LAB N° 1244 L

RADIO TEST REPORT

REP063297

Date of issue: October 25, 2024

Applicant:

Andrew Wireless Systems Industriering 10, Buchdorf 86675 Germany

Product:

RPM-A61L1-66

Model:	Model variant:
7847598-01	None

FCC ID:	IC Registration number:
XS5-RPML2-B66	NA

Specifications:

- FCC 47 CFR Part 27

  Miscellaneous Wireless Communications Services

Lab and test locations

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Tested by	O. Frau
Signature	Firmato digitalmente da Frau Oscar
Reviewed by	D. Guarnone
Review date	October 25, 2024
Signature	Firmato digitalmente da Guarnone Daniele

Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report. This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko Spa ISO/IEC 17025 accreditation.

Copyright notification

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Section 1. Report summary

1.1 Applicant and manufacturer

Company name	Andrew Wireless Systems
Address	Industriering 10,
City	Buchdorf
Province/State	--
Postal/Zip code	86675
Country	Germany

1.2 Test specifications

FCC 47 CFR Part 27	Miscellaneous Wireless Communications Services

1.3 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was performed against all relevant requirements of the test standard. Results obtained indicate that the product under test complies in full with the requirements tested. The test results relate only to the items tested.

See "Summary of test results" for full details.

1.4 Exclusions

None

1.5 Test report revision history

Revision #	Details of changes made to test report
REP063297	Original report issued

Section 2. Summary of test results

2.1 FCC Part 27 test results

Part	Test description	Verdict
§2.1033(c)(4)	Modulation type	Pass
§2.1049(h)	99% Occupied bandwidth	Pass
§27.53(h)(3)	Frequency ranges	Pass
§27.50(d)(2)	Output power at RF antenna connector	Pass
§27.50(d)(5)	Peak to average power ratio	Pass
§27.53(h)(1)-(2)	Conducted spurious emissions	Pass
§27.53(h)(1)-(2)	Radiated spurious emissions	Pass
§27.53(h)(3)	26 dB Occupied bandwidth	Pass
§27.54	Frequency stability	Pass

Note: None.

Section 3. Equipment under test (EUT) details

3.1 Sample information

Receipt date	August 29, 2024
Nemko sample ID number	PRJ00630770003

3.2 EUT information

Product name	RPM-A61L1-66
Model	7847598-01
Part Number	7847598-01
Serial number	SZRMAY24170028

3.3 Technical information

Frequency band	n66: 2110-2200 MHz
RF power Max (W), Conducted	max Port 1 = 24.8 dBm (0.30 W) – max Port 2 = 24.8 dBm (0.30 W); max comb. Port 1 + Port 2 = 27.8 dBm (0.60 W) @2117.5 MHz (with 15 MHz bandwidth)
Supported bandwidths:	5, 10, 15, 20 MHz
Type of modulation	TM1.1, TM3p1, TM3p1a, TM3p3 (QPSK, 16QAM, 64QAM, 256QAM)
Power requirements	48 Vdc
Antenna information	The EUT uses a unique antenna coupling/ non-detachable antenna to the intentional radiator.
Antenna gain	5.7 dBi

3.4 Product description and theory of operation

The radio unit (RU) is one of the components to configure the 4G RAN mobile communication system.

3.5 EUT exercise details

A laptop computer was used to send test commands to EUT to force it to transmit the appropriate signal. Unit transmit the selected signal at full power. The unit was tested using a conducted port. The antenna installation shall be done by professionals, and they are not within the scope of the tests evaluated on this document.

3.6 EUT setup diagram

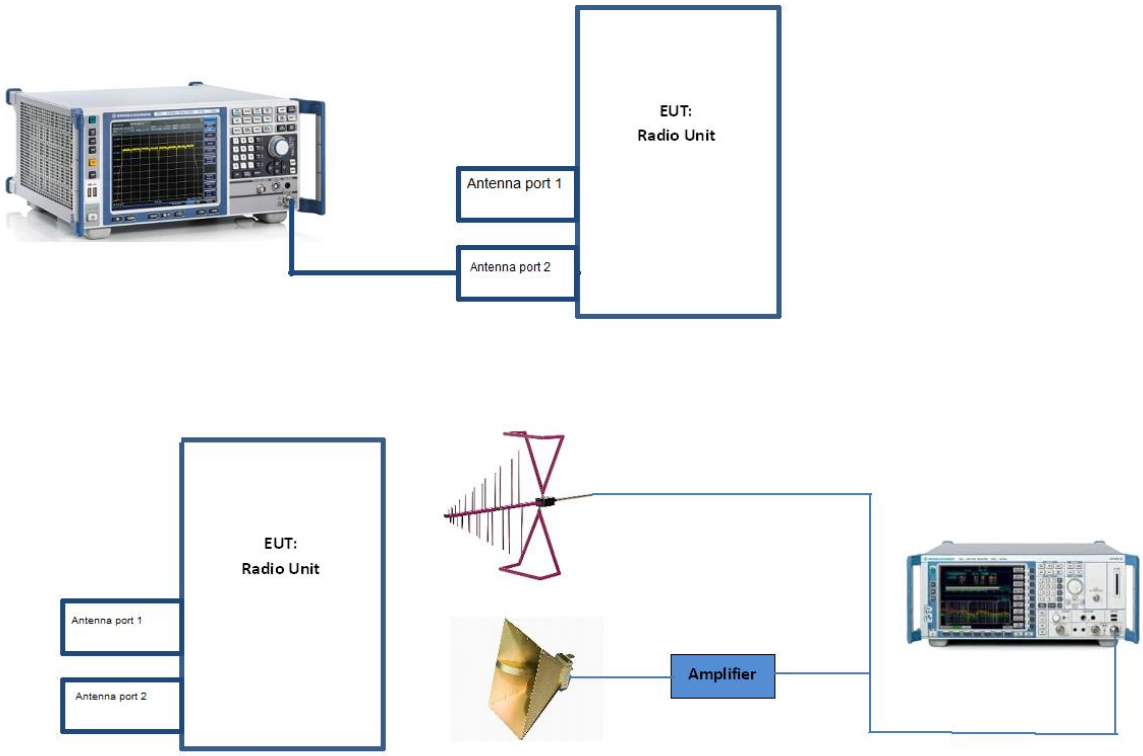


Figure 3.6-1: Setup diagram

Section 4. Engineering considerations

4.1 Modifications incorporated in the EUT

There were no modifications performed to the EUT during this assessment.

4.2 Technical judgment

None

4.3 Deviations from laboratory tests procedures

No deviations were made from laboratory procedures.

Section 5. Test conditions

5.1 Atmospheric conditions

Temperature	15 °C – 35 °C
Relative humidity	20 % – 75 %
Air pressure	86 kPa (860 mbar) – 106 kPa (1060 mbar)

When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorded and stated.

The following instruments are used to monitor the environmental conditions:

Equipment	Manufacturer	Model no.	Asset no.	Cal date	Next cal.
Thermo-hygrometer data loggers	Testo	175-H2	20012380/305	2022-12	2024-12
Thermo-hygrometer data loggers	Testo	175-H2	38203337/703	2022-12	2024-12
Barometer	Castle	GPB 3300	072015	2024-04	2025-04

5.2 Power supply range

The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages ±5 %, for which the equipment was designed.

Section 6. Measurement uncertainty

6.1 Uncertainty of measurement

The measurement uncertainty was calculated for each test and quantity listed in this test report, according to CISPR 16-4-2, ETSI TR 100 028-1, ETSI TR 100 028-2 and other specific test standards and is documented in Nemko Spa working manuals WML1002 and WML0078.
The assessment of conformity for each test performed on the equipment is performed not taking into account the measurement uncertainty. The two following possible verdicts are stated in the report:
P (Pass) - The measured values of the equipment respect the specification limit at the points tested. The specific risk of false accept is up to 50% when the measured result is close to the limit.
F (Fail) - One or more measured values of the equipment do not respect the specification limit at the points tested. The specific risk of false reject is up to 50% when the measured result is close to the limit.
Hereafter Nemko's measurement uncertainties are reported:

EUT	Type	Test	Range	Measurement Uncertainty	Notes
Transmitter	Conducted	Frequency error	0.001 MHz ÷ 40 GHz	0.08 ppm	(1)
		Carrier power RF Output Power	0.009 MHz ÷ 30 MHz	1.1 dB	(1)
			30 MHz ÷ 18 GHz	1.5 dB	(1)
			18 MHz ÷ 40 GHz	3.0 dB	(1)
			40 MHz ÷ 140 GHz	5.0 dB	(1)
		Adjacent channel power	1 MHz ÷ 18 GHz	1.4 dB	(1)
		Conducted spurious emissions	0.009 MHz ÷ 18 GHz	3.0 dB	(1)
			18 GHz ÷ 40 GHz	4.2 dB	(1)
			40 GHz ÷ 220 GHz	6.0 dB	(1)
		Intermodulation attenuation	1 MHz ÷ 18 GHz	2.2 dB	(1)
		Attack time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
		Attack time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
		Release time – frequency behaviour	1 MHz ÷ 18 GHz	2.0 ms	(1)
		Release time – power behaviour	1 MHz ÷ 18 GHz	2.5 ms	(1)
		Transient behaviour of the transmitter– Transient frequency behaviour	1 MHz ÷ 18 GHz	0.2 kHz	(1)
		Transient behaviour of the transmitter – Power level slope	1 MHz ÷ 18 GHz	9%	(1)
		Frequency deviation - Maximum permissible frequency deviation	0.001 MHz ÷ 18 GHz	1.3%	(1)
		Frequency deviation - Response of the transmitter to modulation frequencies above 3 kHz	0.001 MHz ÷ 18 GHz	0.5 dB	(1)
		Dwell time	-	3%	(1)
		Hopping Frequency Separation	0.01 MHz ÷ 18 GHz	1%	(1)
		Occupied Channel Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
		Modulation Bandwidth	0.01 MHz ÷ 18 GHz	2%	(1)
	Radiated	Radiated spurious emissions	0.009 MHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
			66 GHz ÷ 220 GHz	10 dB	(1)
		Effective radiated power transmitter	10 kHz ÷ 26.5 GHz	6.0 dB	(1)
			26.5 GHz ÷ 66 GHz	8.0 dB	(1)
			66 GHz ÷ 220 GHz	10 dB	(1)

NOTES:
(1) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 %

Section 7. Test equipment

7.1 Test equipment list

Table 7.1-1: *Equipment list*

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767	2024-01	2025-01
EMI Receiver	Rohde & Schwarz	ESU8	100202	2024-09	2025-09
EMI Receiver	Rohde & Schwarz	ESW44	101620	2024-08	2025-08
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254	2024-05	2025-05
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397	2024-09	2025-09
Climatic Chamber	MSL	EC500DA	15022	2024-01	2025-01
Antenna Trilog 25MHz - 8GHz	Schwarzbeck Mess-Elektronik	VULB9162	9162-025	2024-07	2027-07
Antenna 1 - 18 GHz	Schwarzbeck Mess-Elektronik	STLP9148	STLP 9148-152	2024-09	2027-09
Double Ridge Horn Antenna	RFSpin	DRH40	061106A40	2023-04	2026-04
Broadband Amplifier	Schwarzbeck Mess-Elektronik	BBV9718C	00121	2024-01	2025-01
Broadband Bench Top Amplifier	Sage	STB-1834034030-KFKF-L1	18490-01	2024-04	2025-04
Semi-anechoic chamber	Nemko S.p.a.	10m semi-anechoic chamber	530	2023-09	2025-09
Controller	Maturo	FCU3.0	10041	NCR	NCR
Tilt antenna mast	Maturo	TAM4.0-E	10042	NCR	NCR
Turntable	Maturo	TT4.0-5T	2.527	NCR	NCR
Semi-anechoic chamber	Comtest	3m SAC	1711-150	2024-09	2026-09
Controller	Maturo	FCU3.0	10237	NCR	NCR
Tilt antenna mast	Maturo	TAM4.0-E	3466.01	NCR	NCR
Turntable	Maturo	TT4.0	-	NCR	NCR
Pyramidal Horn Antenna 40-60 GHz	Sage	SAR-2507-19VF-R2	15715-01	2024-06	2027-06
Harmonic Mixer	Radiometer Physics	FS-Z60	100988	2024-01	2027-01
Cable set	Rosenberger	ST.ALO-02	1.650	2023-10	2024-10
Cable set	Rosenberger and Huber + Suhner	RE01+RE02	1.654+1.655	2024-09	2025-09
Cable set	Rosenberger+Huber-Suhner	RE03+RE04	1.510+1.511	2024-09	2025-09

Section 8. Testing data

8.1 FCC §2.1033(c)(4) Modulation type

8.1.1 Definitions and limits

(c) Applications for equipment other than that operating under parts 15, 11 and 18 of this chapter shall be accompanied by a technical report containing the following information:
(4) Type or types of emission

8.1.2 Test summary

Test date	October 10, 2024	Temperature	22 °C
Test engineer	O. Frau	Air pressure	1001 mbar
Verdict	Pass	Relative humidity	62 %

8.1.3 Observations, settings and special notes

None

8.1.4 Test data

Band n66:

Bandwidth (MHz)	Emission type
5	TM1.1
5	TM3p1
5	TM3p1a
5	TM3p3
10	TM1.1
10	TM3p1
10	TM3p1a
10	TM3p3
15	TM1.1
15	TM3p1
15	TM3p1a
15	TM3p3
20	TM1.1
20	TM3p1
20	TM3p1a
20	TM3p3

***Table** Errore. Per applicare Heading 2 al testo da visualizzare in questo punto, utilizzare la scheda Home.**-1:** Types of emission*

8.2 FCC §2.1049(h) 99% Occupied Bandwidth and frequency ranges

8.2.1 Definitions and limits

§2.1049 (h) Transmitters employing digital modulation techniques—when modulated by an input signal such that its amplitude and symbol rate represent the maximum rated conditions under which the equipment will be operated. The signal shall be applied through any filter networks, pseudo-random generators or other devices required in normal service. Additionally, the occupied bandwidth shall be shown for operation with any devices used for modifying the spectrum when such devices are optional at the discretion of the use.

8.2.2 Test summary

Test start date	October 10, 2024	Temperature	22 °C
Test end date	October 25, 2024	Air pressure	1001 mbar
Test engineer	O. Frau	Relative humidity	62%
Verdict	Pass		

8.2.3 Observations, settings and special notes

Test method: ANSI C63.26 Section 5.4.4

Spectrum analyzer settings:

Resolution bandwidth	1% - 5% OBW
Video bandwidth	3*RBW
Frequency span	2*OBW
Detector mode	Peak
Trace mode	Max Hold

8.2.4 Test equipment used

Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767

8.2.5 Test data

Band n66: Antenna port 1

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM1.1	2112.5	4.00
n66	5 MHz	TM1.1	2145.0	3.96
n66	5 MHz	TM1.1	2177.5	3.99

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM3p1	2112.5	3.97
n66	5 MHz	TM3p1	2145.0	3.97
n66	5 MHz	TM3p1	2177.5	3.98

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM3p1a	2112.5	3.95
n66	5 MHz	TM3p1a	2145.0	3.99
n66	5 MHz	TM3p1a	2177.5	3.99

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM3p3	2112.5	4.02
n66	5 MHz	TM3p3	2145.0	4.02
n66	5 MHz	TM3p3	2177.5	4.01

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM1.1	2115.0	8.61
n66	10 MHz	TM1.1	2145.0	8.67
n66	10 MHz	TM1.1	2175.0	8.66

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM3p1	2115.0	8.66
n66	10 MHz	TM3p1	2145.0	8.66
n66	10 MHz	TM3p1	2175.0	8.65

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM3p1a	2115.0	8.63
n66	10 MHz	TM3p1a	2145.0	8.63
n66	10 MHz	TM3p1a	2175.0	8.64

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM3p3	2115.0	8.52
n66	10 MHz	TM3p3	2145.0	8.52
n66	10 MHz	TM3p3	2175.0	8.52

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM1.1	2117.5	13.64
n66	15 MHz	TM1.1	2145.0	13.63
n66	15 MHz	TM1.1	2172.5	13.63

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM3p1	2117.5	13.61
n66	15 MHz	TM3p1	2145.0	13.61
n66	15 MHz	TM3p1	2172.5	13.61

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM3p1a	2117.5	13.63
n66	15 MHz	TM3p1a	2145.0	13.63
n66	15 MHz	TM3p1a	2172.5	13.63

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM3p3	2117.5	13.47
n66	15 MHz	TM3p3	2145.0	13.46
n66	15 MHz	TM3p3	2172.5	13.47

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM1.1	2120.0	18.25
n66	20 MHz	TM1.1	2145.0	18.25
n66	20 MHz	TM1.1	2170.0	18.24

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM3p1	2120.0	18.26
n66	20 MHz	TM3p1	2145.0	18.26
n66	20 MHz	TM3p1	2170.0	18.25

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM3p1a	2120.0	18.26
n66	20 MHz	TM3p1a	2145.0	18.26
n66	20 MHz	TM3p1a	2170.0	18.26

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM3p3	2120.0	18.32
n66	20 MHz	TM3p3	2145.0	18.31
n66	20 MHz	TM3p3	2170.0	18.31

Band n66: Antenna port 2

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM1.1	2112.5	3.99
n66	5 MHz	TM1.1	2145.0	3.98
n66	5 MHz	TM1.1	2177.5	3.98

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM3p1	2112.5	3.96
n66	5 MHz	TM3p1	2145.0	3.97
n66	5 MHz	TM3p1	2177.5	3.97

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM3p1a	2112.5	4.03
n66	5 MHz	TM3p1a	2145.0	4.01
n66	5 MHz	TM3p1a	2177.5	4.01

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	5 MHz	TM3p3	2112.5	4.02
n66	5 MHz	TM3p3	2145.0	4.02
n66	5 MHz	TM3p3	2177.5	4.01

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM1.1	2115.0	8.66
n66	10 MHz	TM1.1	2145.0	8.66
n66	10 MHz	TM1.1	2175.0	8.66

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM3p1	2115.0	8.66
n66	10 MHz	TM3p1	2145.0	8.65
n66	10 MHz	TM3p1	2175.0	8.65

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM3p1a	2115.0	8.63
n66	10 MHz	TM3p1a	2145.0	8.63
n66	10 MHz	TM3p1a	2175.0	8.63

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	10 MHz	TM3p3	2115.0	8.51
n66	10 MHz	TM3p3	2145.0	8.52
n66	10 MHz	TM3p3	2175.0	8.52

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM1.1	2117.5	13.63
n66	15 MHz	TM1.1	2145.0	13.63
n66	15 MHz	TM1.1	2172.5	13.64

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM3p1	2117.5	13.60
n66	15 MHz	TM3p1	2145.0	13.62
n66	15 MHz	TM3p1	2172.5	13.63

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM3p1a	2117.5	13.63
n66	15 MHz	TM3p1a	2145.0	13.63
n66	15 MHz	TM3p1a	2172.5	13.64

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	15 MHz	TM3p3	2117.5	13.47
n66	15 MHz	TM3p3	2145.0	13.47
n66	15 MHz	TM3p3	2172.5	13.47

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM1.1	2120.0	18.25
n66	20 MHz	TM1.1	2145.0	18.24
n66	20 MHz	TM1.1	2170.0	18.25

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM3p1	2120.0	18.25
n66	20 MHz	TM3p1	2145.0	18.26
n66	20 MHz	TM3p1	2170.0	18.24

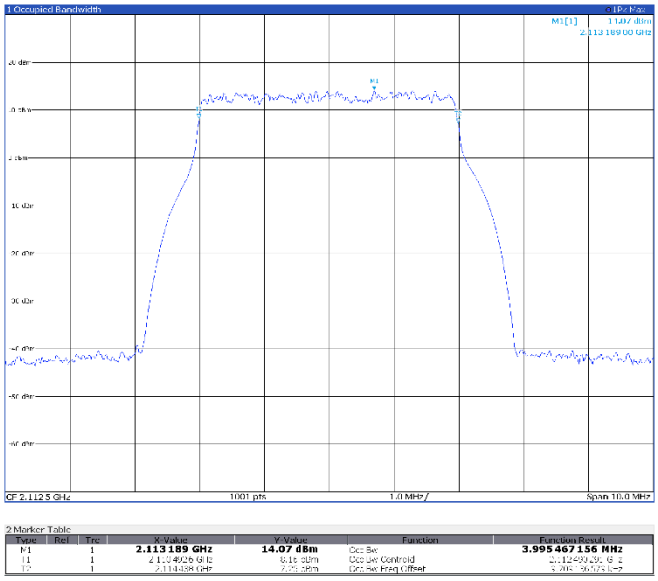
Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM3p1a	2120.0	18.26
n66	20 MHz	TM3p1a	2145.0	18.27
n66	20 MHz	TM3p1a	2170.0	18.26

Band	OBW Declared	Modulation	Channel (MHz)	99% OBW (MHz)
n66	20 MHz	TM3p3	2120.0	18.31
n66	20 MHz	TM3p3	2145.0	18.30
n66	20 MHz	TM3p3	2170.0	18.31

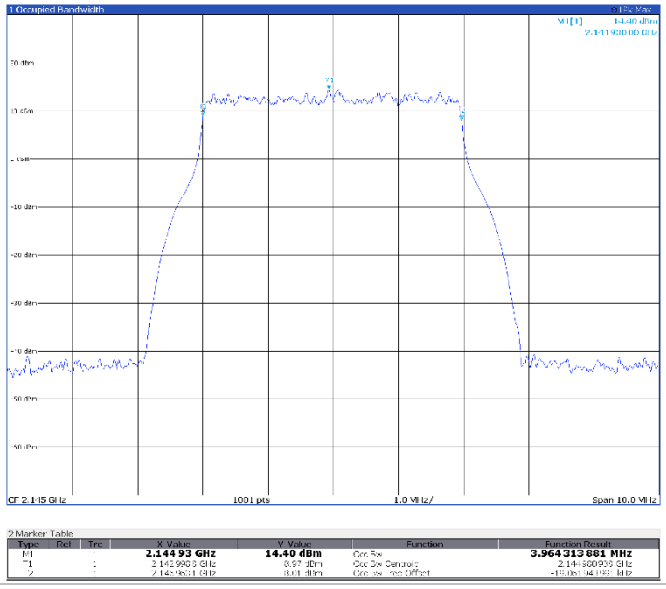
Antenna port 1

Band n66	5 MHz

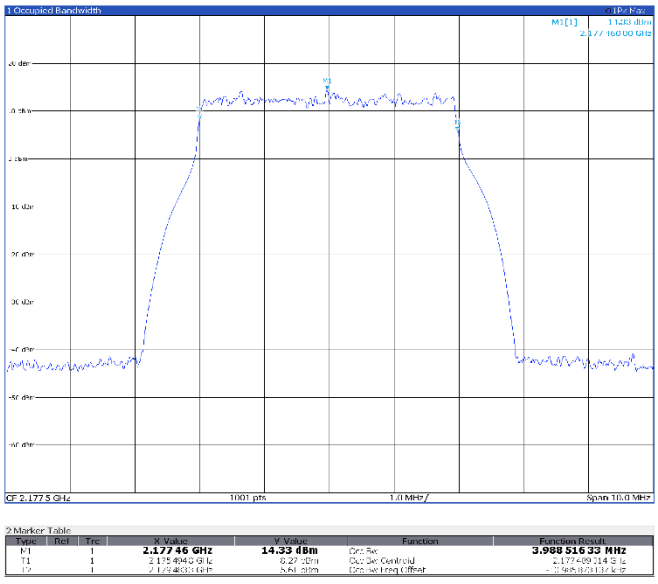
TM1.1, 5 MHz, low channel



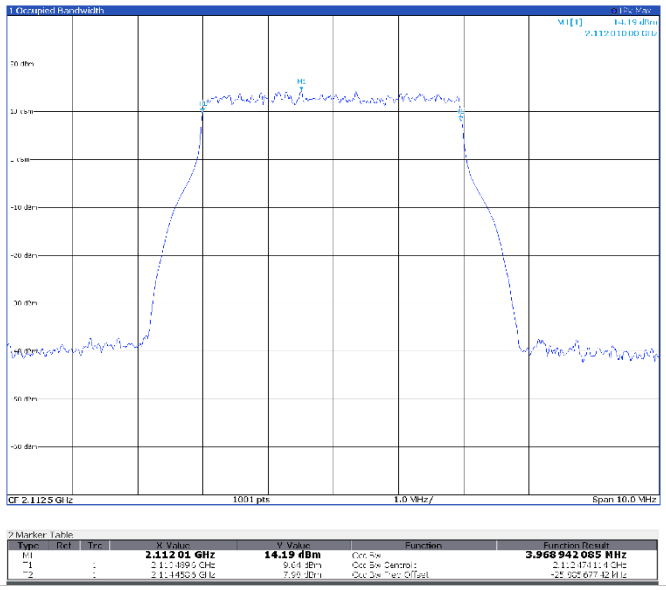
TM1.1, 5 MHz, mid channel



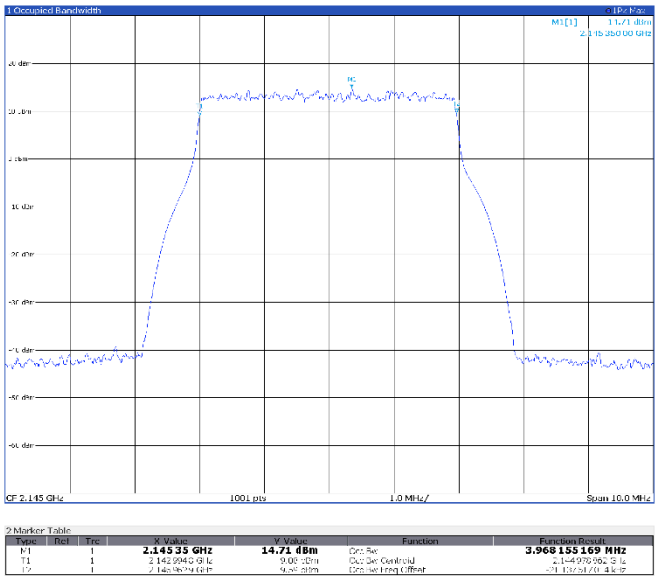
TM1.1, 5 MHz, high channel



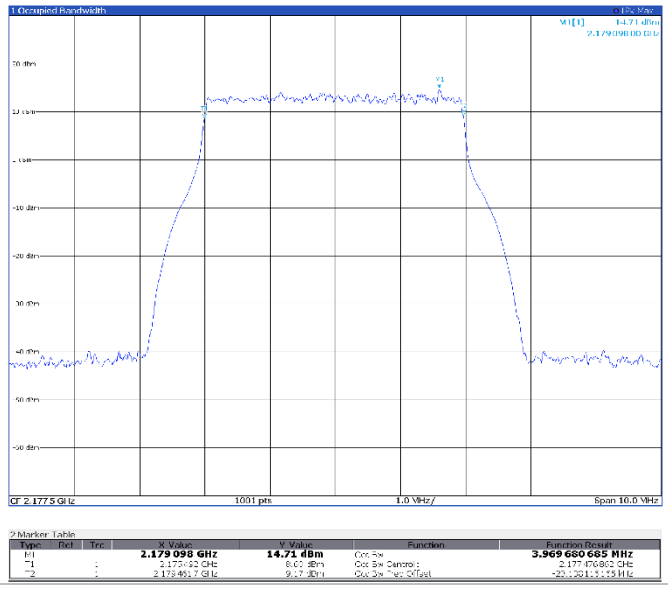
TM3p1, 5 MHz, low channel



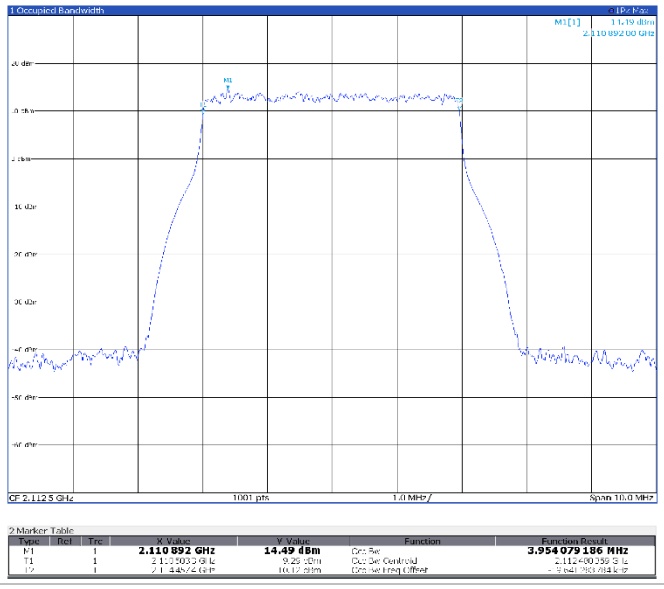
TM3p1, 5 MHz, mid channel



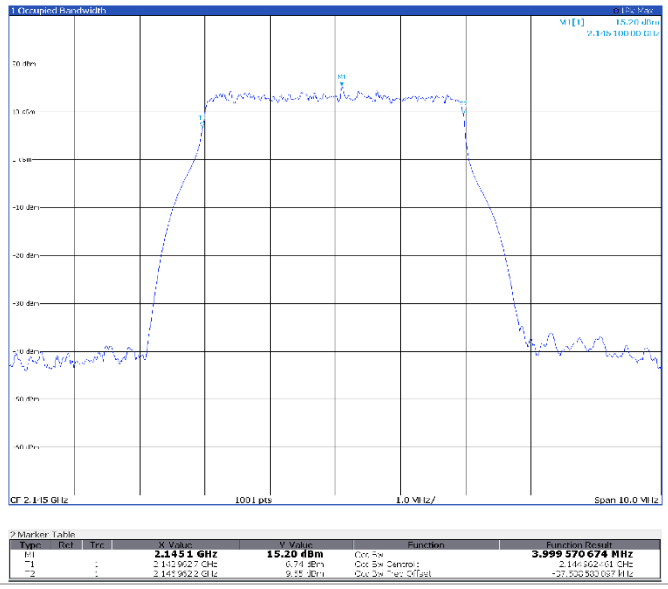
TM3p1, 5 MHz, high channel



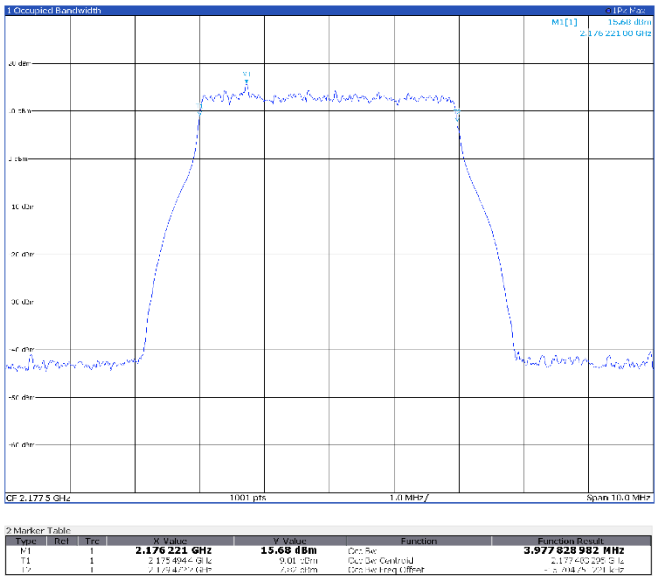
TM3p1a, 5 MHz, low channel



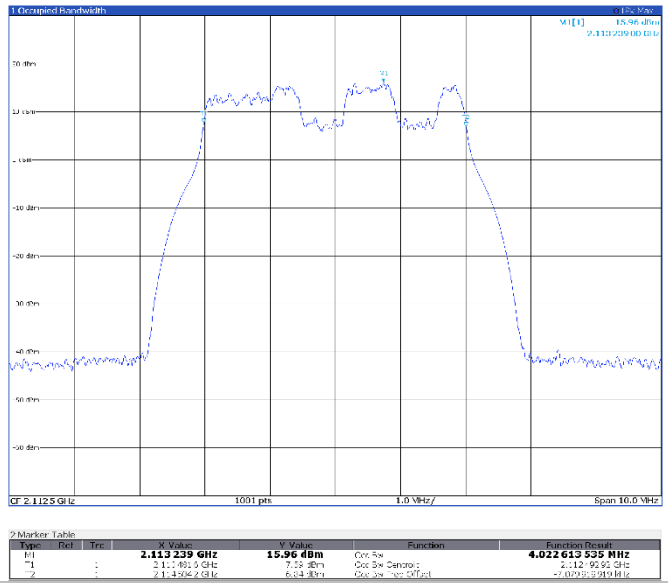
TM3p1a, 5 MHz, mid channel



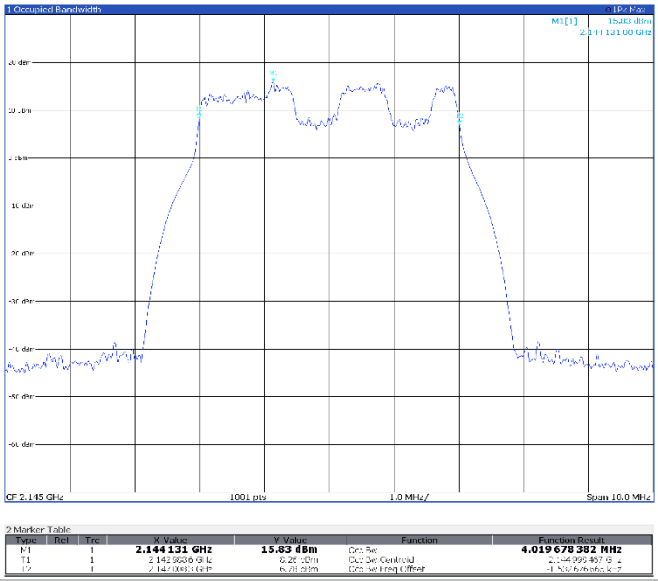
TM3p1a, 5 MHz, high channel



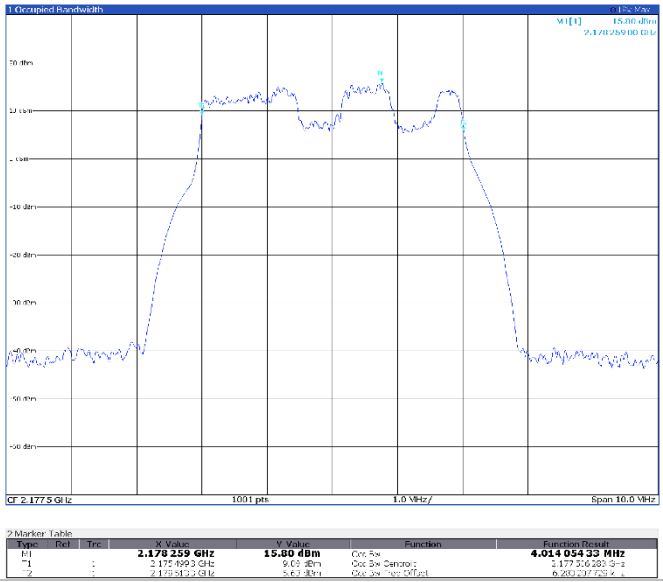
TM3p3, 5 MHz, low channel



TM3p3, 5 MHz, mid channel

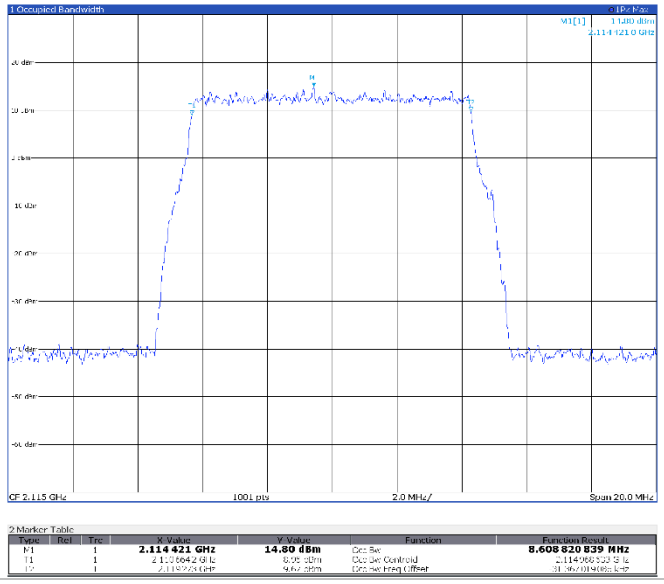


TM3p3, 5 MHz, high channel

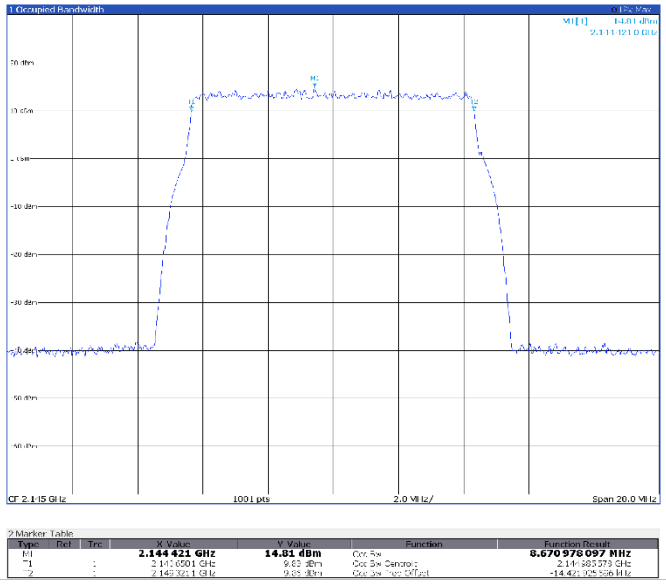


Band n66 | **10 MHz**

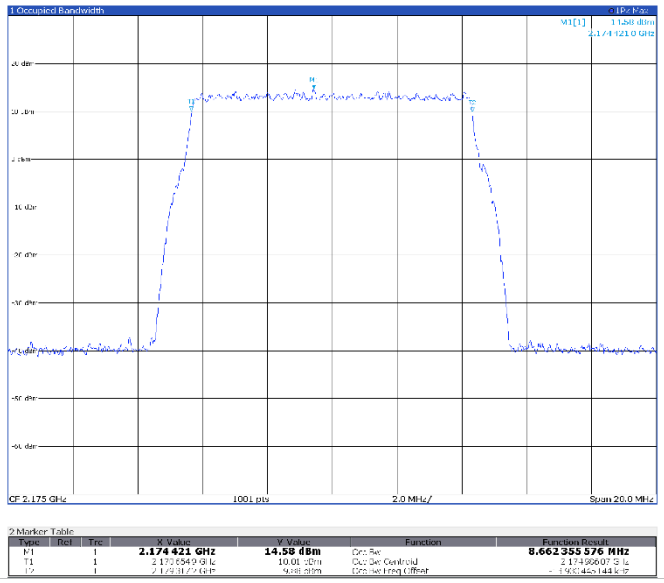
TM1.1, 10 MHz, low channel



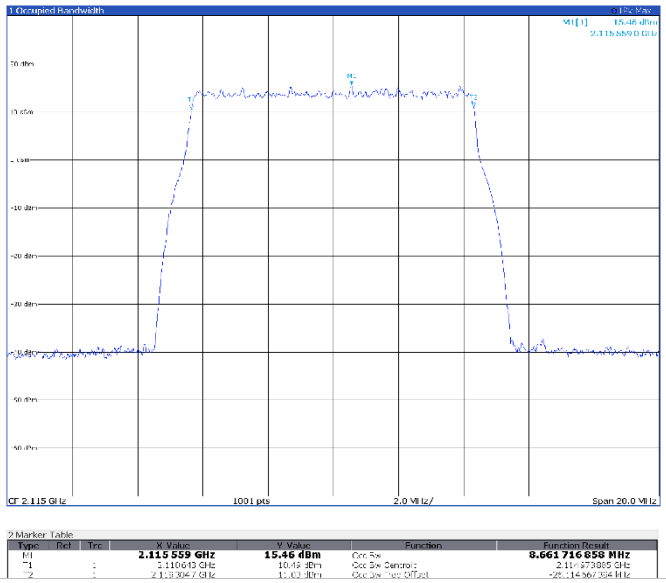
TM1.1, 10 MHz, mid channel



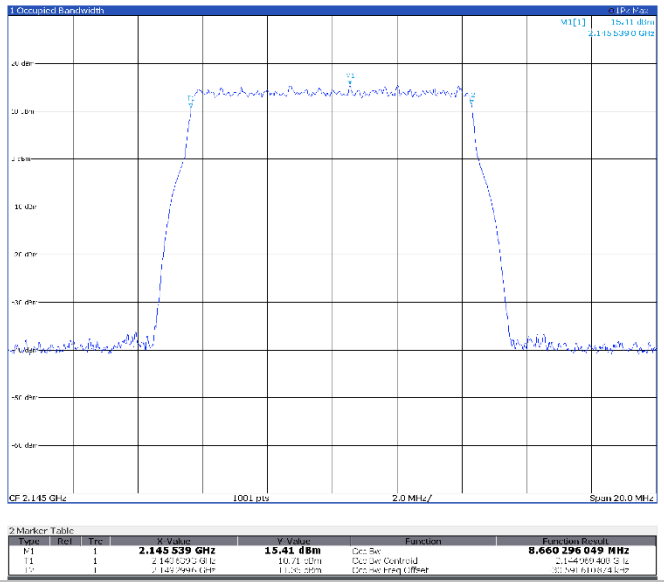
TM1.1, 10 MHz, high channel



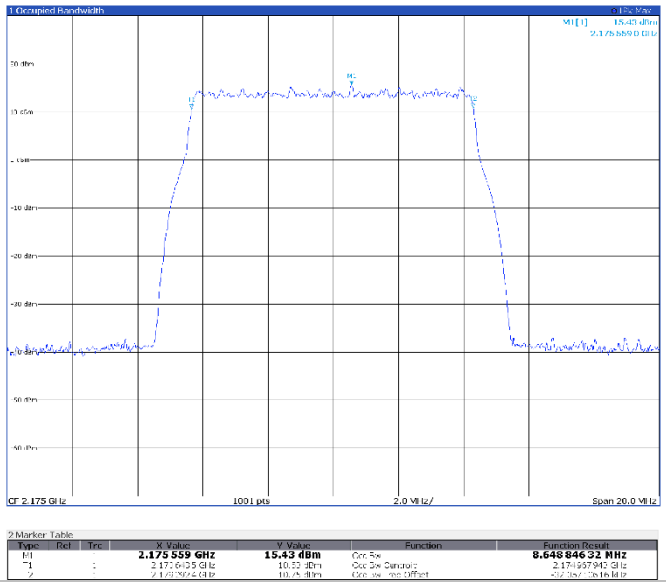
TM3p1, 10 MHz, low channel



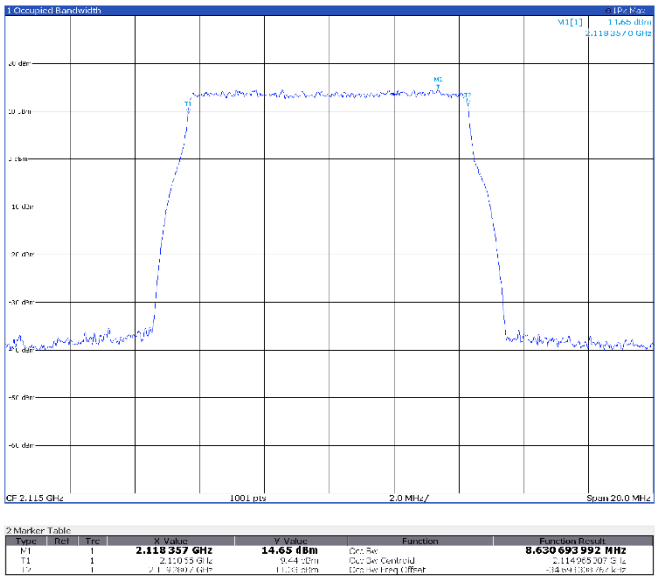
TM3p1, 10 MHz, mid channel



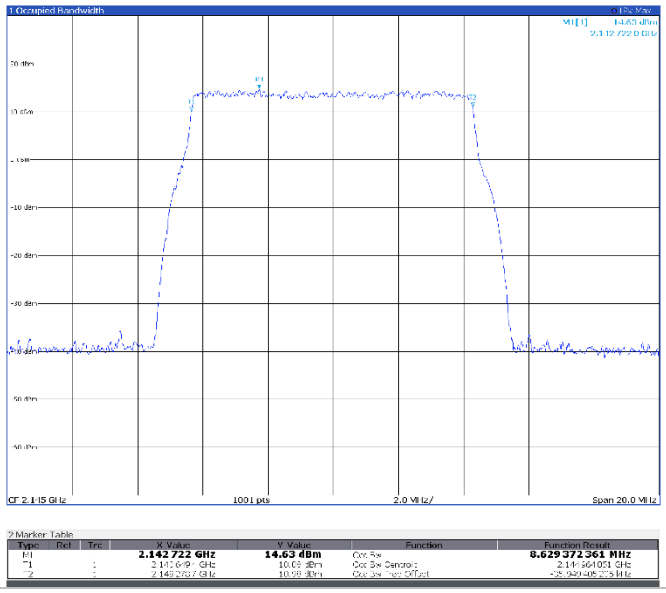
TM3p1, 10 MHz, high channel



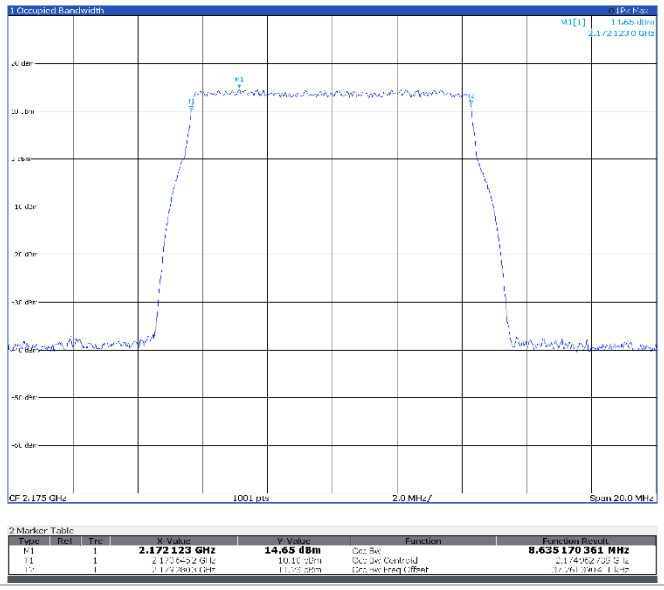
TM3p1a, 10 MHz, low channel



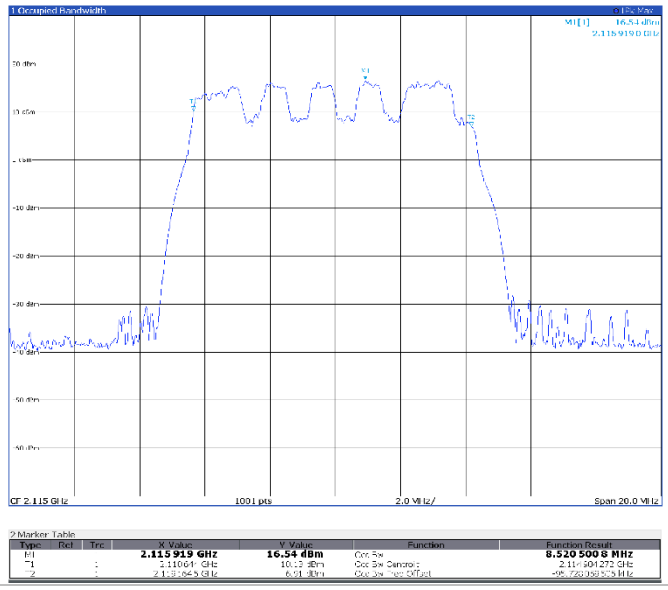
TM3p1a, 10 MHz, mid channel



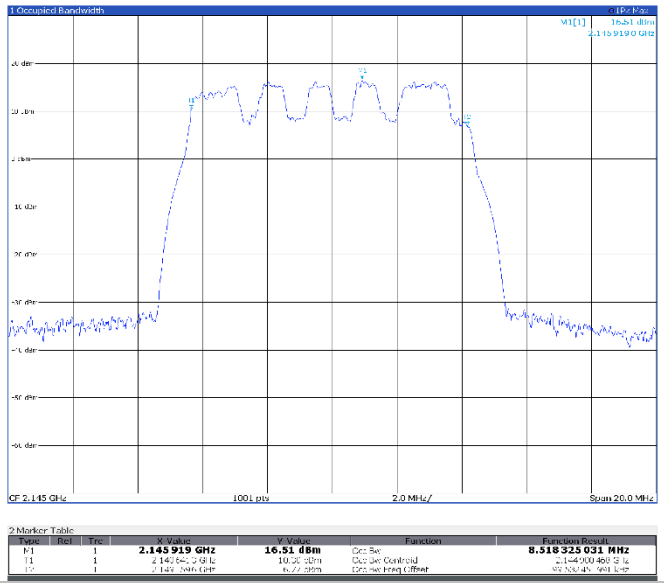
TM3p1a, 10 MHz, high channel



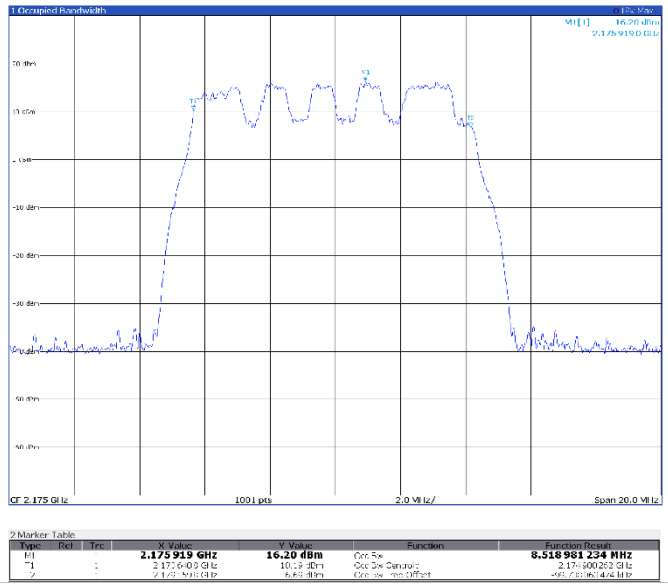
TM3p3, 10 MHz, low channel



TM3p3, 10 MHz, mid channel

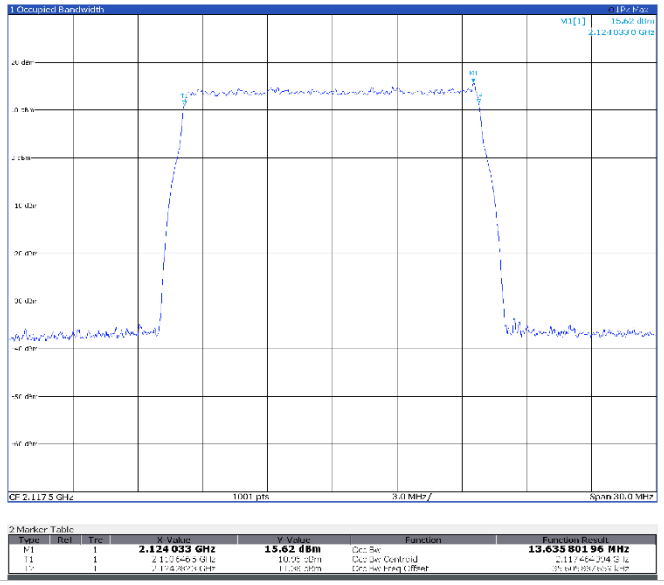


TM3p3, 10 MHz, high channel

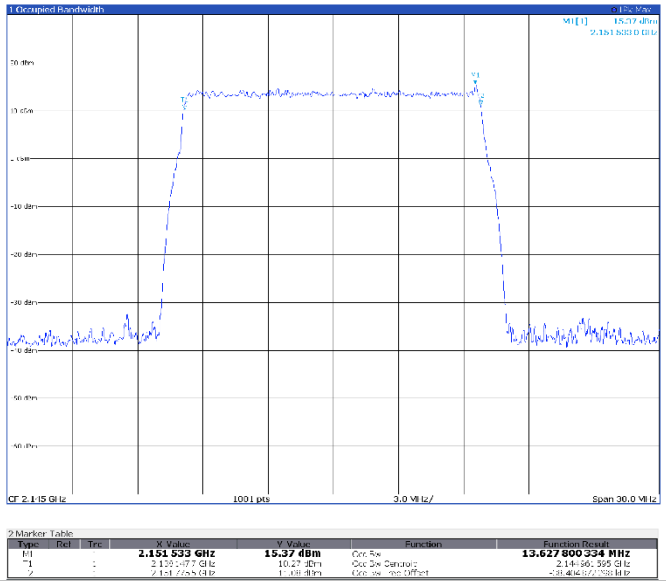


Band n66 | **15 MHz**

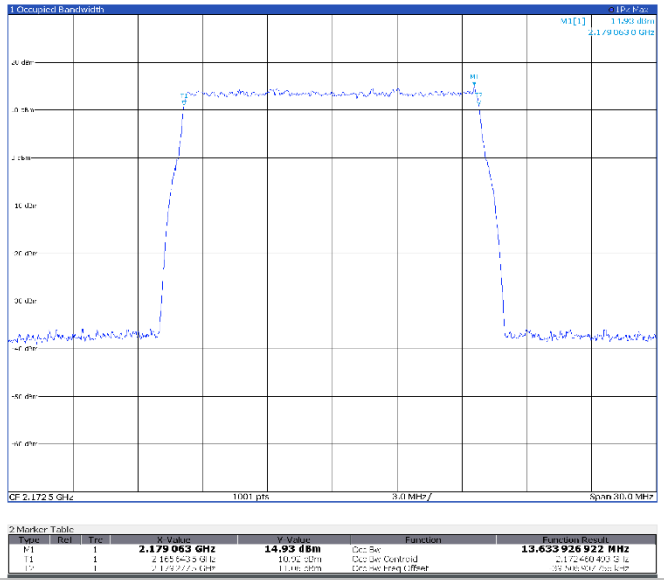
TM1.1, 15 MHz, low channel



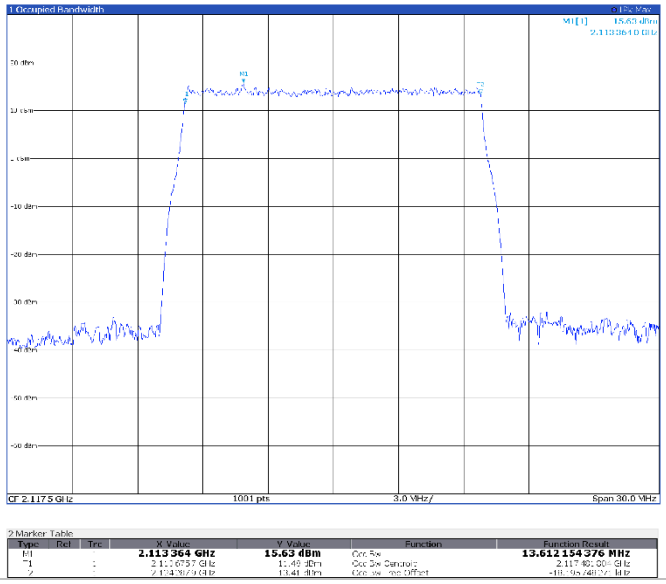
TM1.1, 15 MHz, mid channel



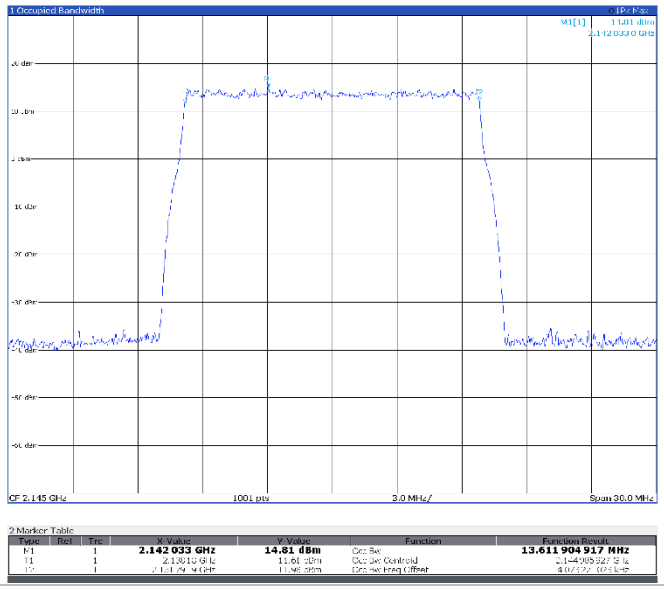
TM1.1, 15 MHz, high channel



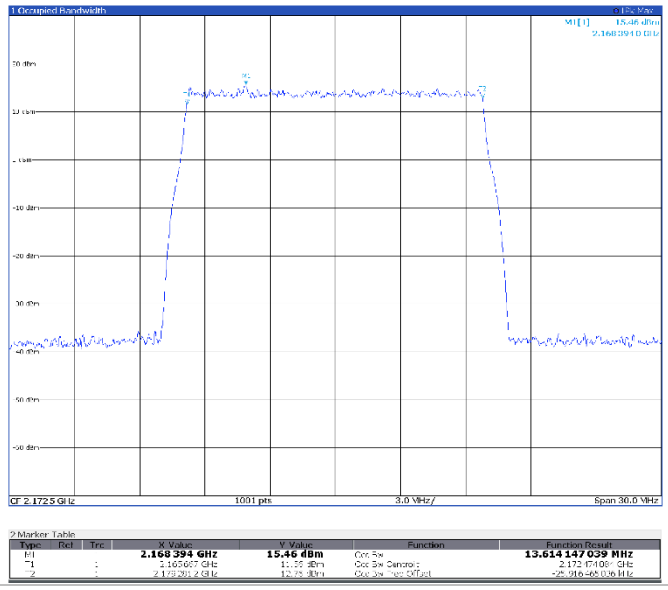
TM3p1, 15 MHz, low channel



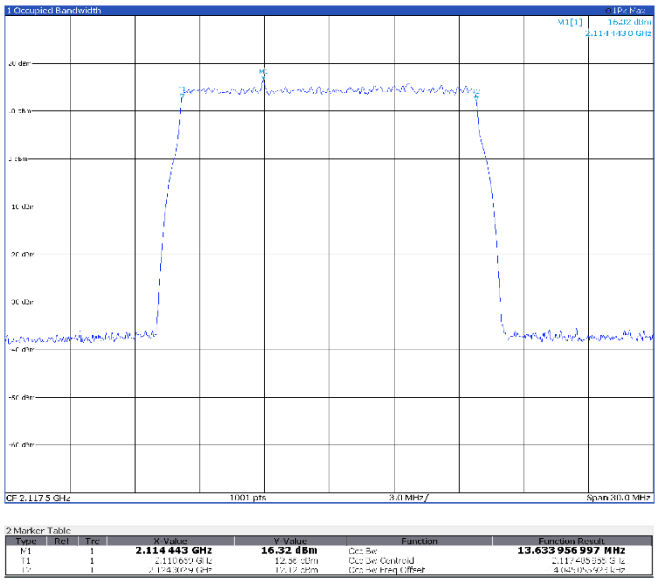
TM3p1, 15 MHz, mid channel



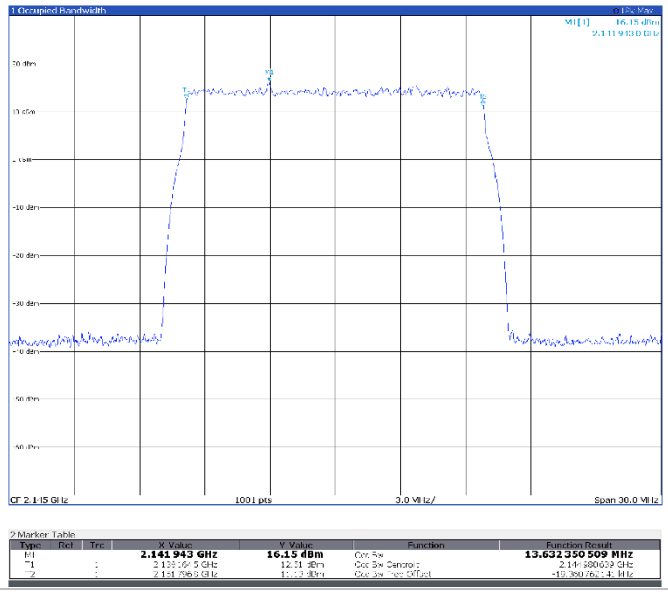
TM3p1, 15 MHz, high channel



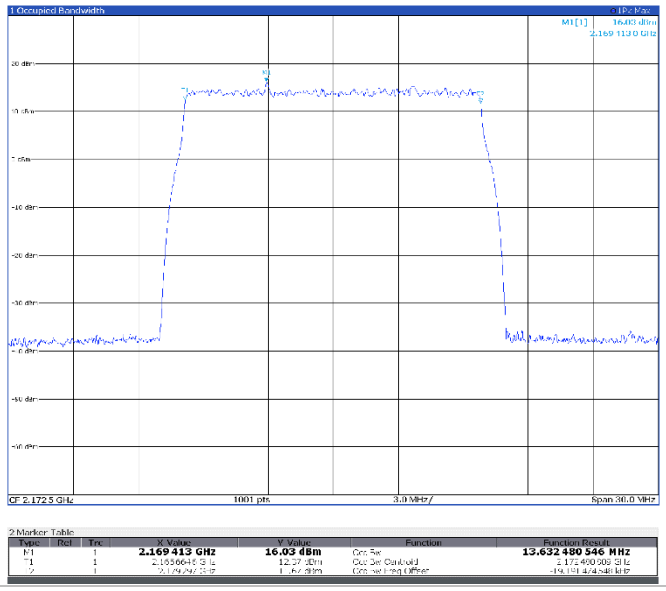
TM3p1a, 15 MHz, low channel



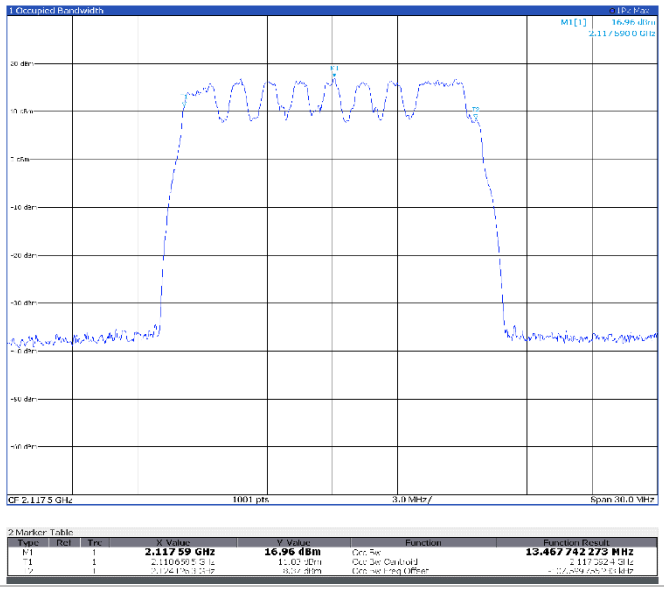
TM3p1a, 15 MHz, mid channel



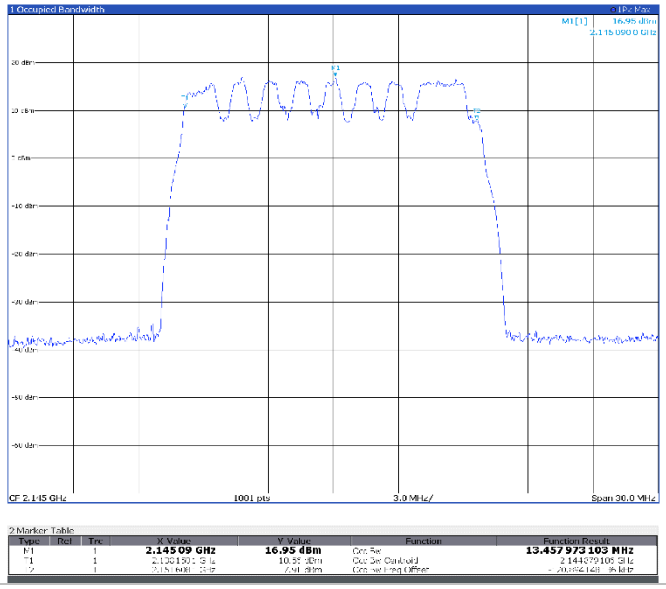
TM3p1a, 15 MHz, high channel



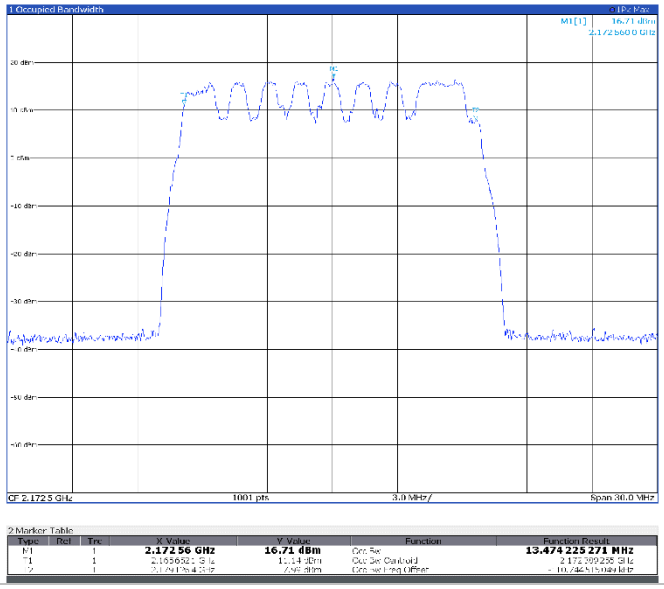
TM3p3, 15 MHz, low channel



TM3p3, 15 MHz, mid channel

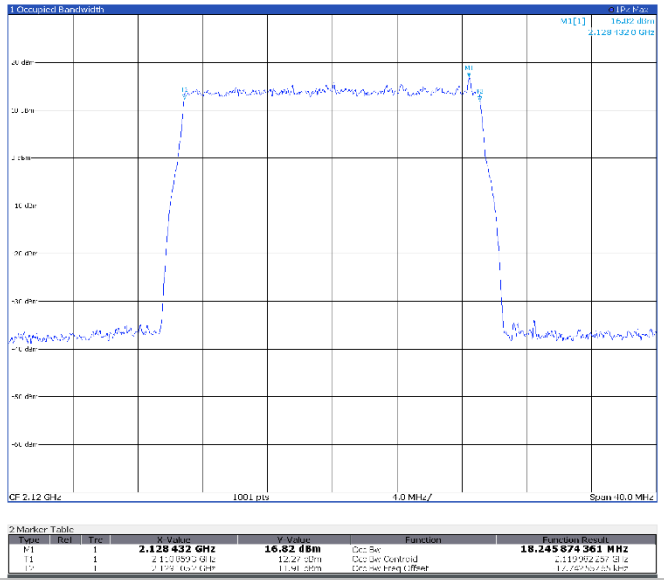


TM3p3, 15 MHz, high channel

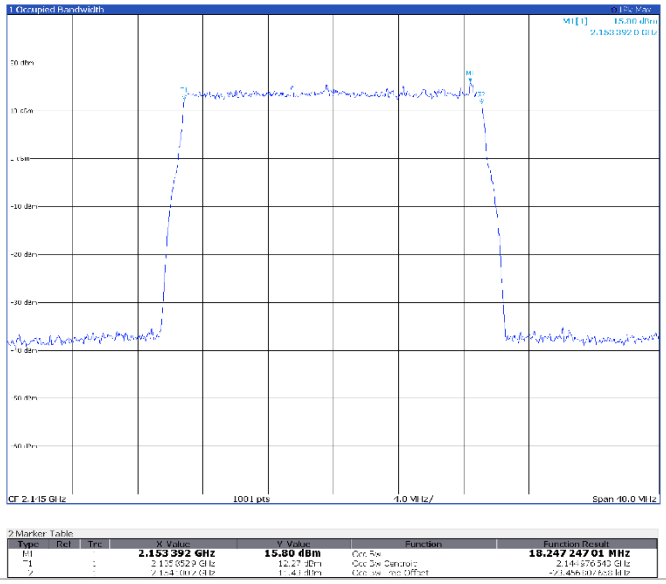


Band n66 | **20 MHz**

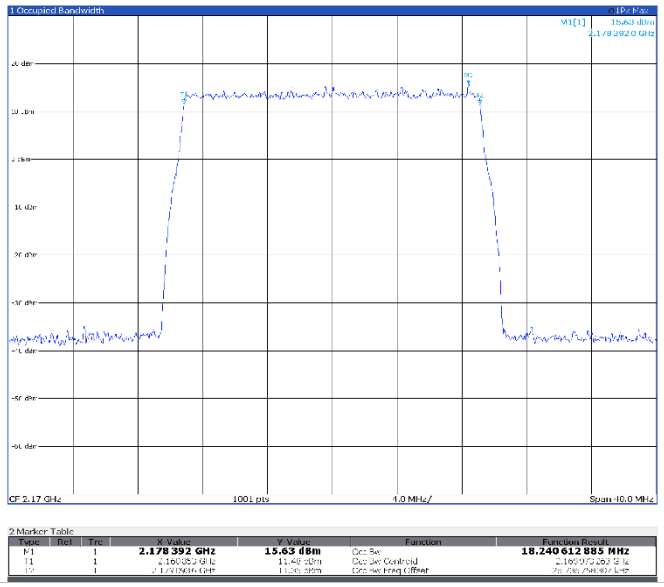
TM1.1, 20 MHz, low channel



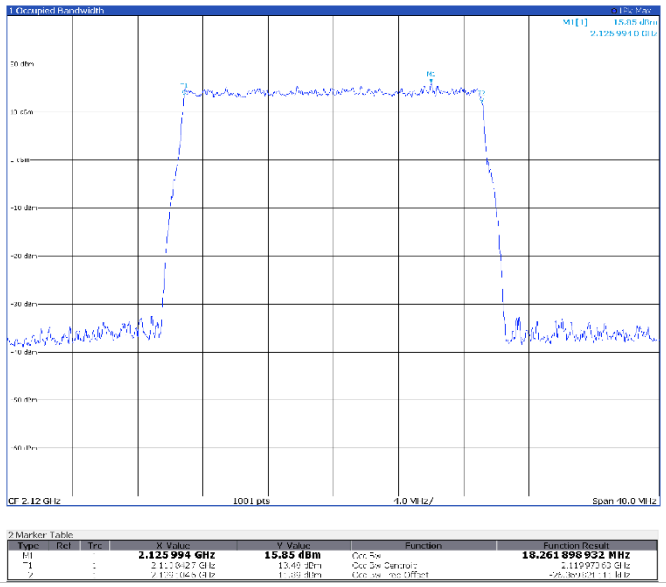
TM1.1, 20 MHz, mid channel



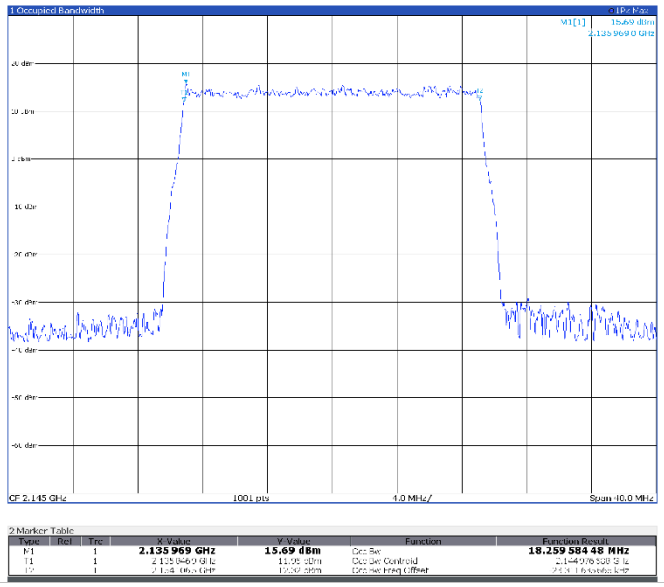
TM1.1, 20 MHz, high channel



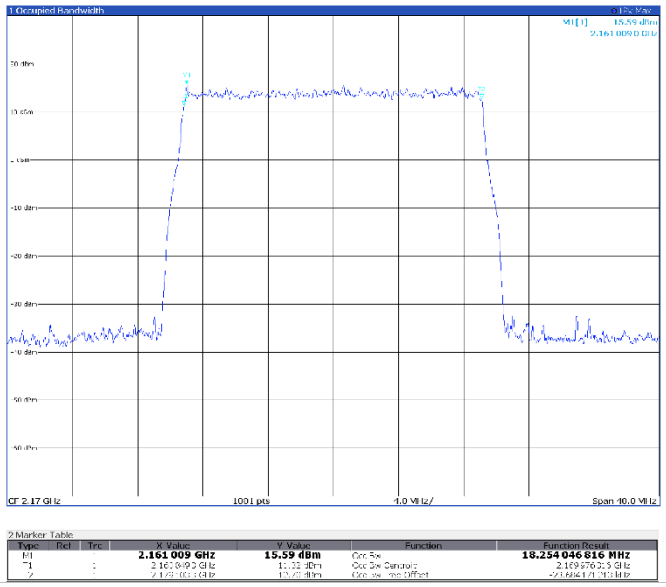
TM3p1, 20 MHz, low channel



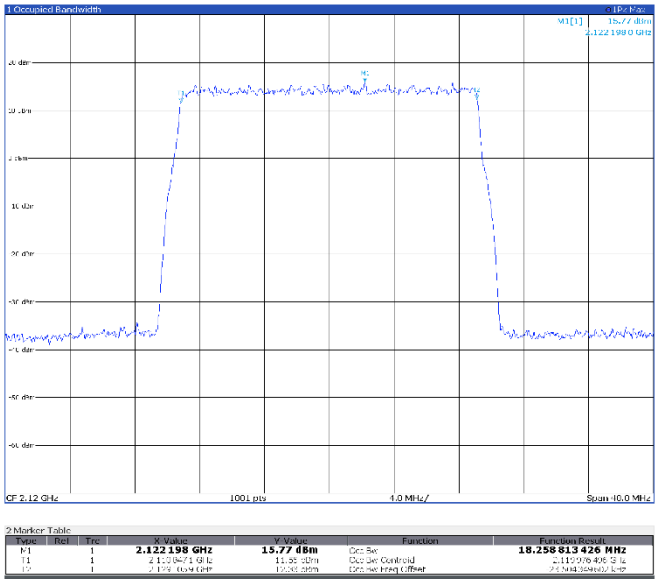
TM3p1, 20 MHz, mid channel



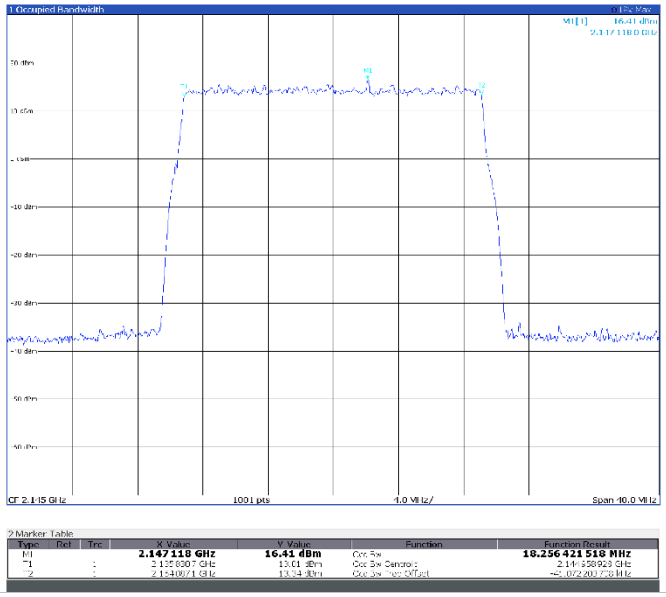
TM3p1, 20 MHz, high channel



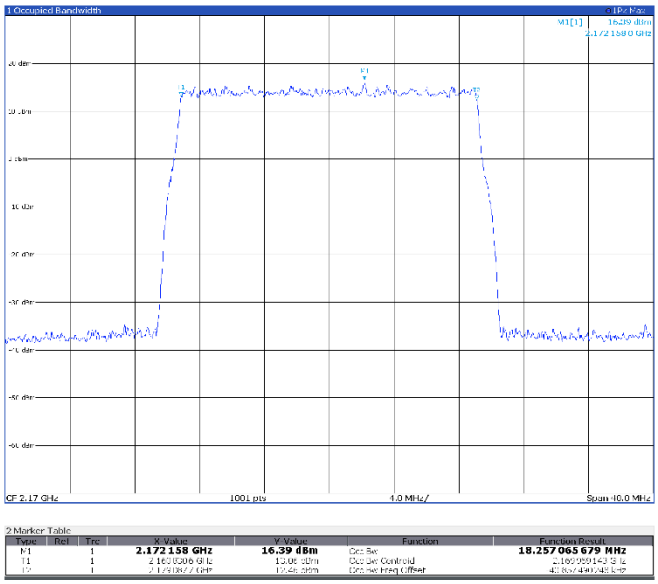
TM3p1a, 20 MHz, low channel



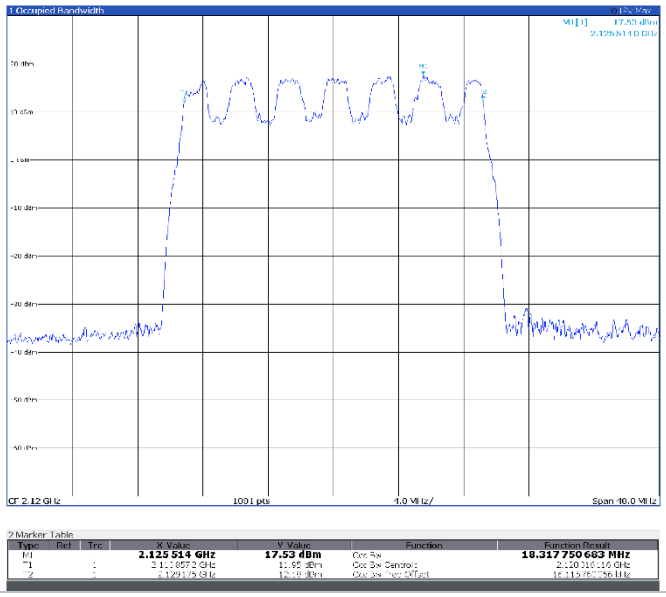
TM3p1a, 20 MHz, mid channel



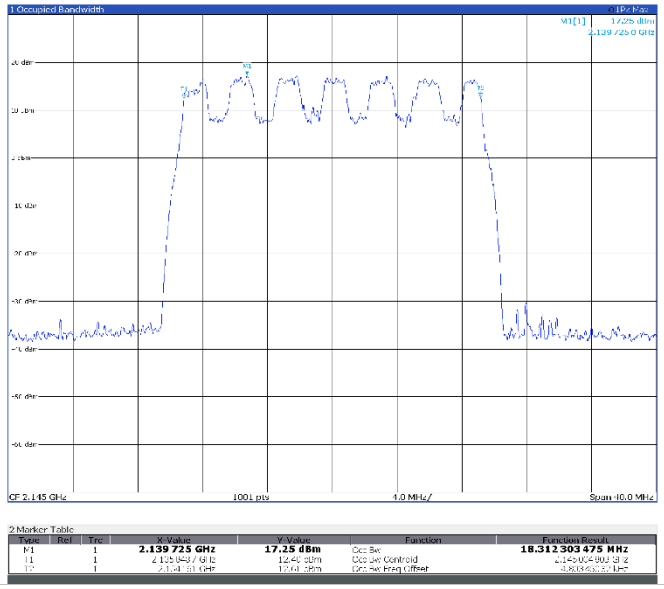
TM3p1a, 20 MHz, high channel



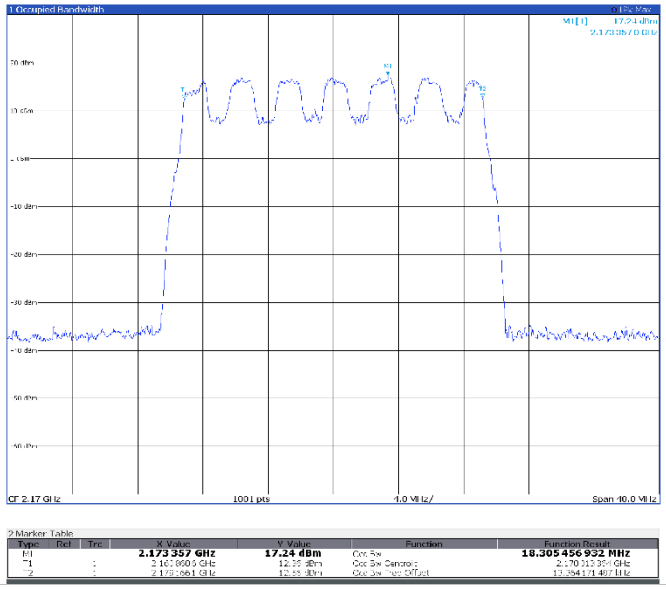
TM3p3, 20 MHz, low channel



TM3p3, 20 MHz, mid channel



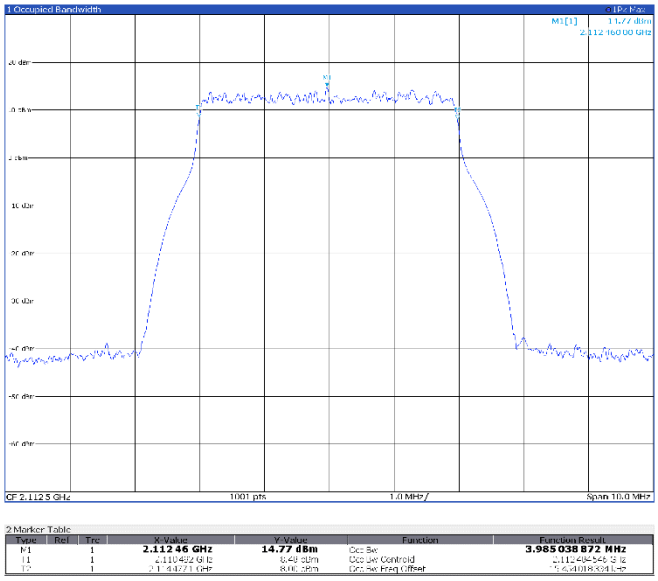
TM3p3, 20 MHz, high channel



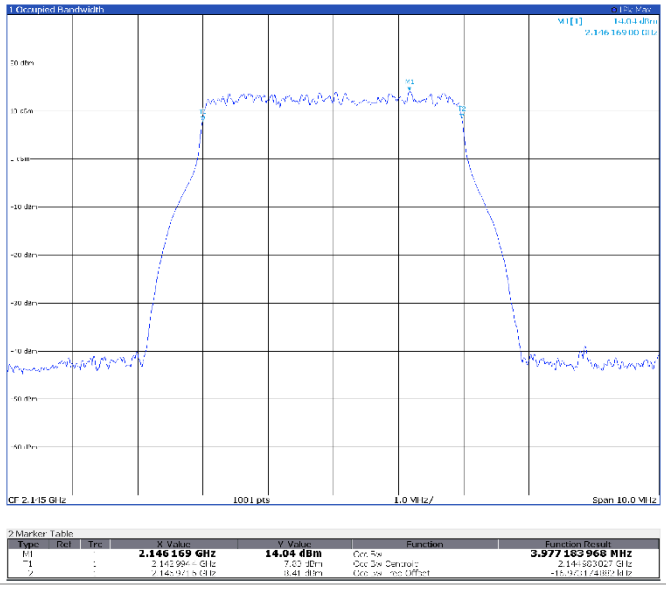
Antenna port 2

Band n66	5 MHz

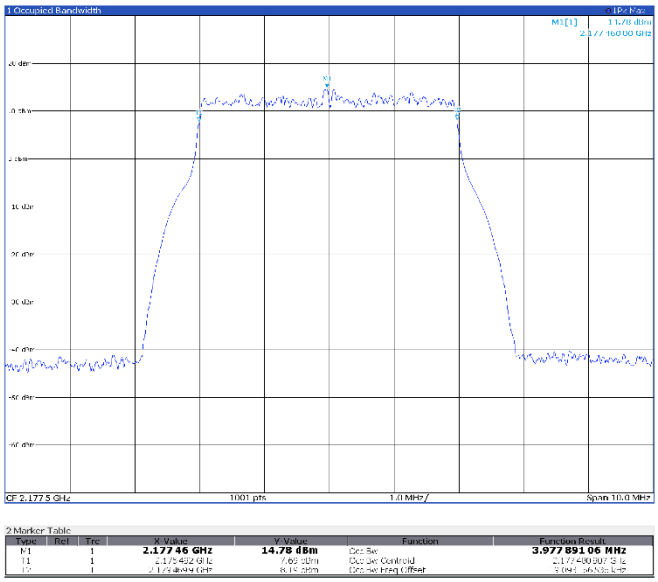
TM1.1, 5 MHz, low channel



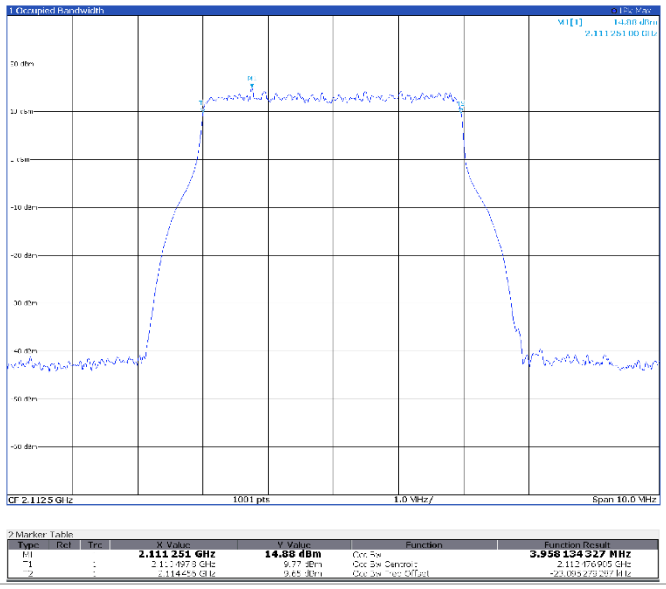
TM1.1, 5 MHz, mid channel



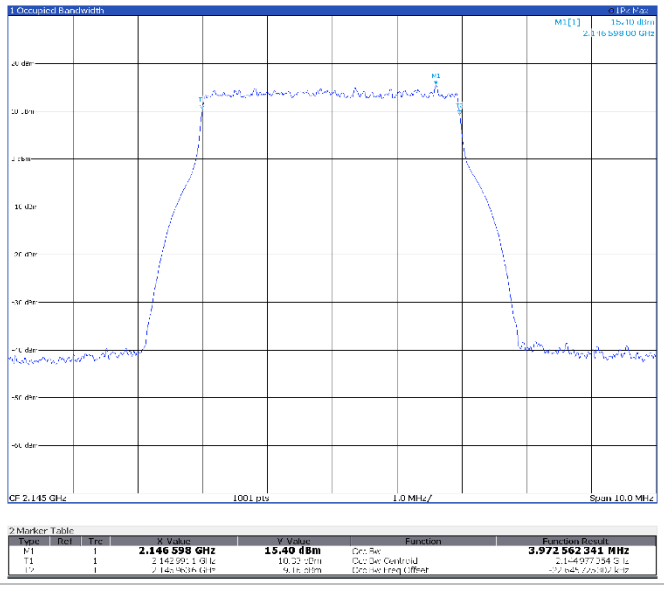
TM1.1, 5 MHz, high channel



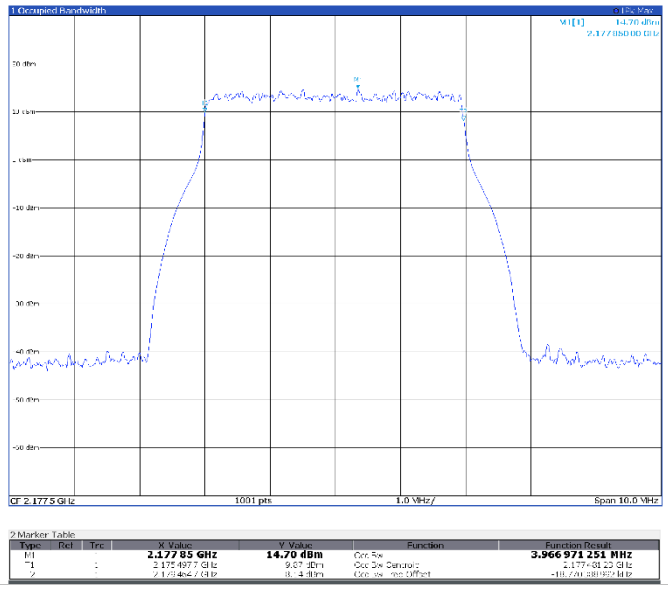
TM3p1, 5 MHz, low channel



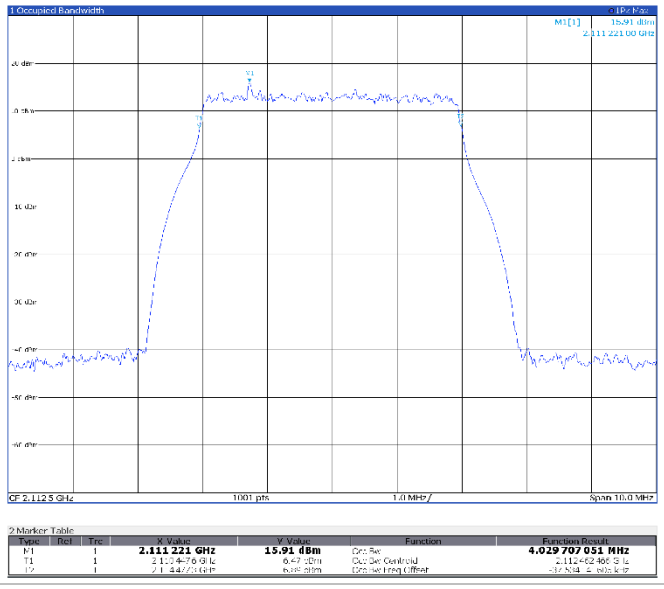
TM3p1, 5 MHz, mid channel



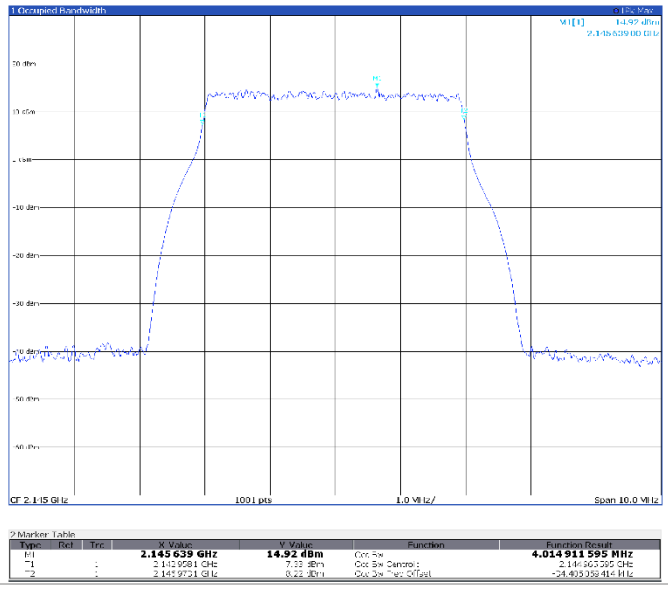
TM3p1, 5 MHz, high channel



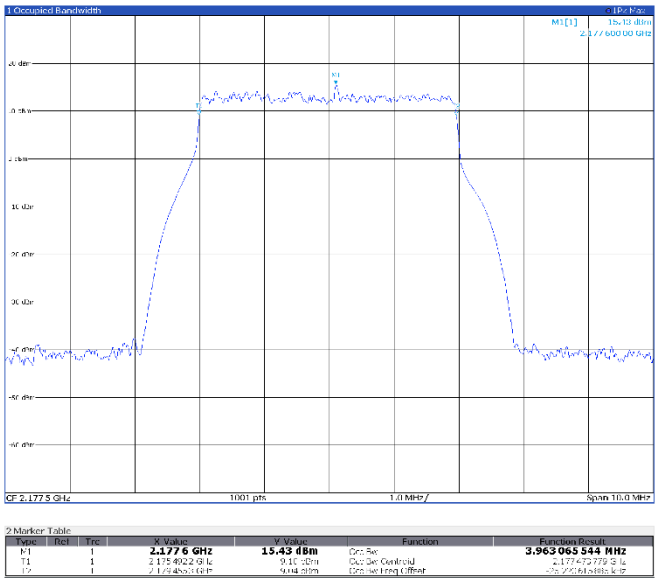
TM3p1a, 5 MHz, low channel



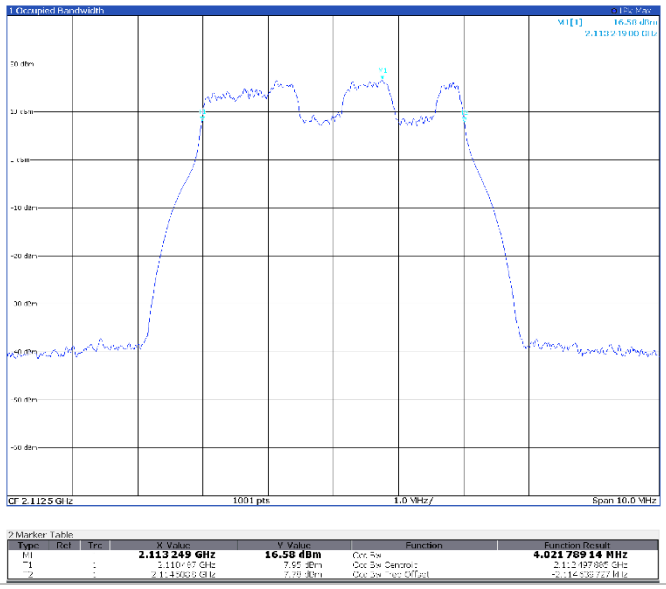
TM3p1a, 5 MHz, mid channel



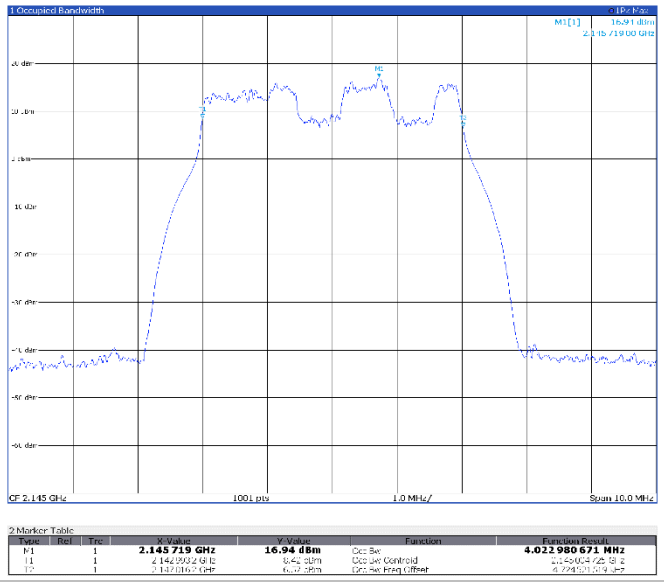
TM3p1a, 5 MHz, high channel



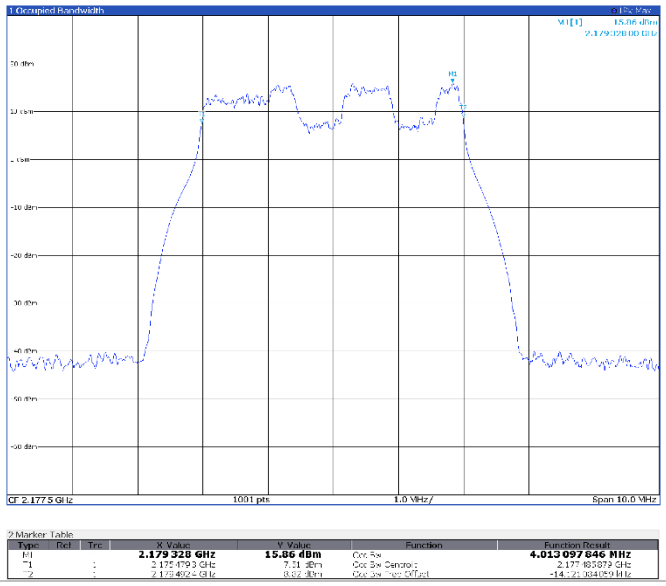
TM3p3, 5 MHz, low channel



TM3p3, 5 MHz, mid channel

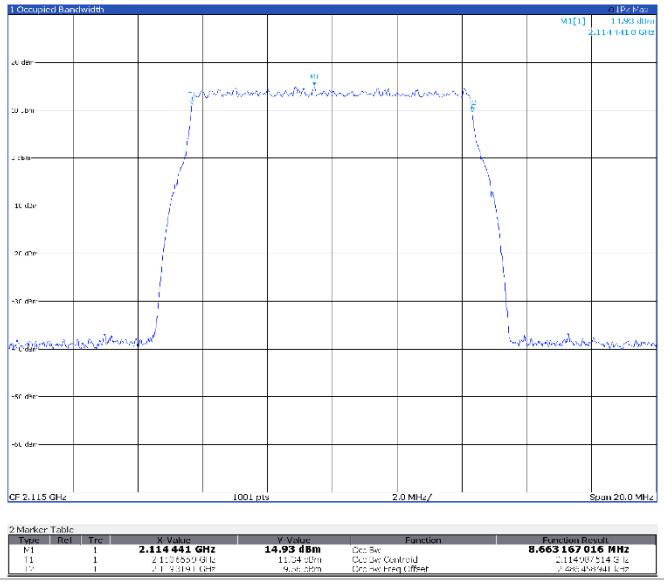


TM3p3, 5 MHz, high channel

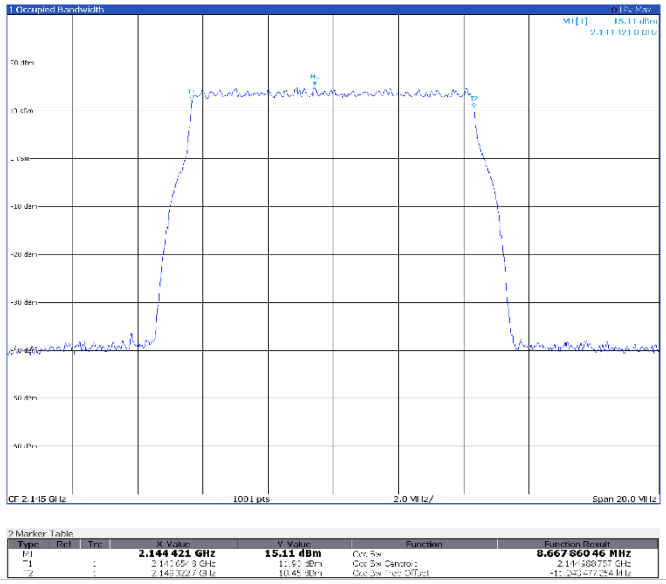


Band n66 | **10 MHz**

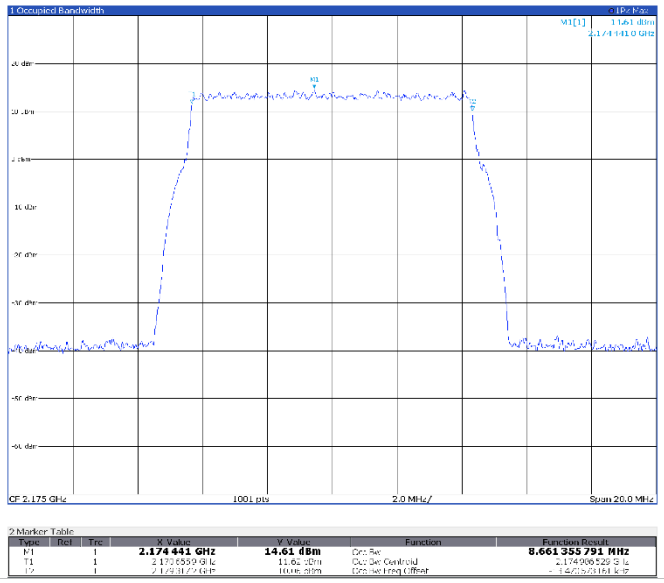
TM1.1, 10 MHz, low channel



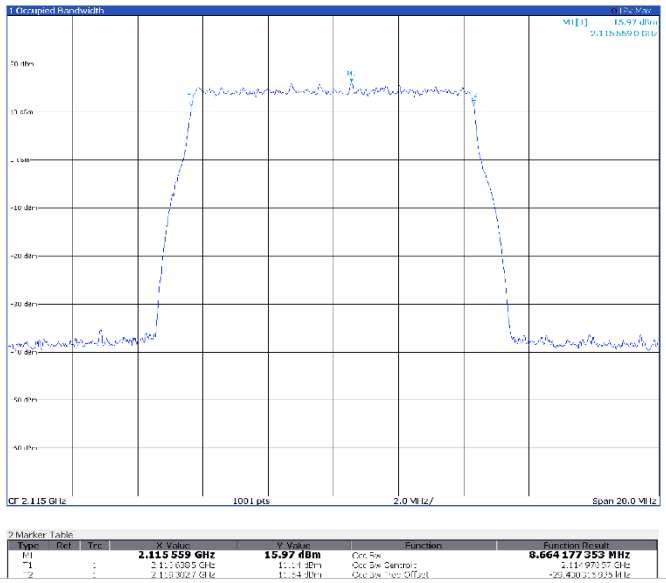
TM1.1, 10 MHz, mid channel



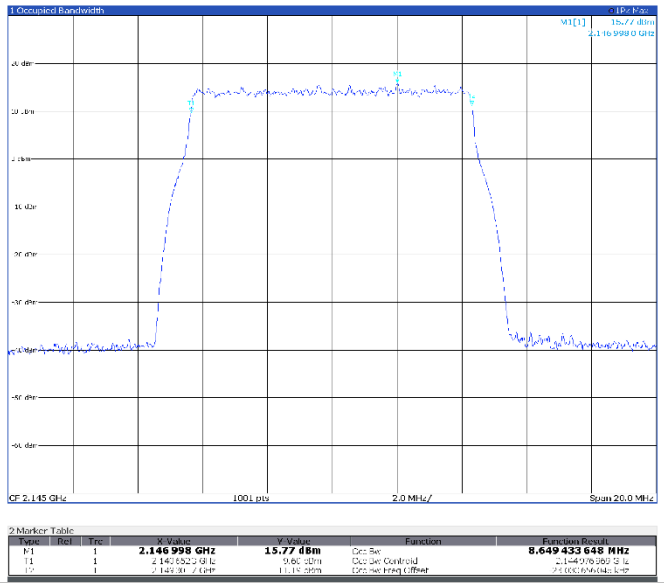
TM1.1, 10 MHz, high channel



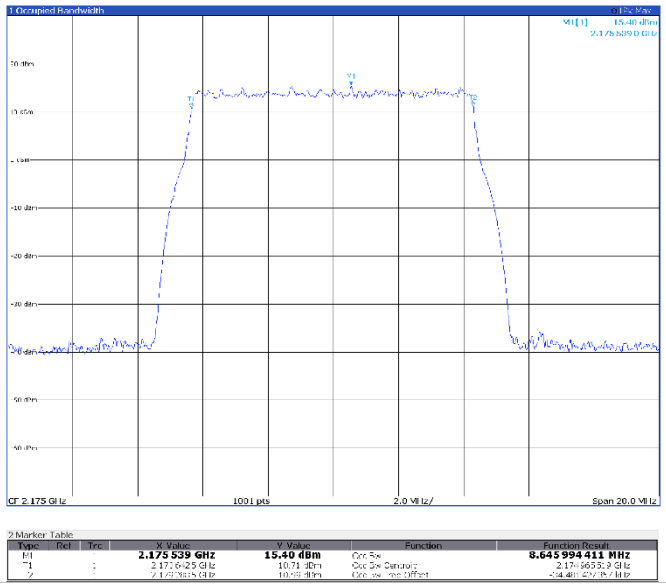
TM3p1, 10 MHz, low channel



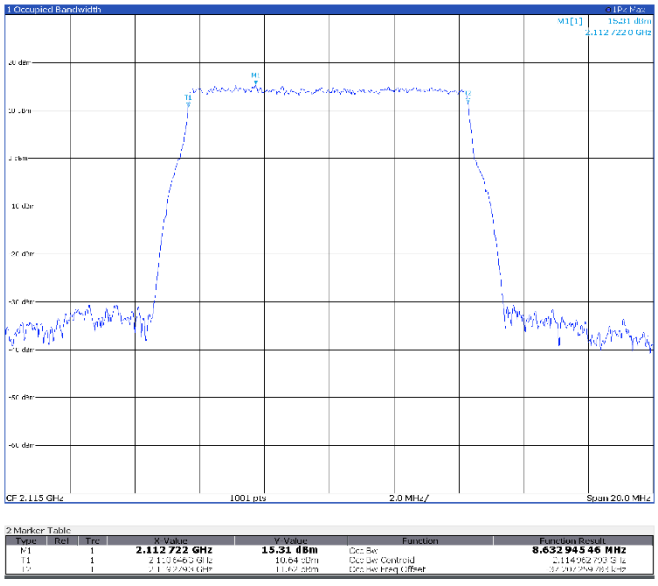
TM3p1, 10 MHz, mid channel



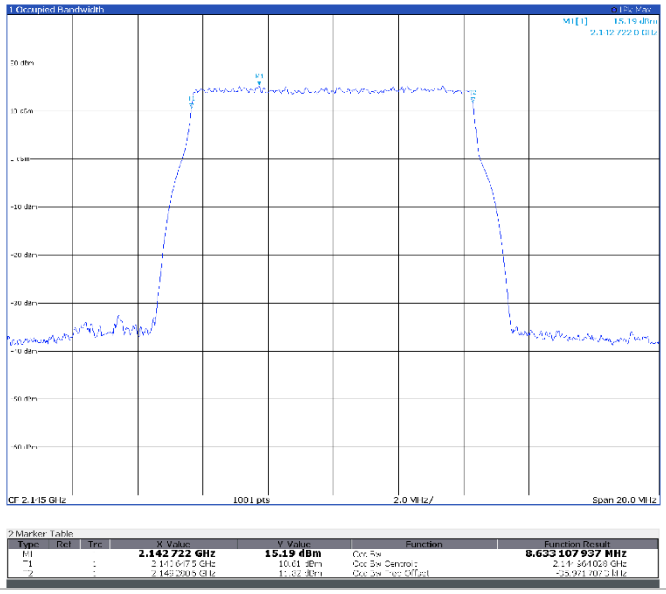
TM3p1, 10 MHz, high channel



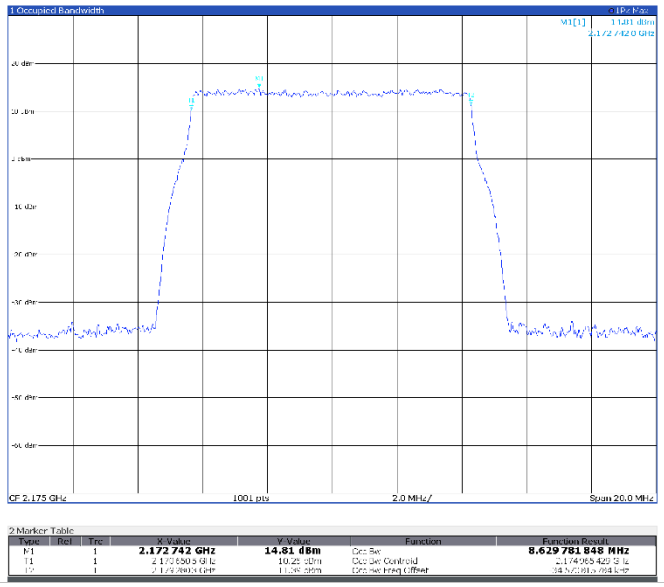
TM3p1a, 10 MHz, low channel



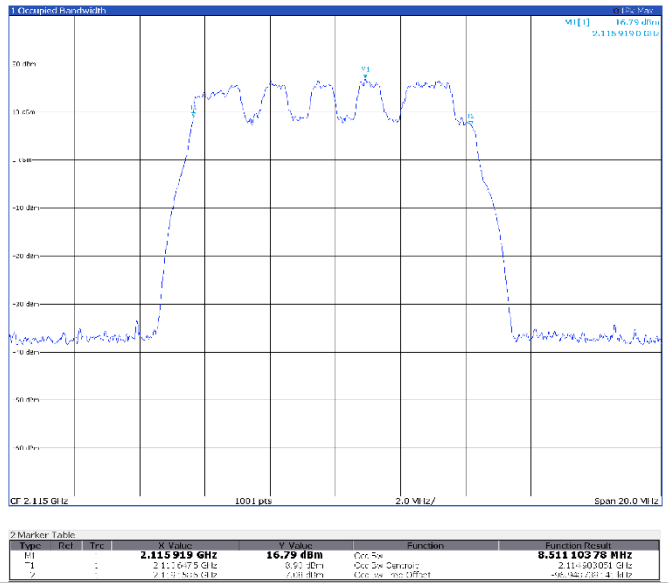
TM3p1a, 10 MHz, mid channel



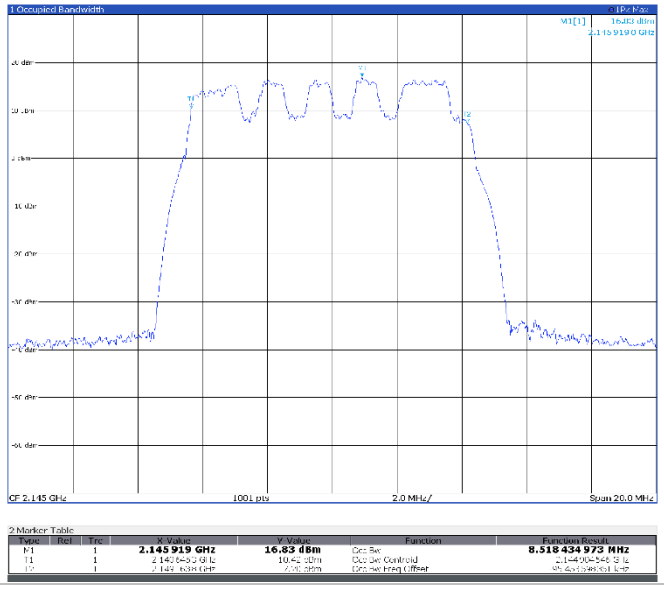
TM3p1a, 10 MHz, high channel



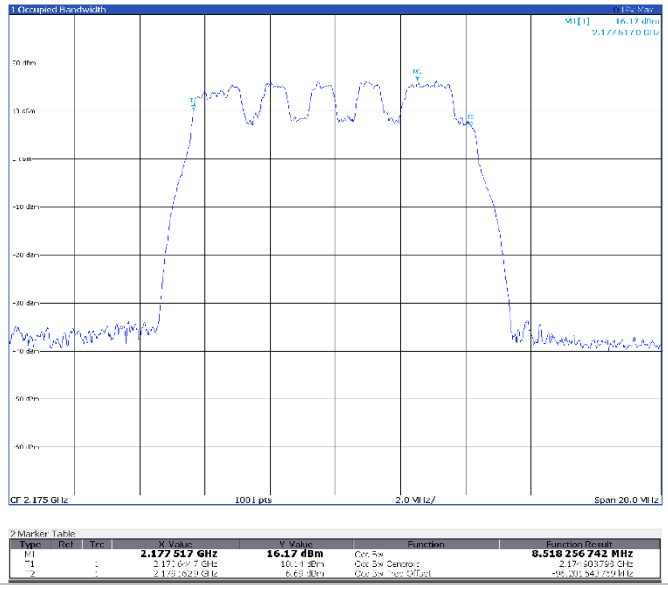
TM3p3, 10 MHz, low channel



TM3p3, 10 MHz, mid channel

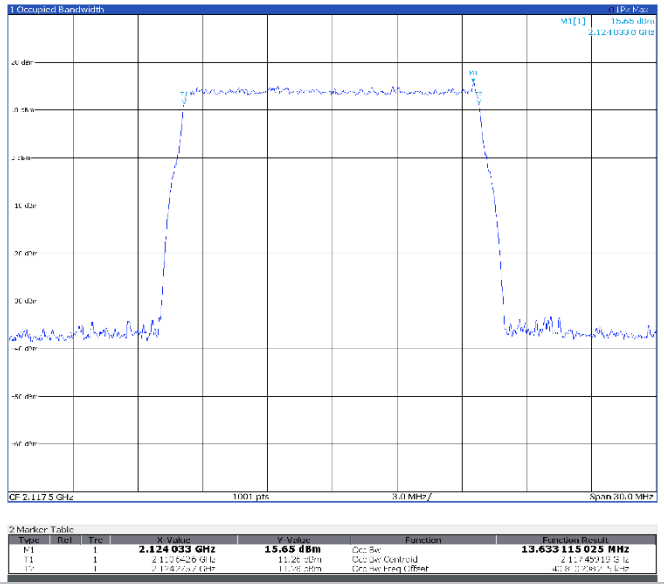


TM3p3, 10 MHz, high channel

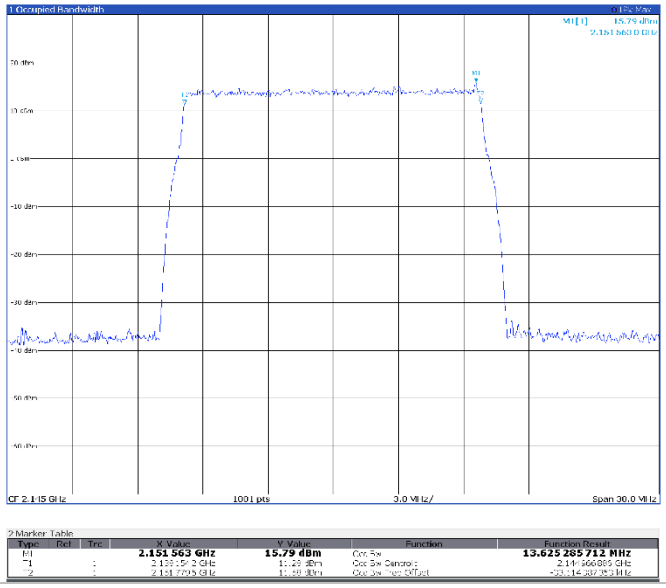


Band n66 | **15 MHz**

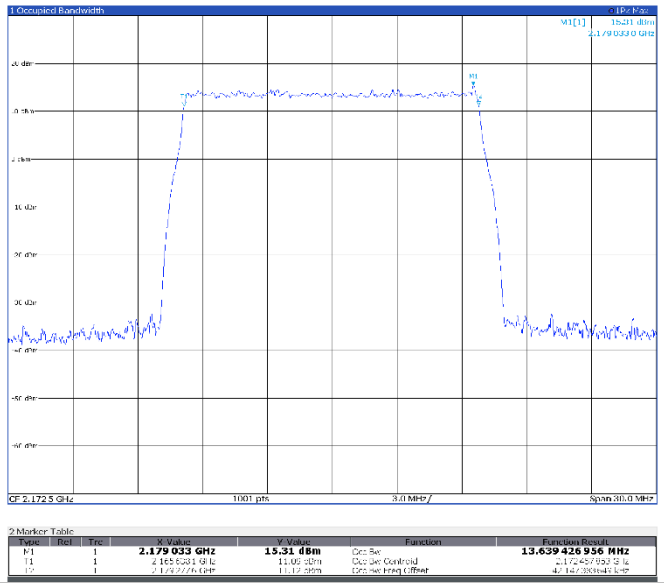
TM1.1, 15 MHz, low channel



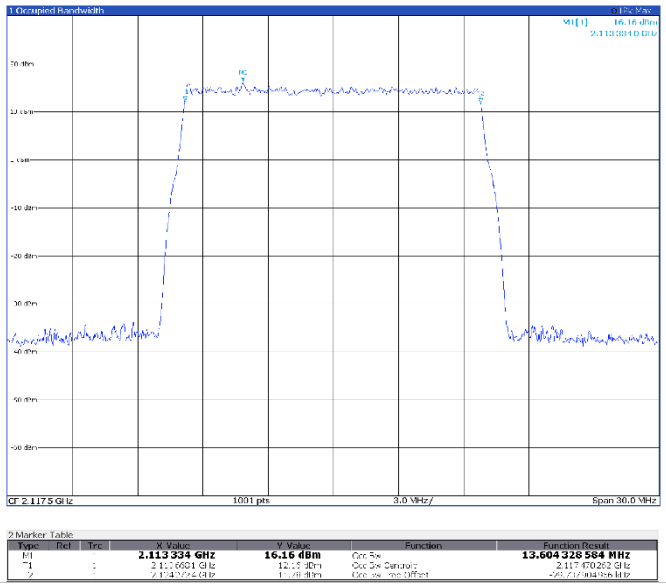
TM1.1, 15 MHz, mid channel



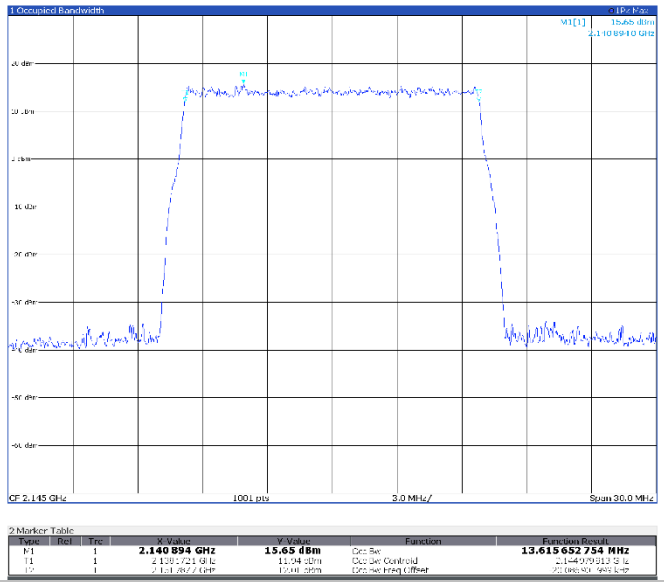
TM1.1, 15 MHz, high channel



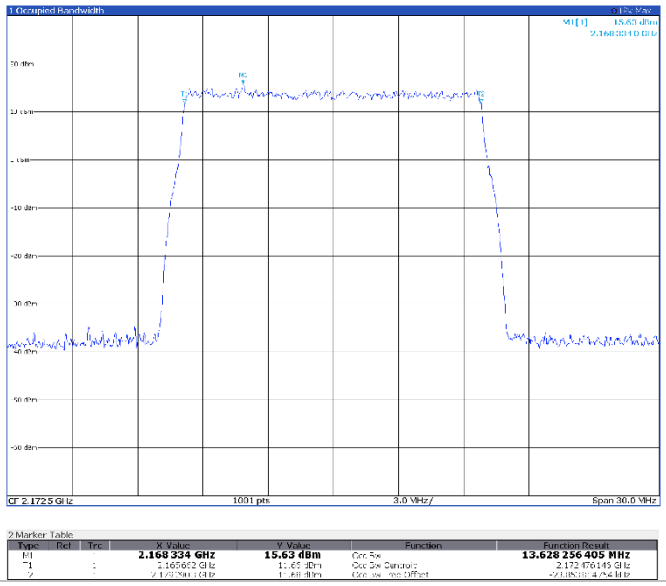
TM3p1, 15 MHz, low channel



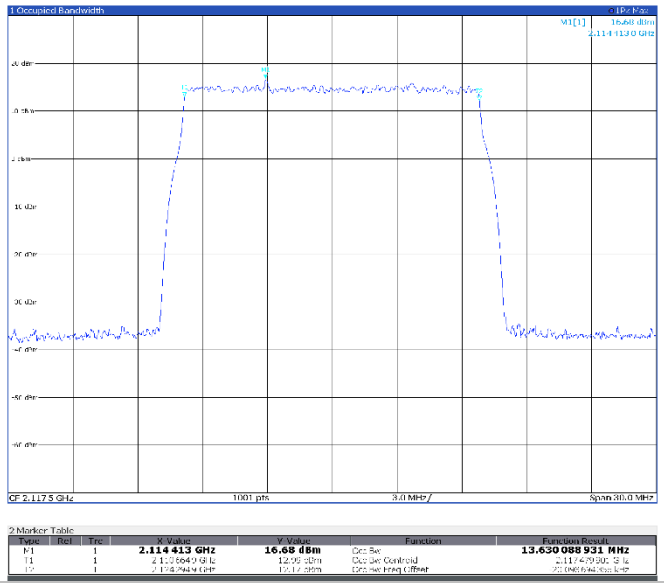
TM3p1, 15 MHz, mid channel



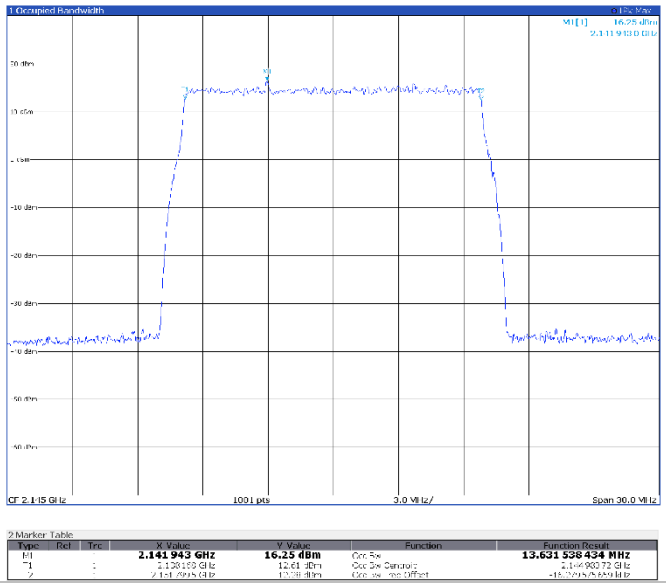
TM3p1, 15 MHz, high channel



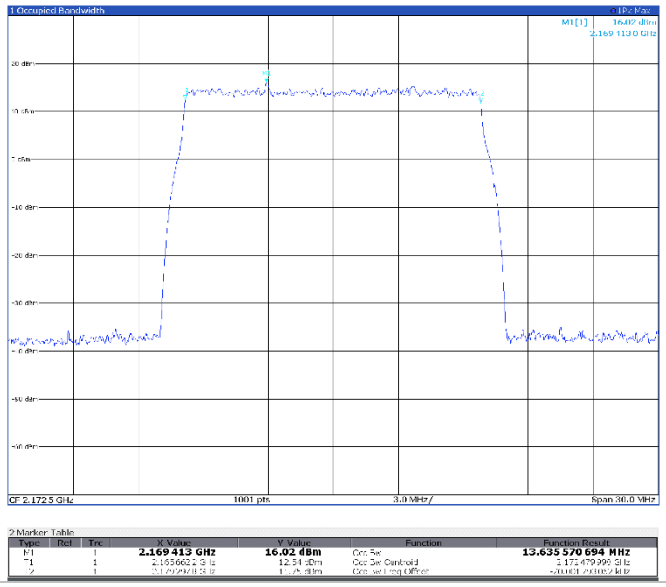
TM3p1a, 15 MHz, low channel



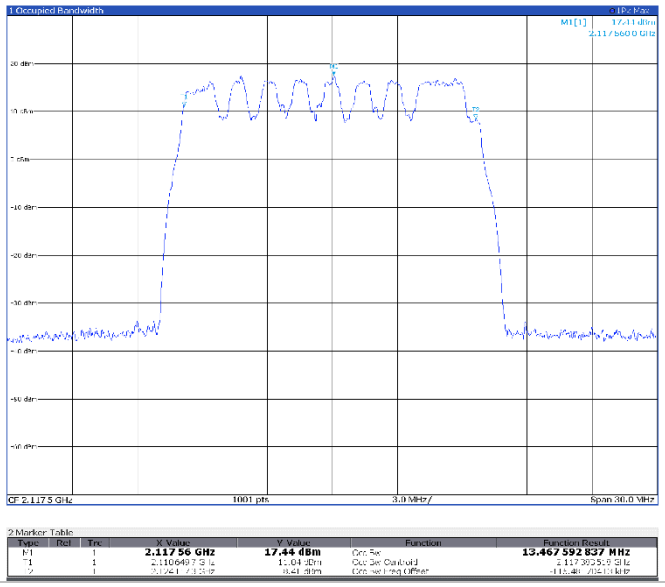
TM3p1a, 15 MHz, mid channel



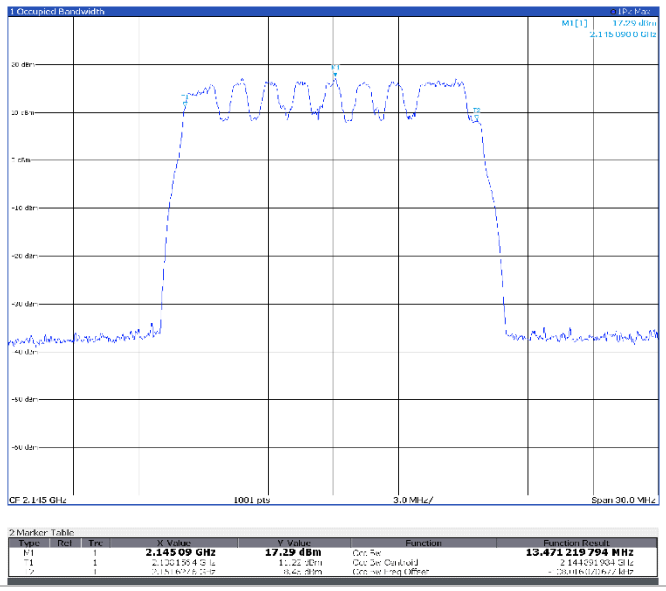
TM3p1a, 15 MHz, high channel



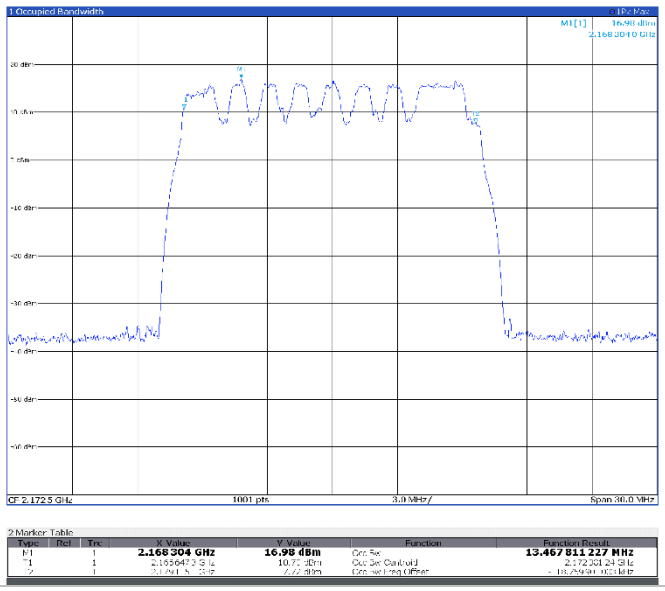
TM3p3, 15 MHz, low channel



TM3p3, 15 MHz, mid channel

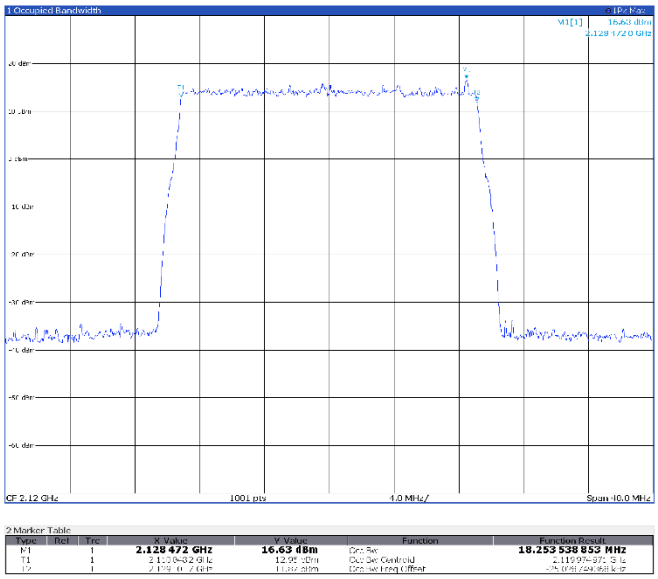


TM3p3, 15 MHz, high channel

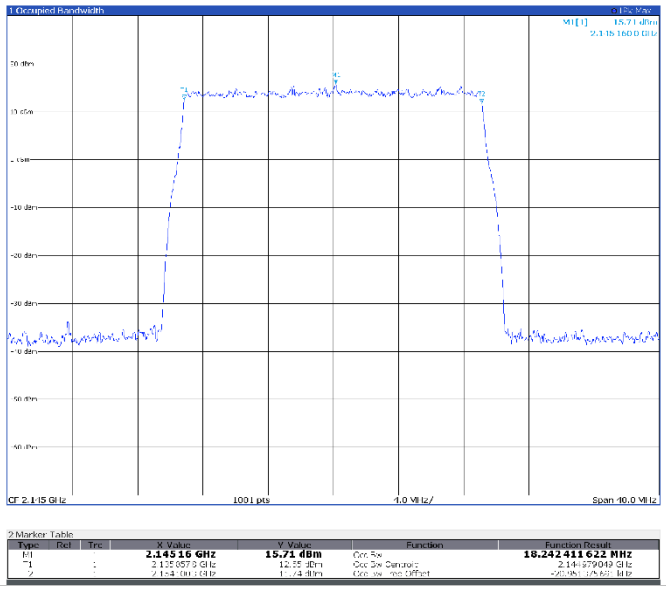


Band n66 | **20 MHz**

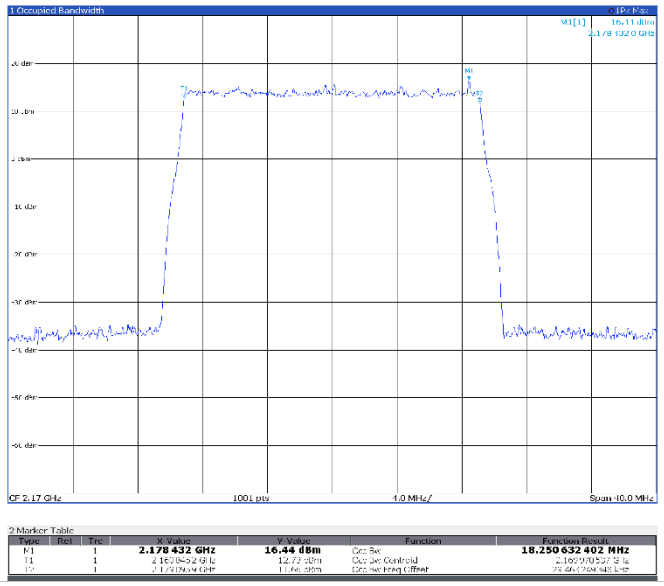
TM1.1, 20 MHz, low channel



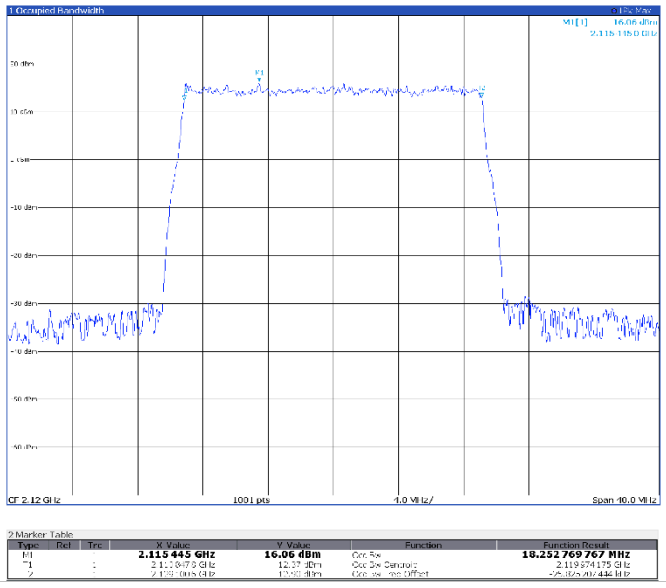
TM1.1, 20 MHz, mid channel



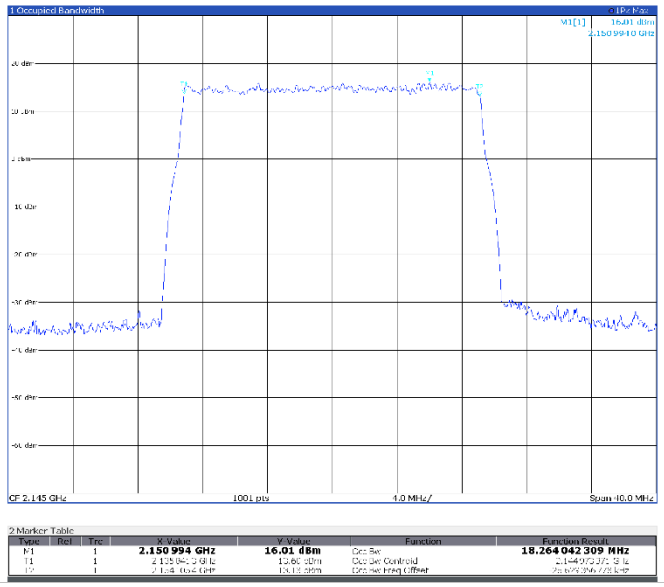
TM1.1, 20 MHz, high channel



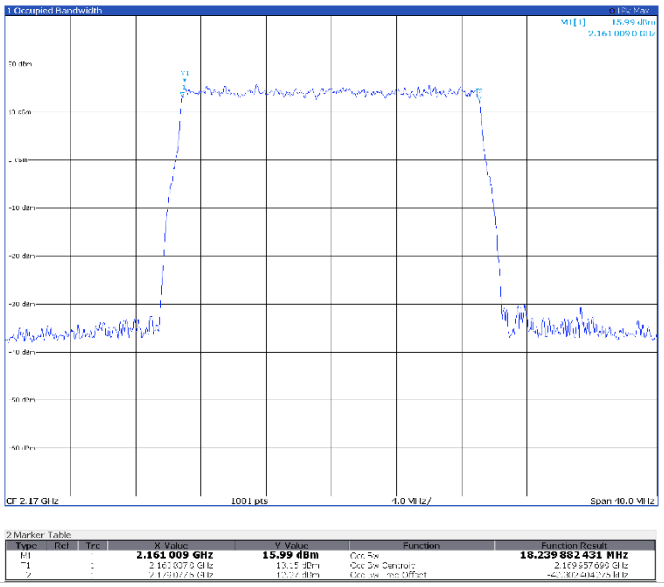
TM3p1, 20 MHz, low channel



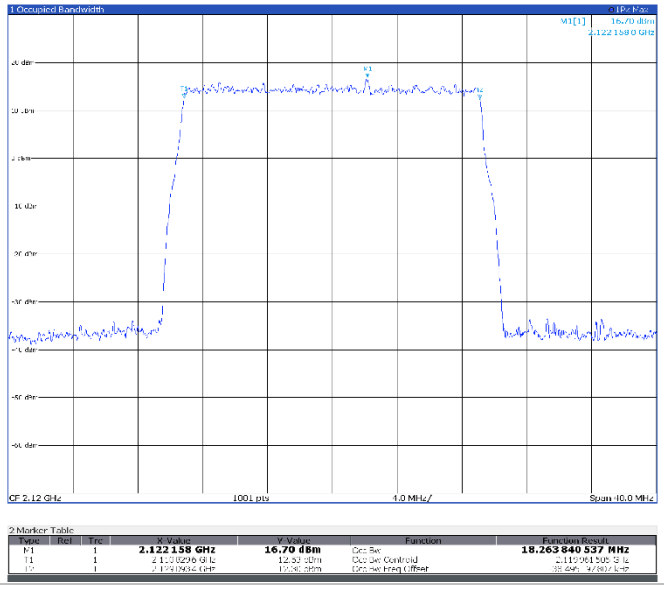
TM3p1, 20 MHz, mid channel



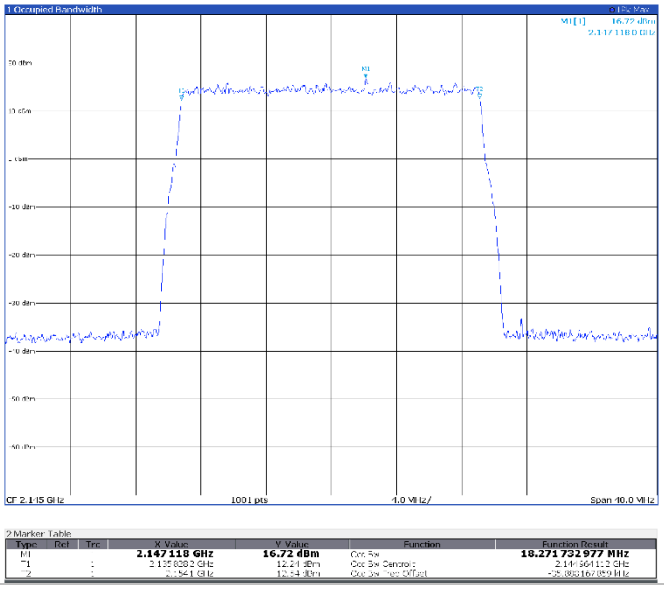
TM3p1, 20 MHz, high channel



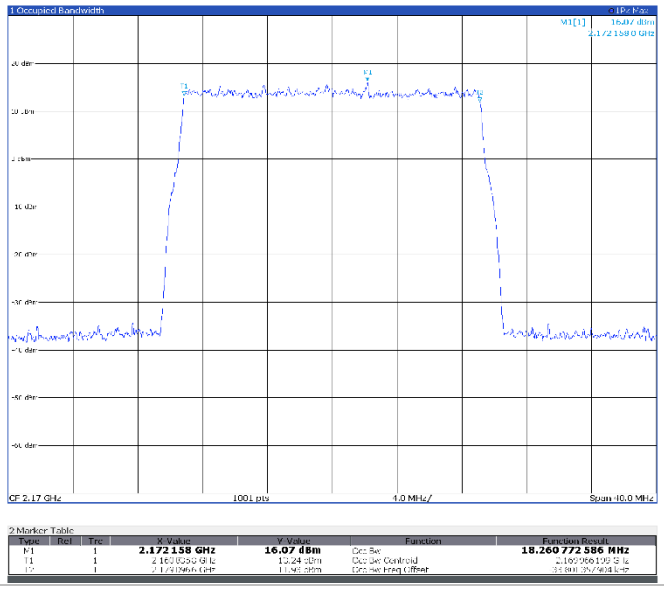
TM3p1a, 20 MHz, low channel



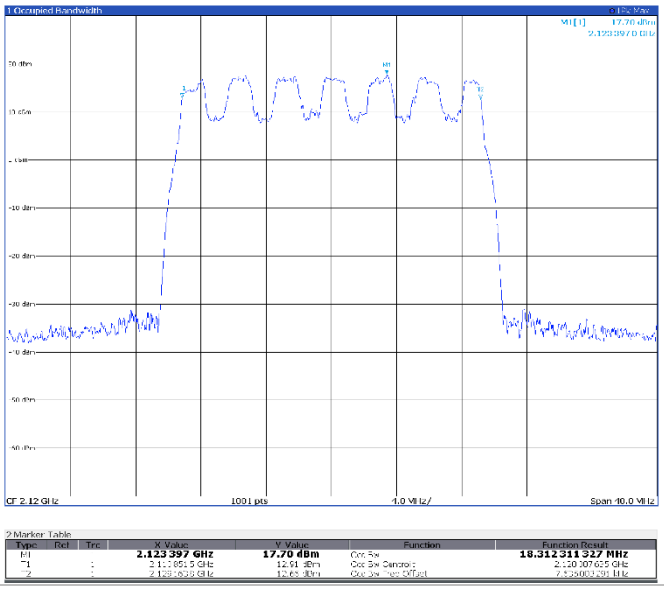
TM3p1a, 20 MHz, mid channel



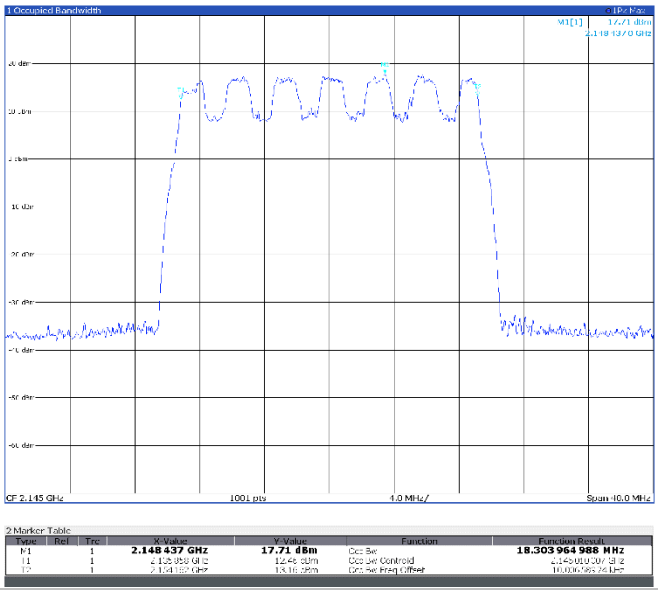
TM3p1a, 20 MHz, high channel



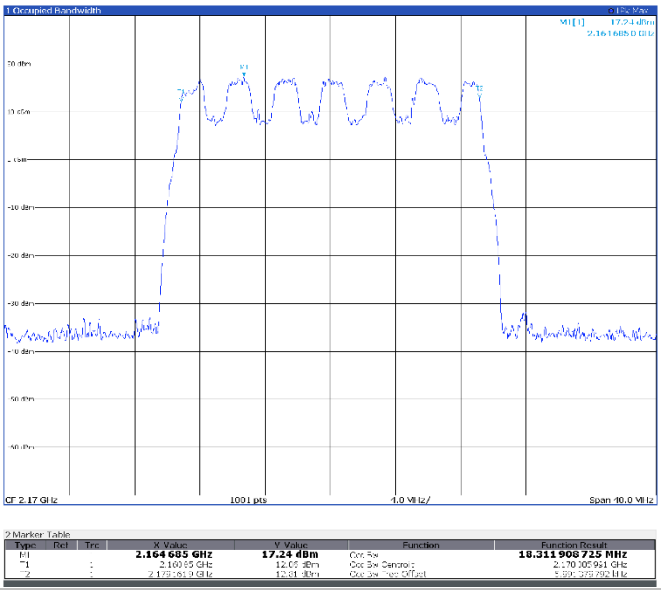
TM3p3, 20 MHz, low channel



TM3p3, 20 MHz, mid channel



TM3p3, 20 MHz, high channel



8.3 FCC §27.53 (h)(3) 26 dB Occupied Bandwidth

8.3.1 Definitions and limits

(3) Measurement procedure. (i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

8.3.2 Test summary

Test start date	October 10, 2024	Temperature	22 °C
Test end date	October 25, 2024	Air pressure	1001 mbar
Test engineer	O. Frau	Relative humidity	62%
Verdict	Pass		

8.3.3 Observations, settings and special notes

Test method: ANSI C63.26 Section 5.4.4

Spectrum analyzer settings:

Resolution bandwidth	1% - 5% OBW
Video bandwidth	3*RBW
Frequency span	2*OBW
Detector mode	Peak
Trace mode	Max Hold

8.3.3 Test equipment used

Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767

8.3.4 Test data

Band n66: Antenna port 1

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM1.1	2112.5	4.97
n66	5 MHz	TM1.1	2145.0	4.88
n66	5 MHz	TM1.1	2177.5	4.95

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM3p1	2112.5	4.91
n66	5 MHz	TM3p1	2145.0	4.83
n66	5 MHz	TM3p1	2177.5	4.83

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM3p1a	2112.5	4.76
n66	5 MHz	TM3p1a	2145.0	4.89
n66	5 MHz	TM3p1a	2177.5	4.78

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM3p3	2112.5	4.87
n66	5 MHz	TM3p3	2145.0	4.86
n66	5 MHz	TM3p3	2177.5	4.83

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM1.1	2115.0	9.91
n66	10 MHz	TM1.1	2145.0	10.05
n66	10 MHz	TM1.1	2175.0	10.07

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM3p1	2115.0	9.95
n66	10 MHz	TM3p1	2145.0	9.97
n66	10 MHz	TM3p1	2175.0	9.97

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM3p1a	2115.0	10.03
n66	10 MHz	TM3p1a	2145.0	10.01
n66	10 MHz	TM3p1a	2175.0	10.05

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM3p3	2115.0	9.83
n66	10 MHz	TM3p3	2145.0	9.81
n66	10 MHz	TM3p3	2175.0	9.79

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM1.1	2117.5	15.13
n66	15 MHz	TM1.1	2145.0	15.07
n66	15 MHz	TM1.1	2172.5	15.13

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM3p1	2117.5	15.04
n66	15 MHz	TM3p1	2145.0	15.04
n66	15 MHz	TM3p1	2172.5	15.04

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM3p1a	2117.5	15.13
n66	15 MHz	TM3p1a	2145.0	15.13
n66	15 MHz	TM3p1a	2172.5	15.13

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM3p3	2117.5	14.96
n66	15 MHz	TM3p3	2145.0	14.93
n66	15 MHz	TM3p3	2172.5	14.93

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM1.1	2120.0	19.98
n66	20 MHz	TM1.1	2145.0	19.94
n66	20 MHz	TM1.1	2170.0	19.94

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM3p1	2120.0	20.02
n66	20 MHz	TM3p1	2145.0	19.98
n66	20 MHz	TM3p1	2170.0	19.98

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM3p1a	2120.0	19.98
n66	20 MHz	TM3p1a	2145.0	20.02
n66	20 MHz	TM3p1a	2170.0	19.98

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM3p3	2120.0	20.02
n66	20 MHz	TM3p3	2145.0	20.02
n66	20 MHz	TM3p3	2170.0	19.98

Band n66: Antenna port 2

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM1.1	2112.5	4.88
n66	5 MHz	TM1.1	2145.0	4.87
n66	5 MHz	TM1.1	2177.5	4.84

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM3p1	2112.5	4.82
n66	5 MHz	TM3p1	2145.0	4.80
n66	5 MHz	TM3p1	2177.5	4.89

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM3p1a	2112.5	4.88
n66	5 MHz	TM3p1a	2145.0	4.96
n66	5 MHz	TM3p1a	2177.5	4.83

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	5 MHz	TM3p3	2112.5	4.87
n66	5 MHz	TM3p3	2145.0	4.83
n66	5 MHz	TM3p3	2177.5	4.82

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM1.1	2115.0	10.09
n66	10 MHz	TM1.1	2145.0	10.07
n66	10 MHz	TM1.1	2175.0	10.07

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM3p1	2115.0	9.97
n66	10 MHz	TM3p1	2145.0	9.97
n66	10 MHz	TM3p1	2175.0	9.97

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM3p1a	2115.0	10.01
n66	10 MHz	TM3p1a	2145.0	10.05
n66	10 MHz	TM3p1a	2175.0	10.03

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	10 MHz	TM3p3	2115.0	9.79
n66	10 MHz	TM3p3	2145.0	9.83
n66	10 MHz	TM3p3	2175.0	9.85

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM1.1	2117.5	15.07
n66	15 MHz	TM1.1	2145.0	15.07
n66	15 MHz	TM1.1	2172.5	15.11

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM3p1	2117.5	15.04
n66	15 MHz	TM3p1	2145.0	15.07
n66	15 MHz	TM3p1	2172.5	15.04

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM3p1a	2117.5	15.11
n66	15 MHz	TM3p1a	2145.0	15.07
n66	15 MHz	TM3p1a	2172.5	15.13

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	15 MHz	TM3p3	2117.5	14.96
n66	15 MHz	TM3p3	2145.0	14.96
n66	15 MHz	TM3p3	2172.5	14.96

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM1.1	2120.0	19.94
n66	20 MHz	TM1.1	2145.0	20.06
n66	20 MHz	TM1.1	2170.0	19.98

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM3p1	2120.0	20.02
n66	20 MHz	TM3p1	2145.0	20.06
n66	20 MHz	TM3p1	2170.0	19.98

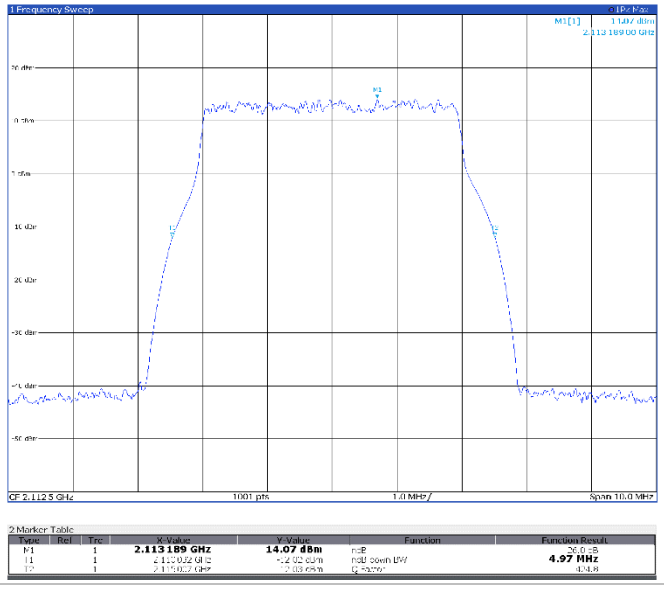
Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM3p1a	2120.0	19.98
n66	20 MHz	TM3p1a	2145.0	19.90
n66	20 MHz	TM3p1a	2170.0	20.02

Band	OBW Declared	Modulation	Channel (MHz)	26 dB (MHz)
n66	20 MHz	TM3p3	2120.0	20.02
n66	20 MHz	TM3p3	2145.0	20.02
n66	20 MHz	TM3p3	2170.0	19.98

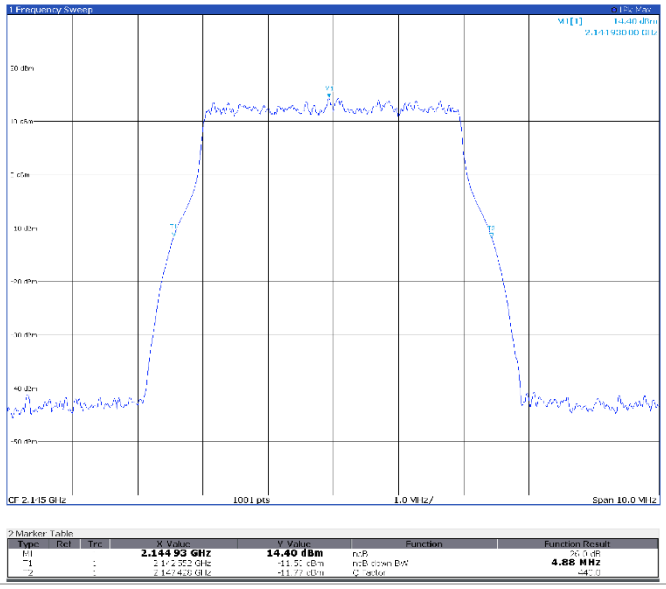
Antenna port 1

Band n66	5 MHz

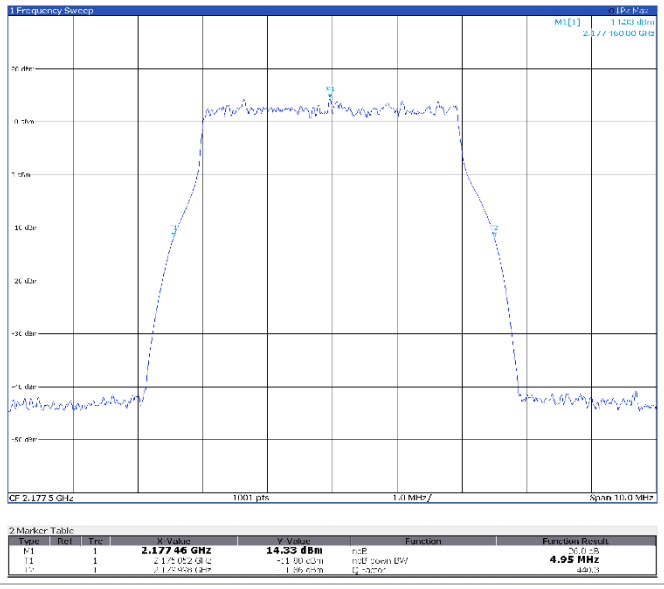
TM1.1, 5 MHz, low channel



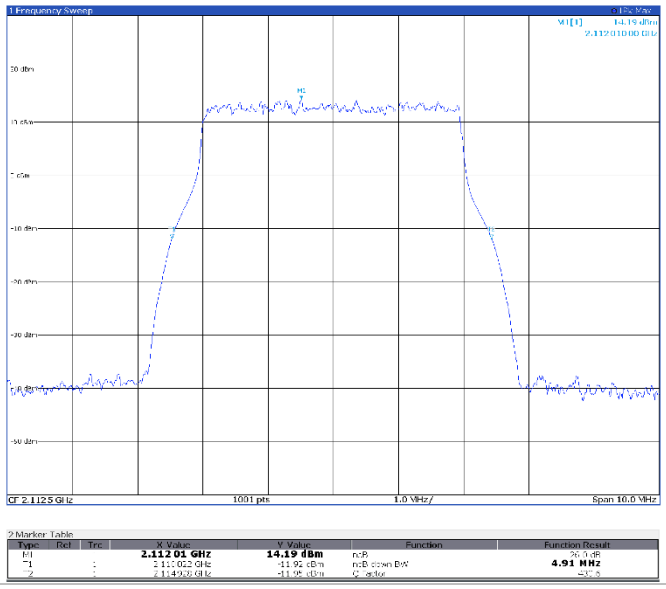
TM1.1, 5 MHz, mid channel



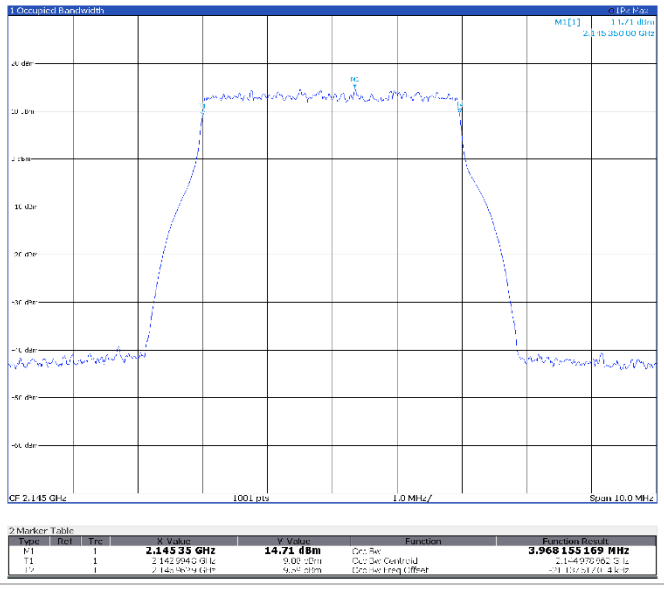
TM1.1, 5 MHz, high channel



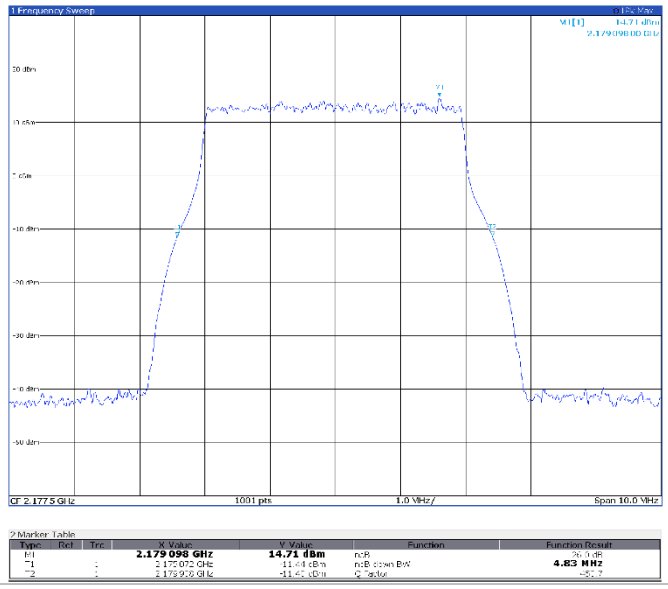
TM3p1, 5 MHz, low channel



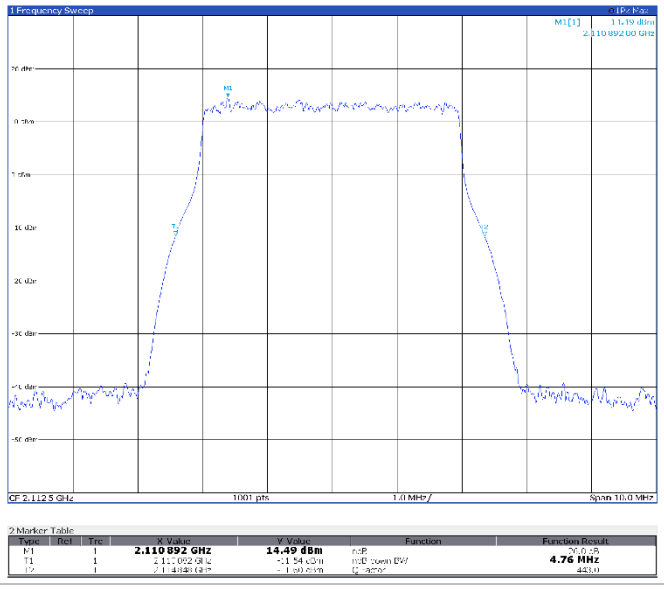
TM3p1, 5 MHz, mid channel



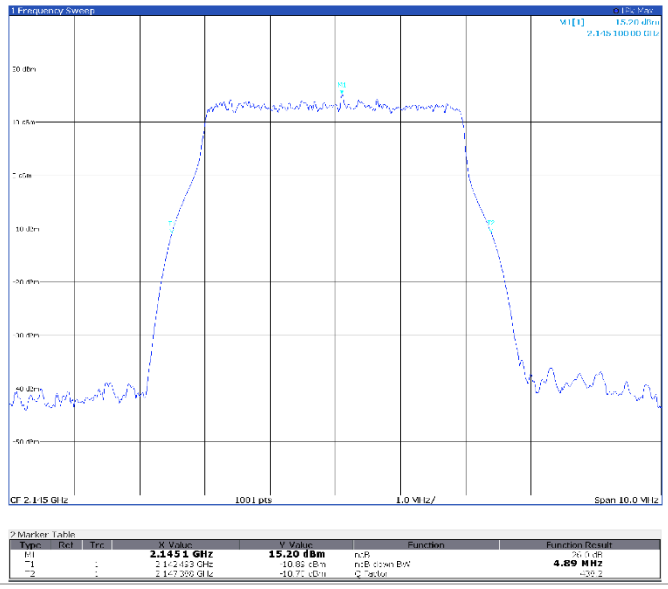
TM3p1, 5 MHz, high channel



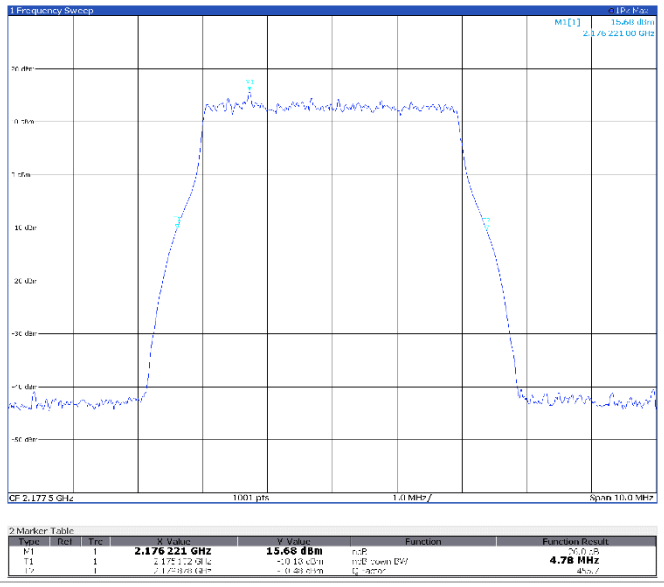
TM3p1a, 5 MHz, low channel



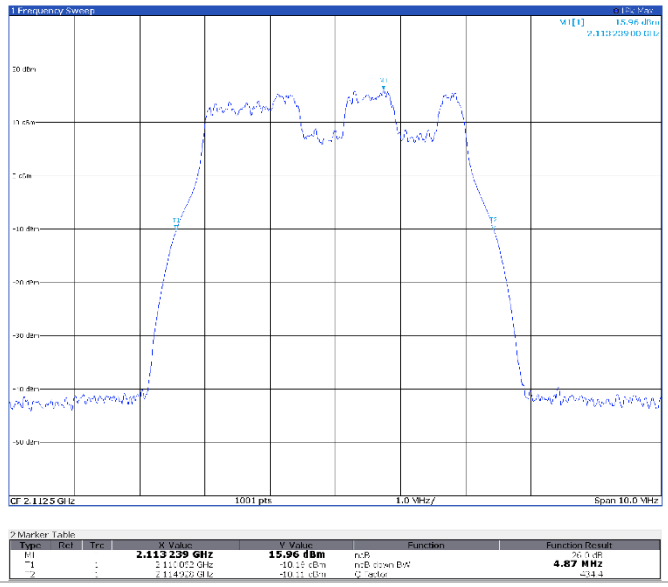
TM3p1a, 5 MHz, mid channel



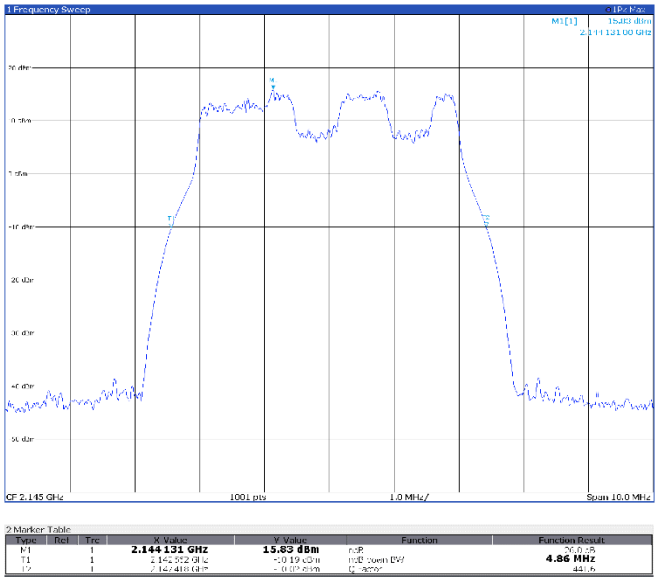
TM3p1a, 5 MHz, high channel



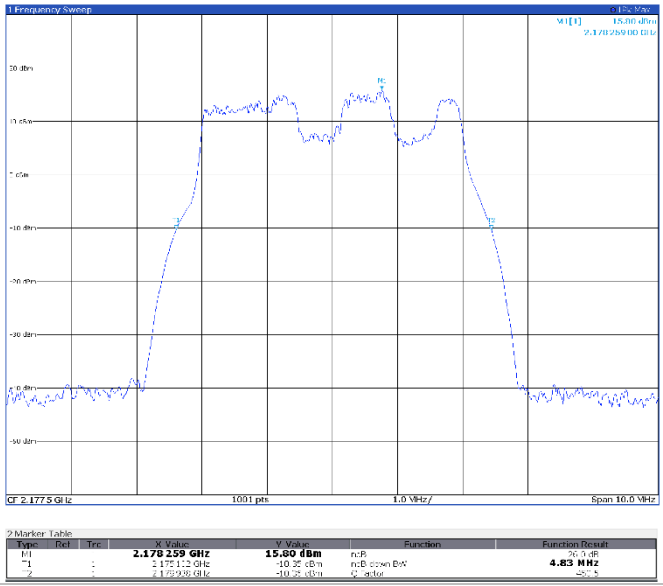
TM3p3, 5 MHz, low channel



TM3p3, 5 MHz, mid channel

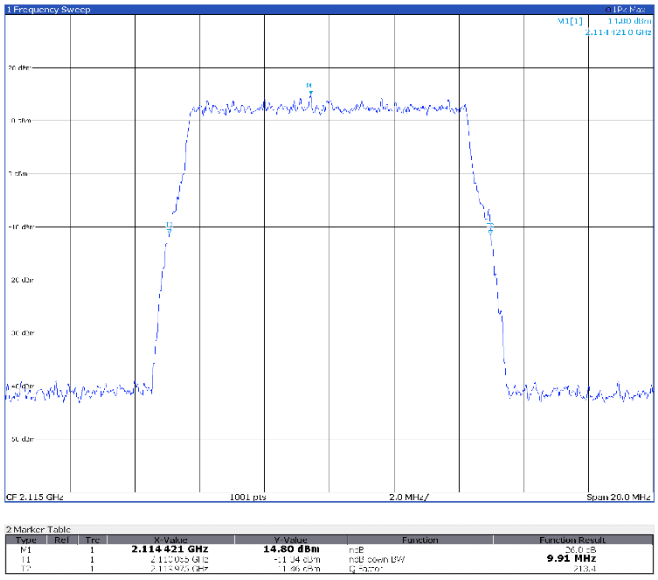


TM3p3, 5 MHz, high channel

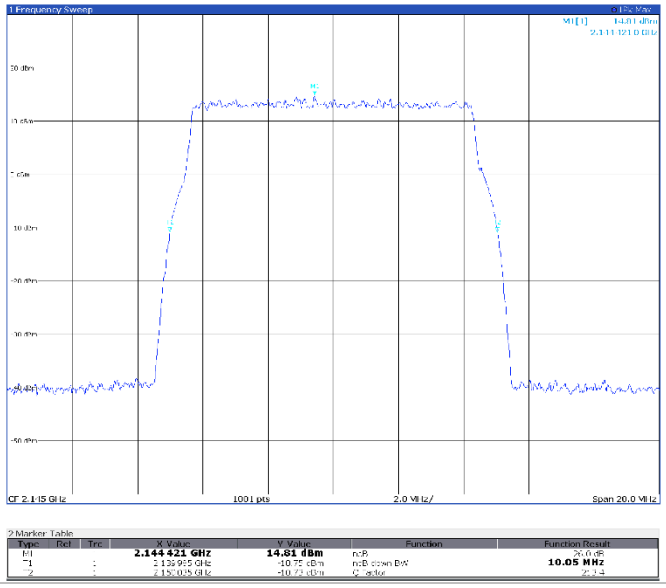


Band n66 | **10 MHz**

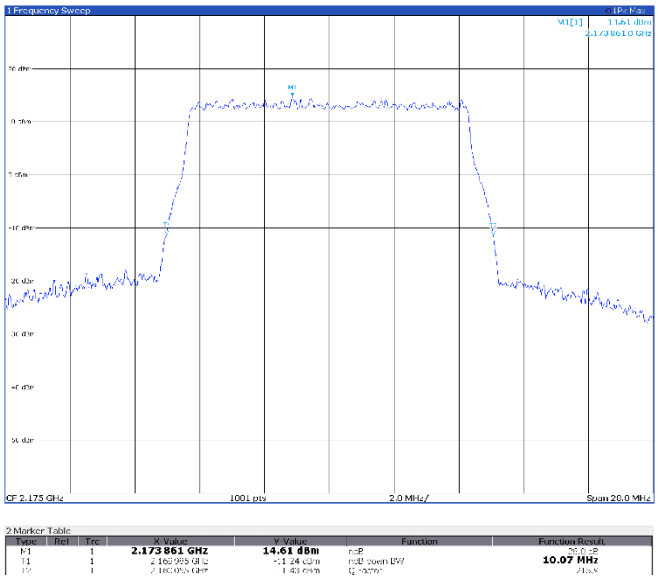
TM1.1, 10 MHz, low channel



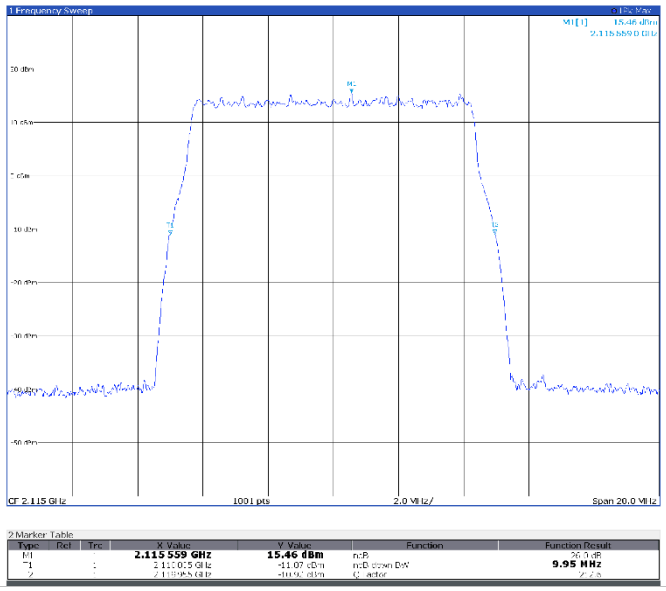
TM1.1, 10 MHz, mid channel



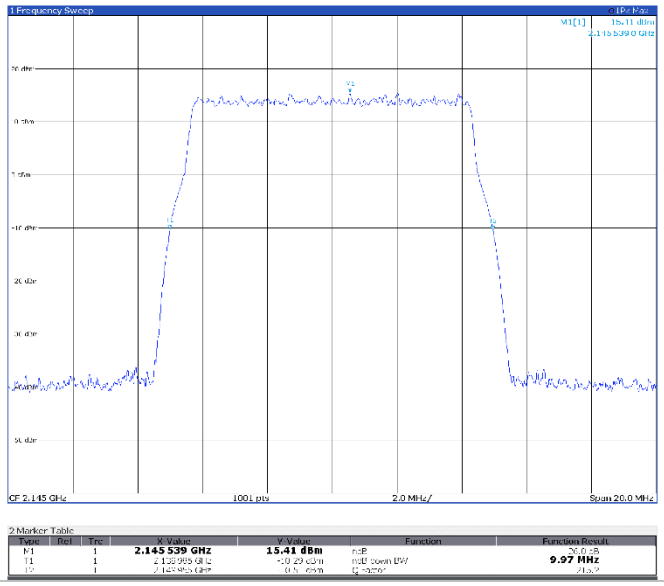
TM1.1, 10 MHz, high channel



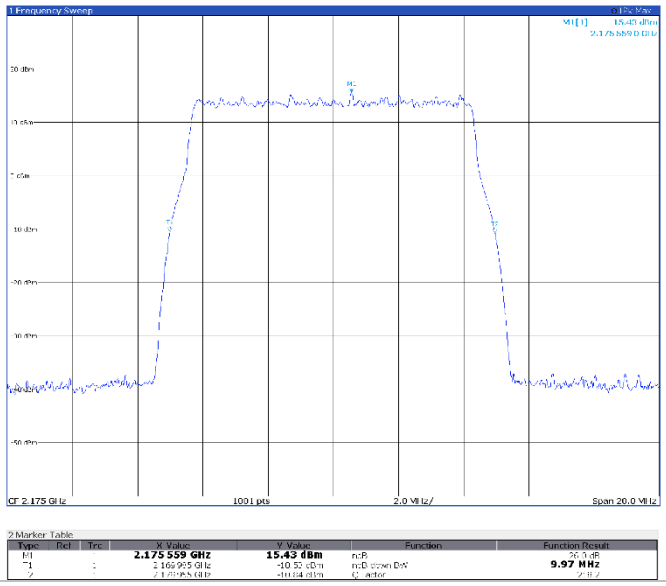
TM3p1, 10 MHz, low channel



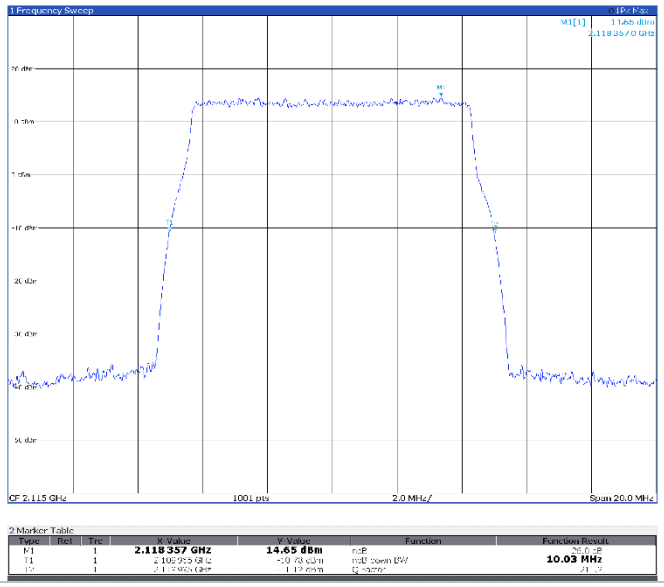
TM3p1, 10 MHz, mid channel



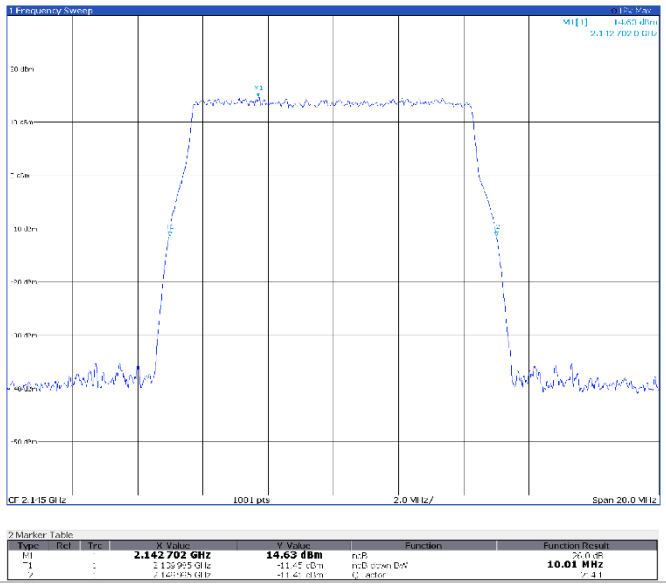
TM3p1, 10 MHz, high channel



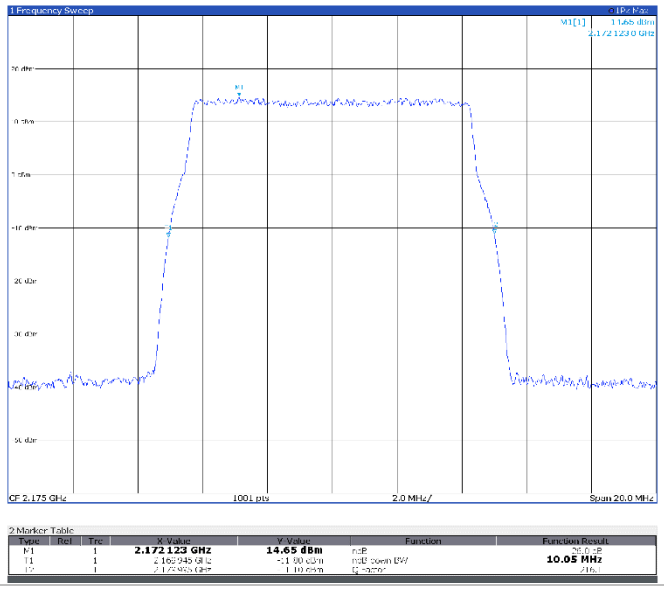
TM3p1a, 10 MHz, low channel



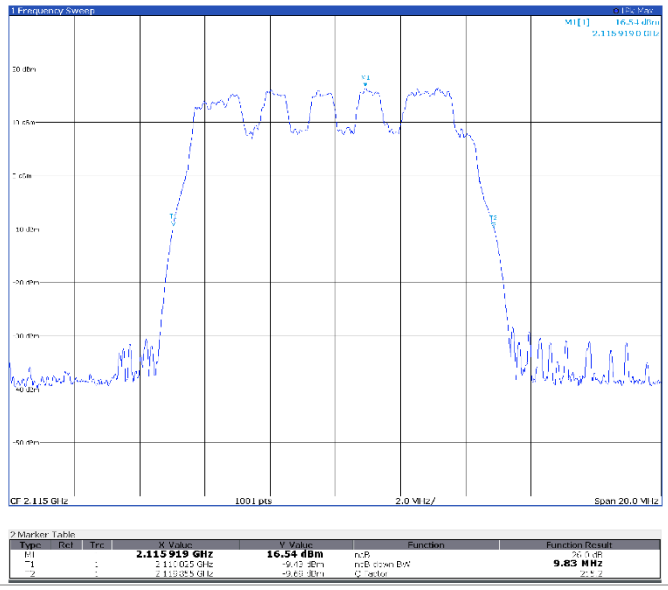
TM3p1a, 10 MHz, mid channel



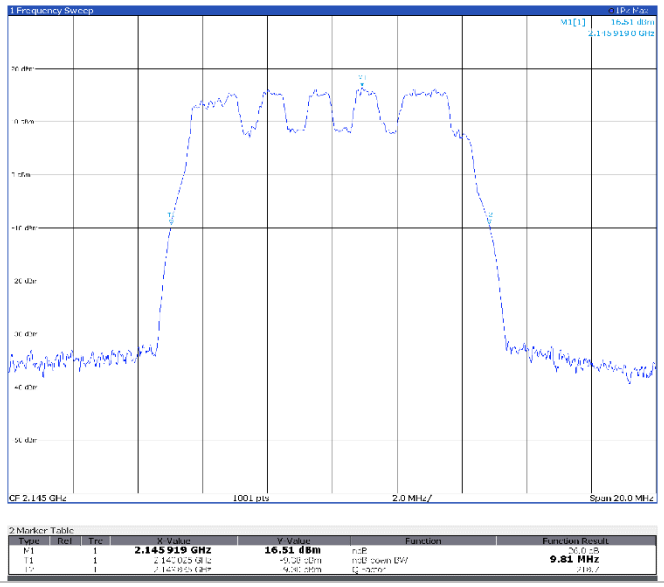
TM3p1a, 10 MHz, high channel



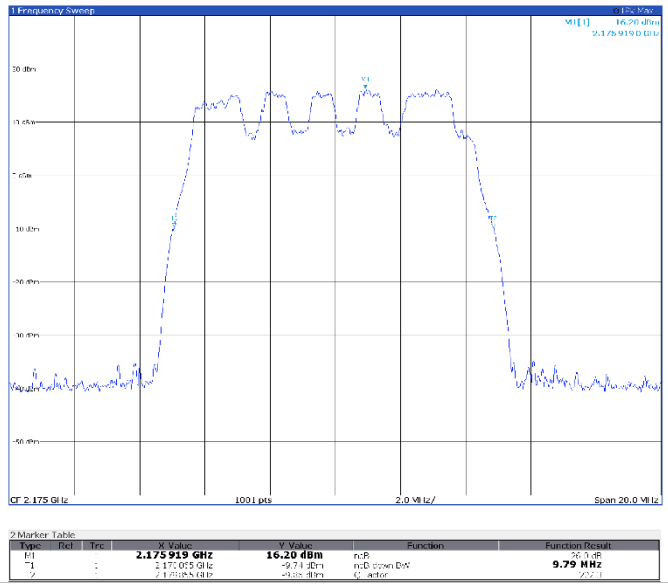
TM3p3, 10 MHz, low channel



TM3p3, 10 MHz, mid channel

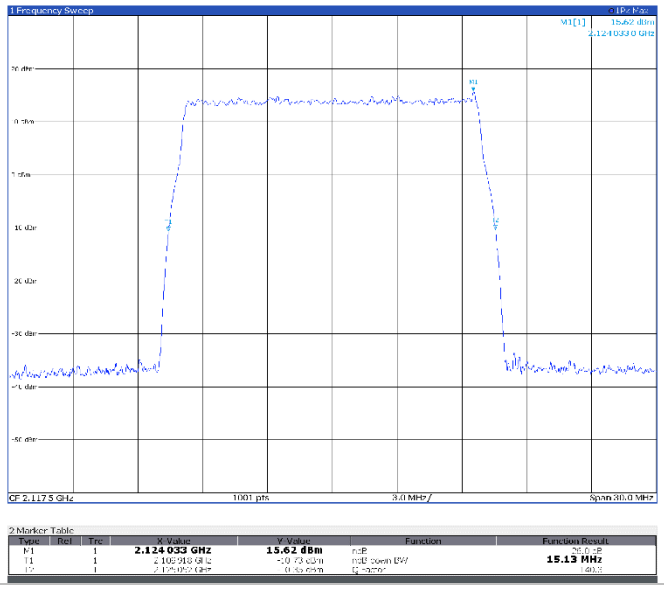


TM3p3, 10 MHz, high channel

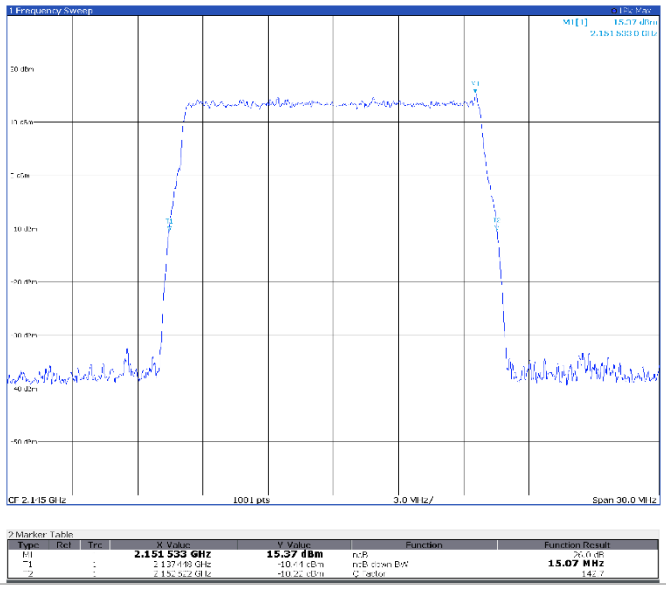


Band n66 | **15 MHz**

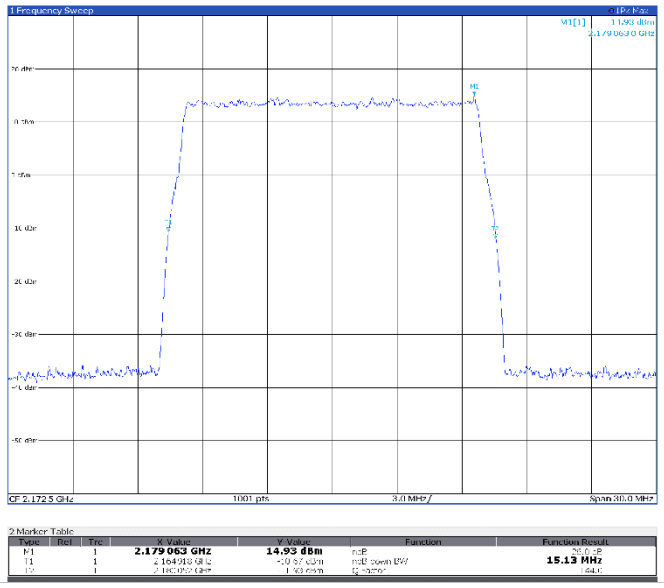
TM1.1, 15 MHz, low channel



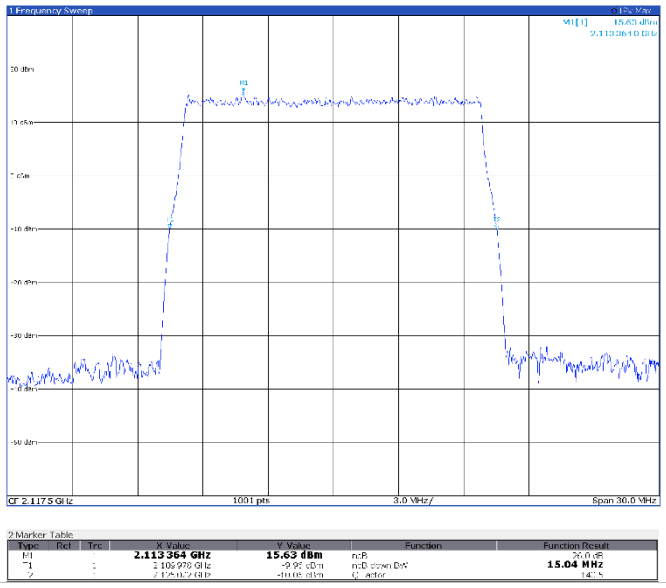
TM1.1, 15 MHz, mid channel



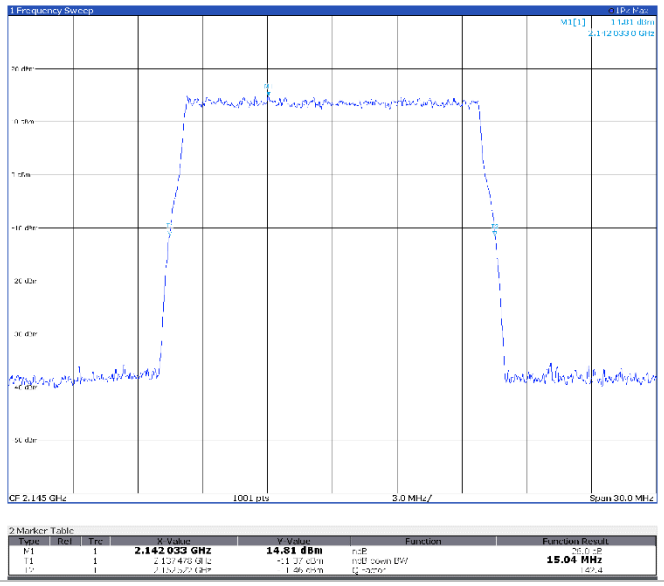
TM1.1, 15 MHz, high channel



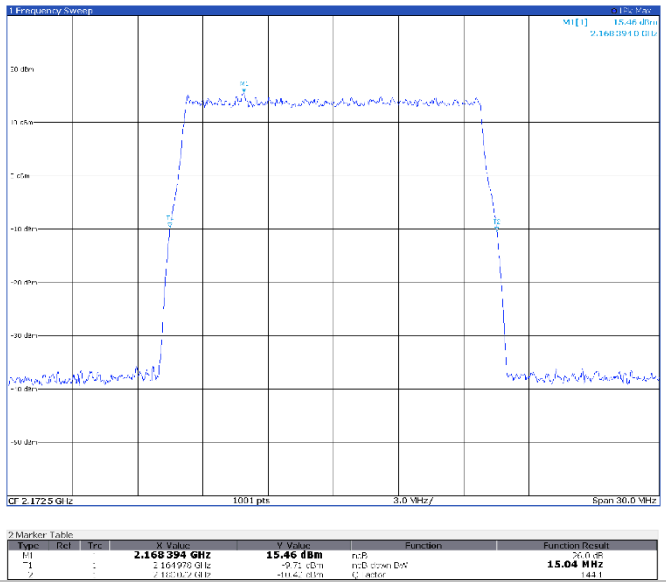
TM3p1, 15 MHz, low channel



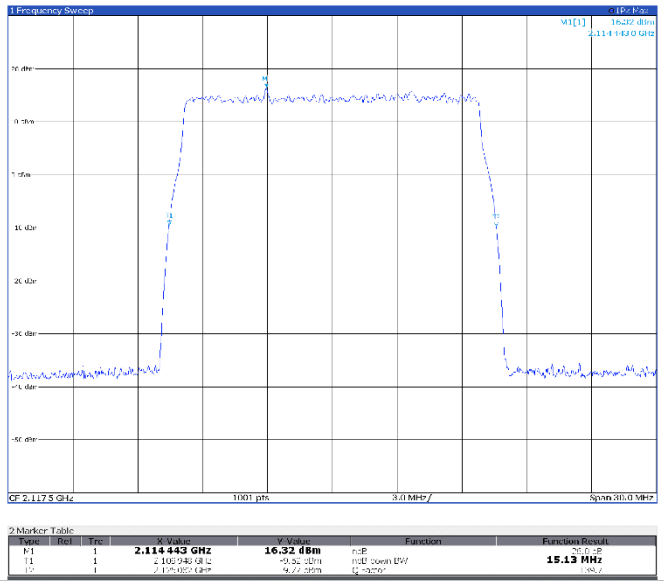
TM3p1, 15 MHz, mid channel



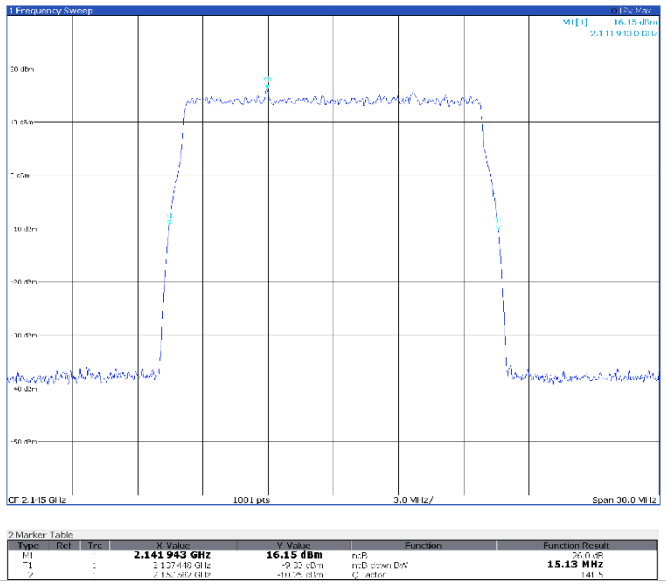
TM3p1, 15 MHz, high channel



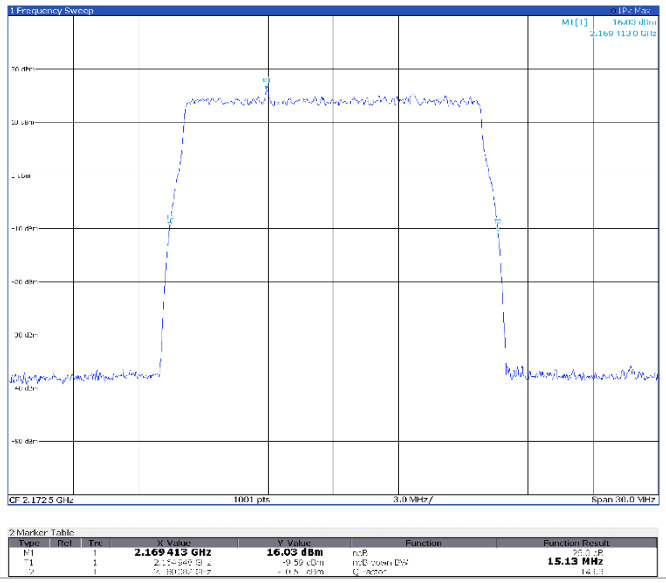
TM3p1a, 15 MHz, low channel



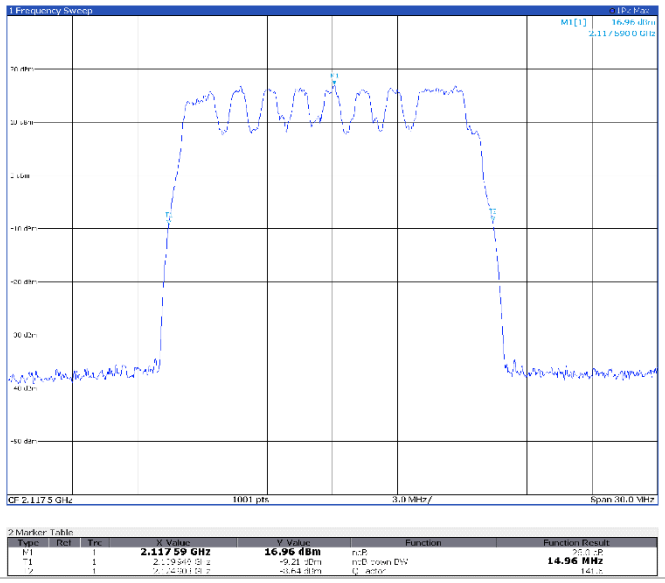
TM3p1a, 15 MHz, mid channel



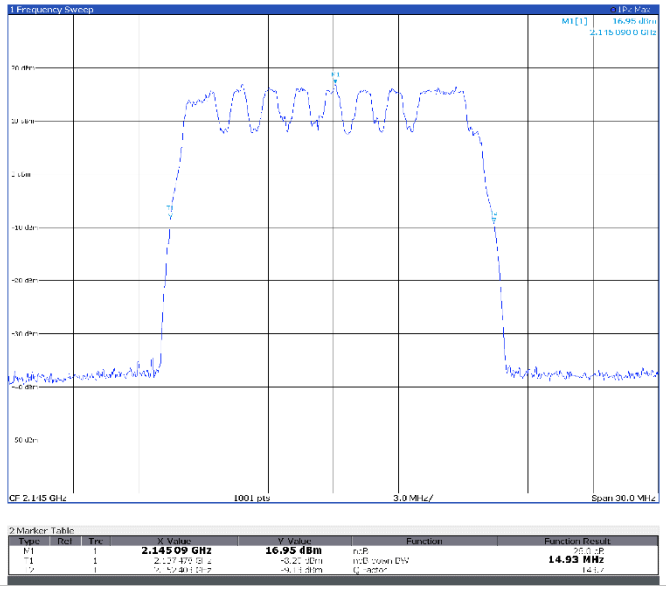
TM3p1a, 15 MHz, high channel



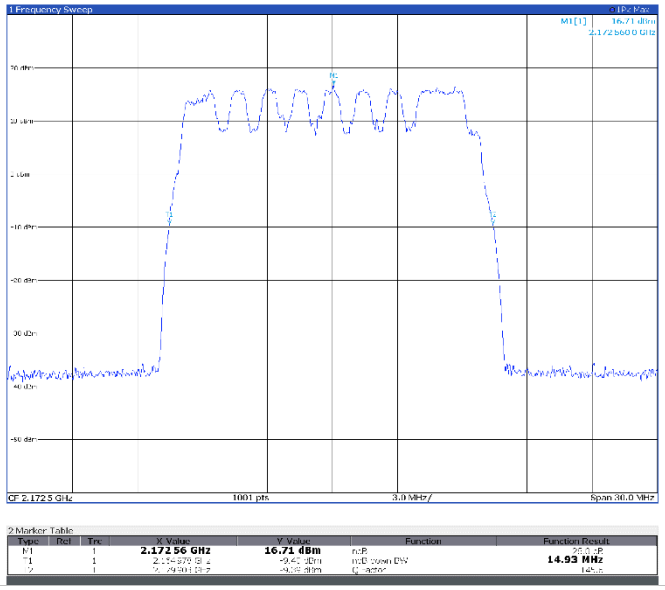
TM3p3, 15 MHz, low channel



TM3p3, 15 MHz, mid channel

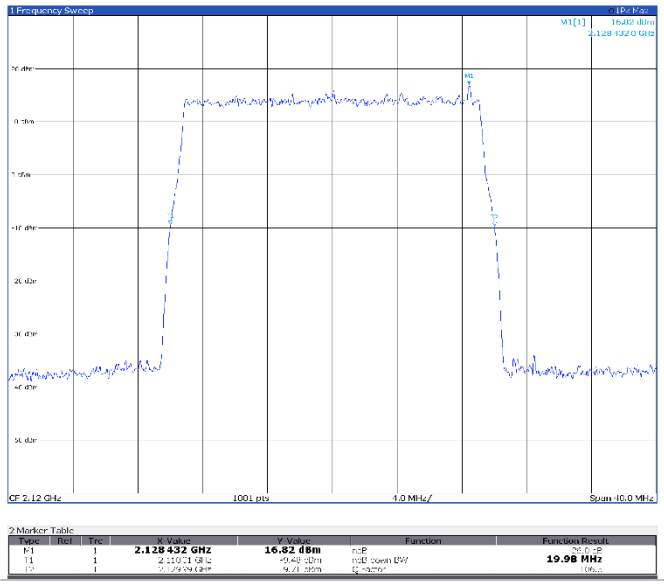


TM3p3, 15 MHz, high channel

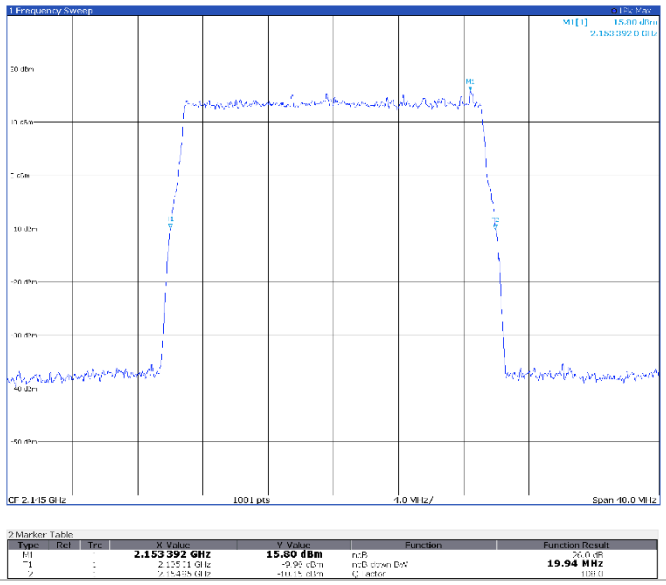


Band n66 | **20 MHz**

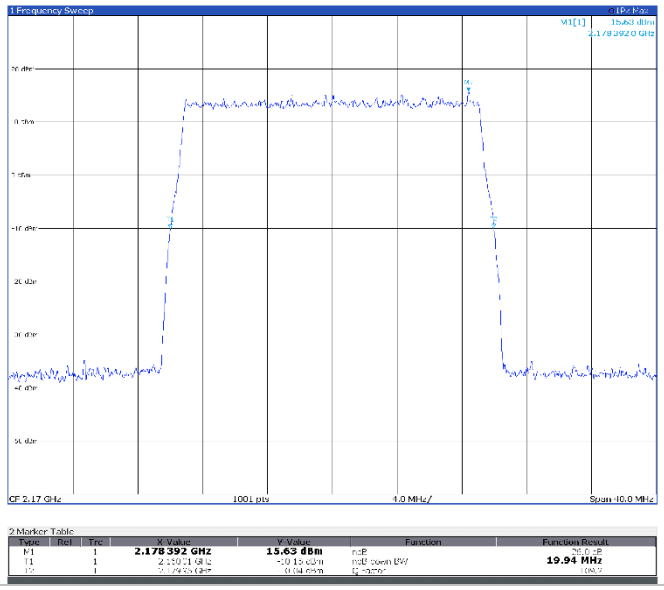
TM1.1, 20 MHz, low channel



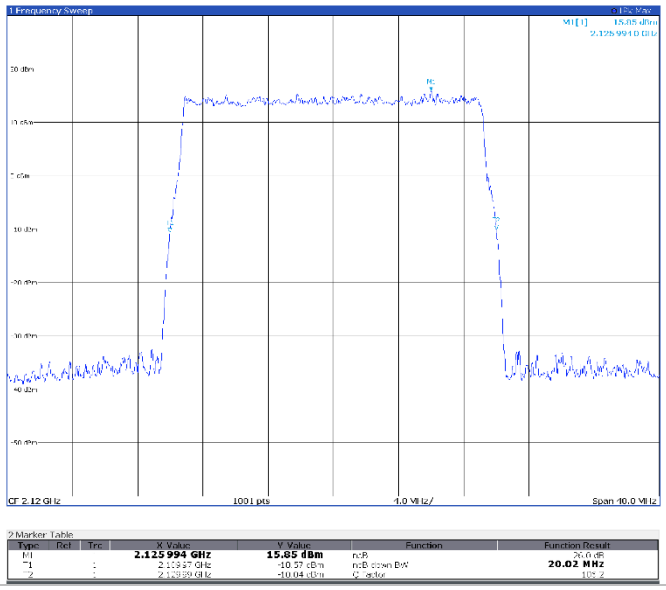
TM1.1, 20 MHz, mid channel



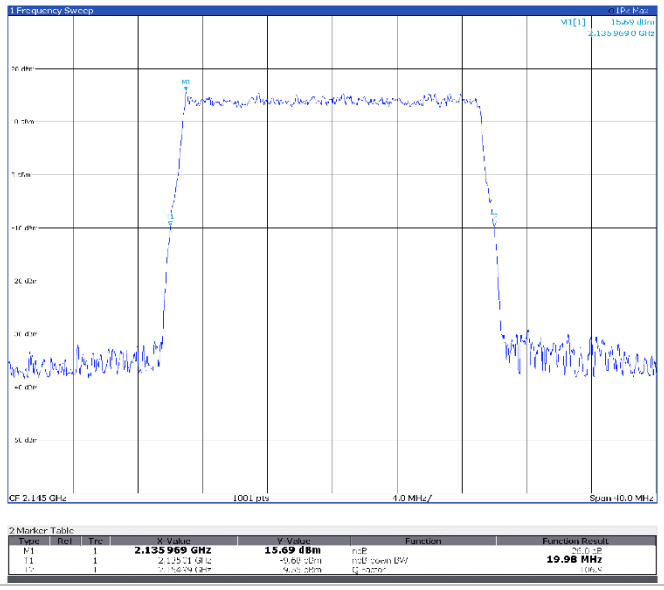
TM1.1, 20 MHz, high channel



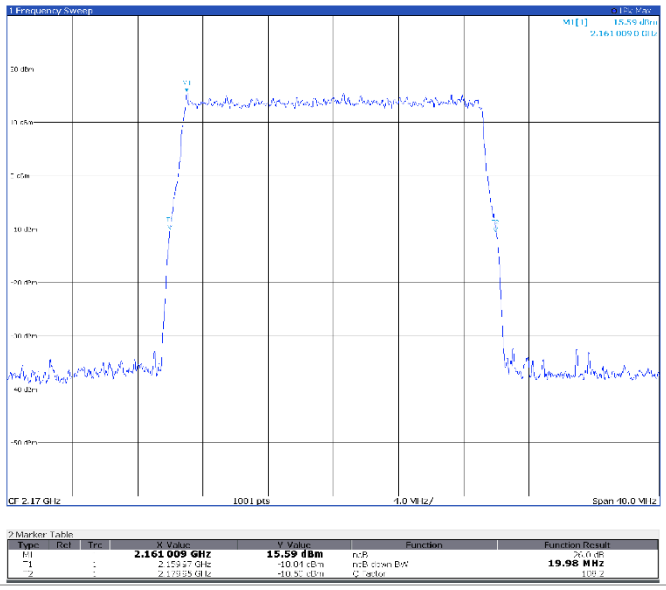
TM3p1, 20 MHz, low channel



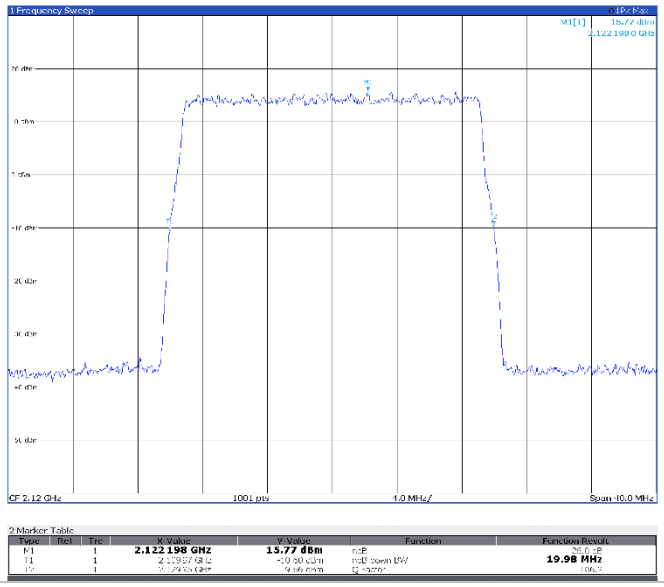
TM3p1, 20 MHz, mid channel



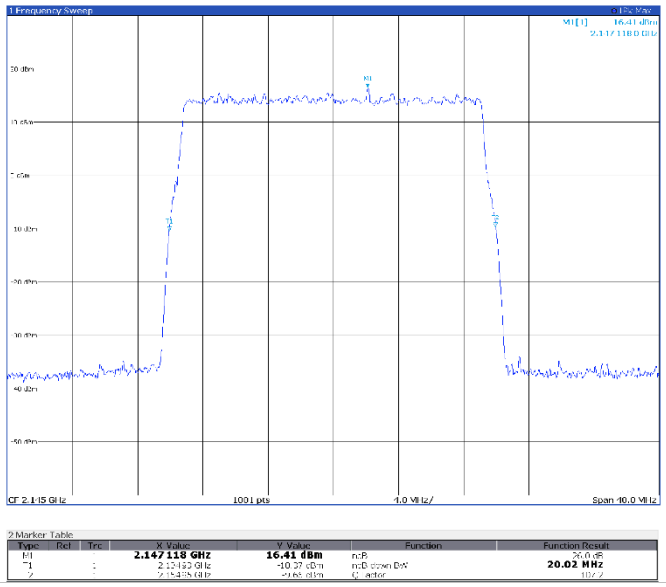
TM3p1, 20 MHz, high channel



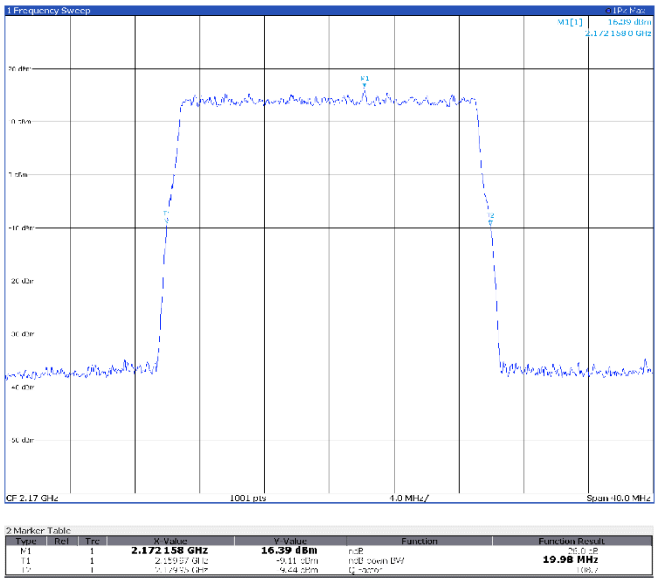
TM3p1a, 20 MHz, low channel



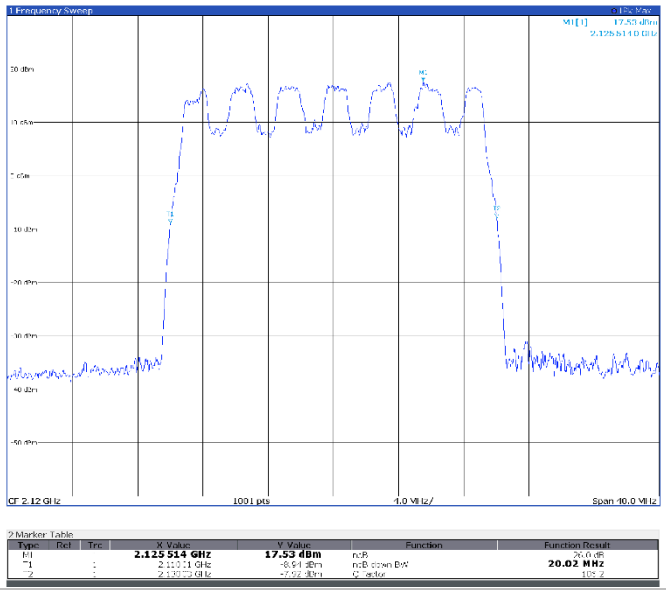
TM3p1a, 20 MHz, mid channel



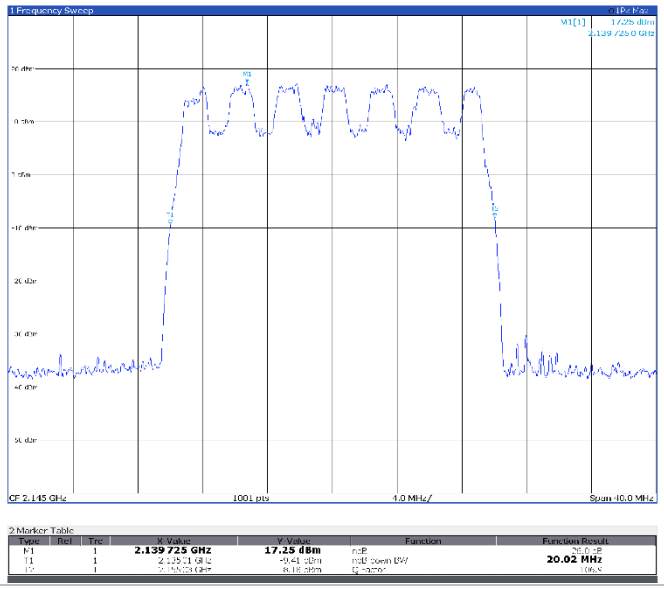
TM3p1a, 20 MHz, high channel



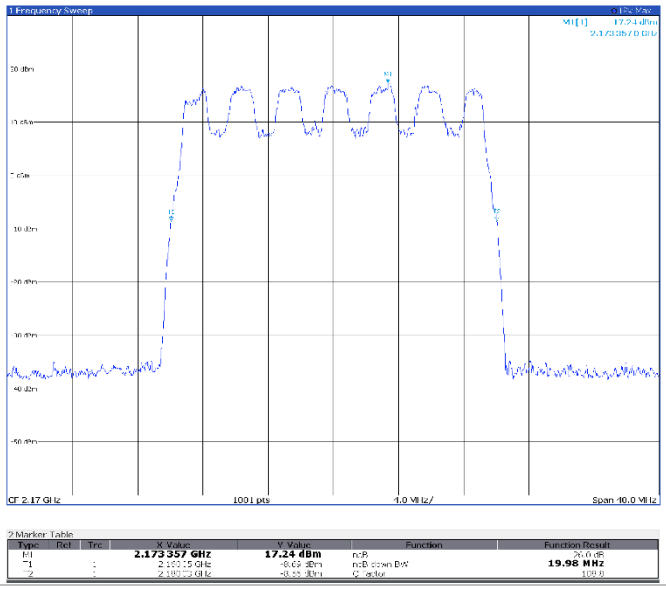
TM3p3, 20 MHz, low channel



TM3p3, 20 MHz, mid channel



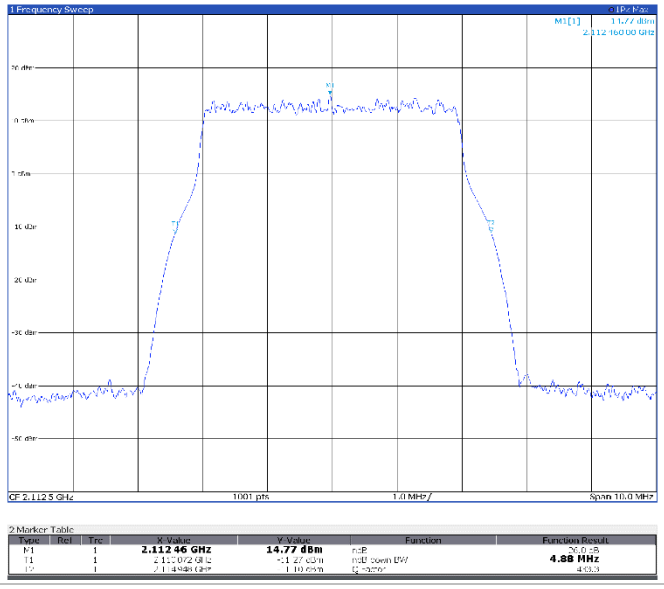
TM3p3, 20 MHz, high channel



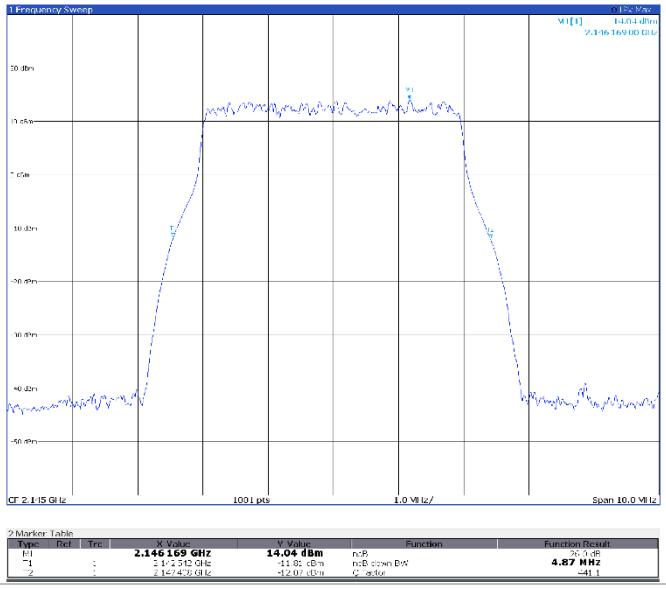
Antenna port 2

Band n66	5 MHz

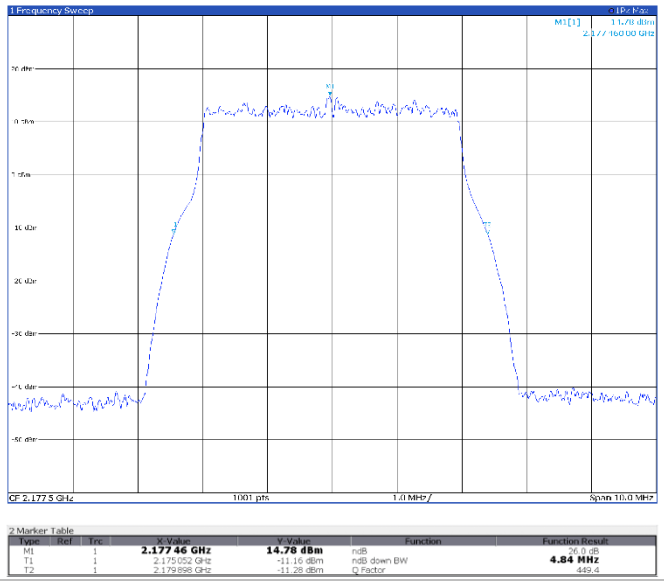
TM1.1, 5 MHz, low channel



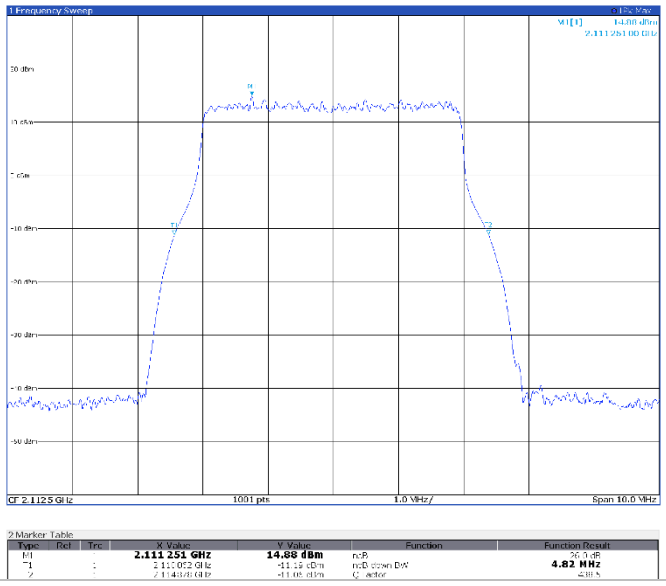
TM1.1, 5 MHz, mid channel



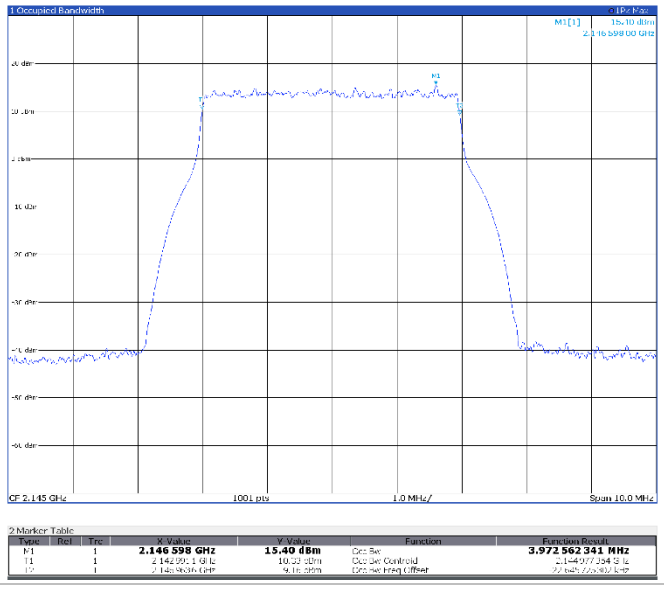
TM1.1, 5 MHz, high channel



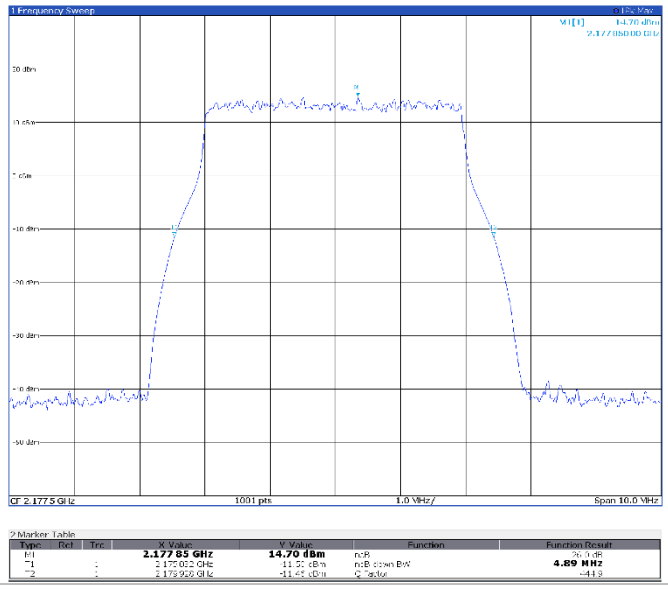
TM3p1, 5 MHz, low channel



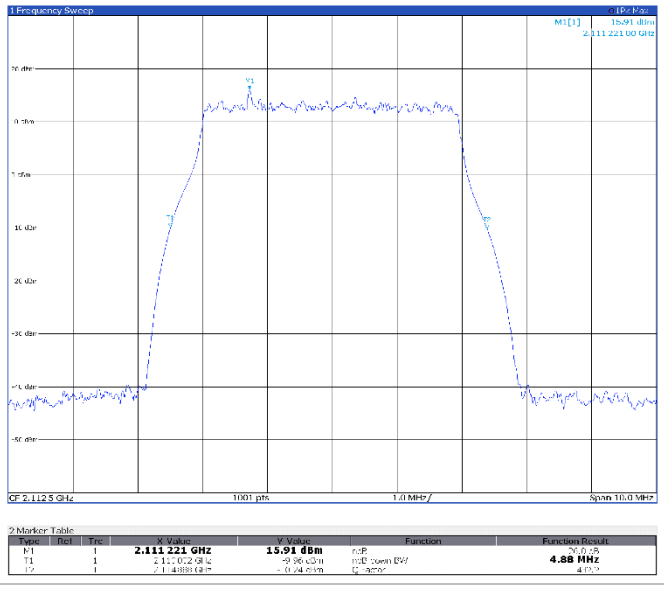
TM3p1, 5 MHz, mid channel



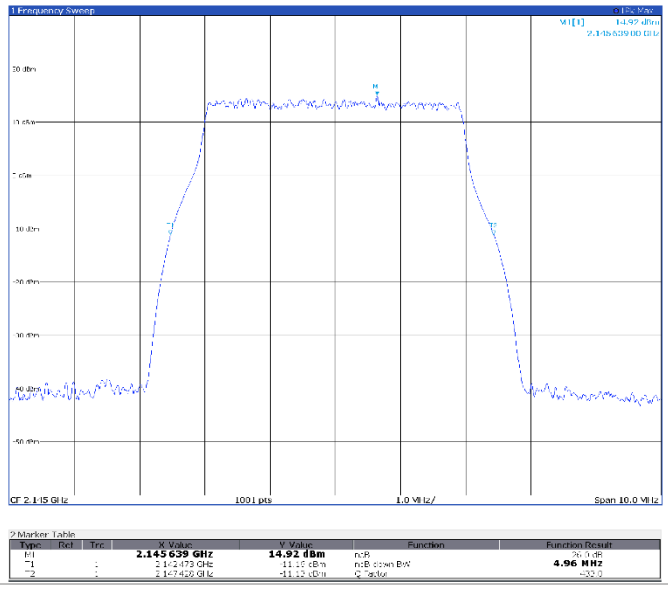
TM3p1, 5 MHz, high channel



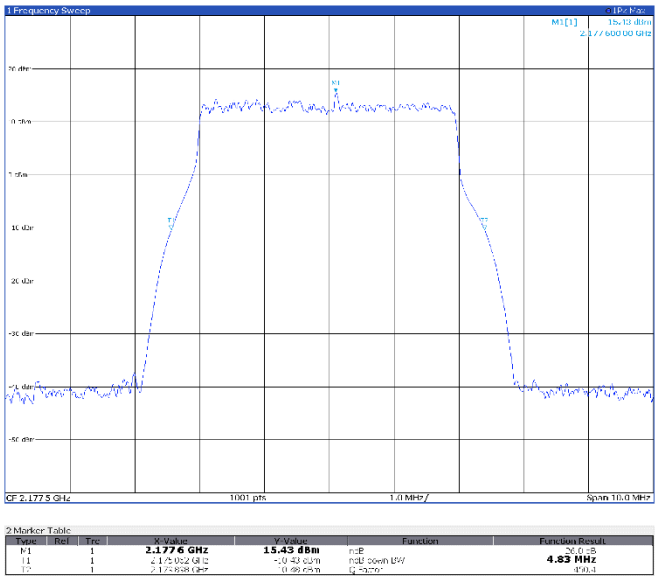
TM3p1a, 5 MHz, low channel



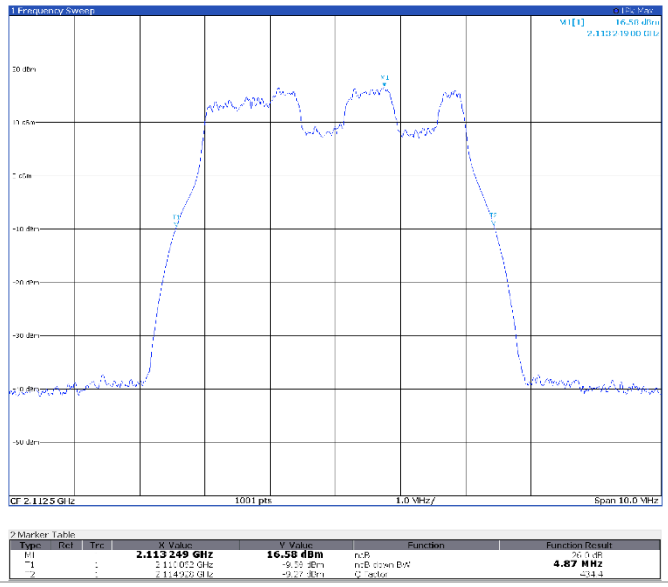
TM3p1a, 5 MHz, mid channel



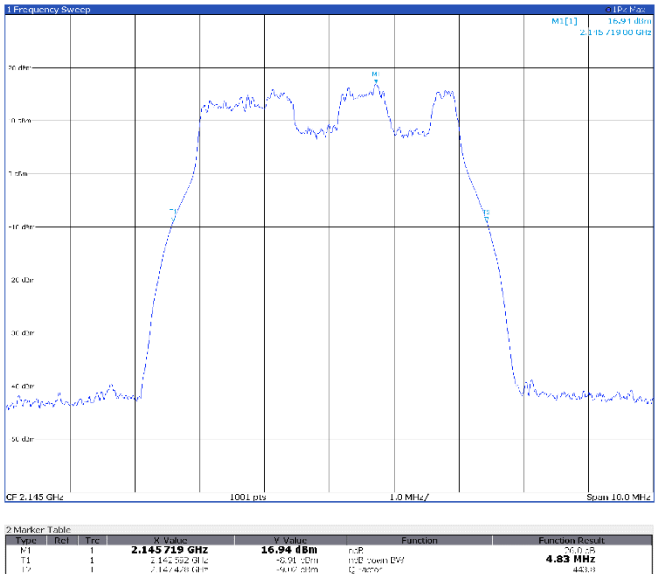
TM3p1a, 5 MHz, high channel



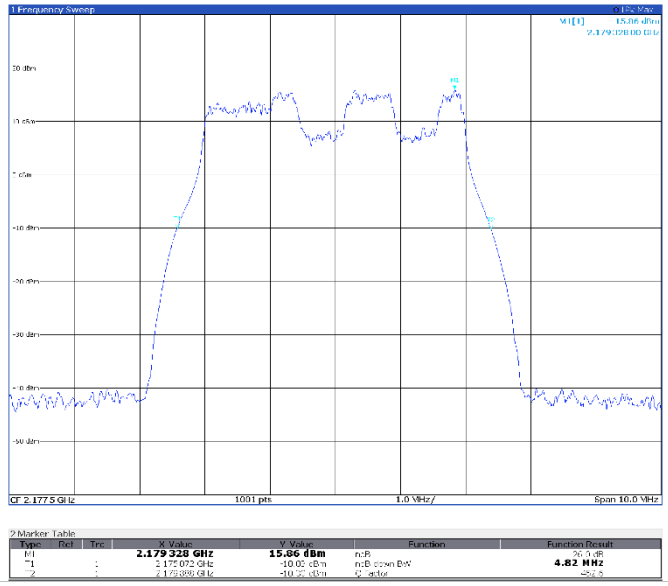
TM3p3, 5 MHz, low channel



TM3p3, 5 MHz, mid channel

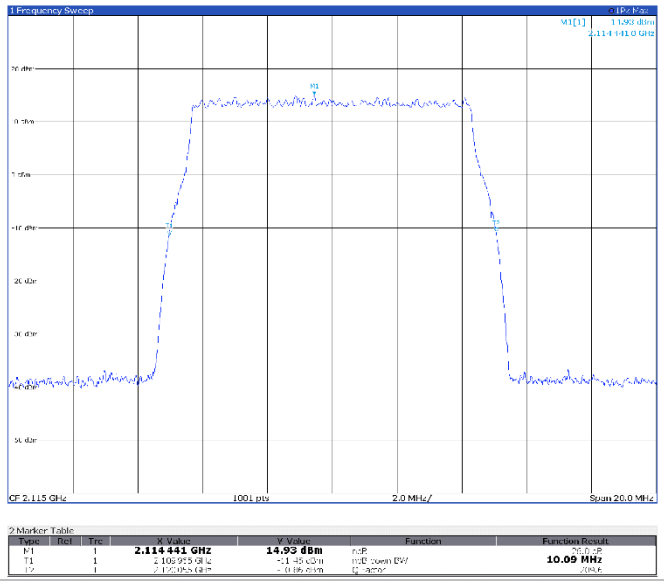


TM3p3, 5 MHz, high channel

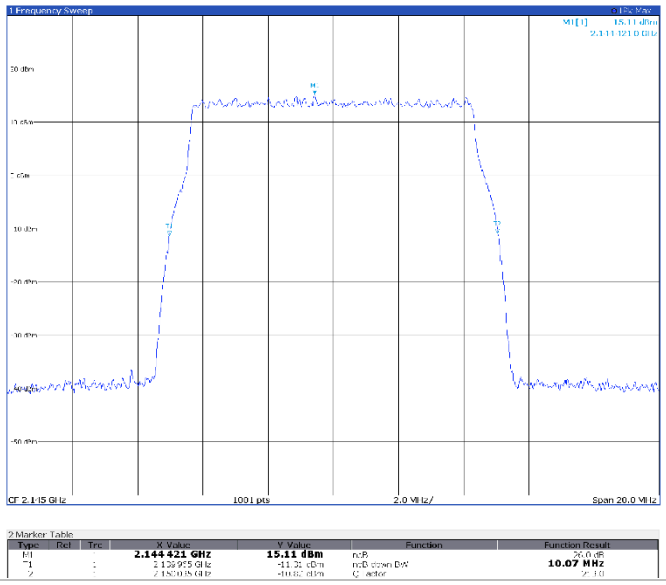


Band n66 | **10 MHz**

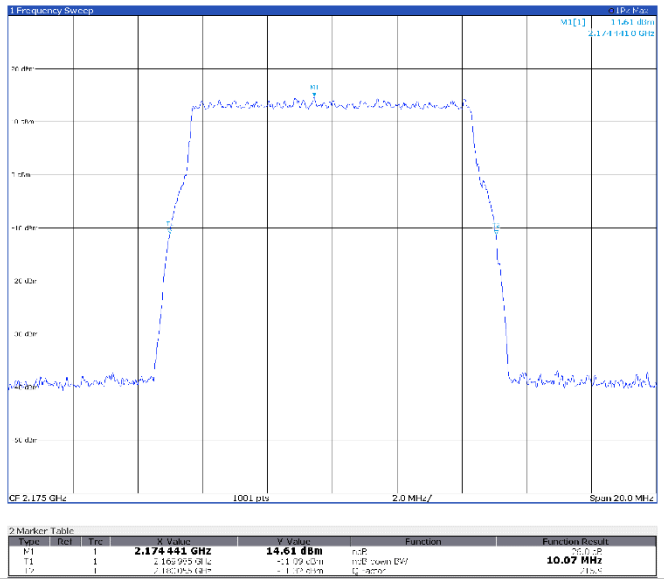
TM1.1, 10 MHz, low channel



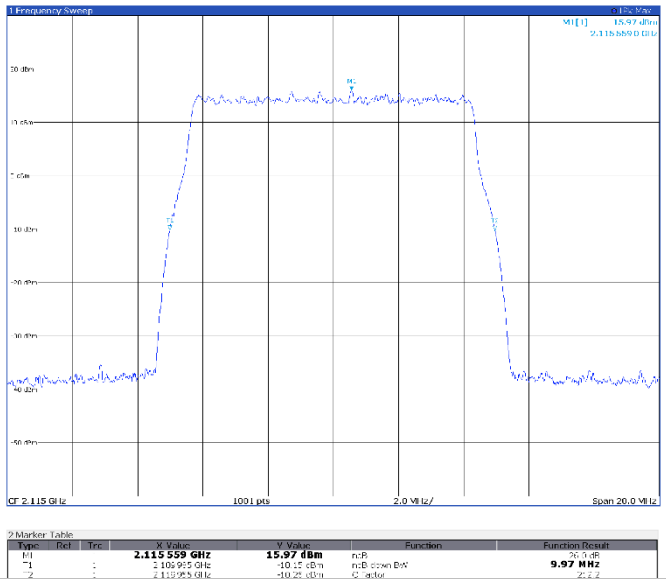
TM1.1, 10 MHz, mid channel



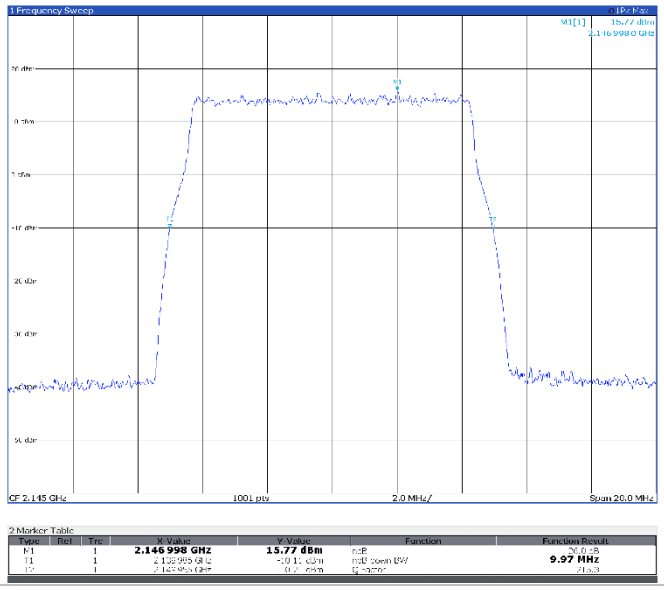
TM1.1, 10 MHz, high channel



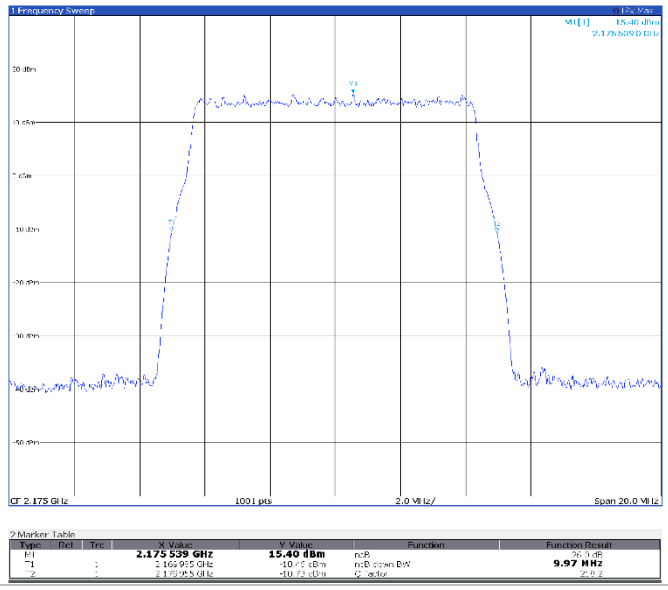
TM3p1, 10 MHz, low channel



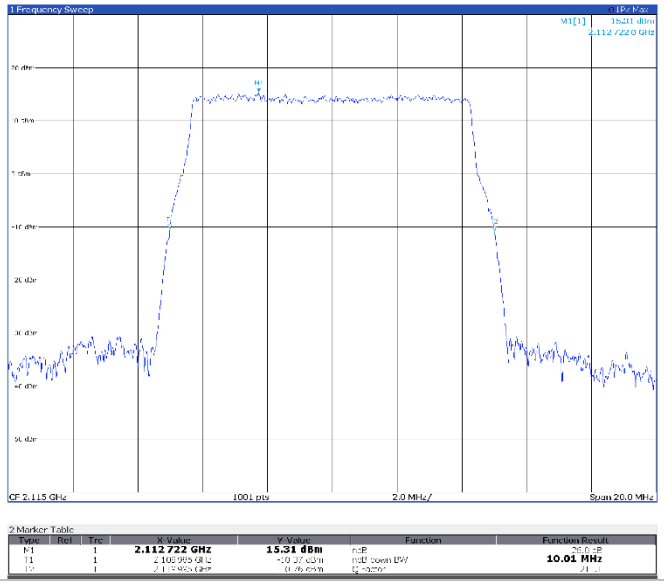
TM3p1, 10 MHz, mid channel



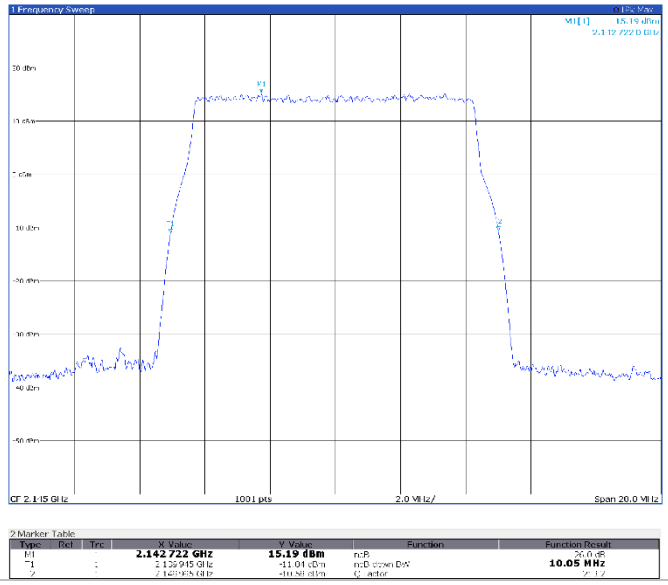
TM3p1, 10 MHz, high channel



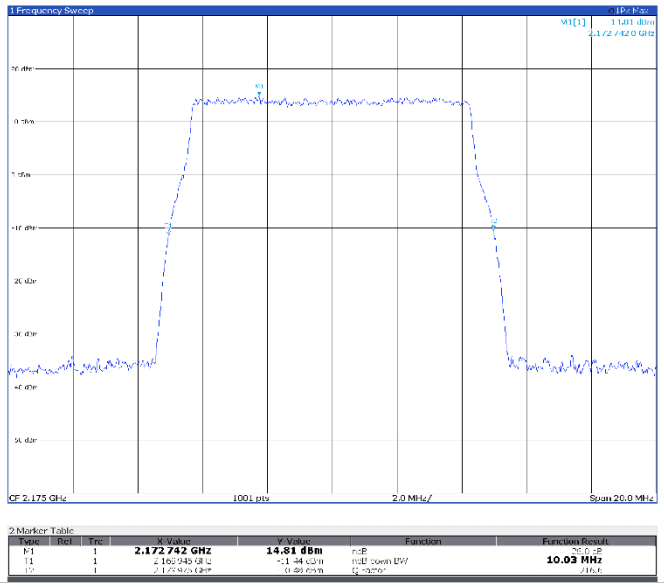
TM3p1a, 10 MHz, low channel



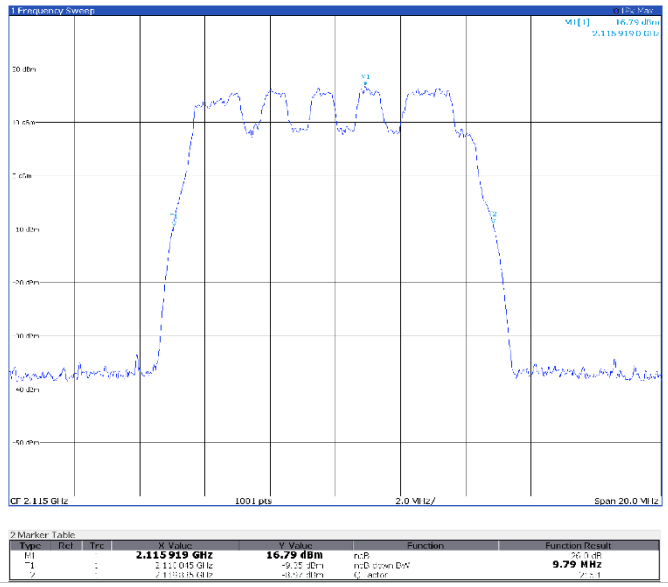
TM3p1a, 10 MHz, mid channel



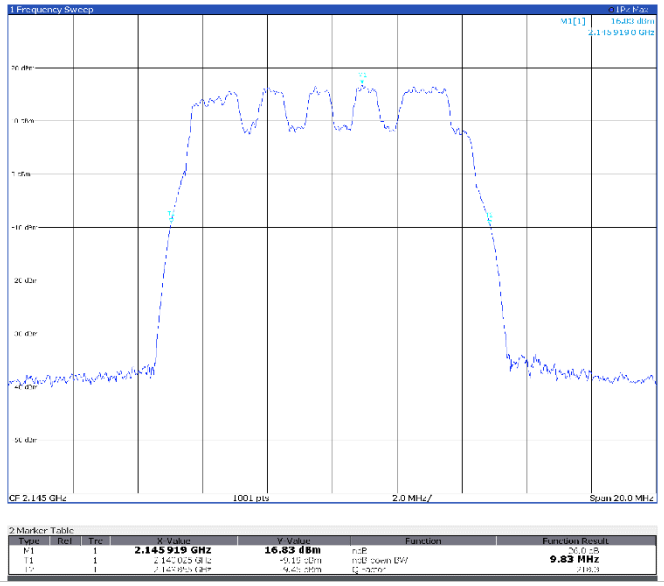
TM3p1a, 10 MHz, high channel



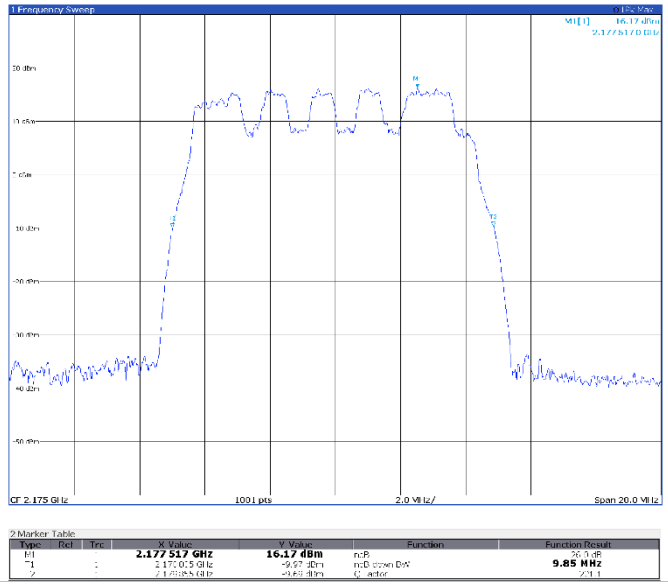
TM3p3, 10 MHz, low channel



TM3p3, 10 MHz, mid channel

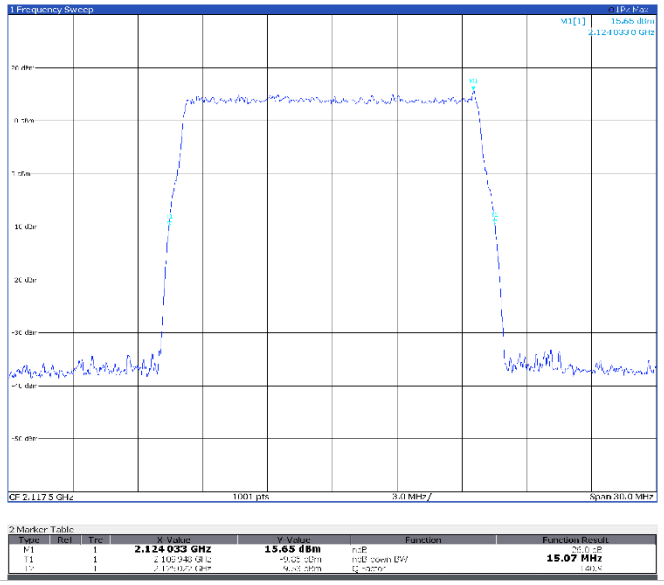


TM3p3, 10 MHz, high channel

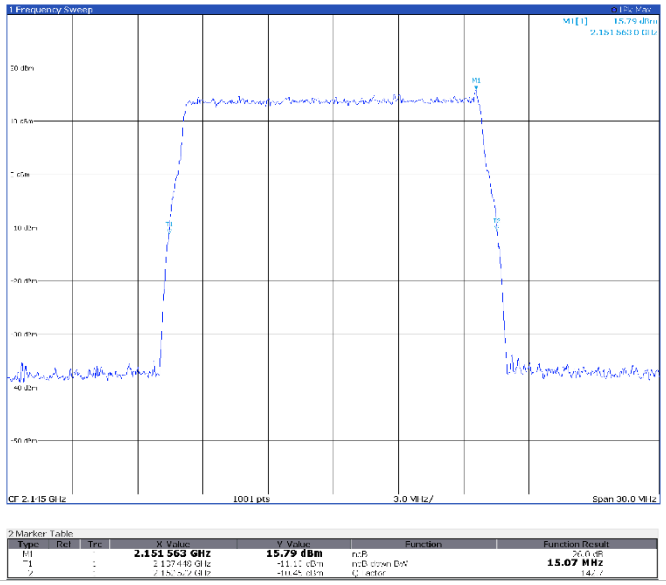


Band n66 | **15 MHz**

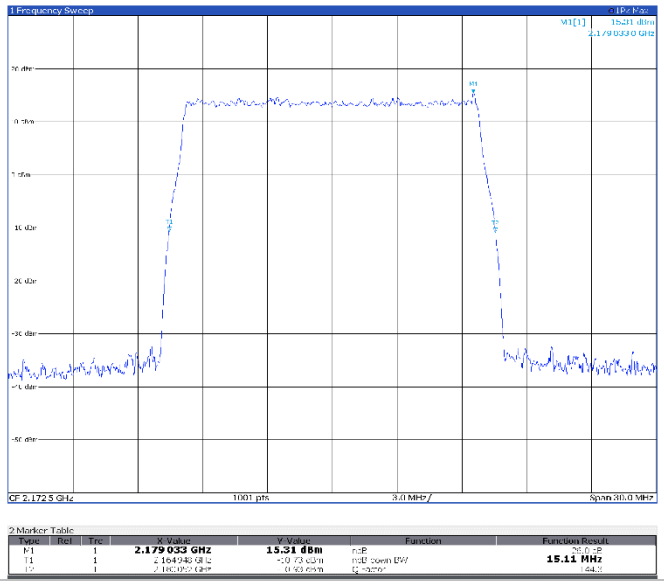
TM1.1, 15 MHz, low channel



TM1.1, 15 MHz, mid channel



TM1.1, 15 MHz, high channel



TM3p1, 15 MHz, low channel