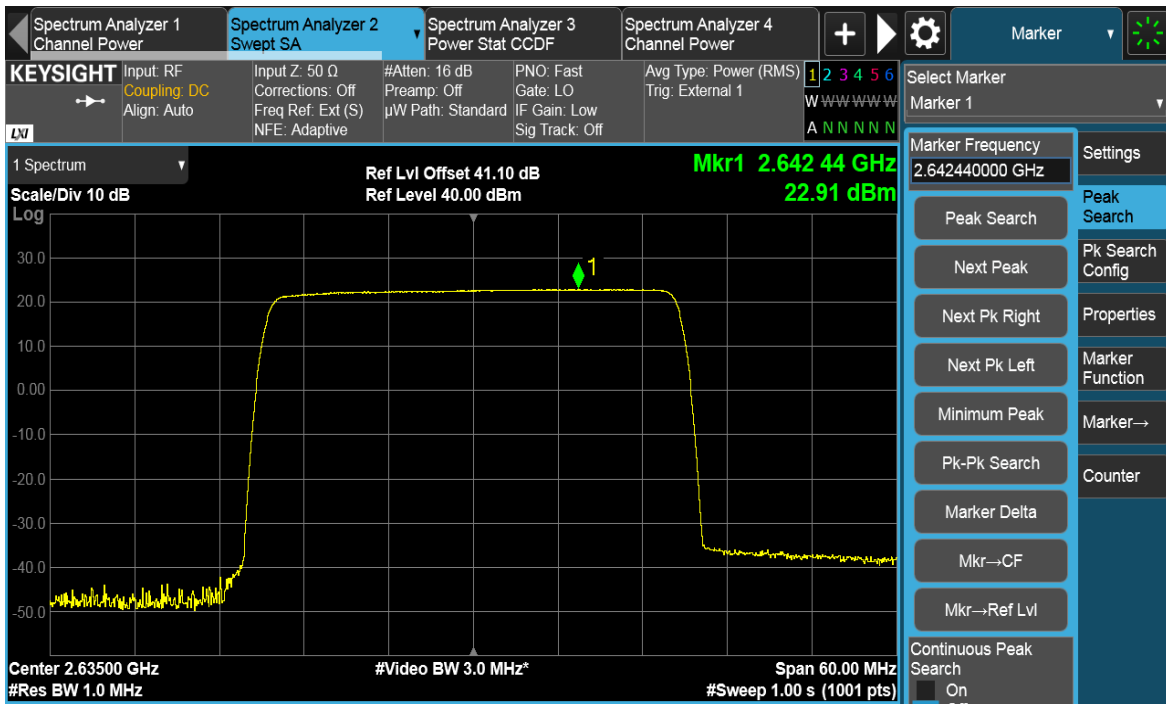
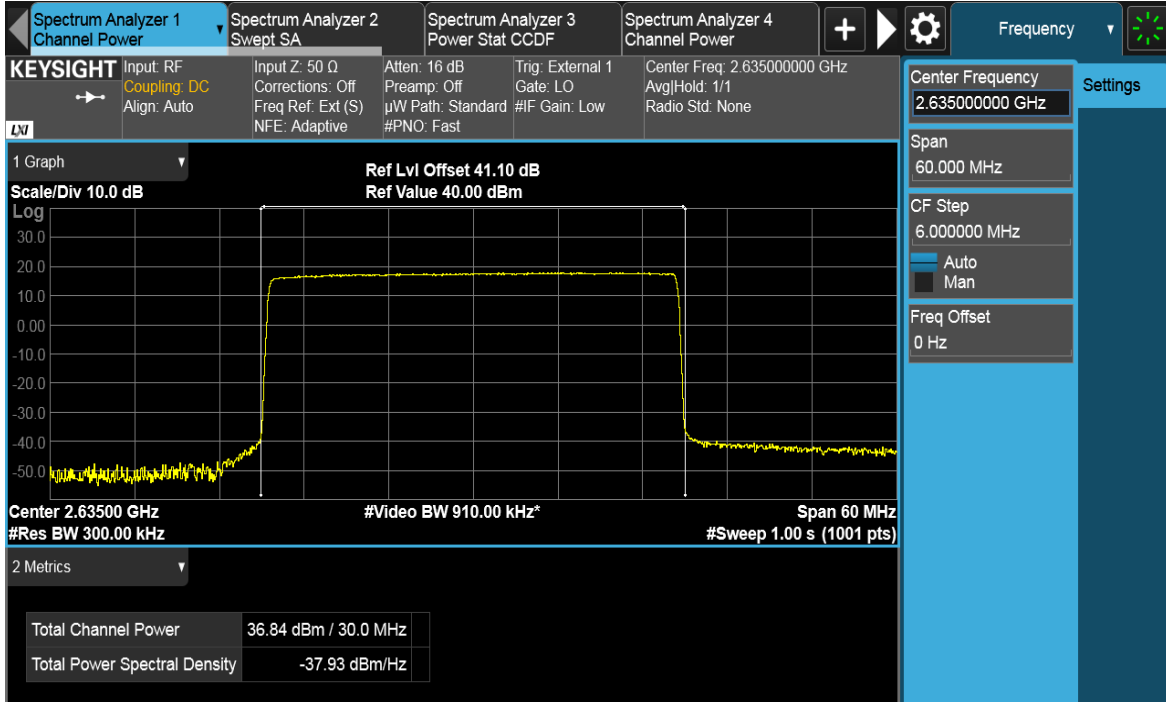


Total Quality. Assured.

TEST REPORT

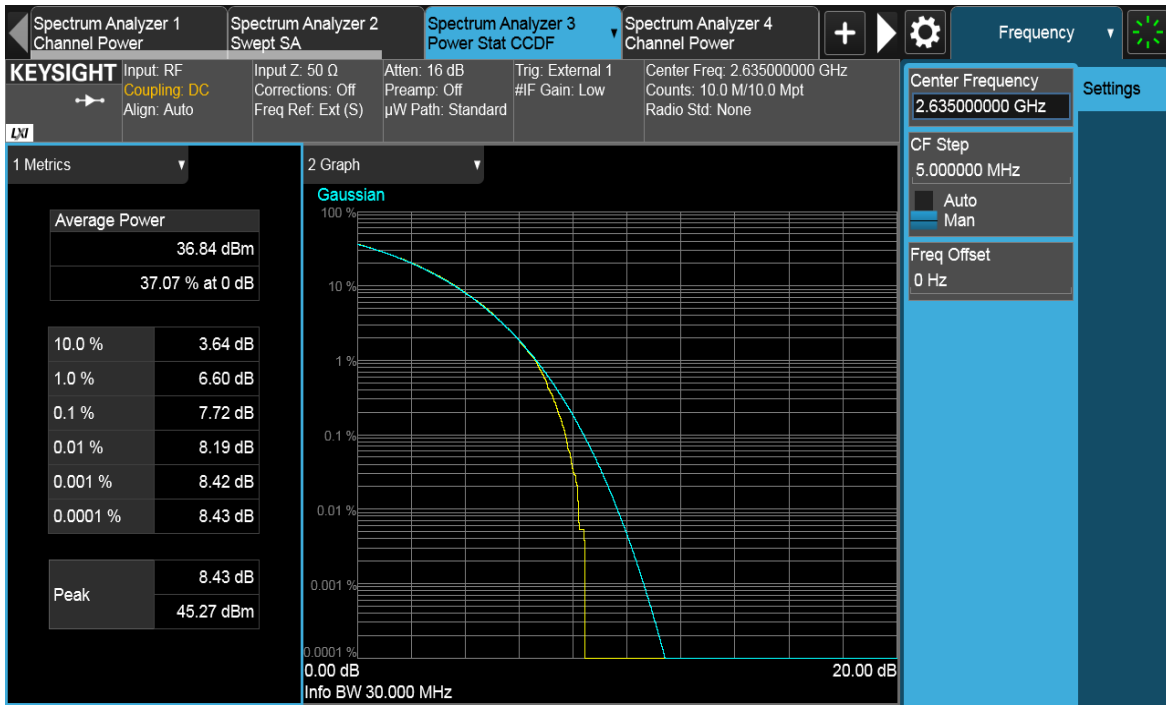


30MHz, Channel position B

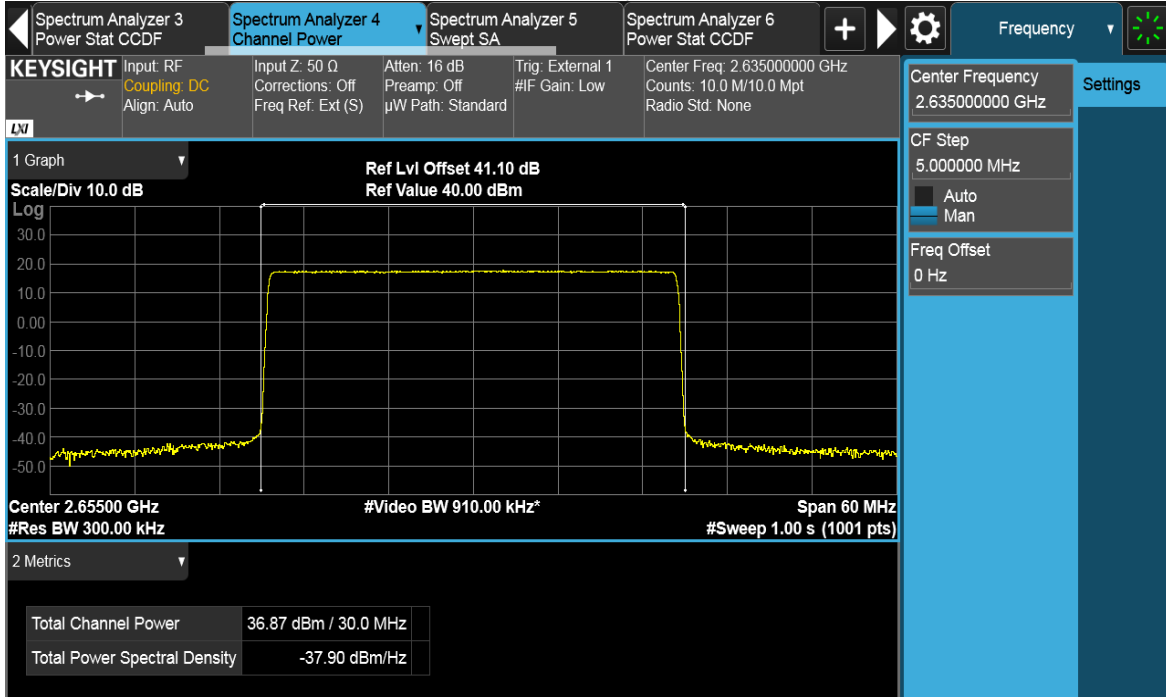


Total Quality. Assured.

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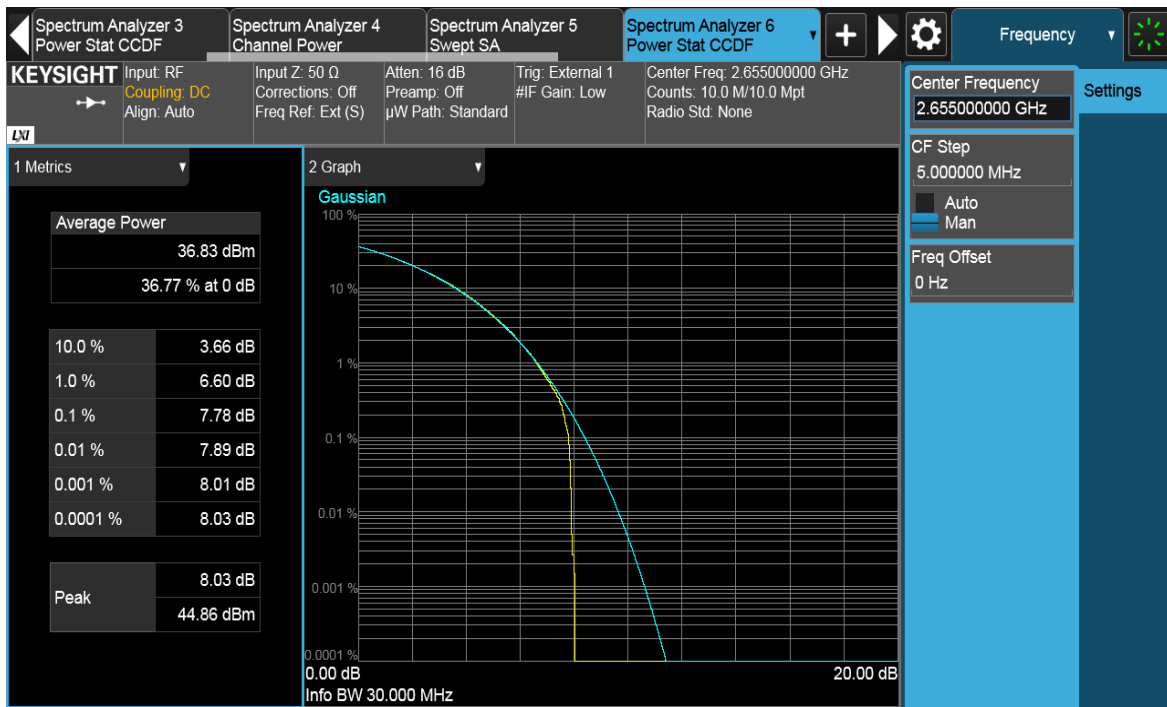
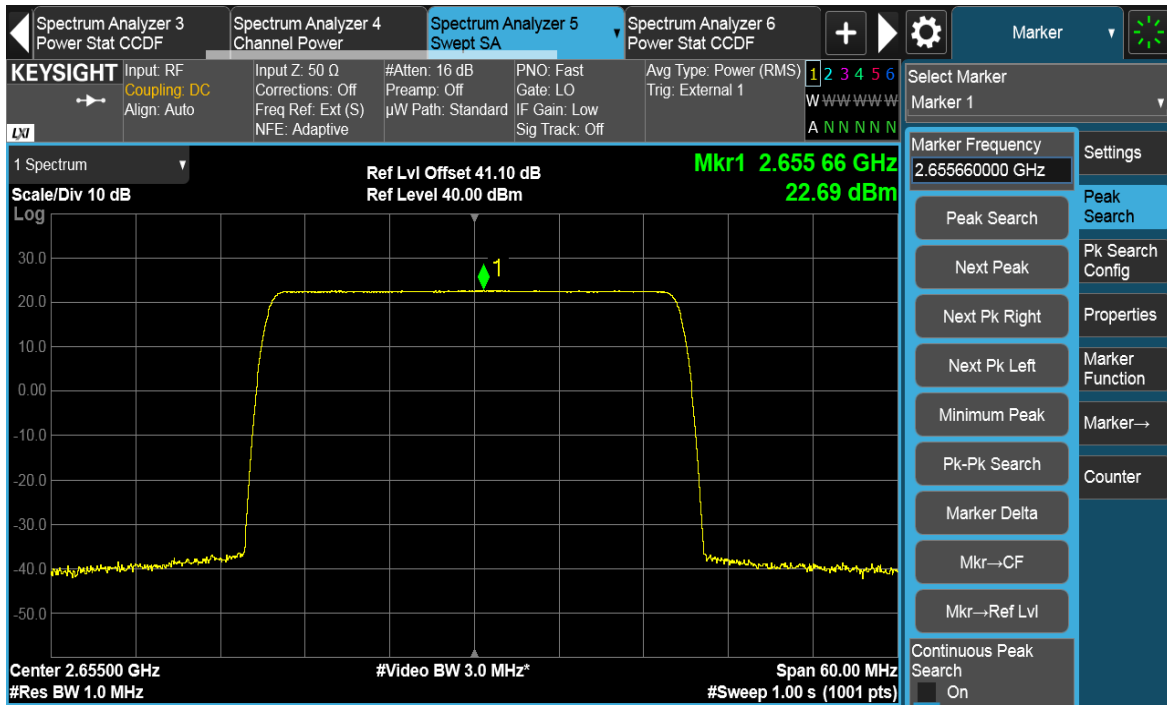


30MHz, Channel position M

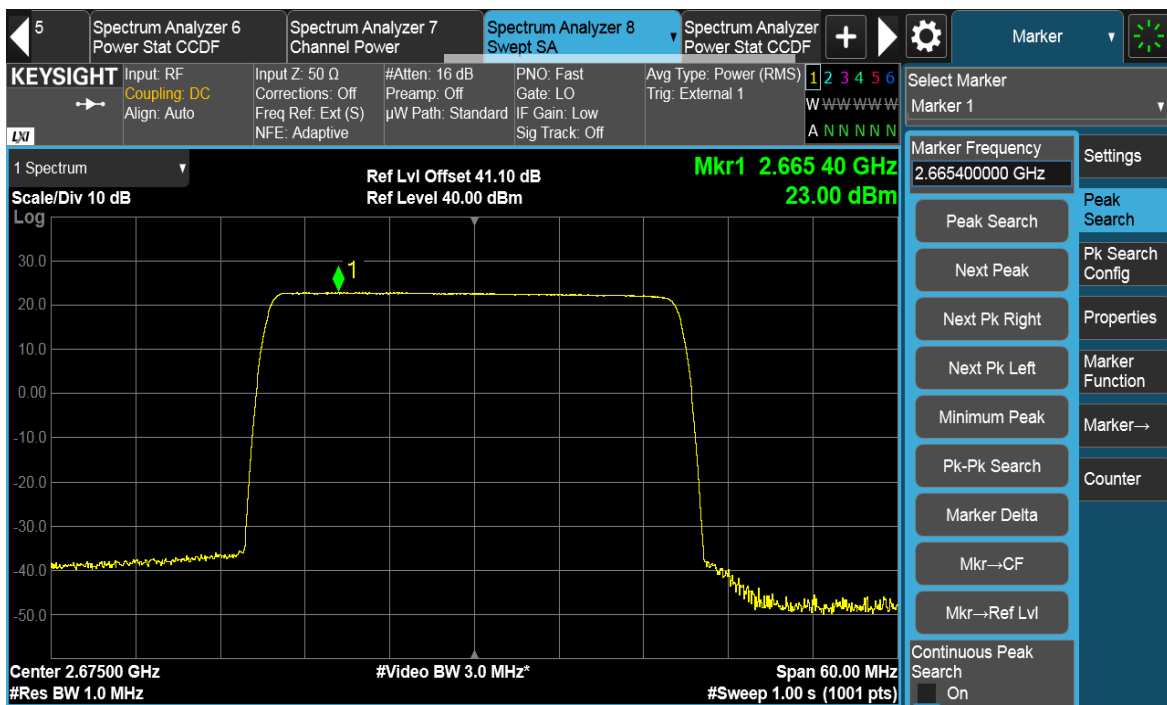
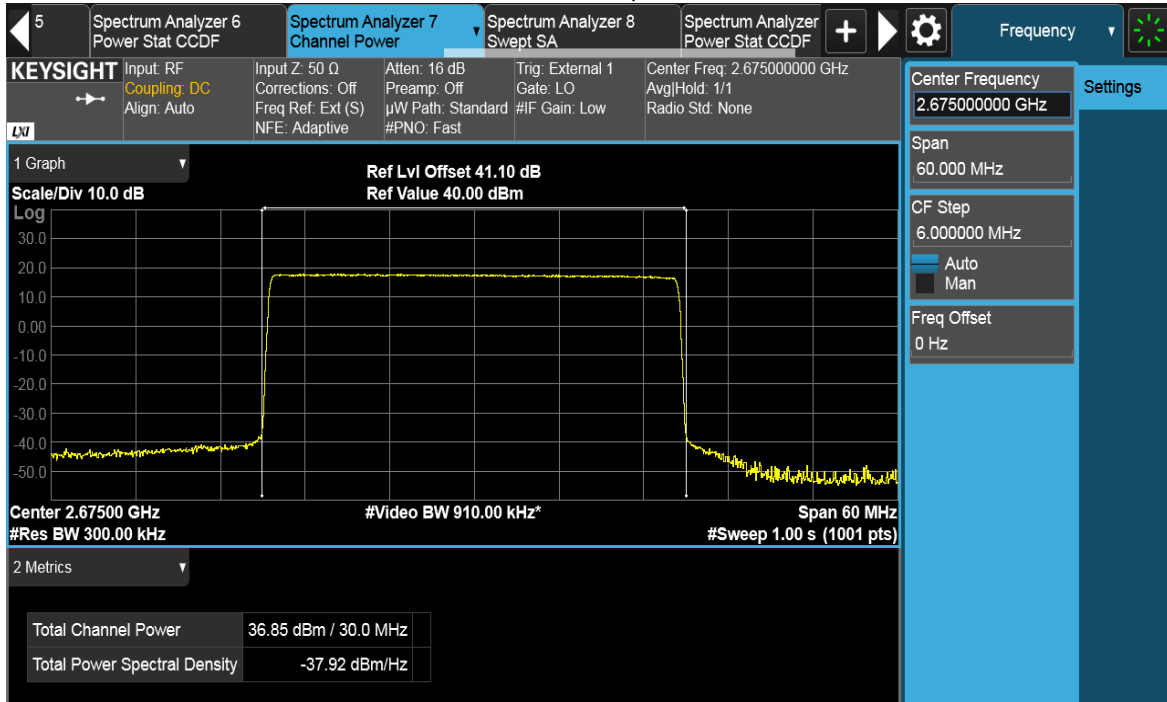


Total Quality. Assured.

TEST REPORT

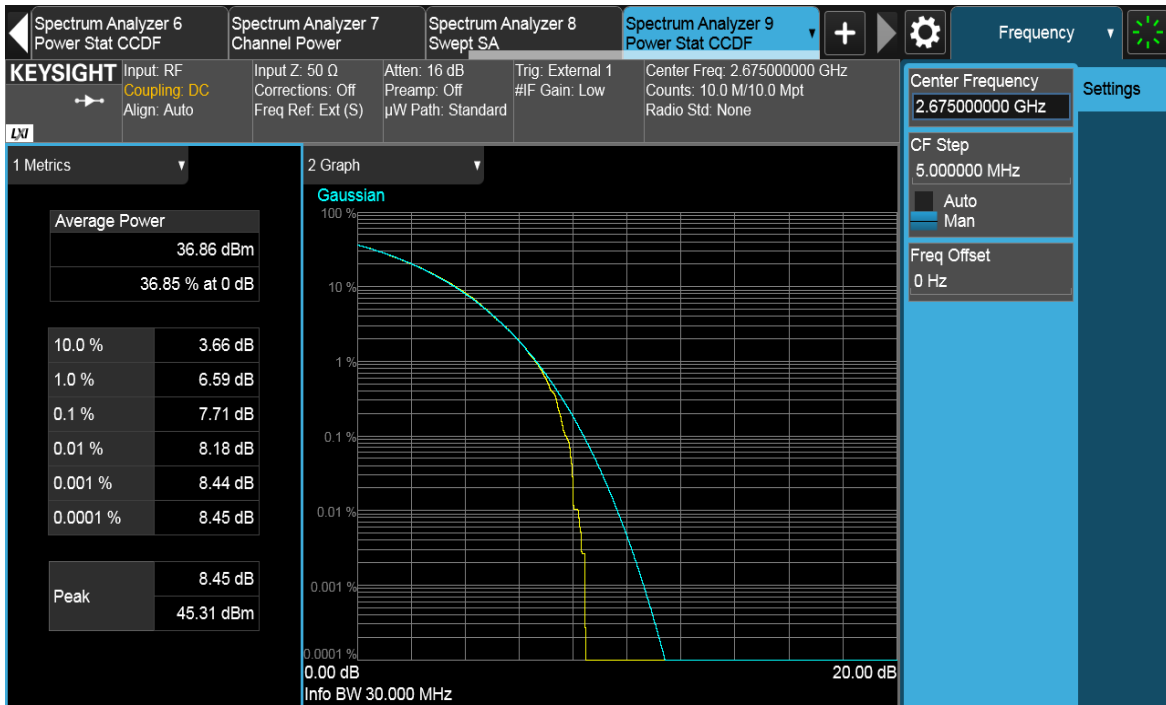


30MHz, Channel position T

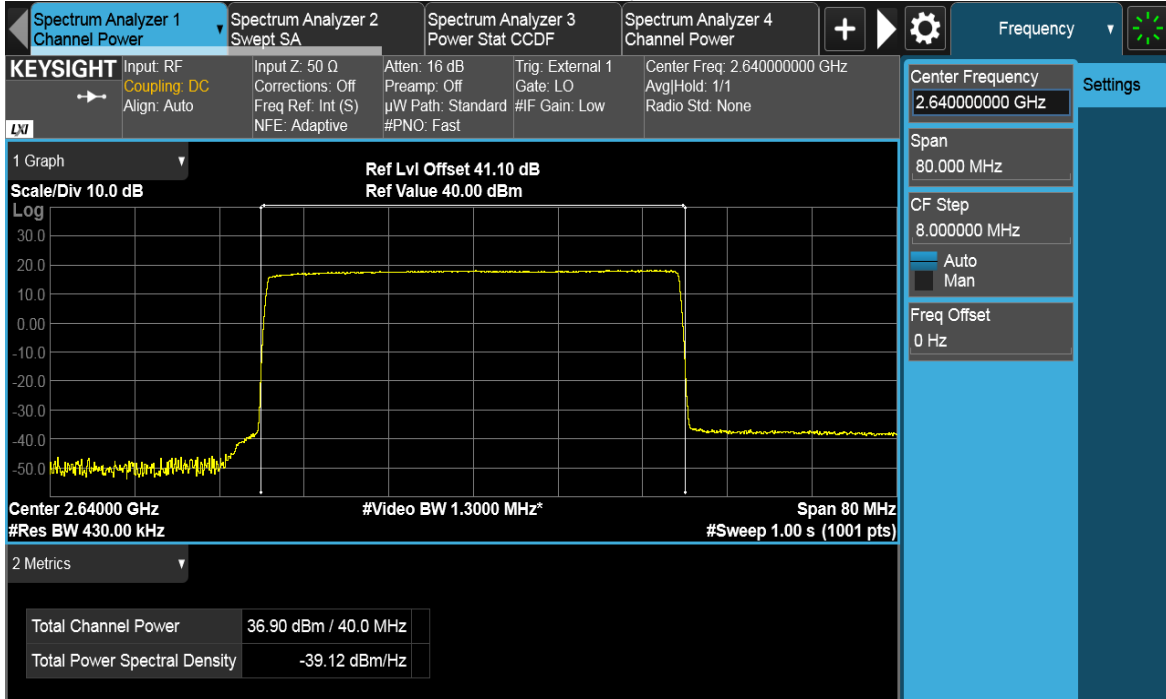


Total Quality. Assured.

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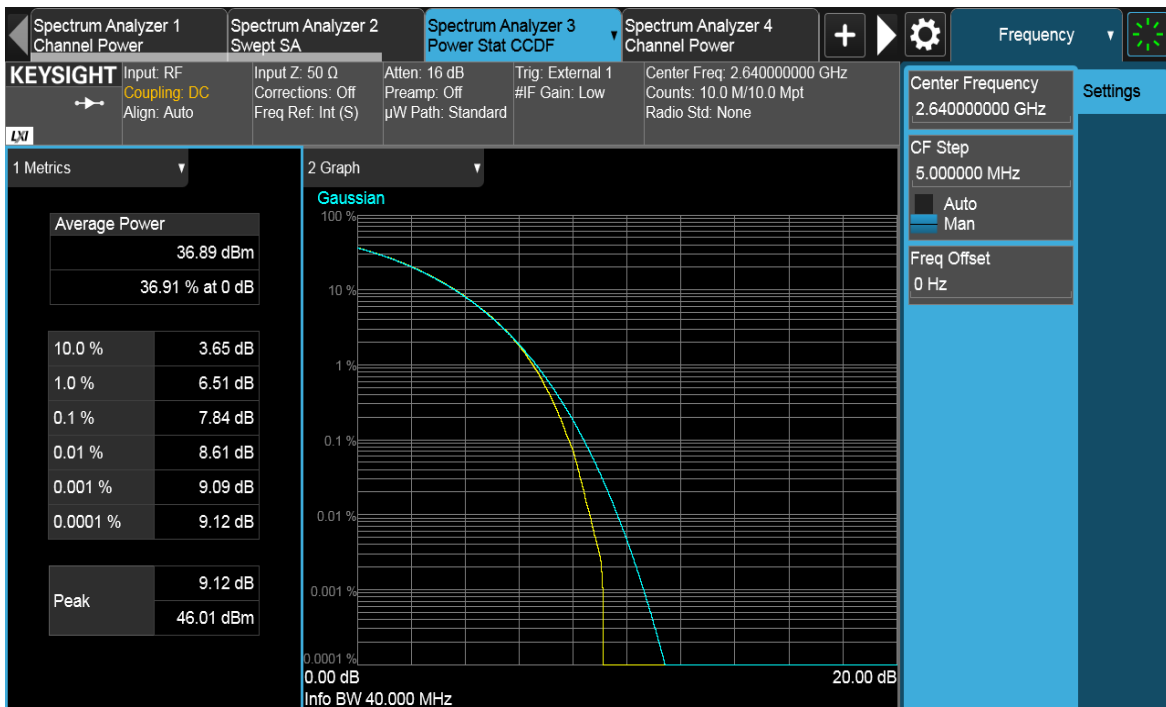
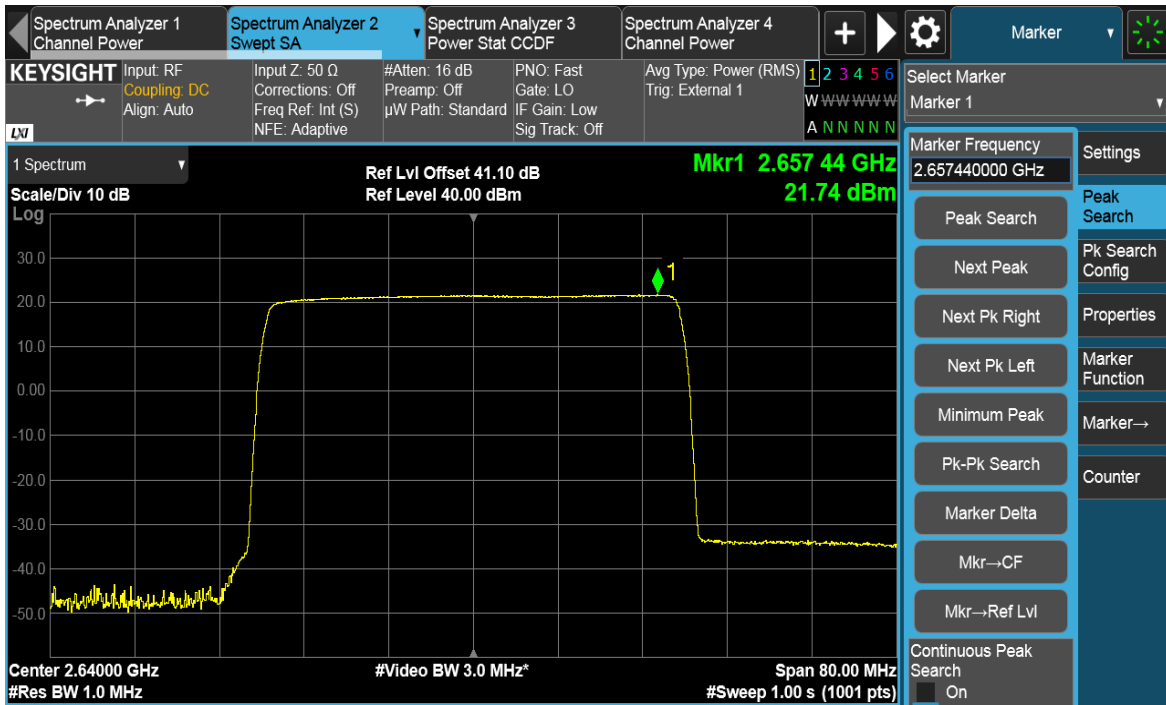


40MHz, Channel position B

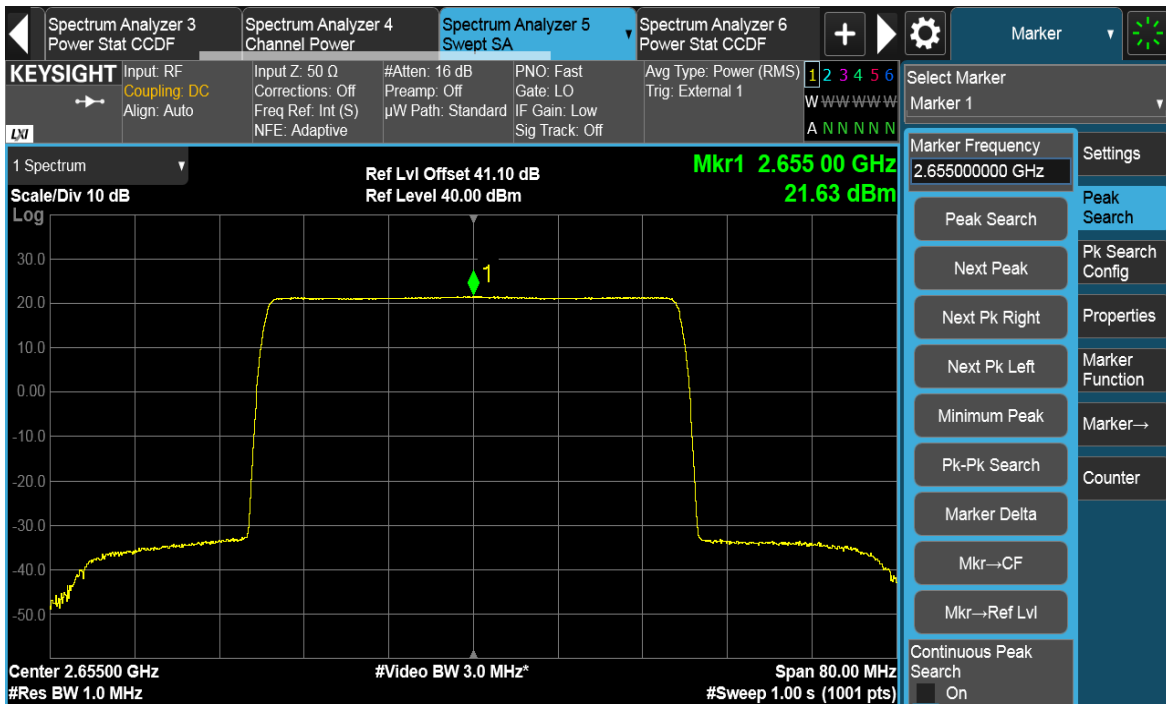
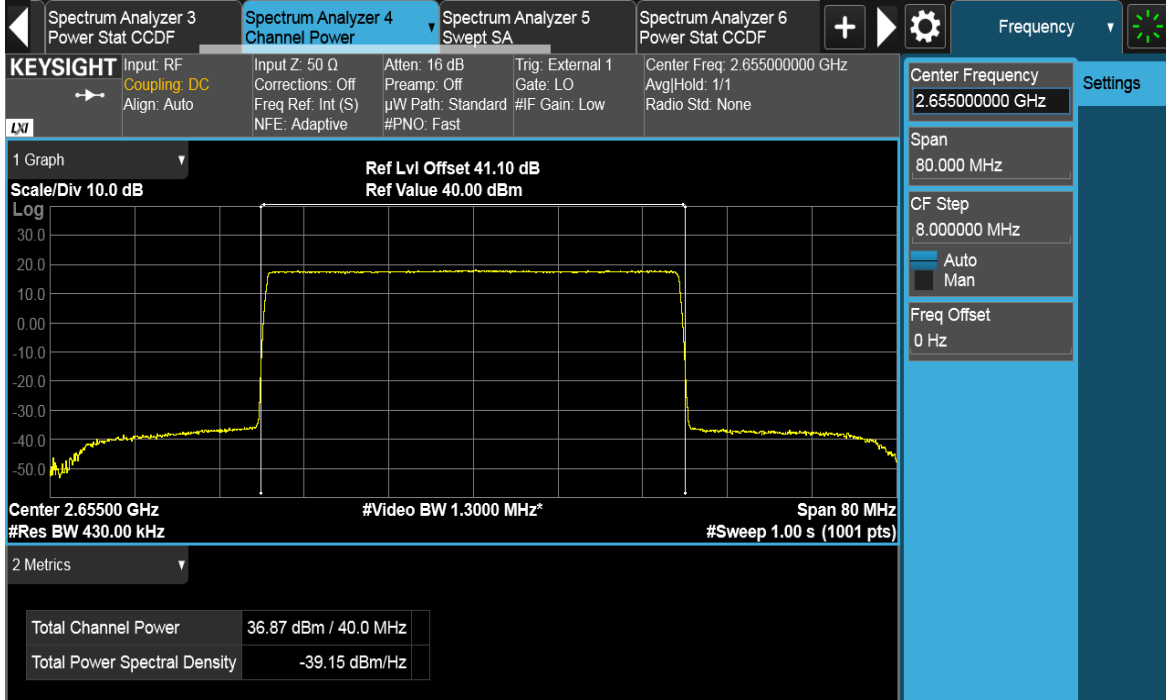


Total Quality. Assured.

TEST REPORT

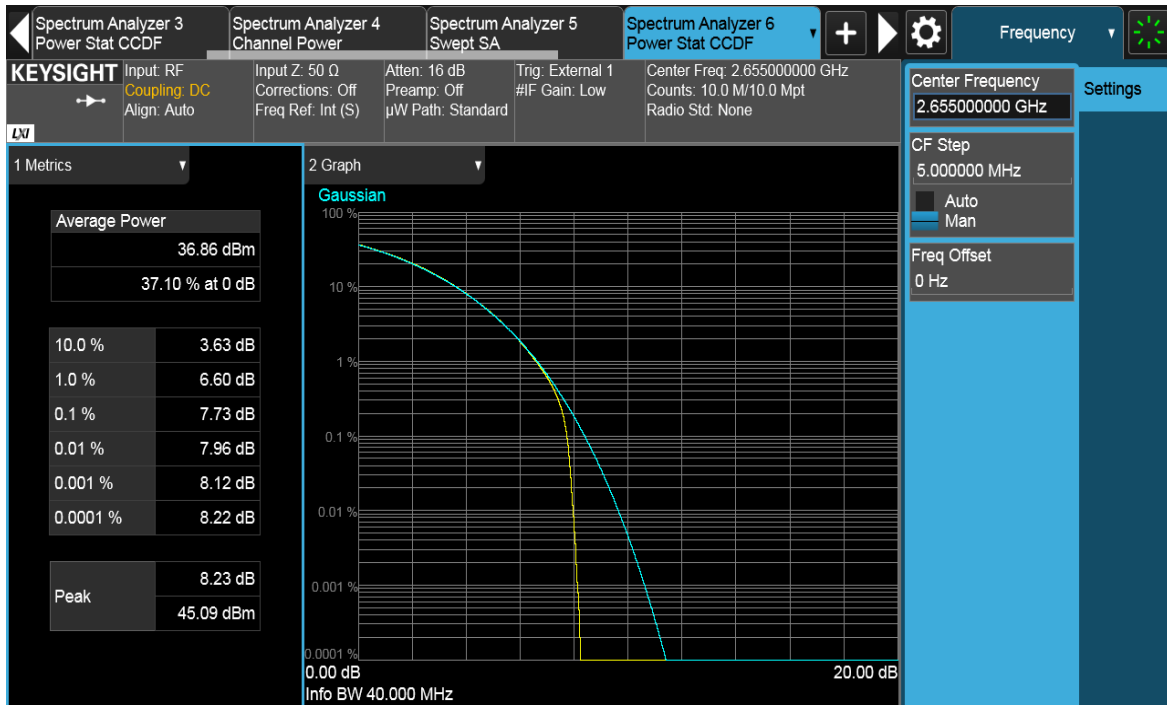


40MHz, Channel position M

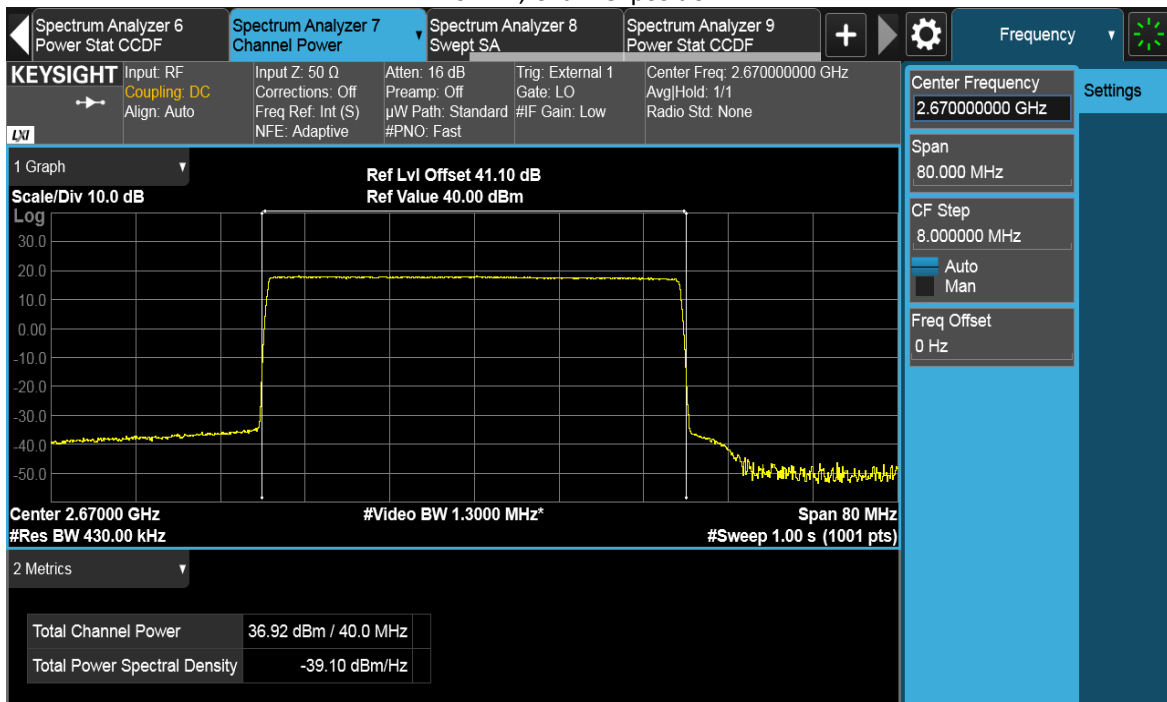


Total Quality. Assured.

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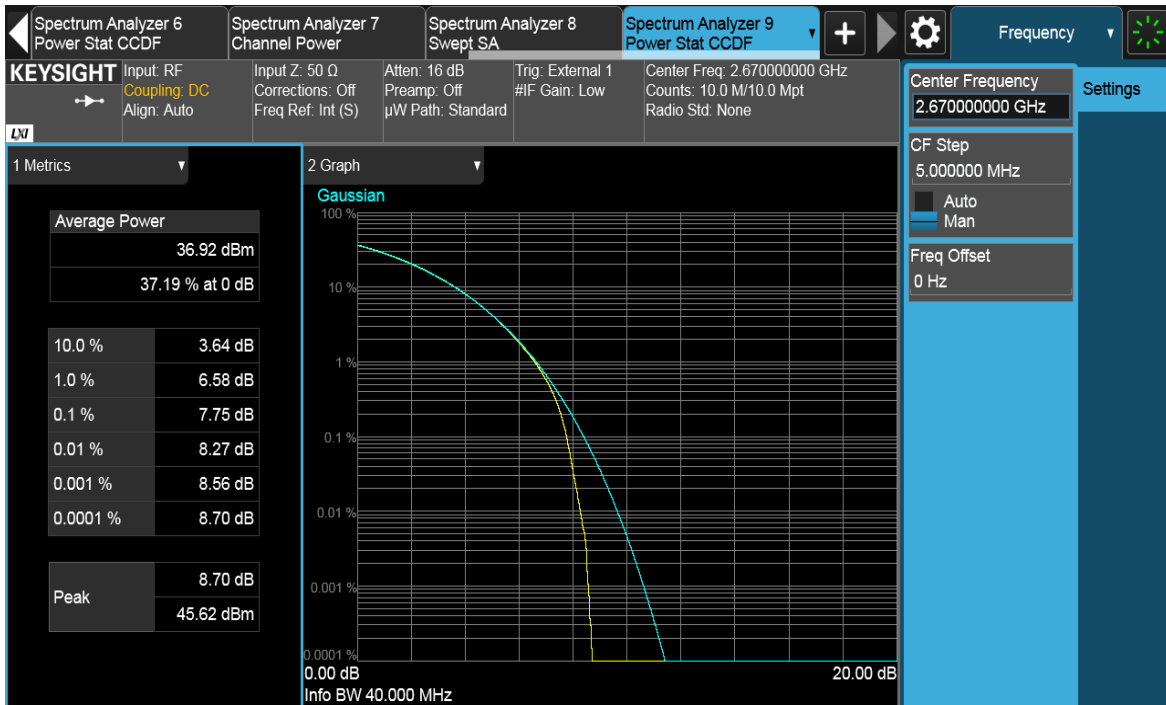
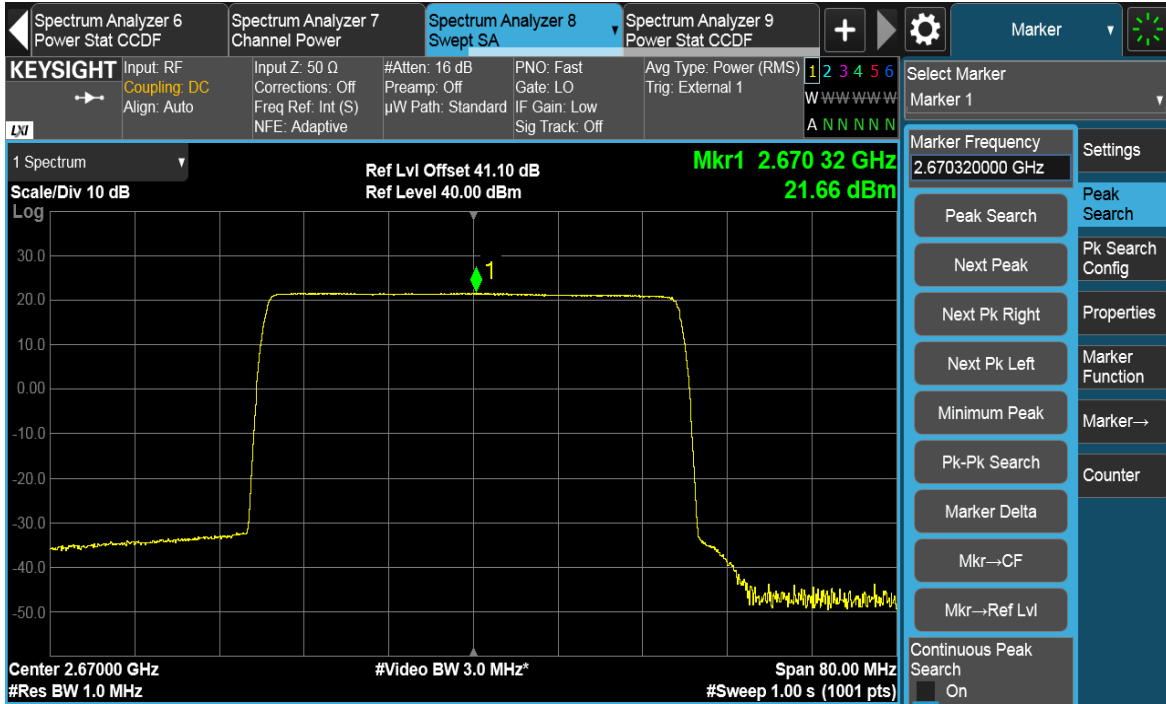


40MHz, Channel position T

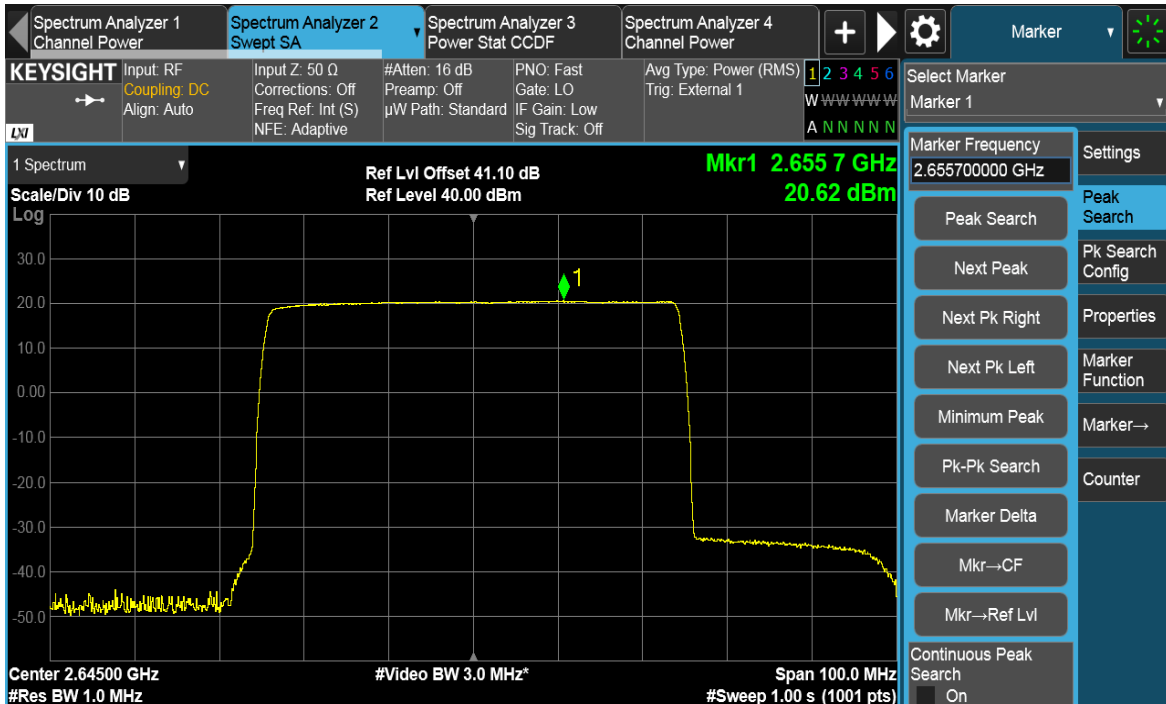
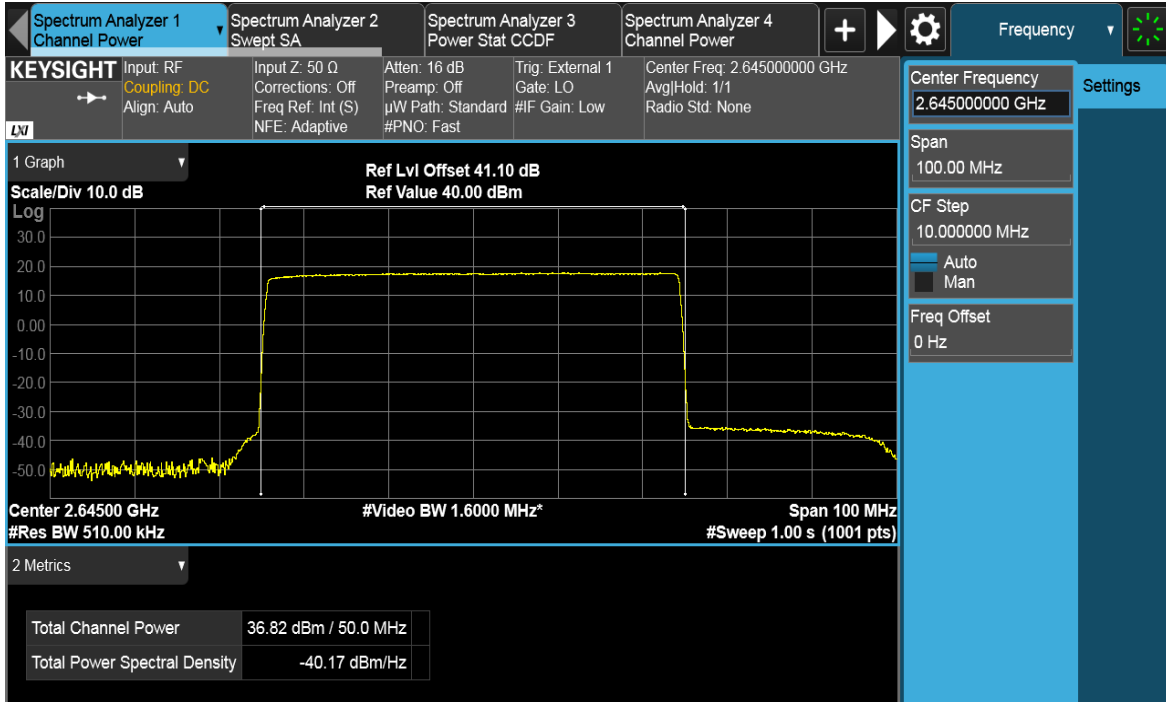


Total Quality. Assured.

TEST REPORT

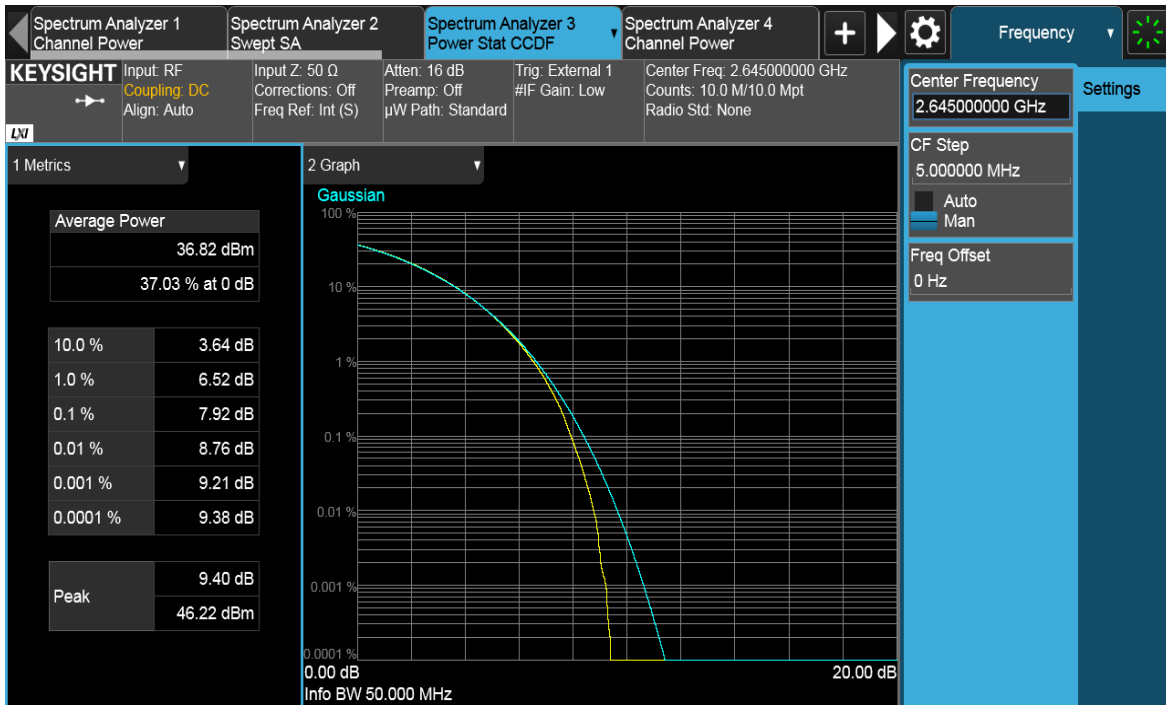


50MHz, Channel position B

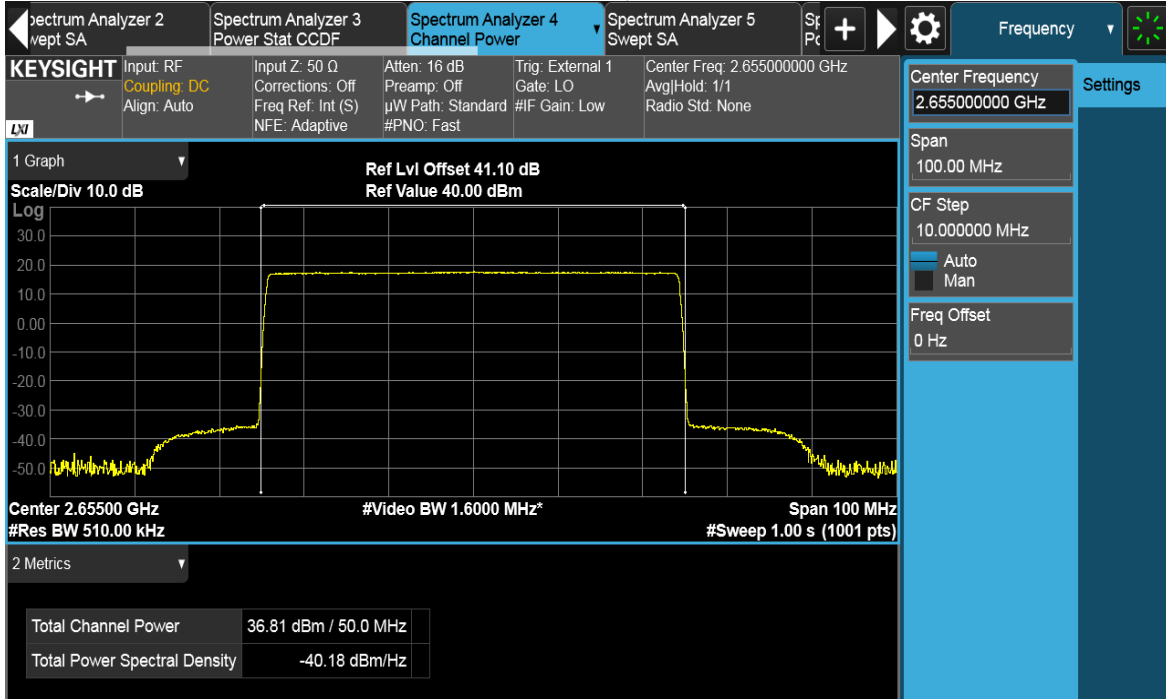


Total Quality. Assured.

TEST REPORT

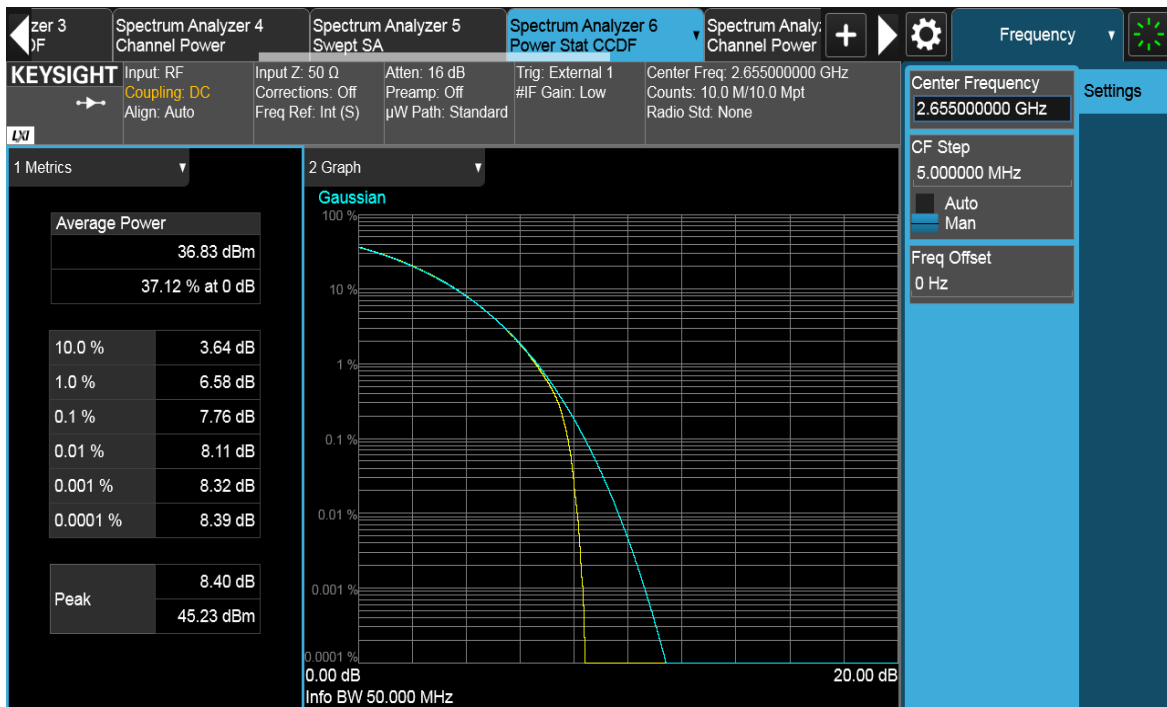
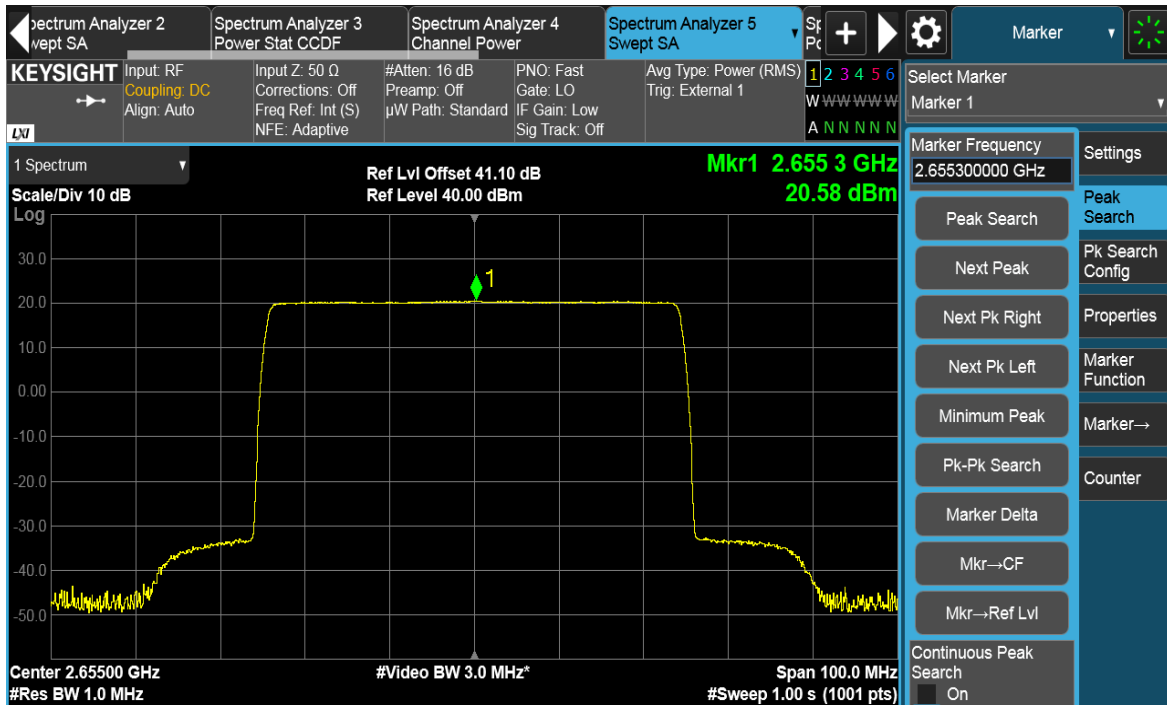


50MHz, Channel position M

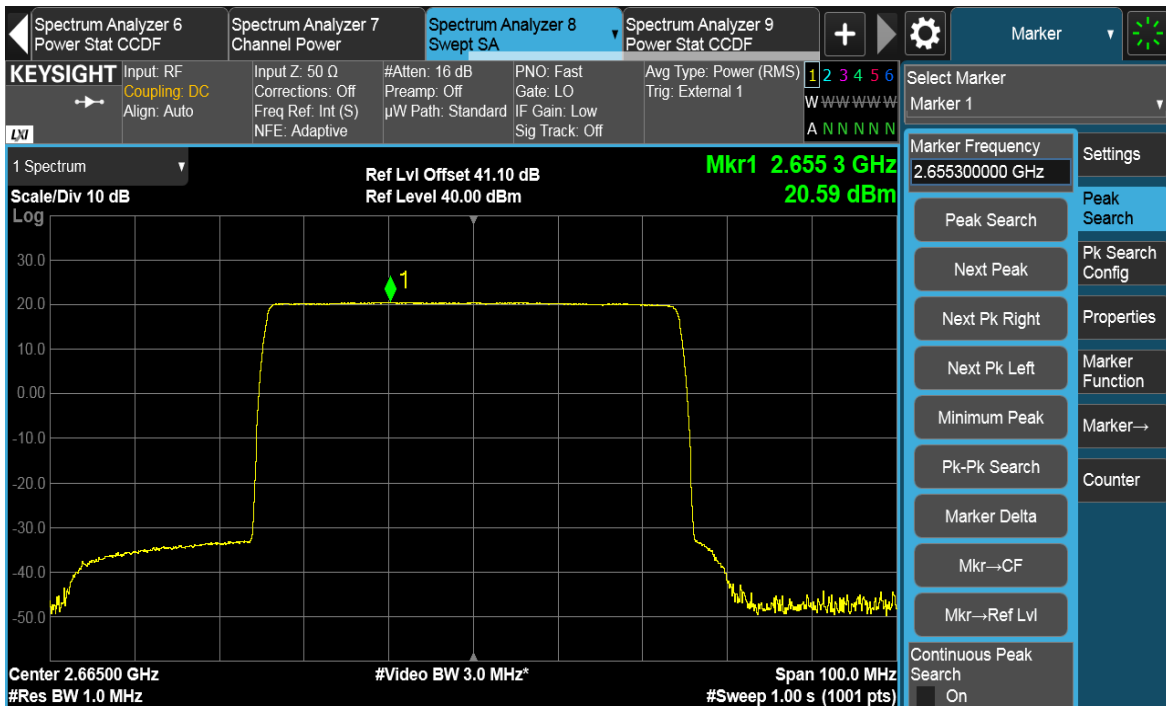
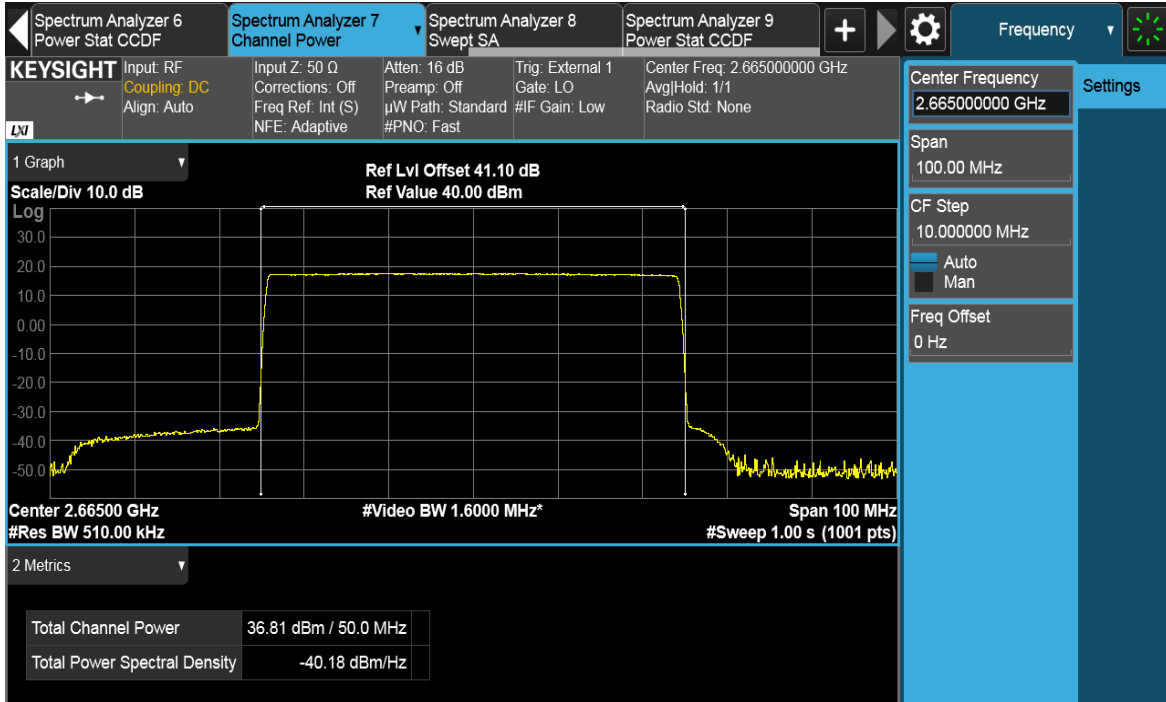


Total Quality. Assured.

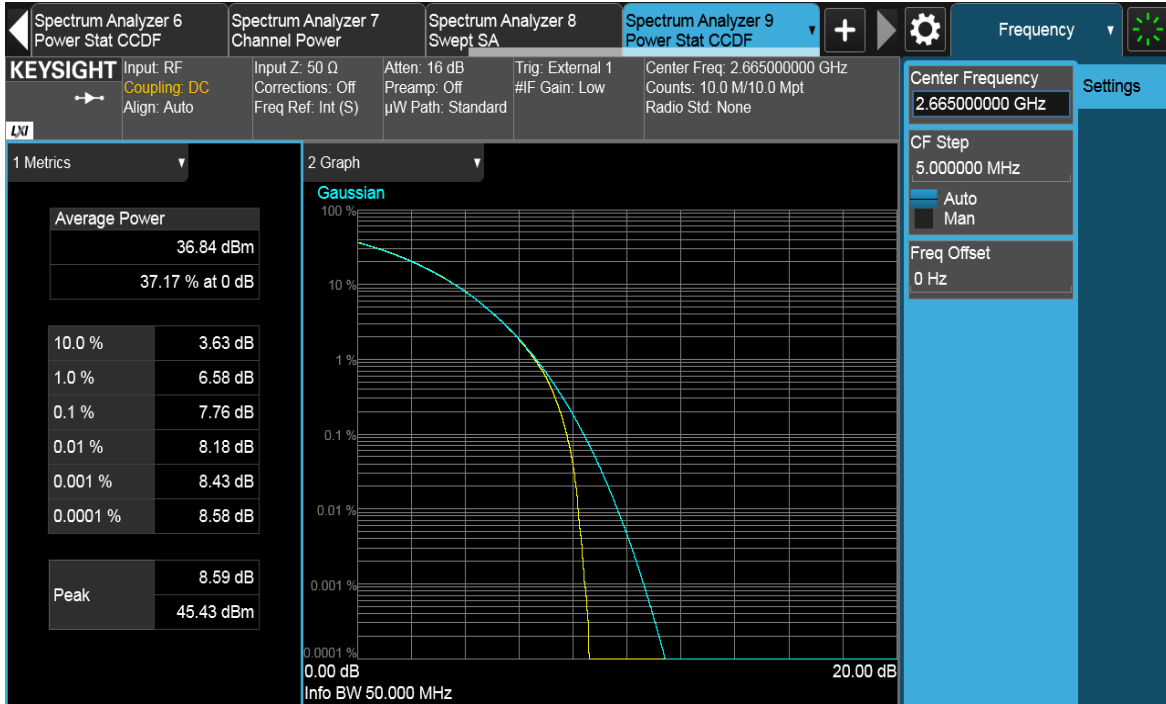
TEST REPORT



50MHz, Channel position T



TEST REPORT



NR-2C:

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	-	-	-	36.95	20.77	-	-	-	-
B	256QAM	25	-	-	-	36.92	20.78	-	-	-	-
C	256QAM	25	-	-	-	36.87	20.82	-	-	-	-
D	256QAM	25	-	-	-	36.91	20.82	-	-	-	-
Total conducted power			-	-	-	42.93	26.82	-	-	-	-
limit			-	-	-	69.20	62.15	-	-	-	-
Max antenna gain			-	-	-	26.26	35.33	-	-	-	-

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	-	-	-	36.90	19.87	-	-	-	-
B	256QAM	30	-	-	-	36.90	19.95	-	-	-	-
C	256QAM	30	-	-	-	36.87	20.00	-	-	-	-
D	256QAM	30	-	-	-	36.86	19.91	-	-	-	-
Total conducted power			-	-	-	42.90	25.95	-	-	-	-
limit			-	-	-	69.99	62.15	-	-	-	-
Max antenna gain			-	-	-	27.09	36.20	-	-	-	-

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 products 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 $10\log(\text{OBW} / \text{RBW})$ 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.

TEST REPORT

4.2 Measurement result

NR-1C

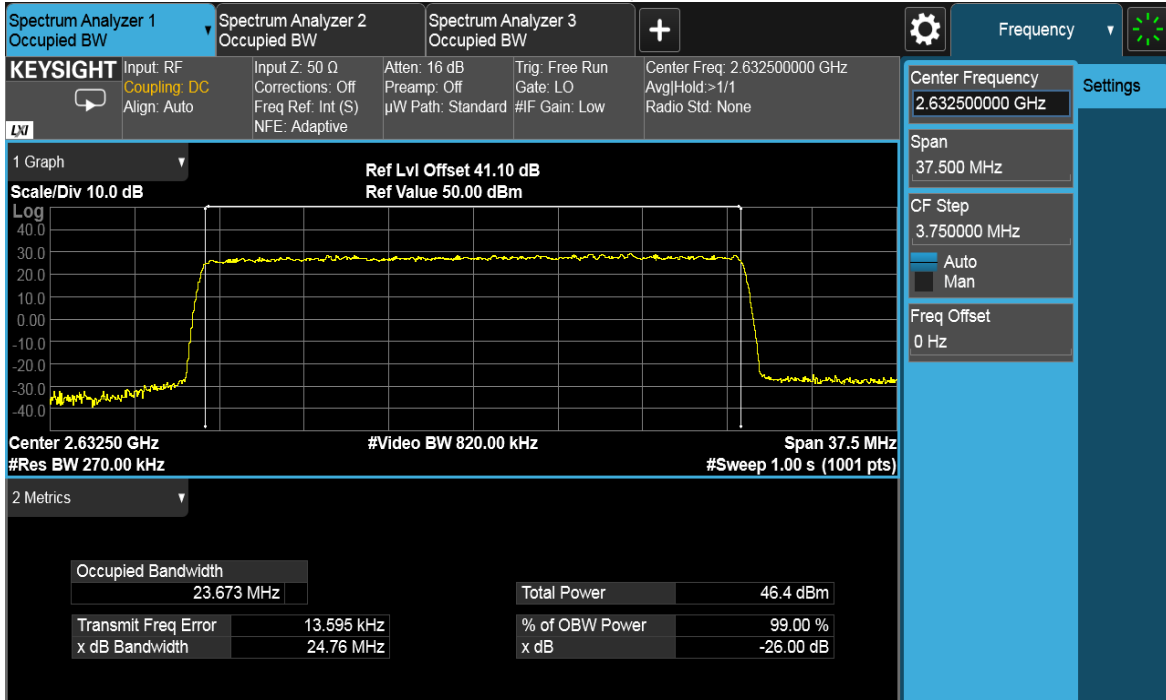
99% Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
A	256QAM	25MHz	23.673	23.721	23.708
A	256QAM	30MHz	28.499	28.548	28.530
A	256QAM	40MHz	38.436	38.531	38.489
A	256QAM	50MHz	48.040	48.109	48.092

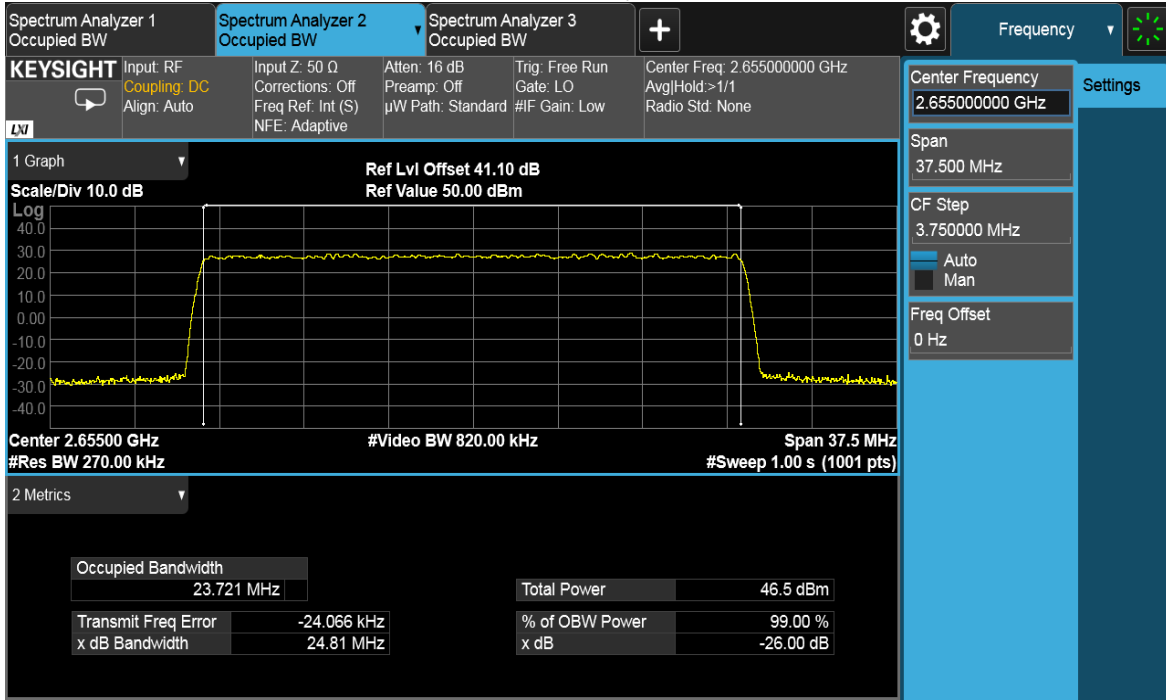
-26dBc Occupied Bandwidth

Antenna Port	Modulation	Bandwidth	Occupied Bandwidth (MHz)		
			Channel Position B	Channel Position M	Channel Position T
A	256QAM	25MHz	24.76	24.81	24.79
A	256QAM	30MHz	29.56	29.57	29.56
A	256QAM	40MHz	40.07	40.07	40.05
A	256QAM	50MHz	50.04	50.04	50.05

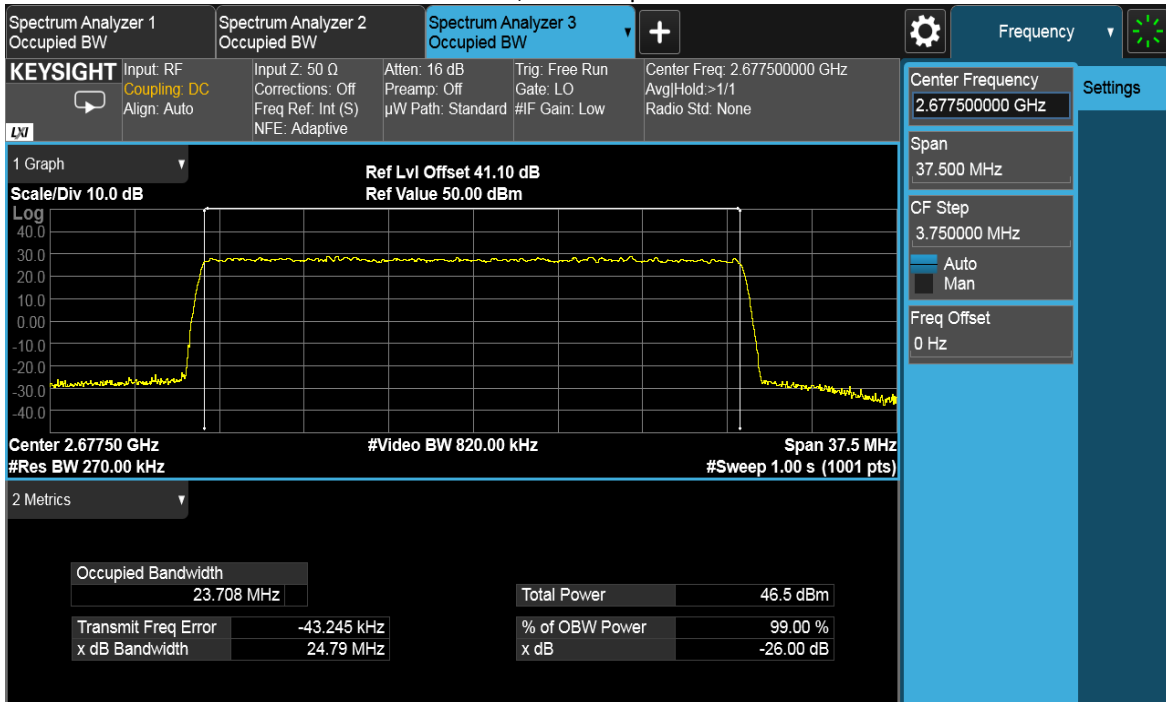
25MHz, Channel position B



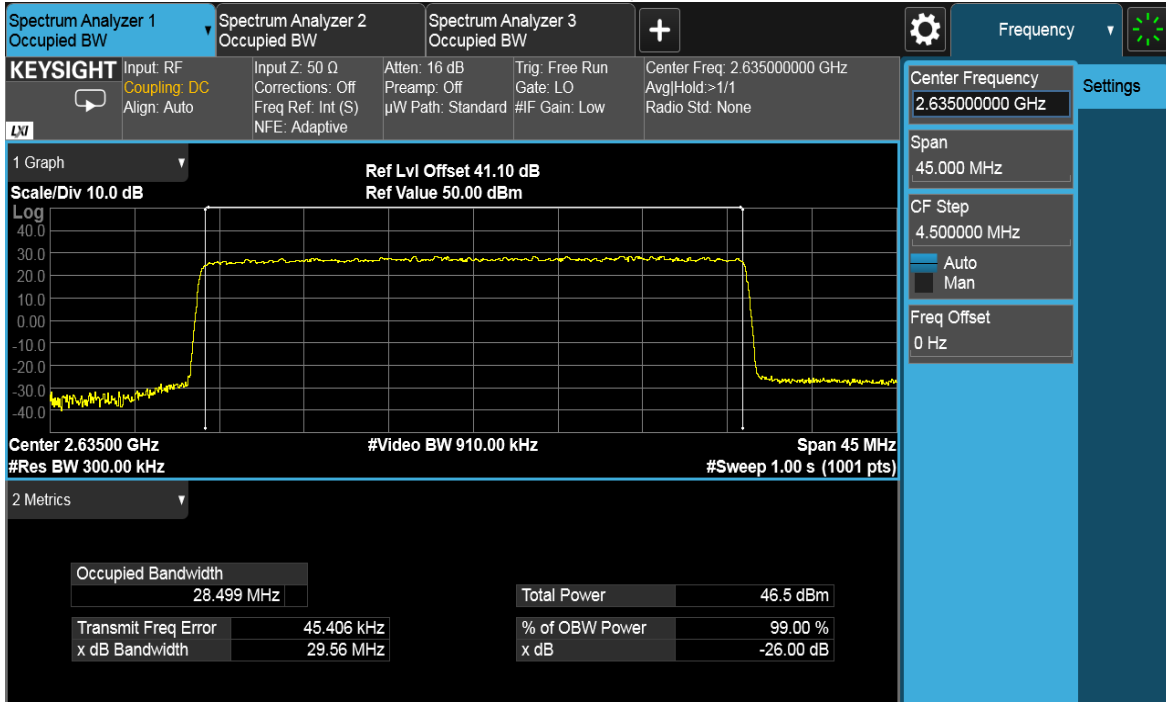
25MHz, Channel position M



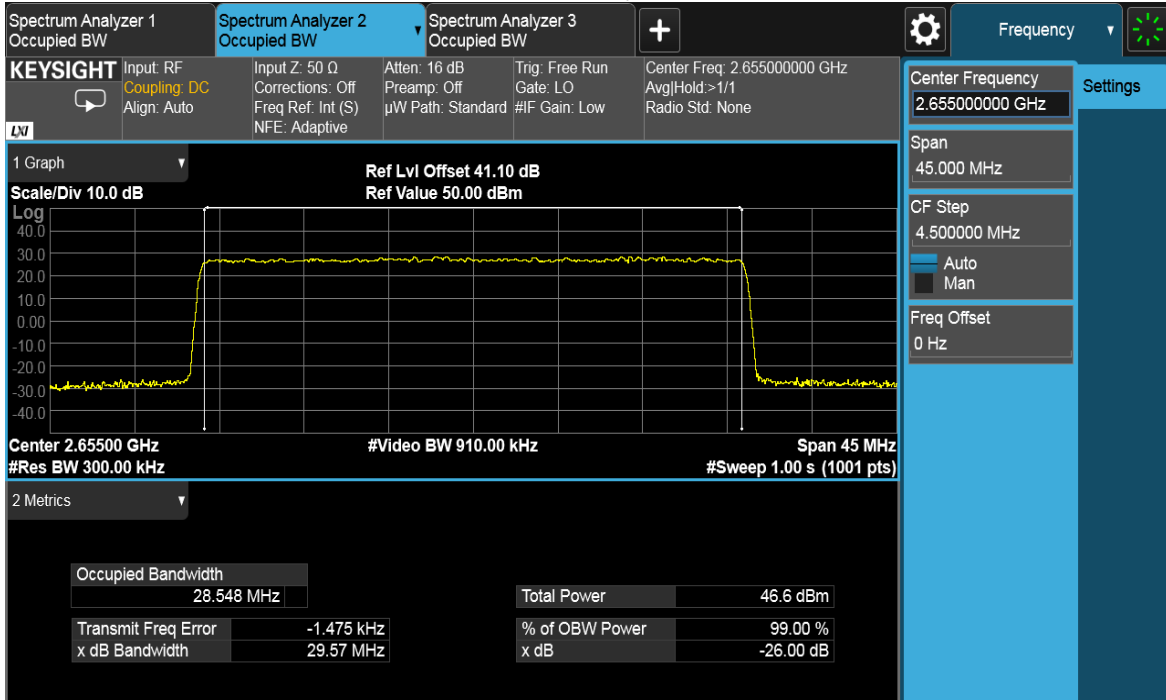
25MHz, Channel position T



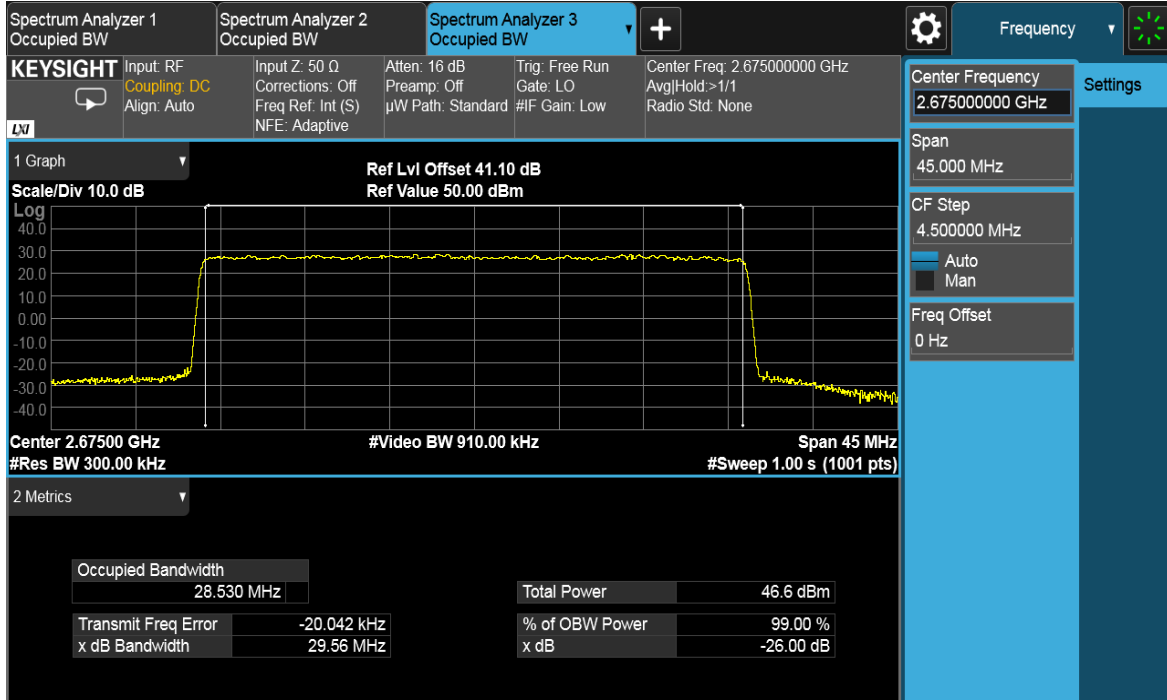
30MHz, Channel position B



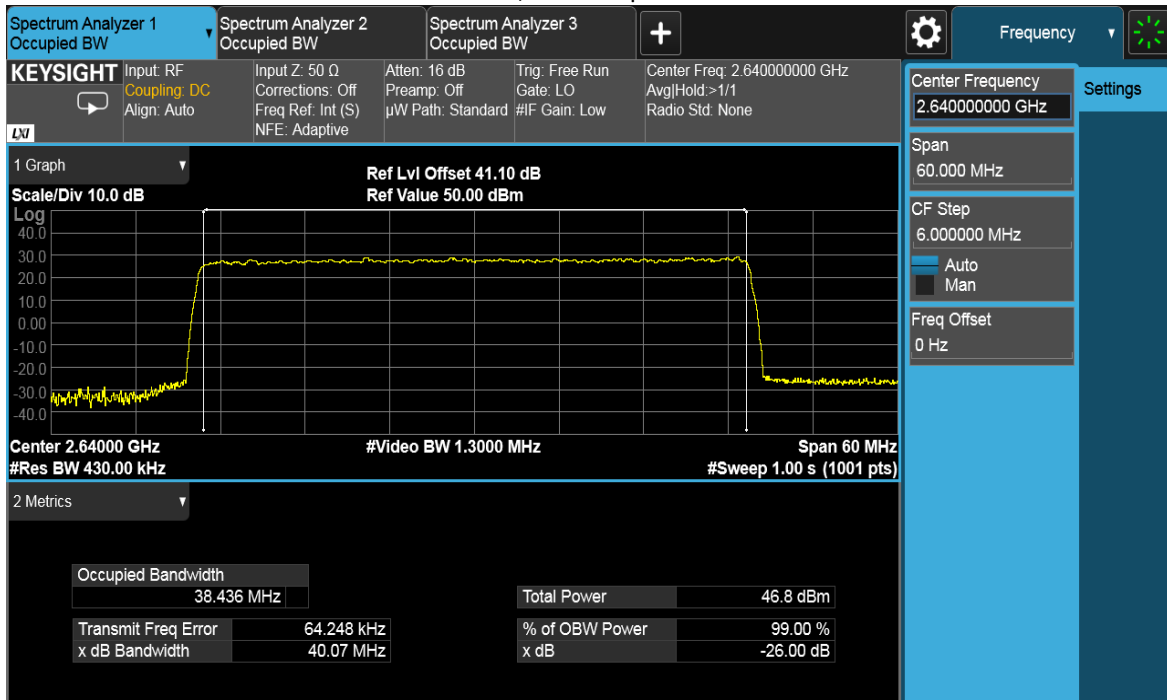
30MHz, Channel position M



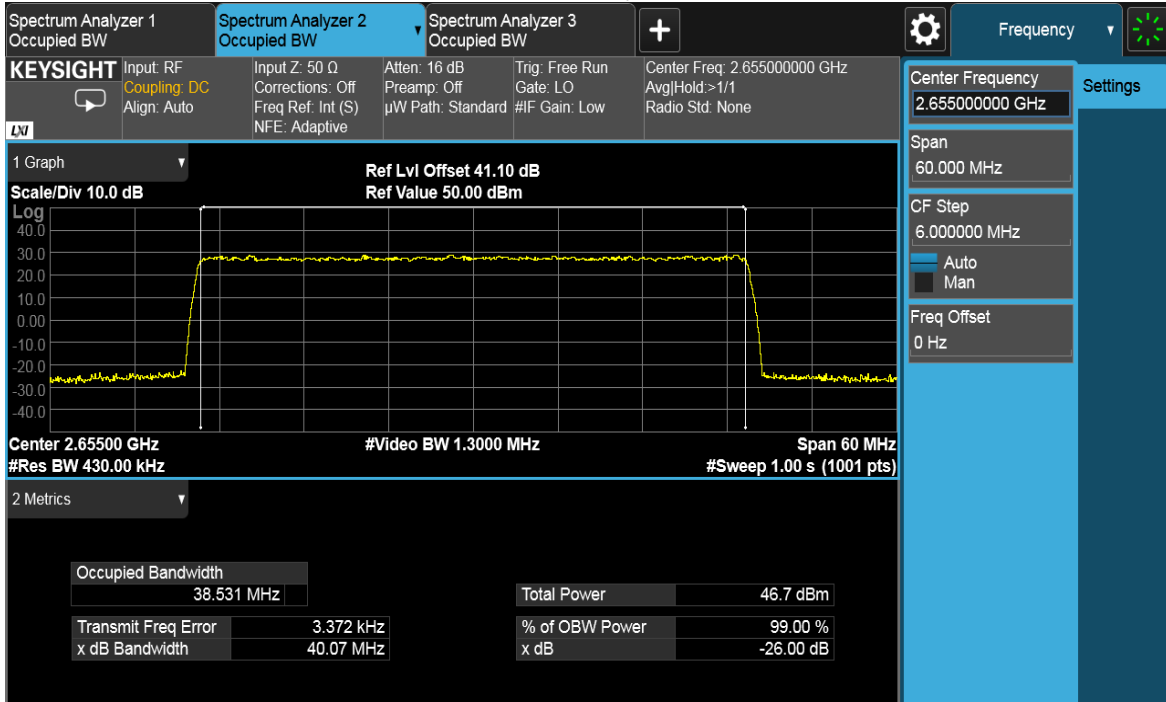
30MHz, Channel position T



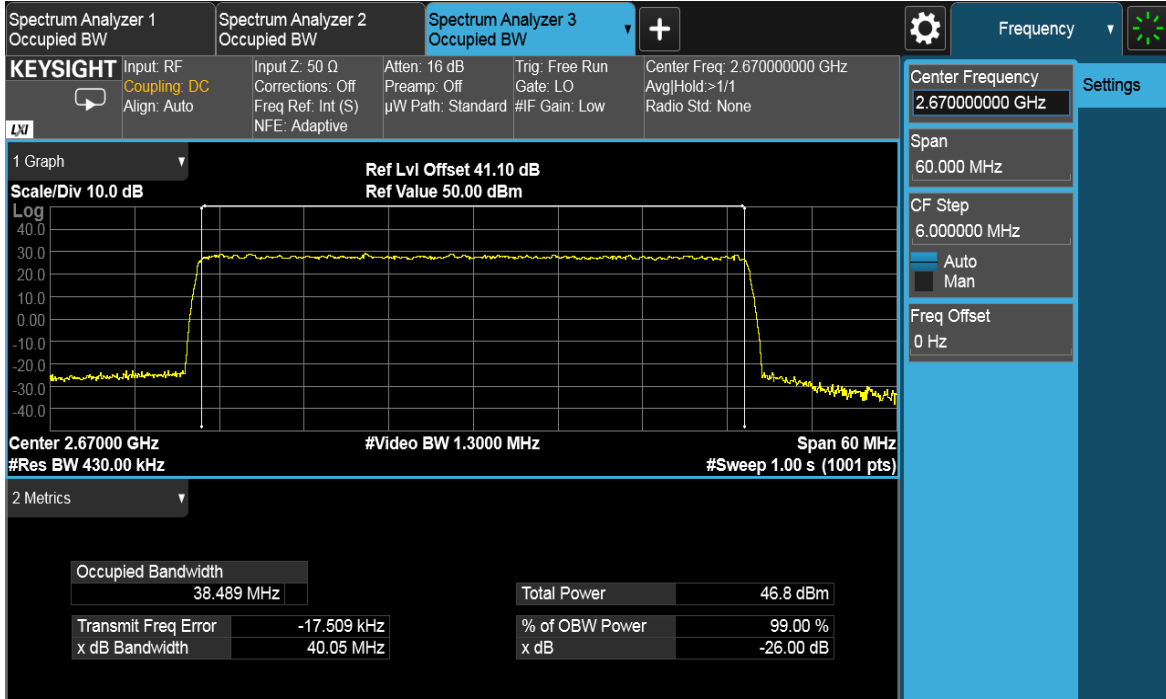
40MHz, Channel position B



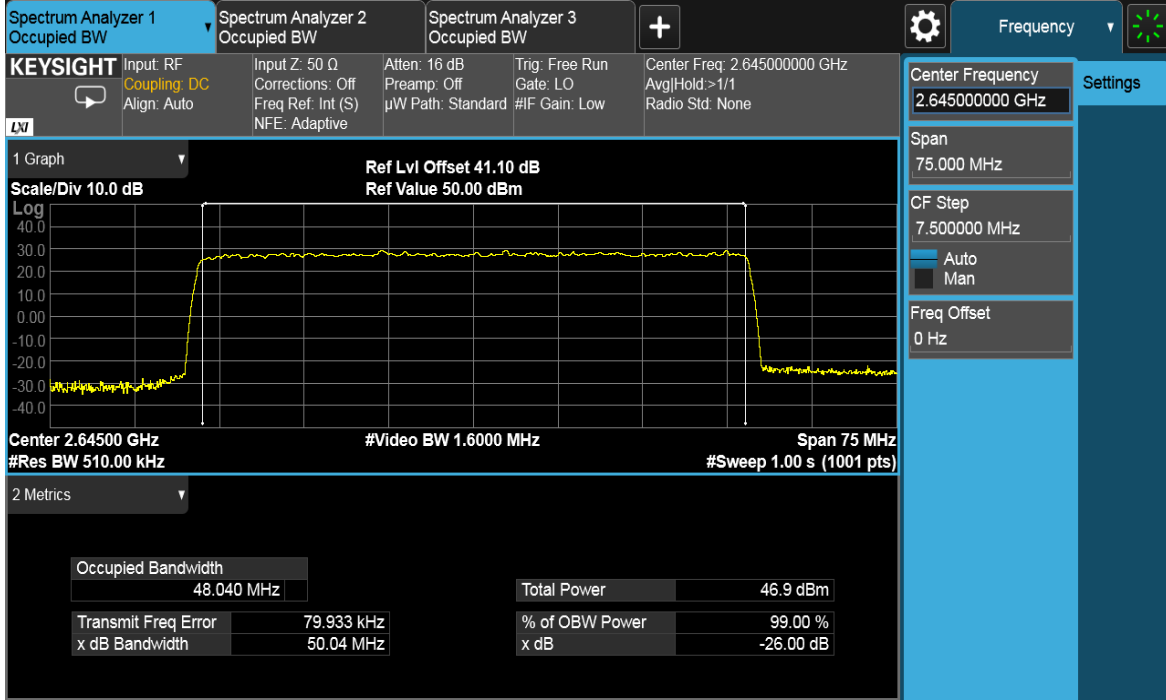
40MHz, Channel position M



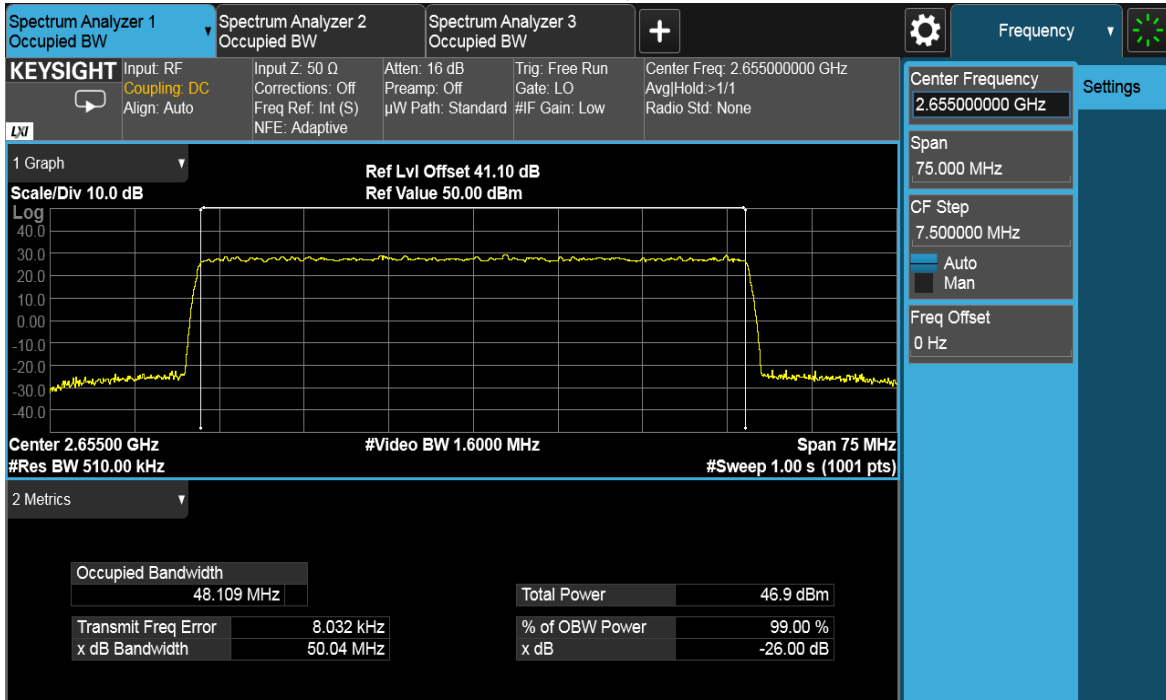
40MHz, Channel position T



50MHz, Channel position B



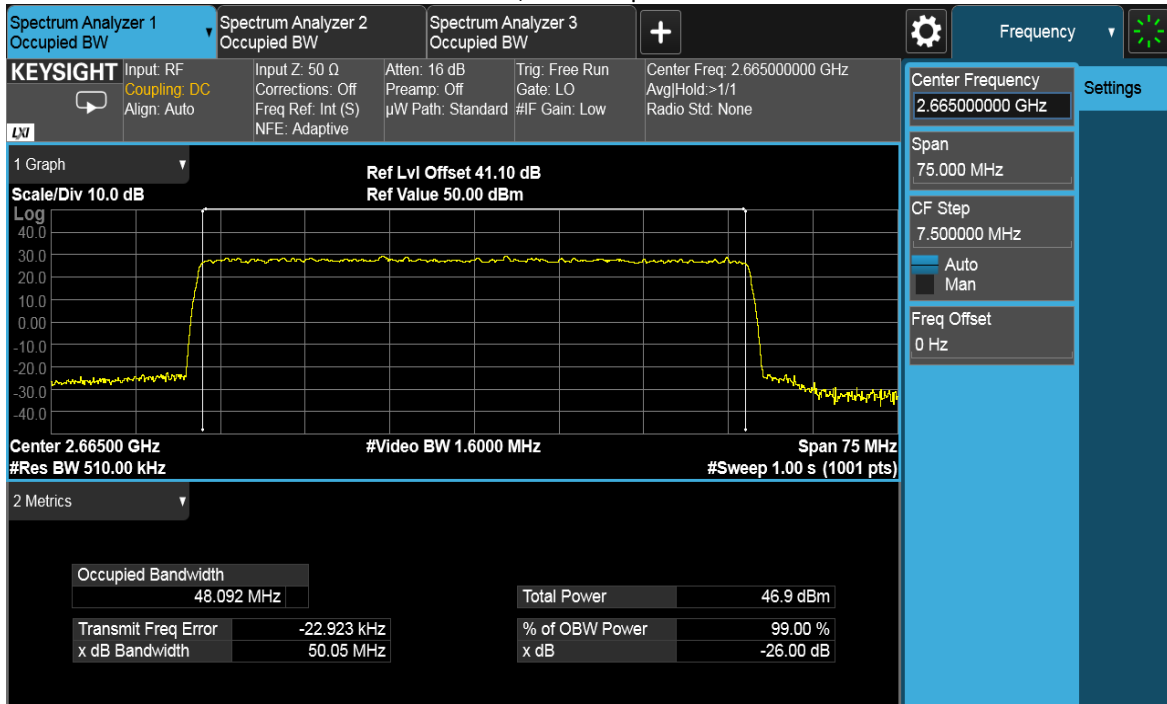
50MHz, Channel position M



Total Quality. Assured.

TEST REPORT

50MHz, Channel position T



TEST REPORT

5 Conducted Unwanted Emissions at the Edge

Test result: Pass

5.1 Limit

In the 1 MHz band immediately outside and adjacent to the channel edge, the unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for base station. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

Equipment shall comply with the following unwanted emission limits:
for base station, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} p$.
p is the transmitter power measured in watts.

5.2 Measurement Procedure

Unwanted emissions at Band Edge shall be measured when the transmitter is operating at maximum power and proper modulation.

The unwanted emissions at Band Edge shall be measured at the bottom and the top of the operating frequency bands.

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

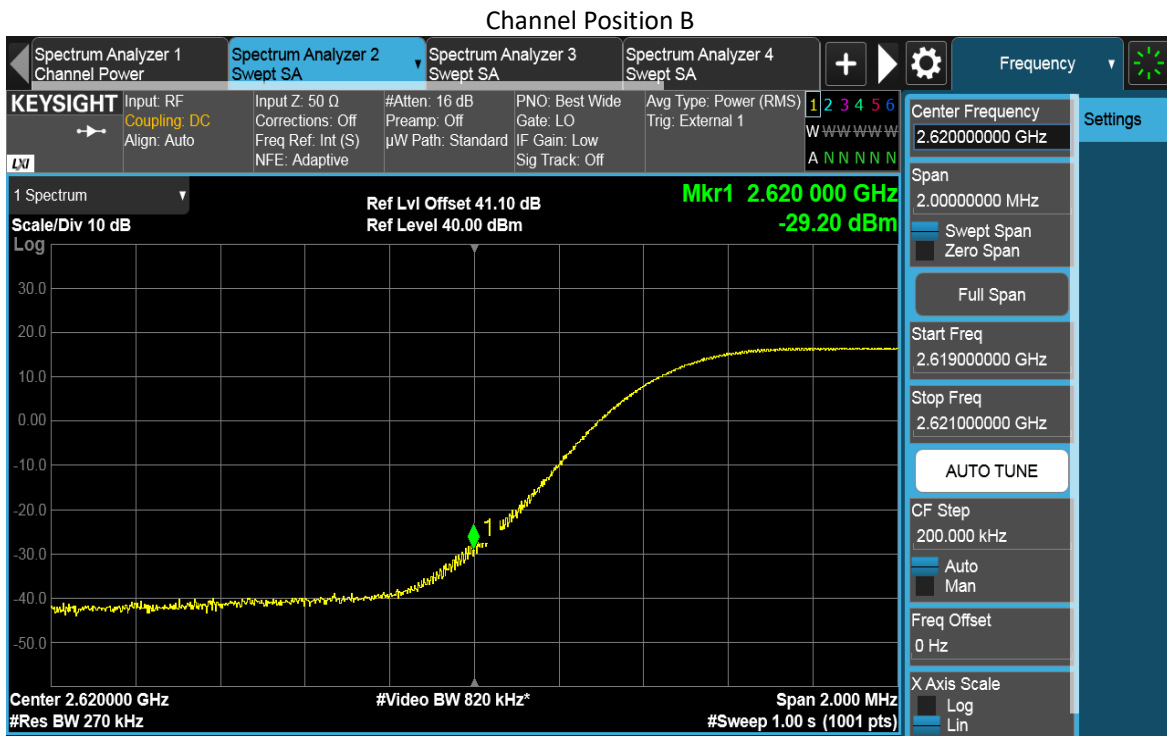
Spectrum analyzer detector was set as RMS.

TEST REPORT

5.3 Measurement result

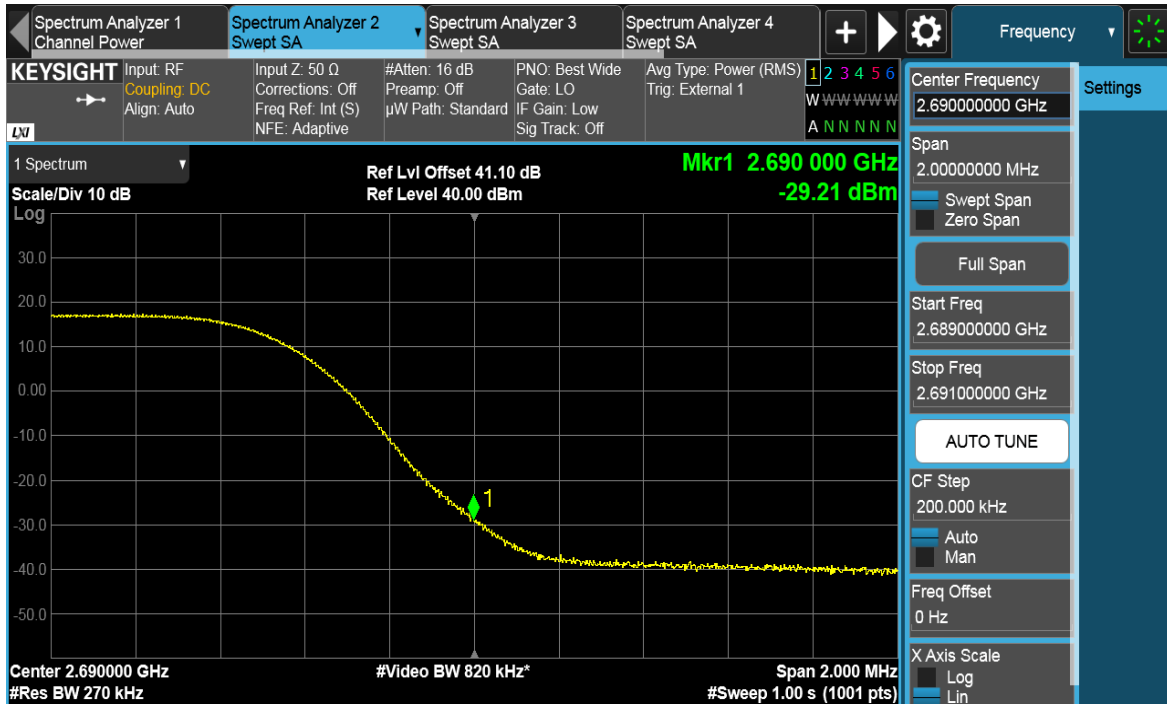
NR-1C-BE:

Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	256QAM	25	270	-19.02
A	T	256QAM	25	270	-19.02



TEST REPORT

Channel Position T

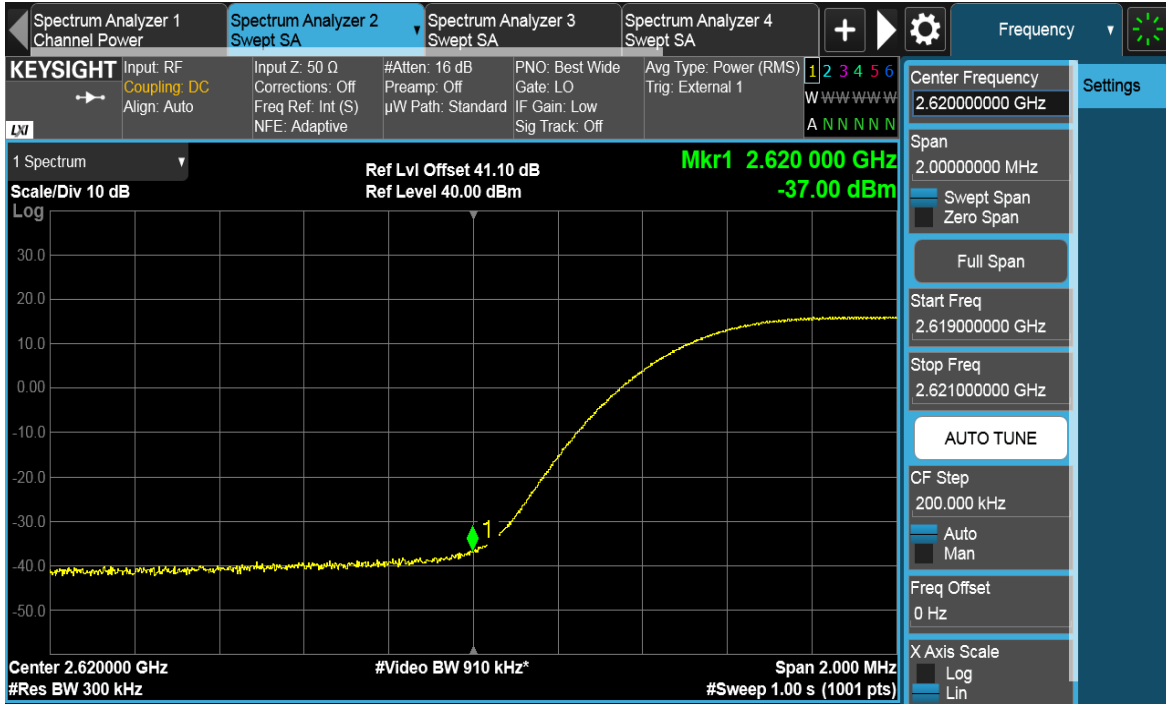


Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	256QAM	30	300	-19.02
A	T	256QAM	30	300	-19.02

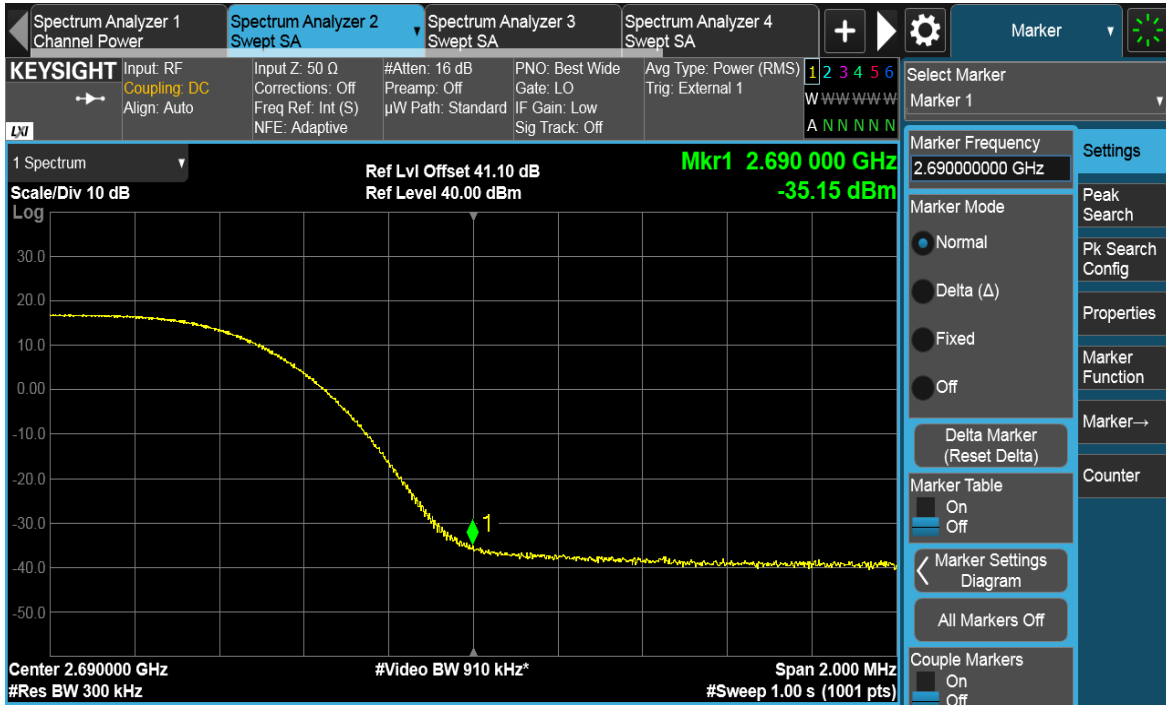
Channel Position B

Total Quality. Assured.

TEST REPORT



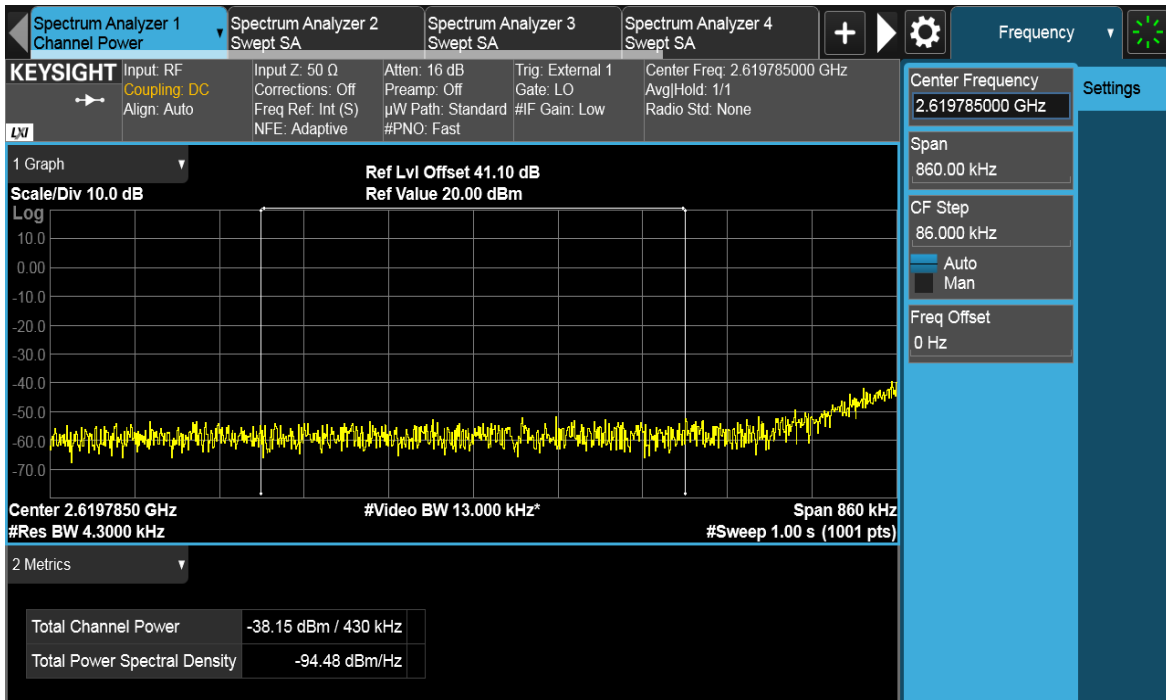
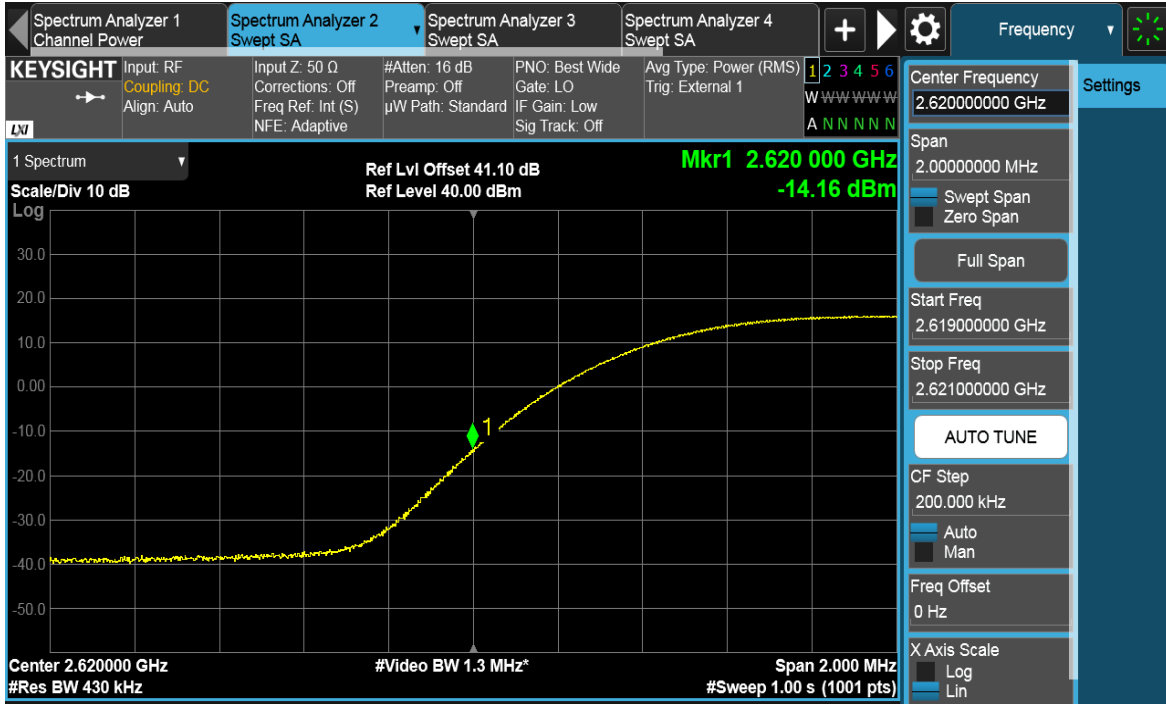
Channel Position T



Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	256QAM	40	430	-19.02
A	T	256QAM	40	430	-19.02

TEST REPORT

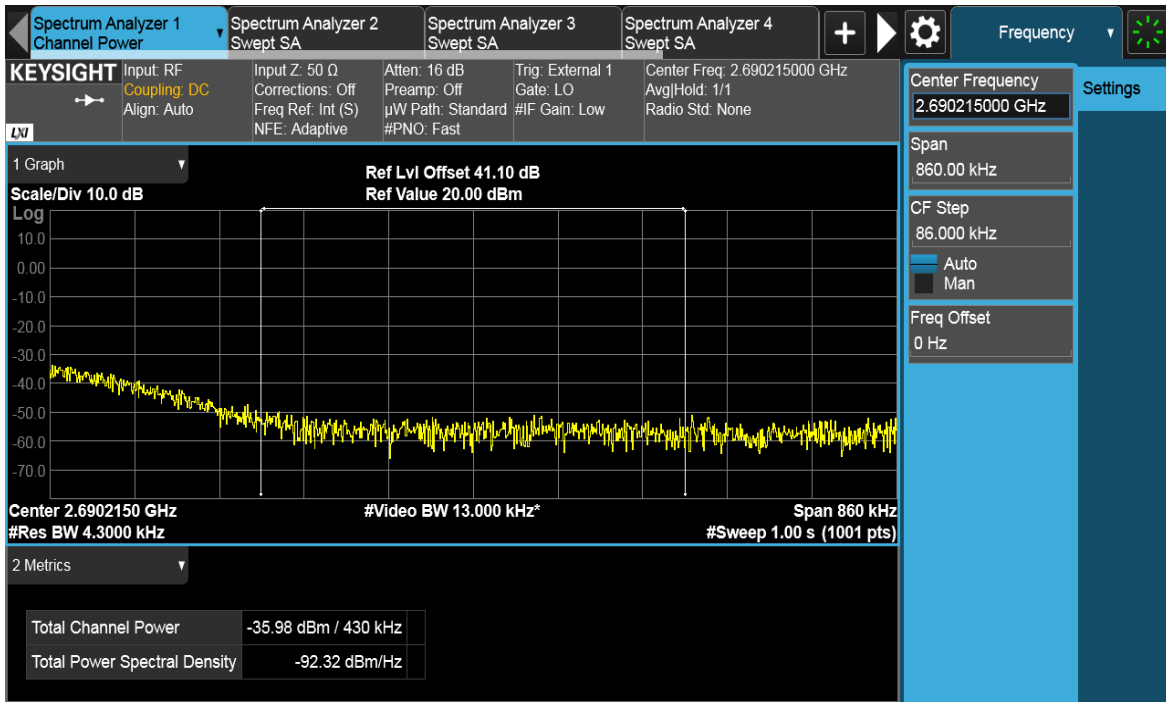
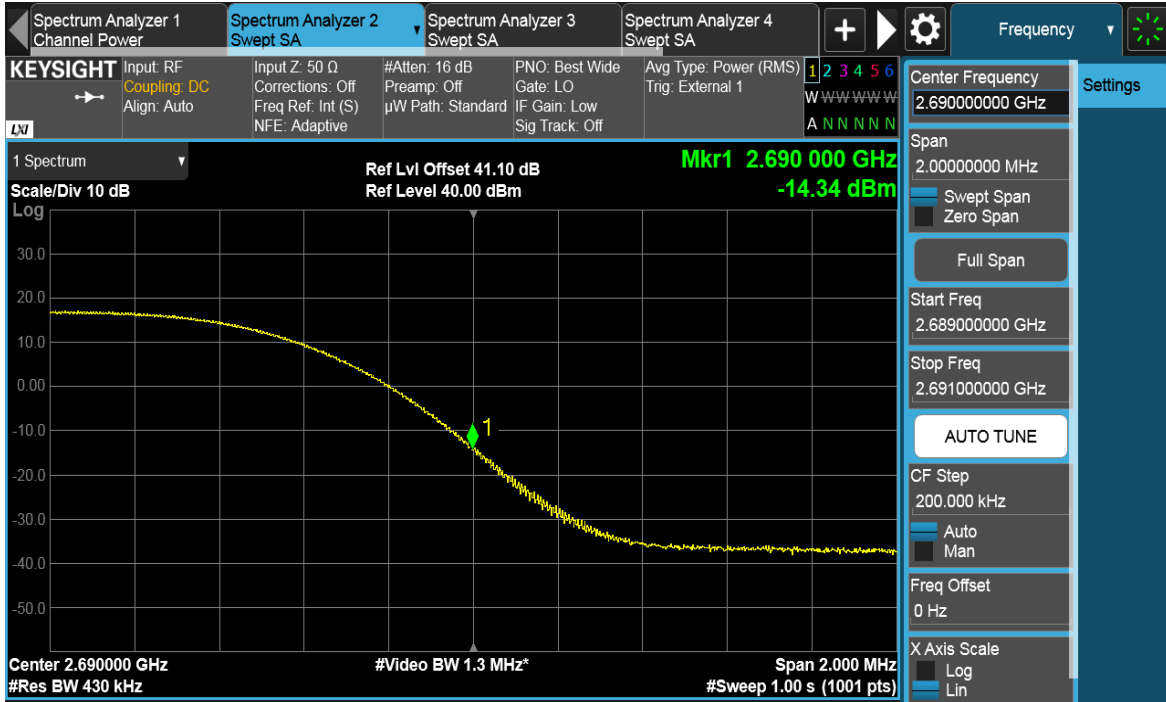
Channel Position B



Channel Position T

Total Quality. Assured.

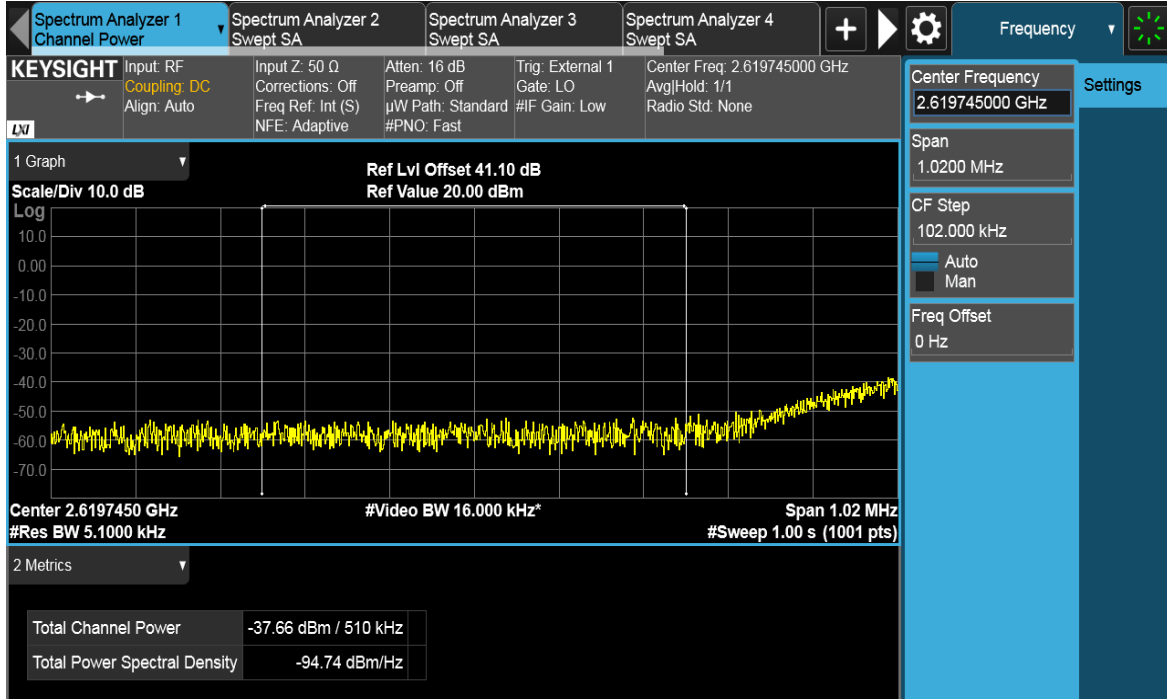
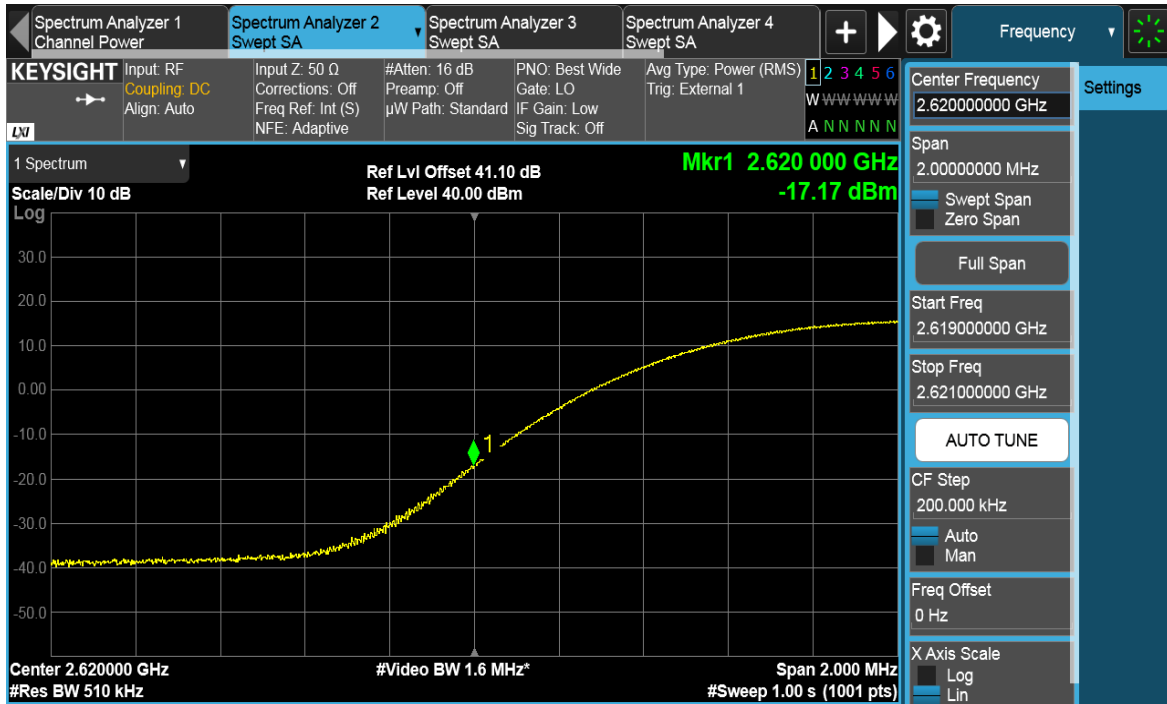
TEST REPORT



Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	256QAM	50	510	-19.02
A	T	256QAM	50	510	-19.02

TEST REPORT

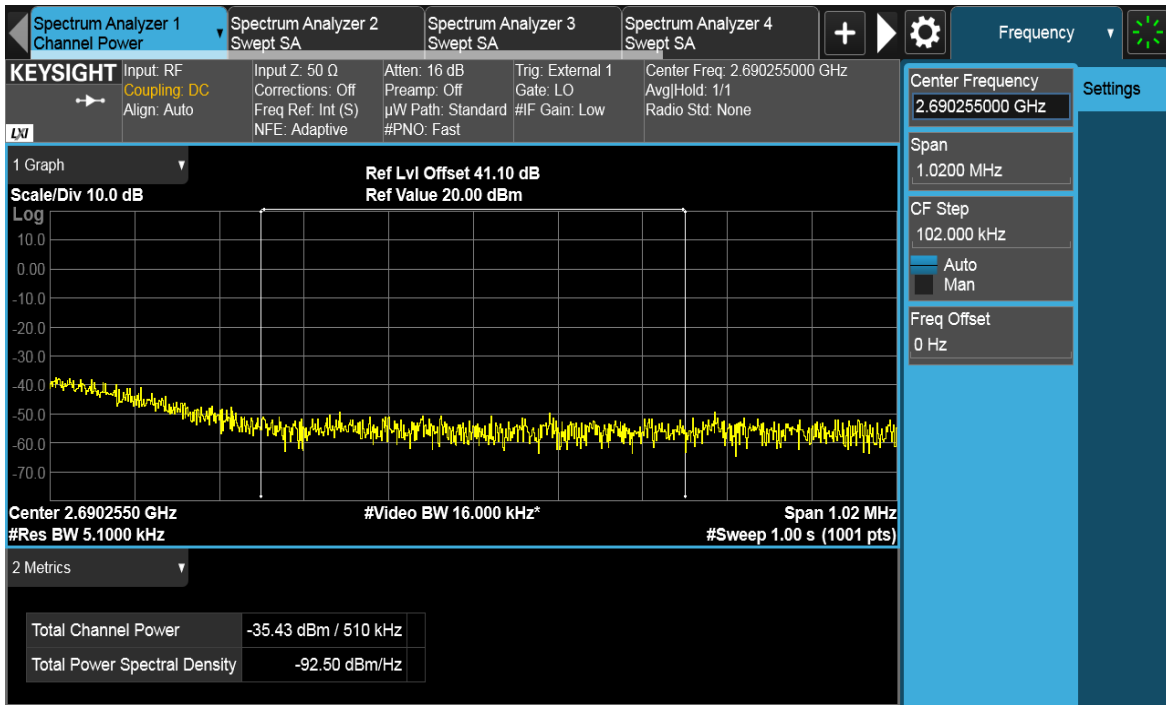
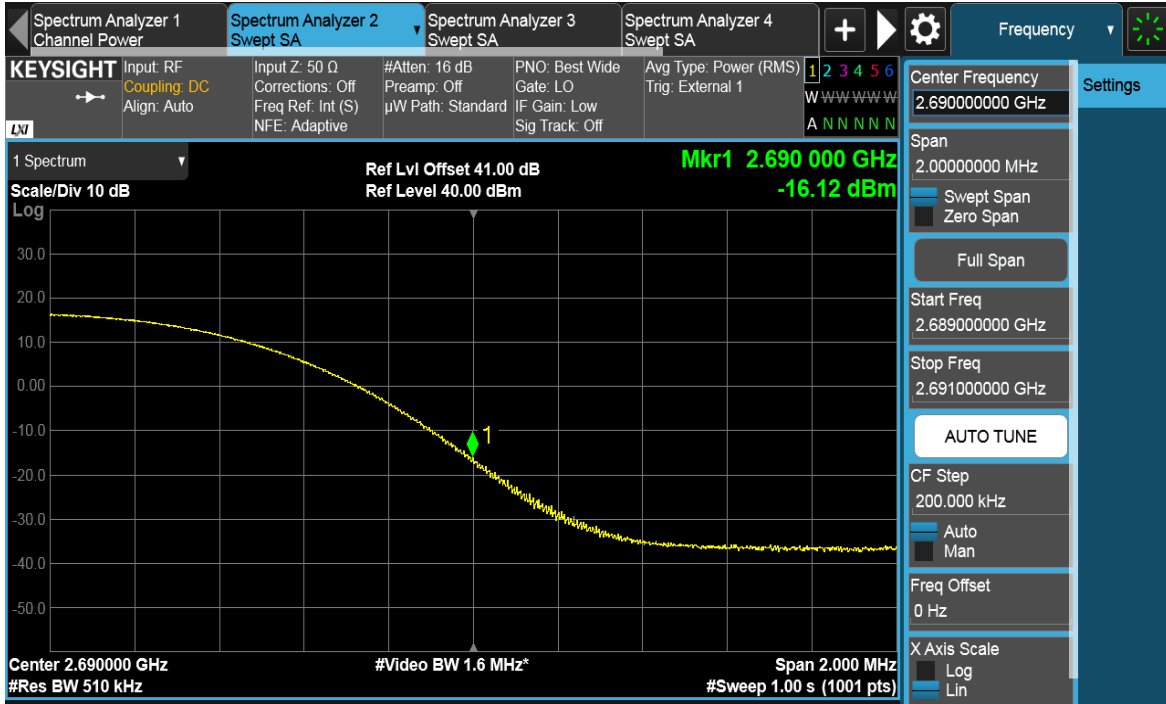
Channel Position B



Channel Position T

Total Quality. Assured.

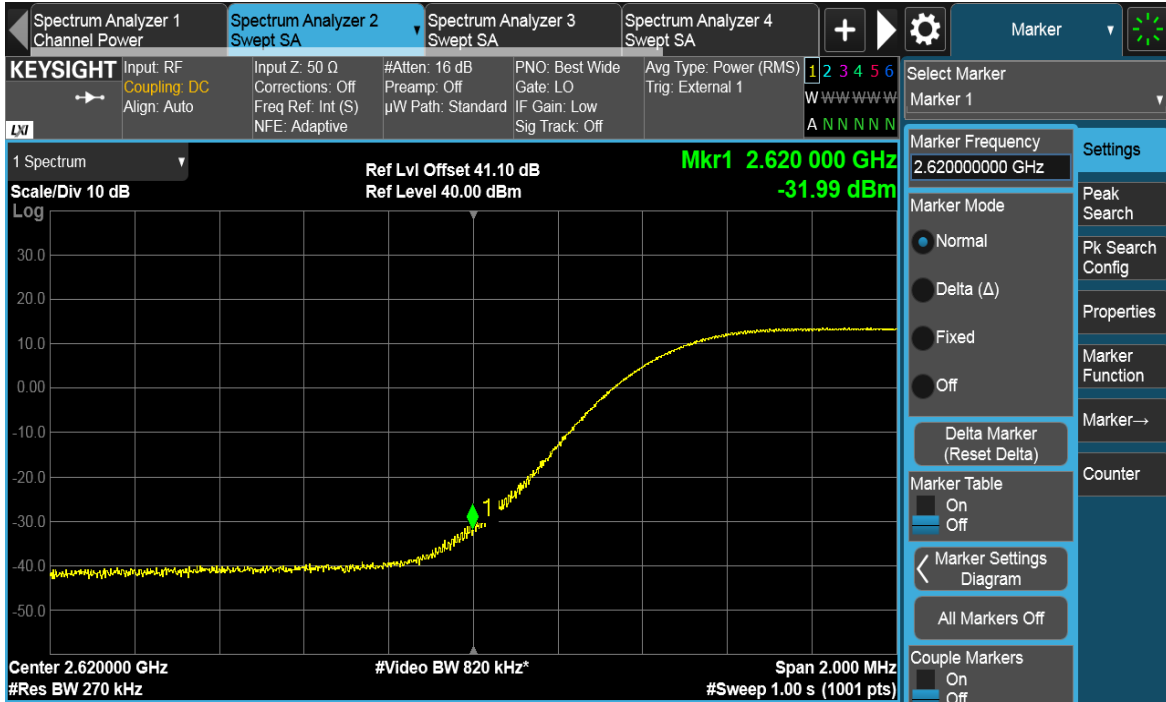
TEST REPORT



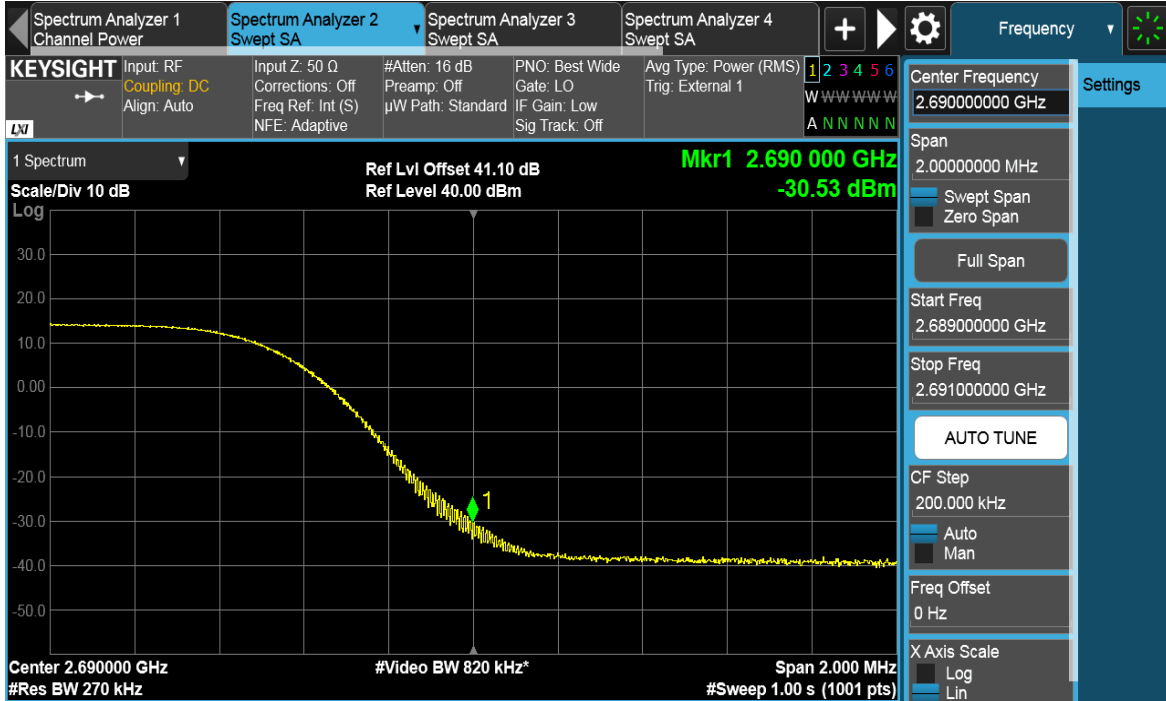
NR-2C-BE:

Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	256QAM	25	270	-19.02
A	T	256QAM	25	270	-19.02

Channel Position B



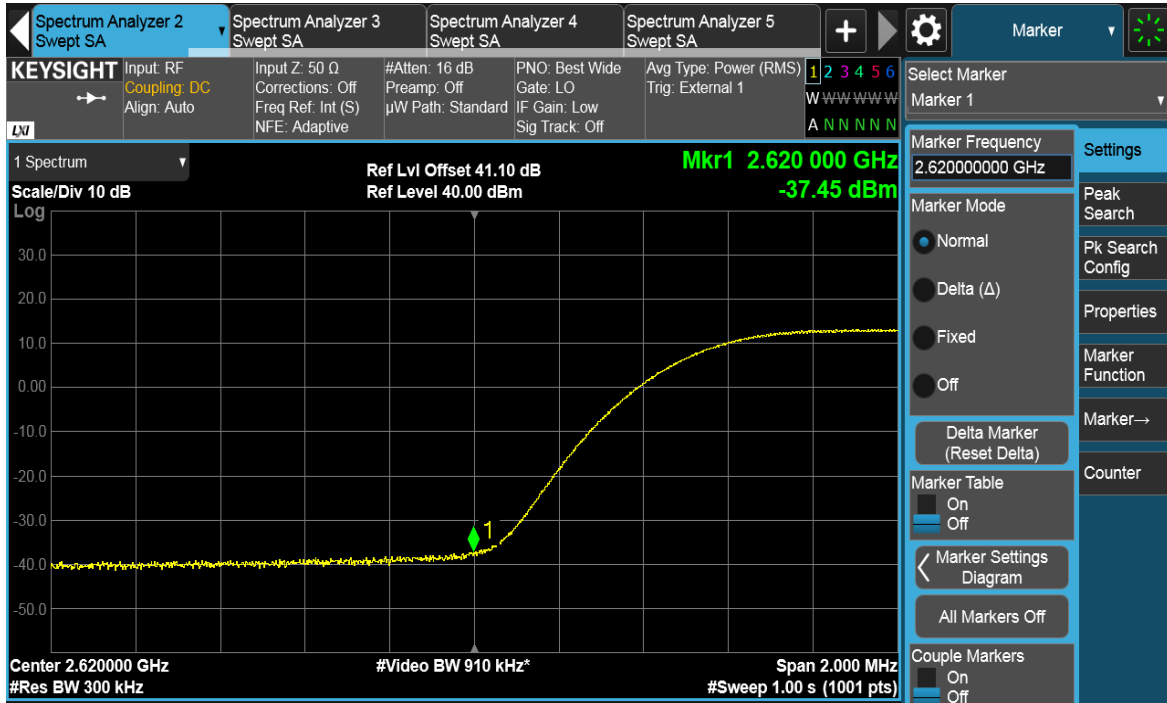
Channel Position T



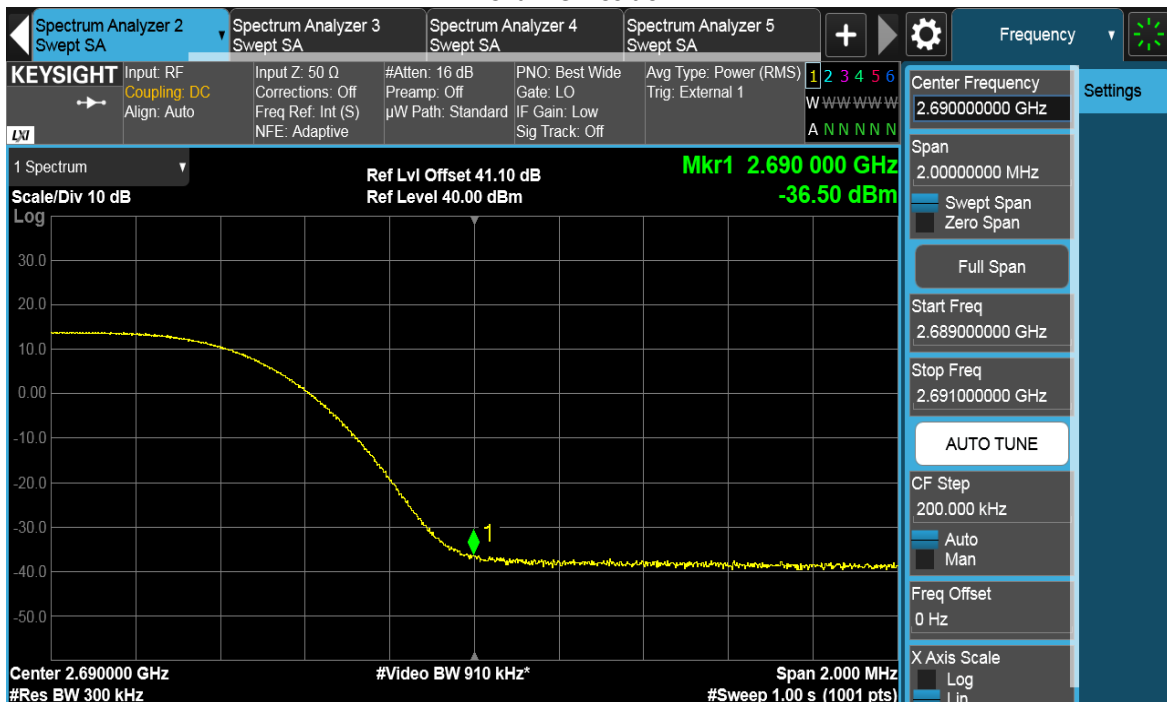
TEST REPORT

Antenna Port	Channel Position	Modulation	Channel Bandwidth (MHz)	RBW (kHz)	Limit (dBm)
A	B	256QAM	30	300	-19.02
A	T	256QAM	30	300	-19.02

Channel Position B



Channel Position T



6 Conducted Unwanted Emission

Test result: Pass

6.1 Limit

Beyond the 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

Equipment shall comply with the following unwanted emission limits:
for base station, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} p$.
p is the transmitter power measured in watts.

6.2 Measurement Procedure

The unwanted emissions from the antenna terminal were measured. The transmitter output power was attenuated using an attenuator and the frequency spectrum investigated from 30MHz to 27GHz. The resolution bandwidth of 1MHz was employed for frequency band 30MHz to 27GHz. The spectrum analyzer detector was set to RMS.

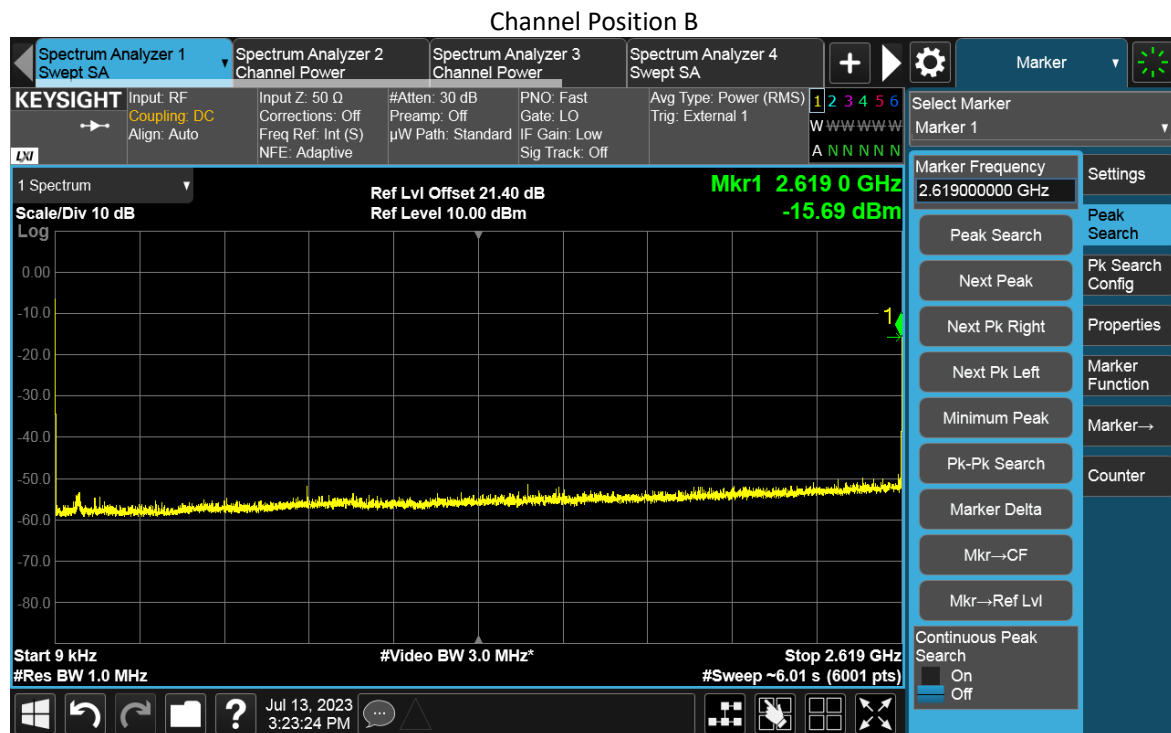
For MIMO mode configurations, the limit was adjusted with a correction of -6.02dB [$10\log(1/4)$] by using the Measure and Add 10Log(N) dB technique according to KDB 662911 D01 Multiple Transmitter Output accounting for simultaneous transmission from antenna ports.

The unwanted emissions shall be measured at the bottom and the top of the operating frequency bands. In doing so, the equipment must be set such that the middle of the occupied bandwidth is respectively as close to the bottom or the top of the band edge as the equipment design permits.

6.3 Measurement result

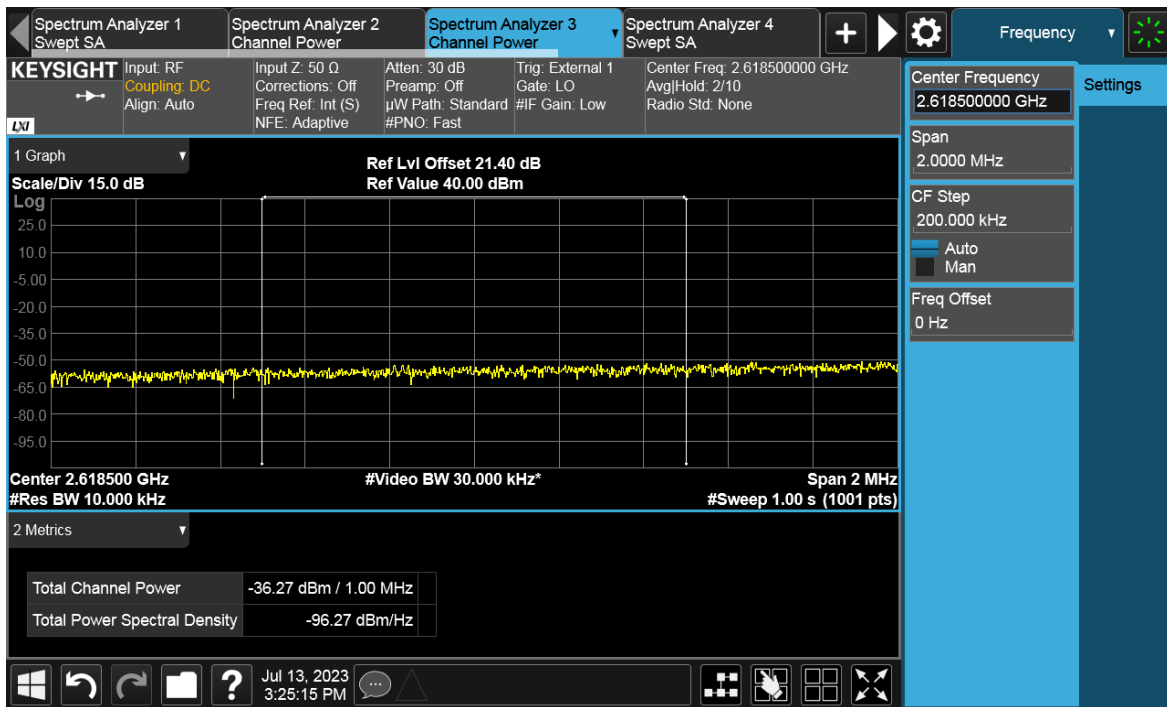
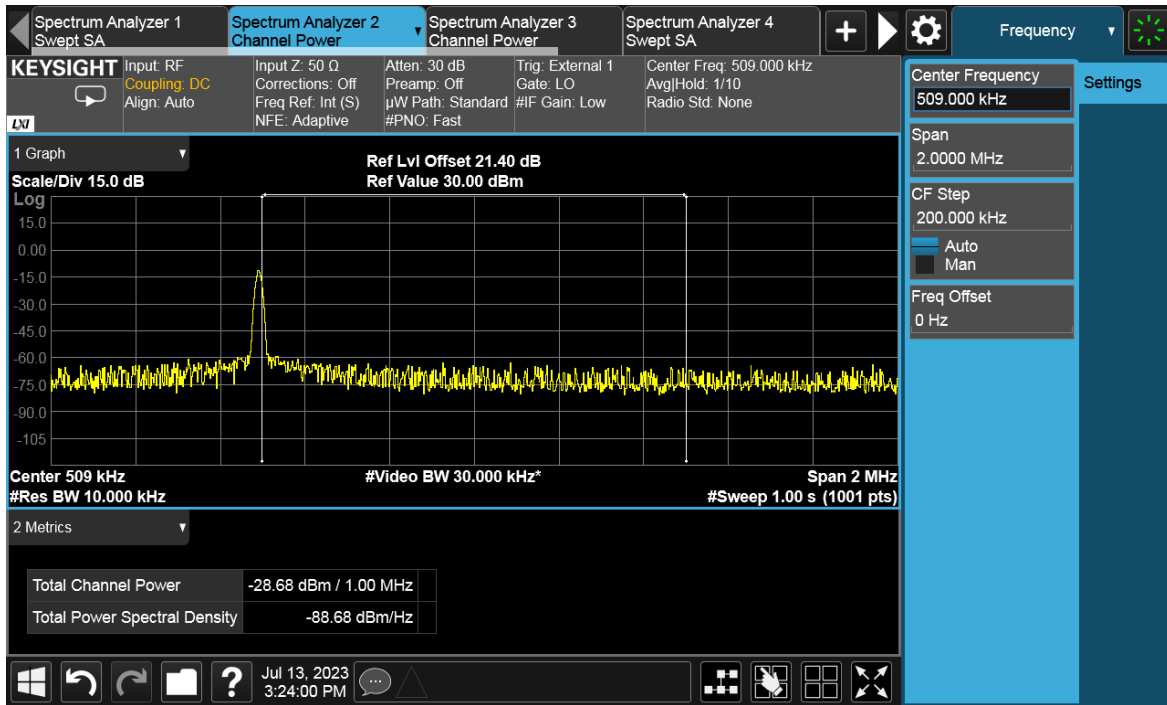
NR-1C-UE:

Antenna Port	Channel Position	Modulation	Channel BW (MHz)	RBW (kHz)	Limit (dBm)
A	B	256QAM	25	1000	-19.02
A	M	256QAM	25	1000	-19.02
A	T	256QAM	25	1000	-19.02



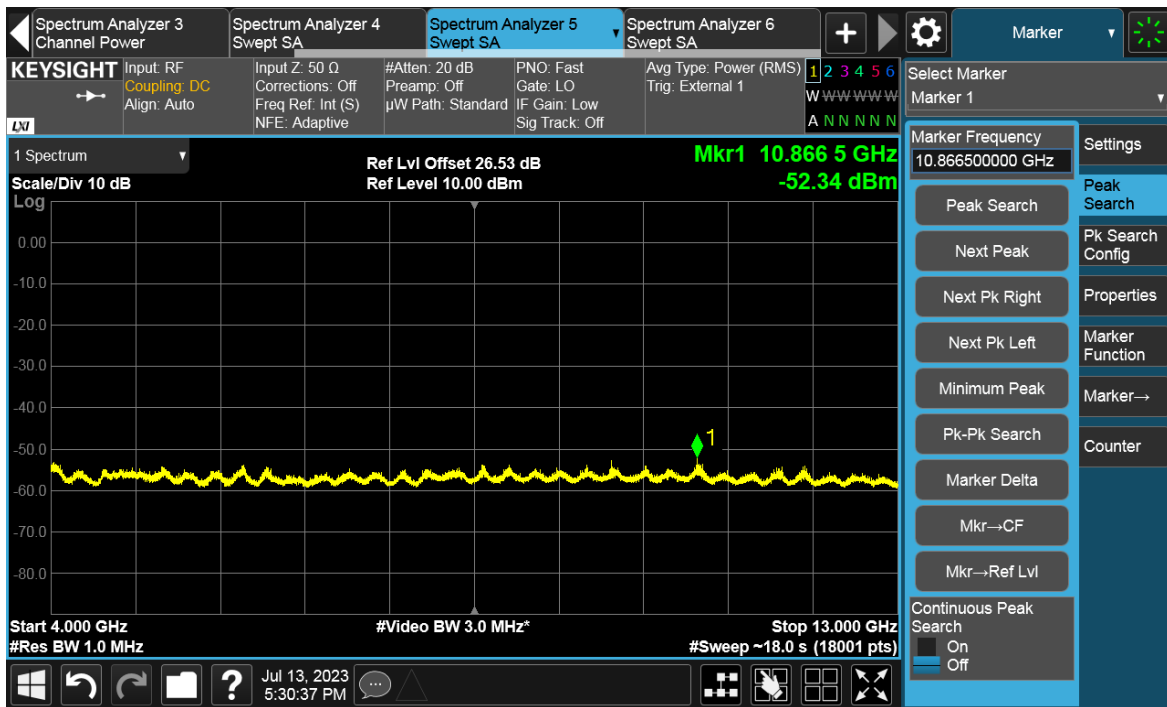
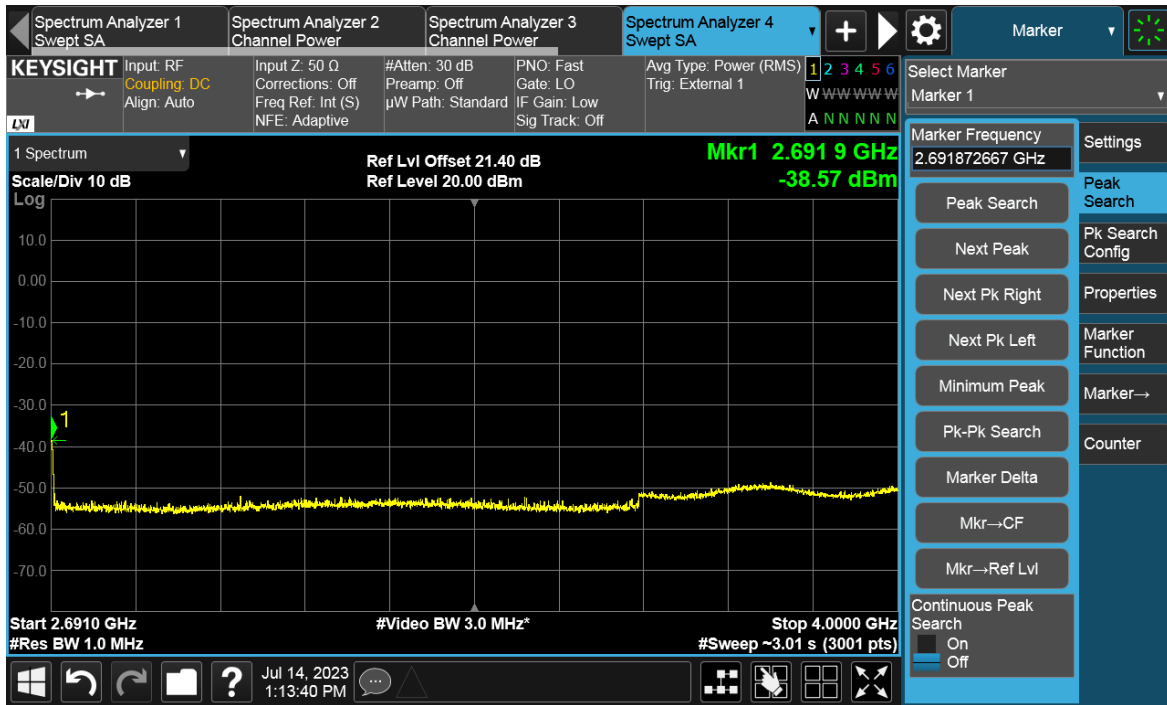
Total Quality. Assured.

TEST REPORT



Total Quality. Assured.

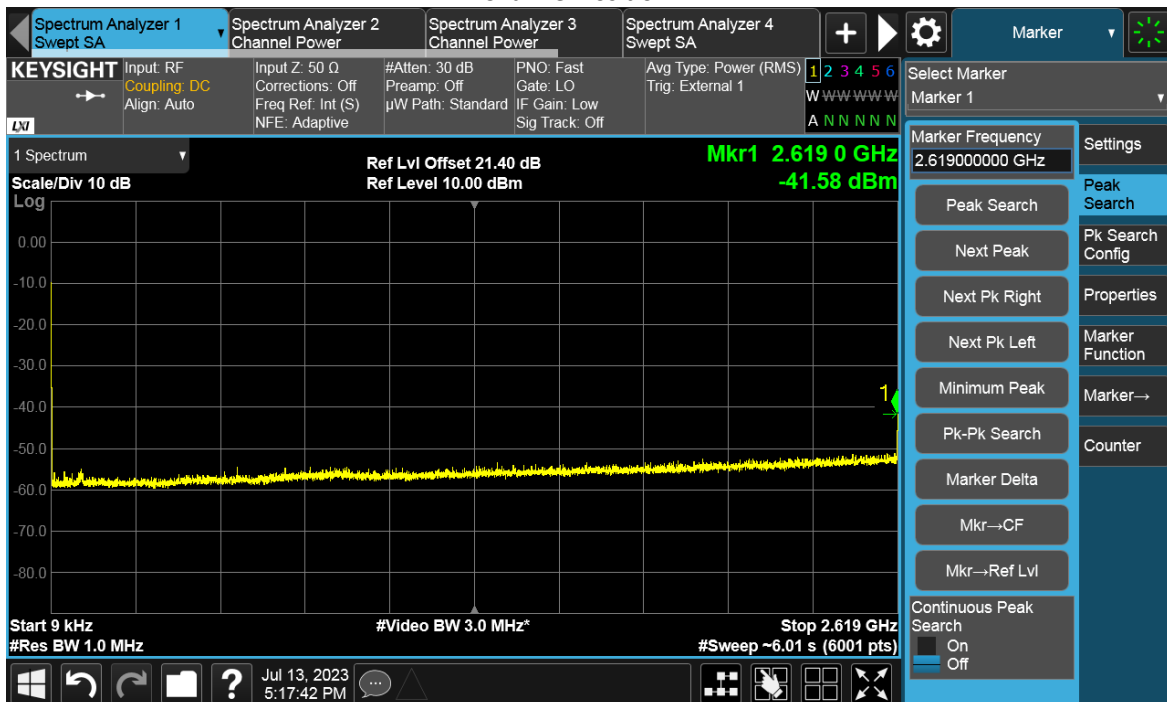
TEST REPORT



TEST REPORT



Channel Position M



Total Quality. Assured.

TEST REPORT

