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Test Report

REP155885

Date of issue: March 20, 2026

Applicant:

Andrew Wireless Systems GmbH
Industriering, 10
86675 Buchdorf – Germany

Product:

Industrial Booster

Model:

CAP H2 34T/37T F-AC-F1

FCC ID:

XS5-H23437HP

Specifications:

- FCC 47 CFR Part 27
  Miscellaneous Wireless Communications Services

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Lab locations

Company name	Nemko Spa
Address	Via del Carroccio, 4
City	Biassono
Province	MB
Postal code	20853
Country	Italy
Telephone	+39 039 220 12 01
Facsimile	+39 039 220 12 21
Website	www.nemko.com
Site number	FCC: 682159

Tested by	P. Barbieri
Test engineer signature	Firmato digitalmente da Barbieri Paolo
Reviewed by	R. Giampaglia
Reviewer signature	Roberto Giampaglia

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 S.p.A. ISO/IEC 17025 accreditation.

Copyright notification

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Section 1 Report summary

1.1 Applicant and manufacturer

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

1.2 Test specifications

FCC 47 CFR Part 2	Frequency Allocations and Radio Treaty Maters; General Rules and Regulations
FCC 47 CFR Part 27	Miscellaneous wireless communications services

1.3 Test methods

ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
KDB 935210 D05	Indus Booster Basic Meas v01r04
KDB 662911 D01	Multiple Transmitter Output v02r01
KDB 662911 D02	MIMO with Cross-Polarized Antennas v01

1.4 Statement of compliance

In the configuration tested, the EUT was found compliant.

Testing was performed against all relevant requirements of the test standard except as noted in section 1.3 above. 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.

1.5 Exclusions

None

1.6 Test report revision history

Table 1.6-1: *Test report revision history*

Revision #	Date of issue	Details of changes made to test report
REP155885	March 20, 2026	Original report issued

Section 2 Summary of test results

2.1 Testing location

Test location (s)	Nemko Spa Via del Carroccio, 4 – 20853 Biassono (MB) - Italy

2.2 Testing period

Test start date	March 9, 2026	Test end date	March 20, 2026

2.3 Sample information

Receipt date	March 9, 2026	Nemko sample ID number(s)	PRJ00986820001

2.4 FCC Part 27 test requirements results

Table 2.4-1: *FCC requirements results*

Part	Method (clause)	Test description	Verdict
--	KDB935210 (3.2)	Measuring AGC threshold level	Pass
--	KDB935210 (3.3)	Out-of-band-rejection	Pass
--	KDB935210 (3.4)	Input-versus-output signal comparison	Pass
FCC 27.50(j)	KDB935210 (3.5)	Mean output power and amplifier/booster gain	Pass
FCC 27.53(l)	KDB935210 (3.6.2)	Out-of-band/out-of-block emissions conducted measurements	Pass
FCC 27.53(l)	KDB935210 (3.6.3)	Spurious emissions conducted measurements	Pass
--	KDB935210 (3.7)	Frequency stability measurements	Not applicable
FCC 27.53(l)	KDB935210 (3.8)	Spurious emissions radiated measurements	Pass

Notes:

Section 3 Equipment under test (EUT) details

3.1 Sample information

Receipt date	March 10, 2026
Nemko sample ID number	PRJ00986820001

3.2 EUT information

Product name	Industrial Booster
Model	CAP H2 34T/37T F-AC-F1
Model variant	--
Serial number	BGH2AA2610001

3.3 Technical information

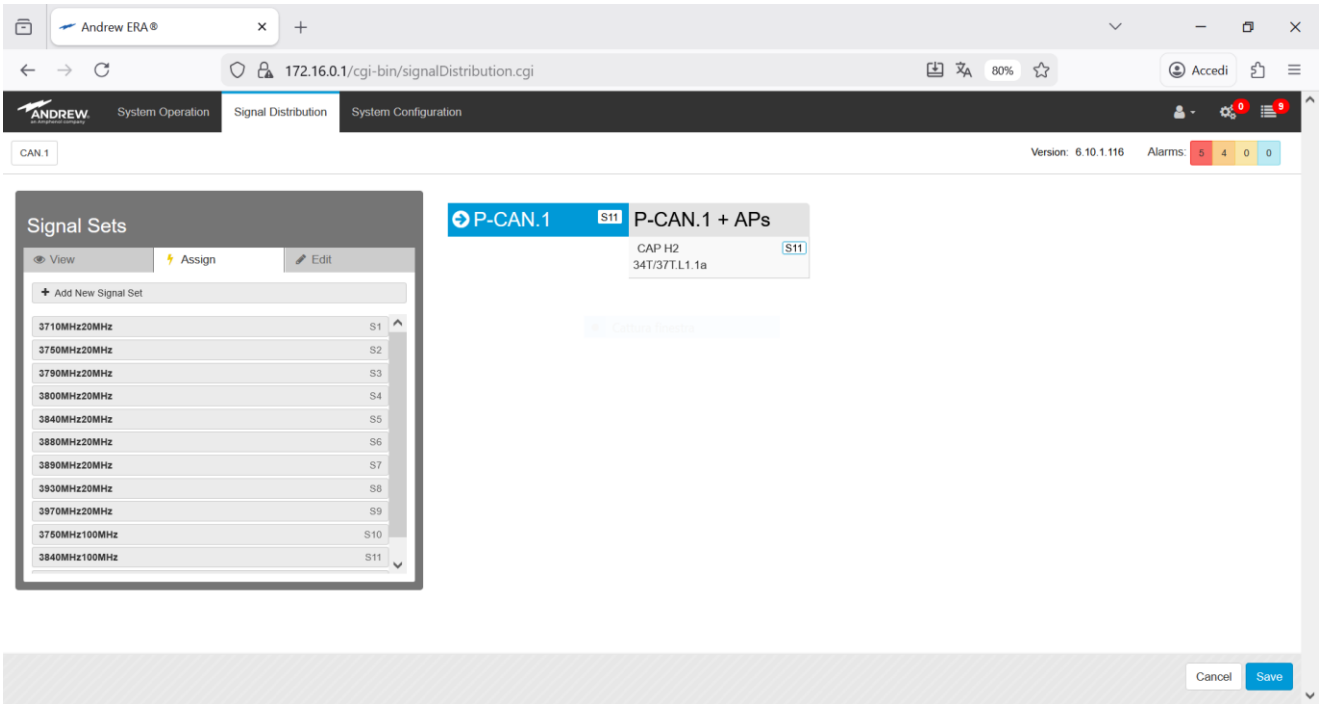
Frequency band	3700 to 3980 MHz
Frequency Min (MHz)	3750 MHz
Frequency Max (MHz)	3930 MHz
RF power (W), Conducted	port 1: 32.4 W (45.1 dBm), port 2: 33.1 W (45.2 dBm)
Measured BW (kHz) (20 dB)	100 MHz
Measured BW (kHz) (99%)	95 MHz
Type of modulation	5G NR
Emission classification (F1D, G1D, D1D)	W7D
Transmitter spurious, Units @ distance	-34 dBm @ 3m
Power requirements	100 – 240 Vac 50 – 60 Hz 6 A
Antenna information	RF connector available (antenna not provided)

3.4 Product description and theory of operation

The Era product is a digital distribution system with focus on flexibility, easy installing, commissioning, and reliable operation.
The Era system comprises of two main parts. A base station interface (Master or Head End Unit) that receives RF signals as well as digital signals from the base stations, conditions the signals for the given application and assigns them to the coverage zones.
The coverage side is built of one or more Remote Units/Access Points. The Rus / Aps are connected to the ERA Head End Unit via a 10GBASE-T or 25GBASE-T fiber optical link.
The CAP H 2 is the Second Generation of ERA high power access points supporting up to 6 RF paths. A composite output power per band of 43/45 dBm, supporting DPD and CFR.
RF signals between Master Unit and Remote Units are sent digitally over the fiber optical link. At the receiver side these signals are converted back to analog and amplified to appropriate transmitter power levels.

3.5 EUT exercise details

The EUT has been tested connected to a dedicated server. The following software has been used to configure the EUT:



A signal generator with an AWGN signal with 95 MHz 99% OBW representative of a 100 MHz 5G NR channel has been connected to the RF input of the server. The RF output of the EUT was connected to a spectrum analyzer or a dummy load.

3.6 EUT setup diagram

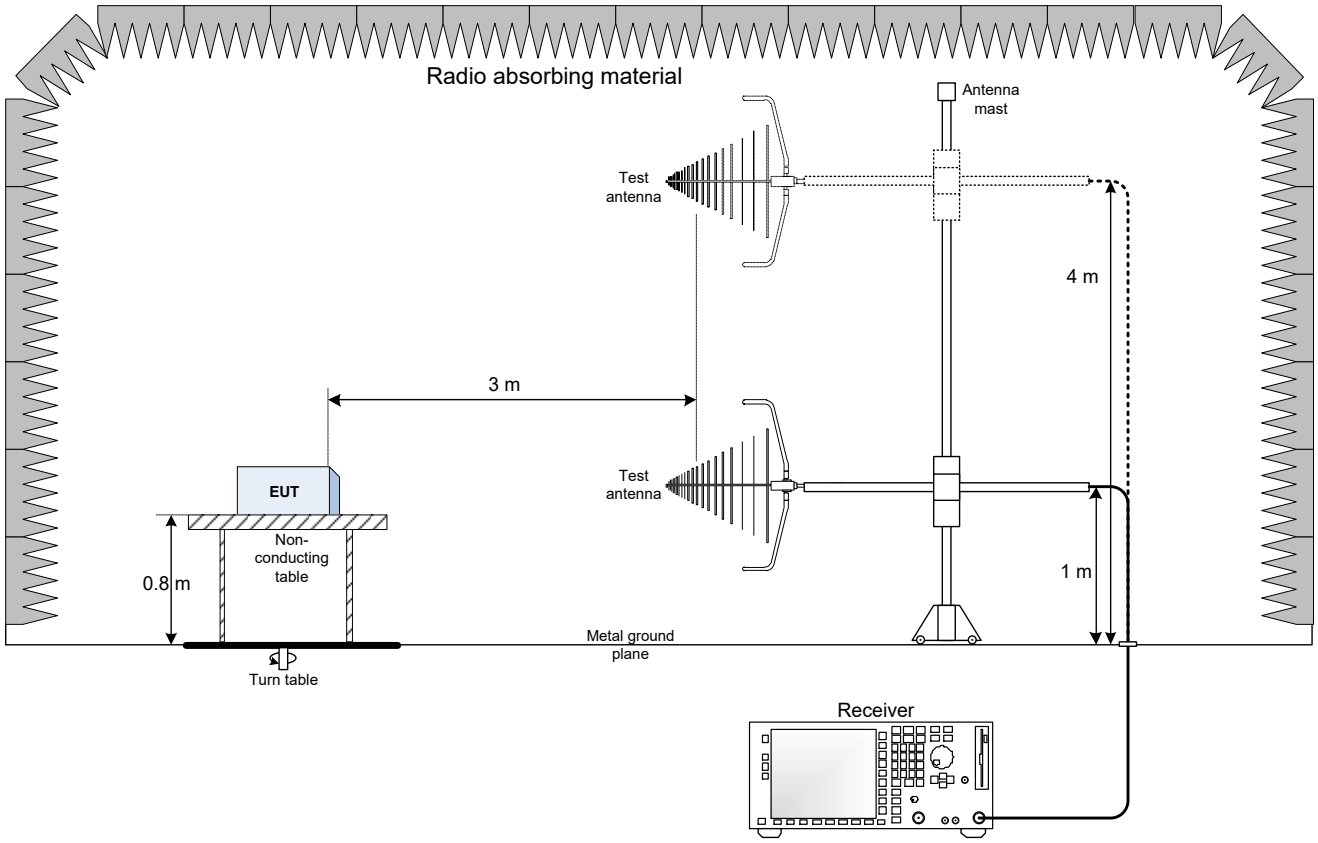


Figure 3.6-1: *Radiated emissions set-up for frequencies below 1 GHz*

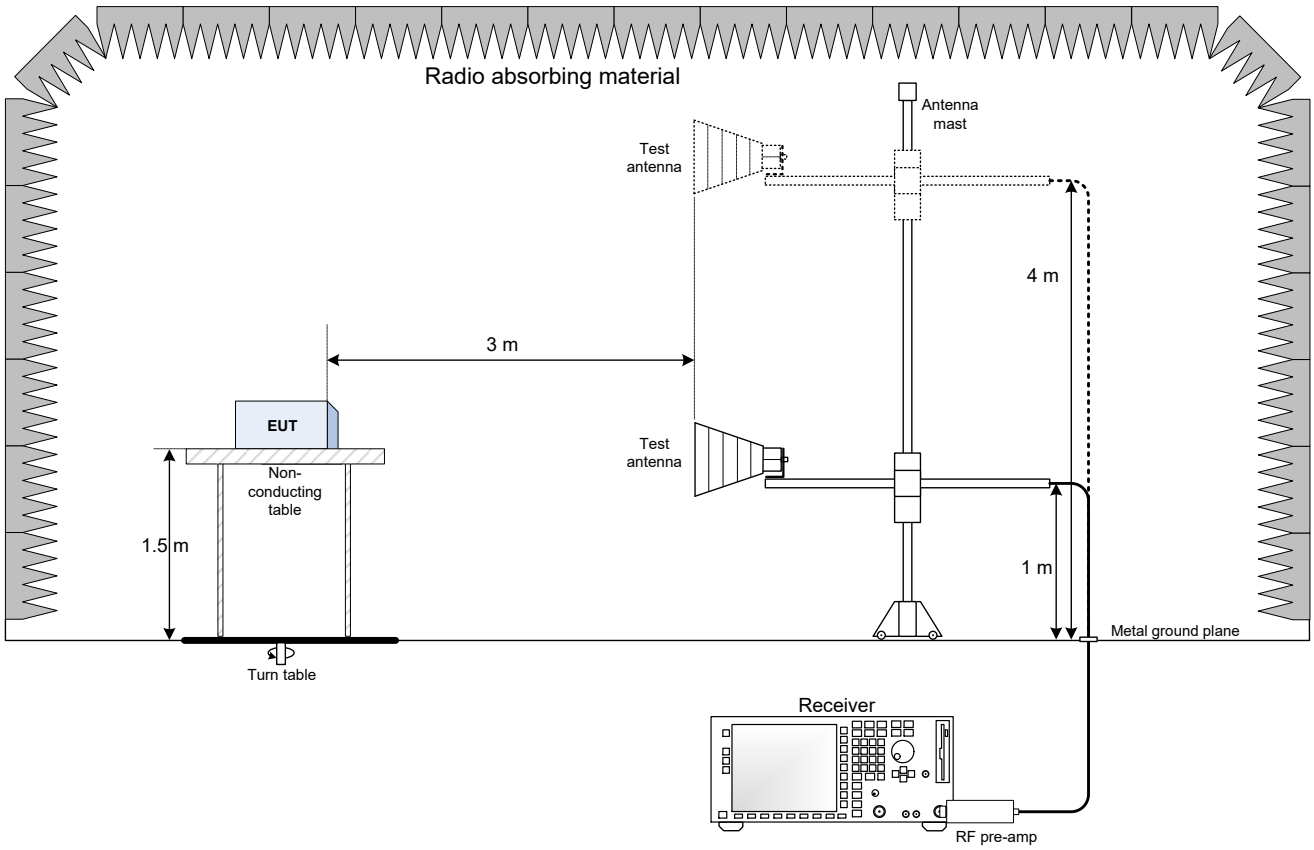


Figure 3.6-2: *Radiated emissions set-up for frequencies above 1 GHz*

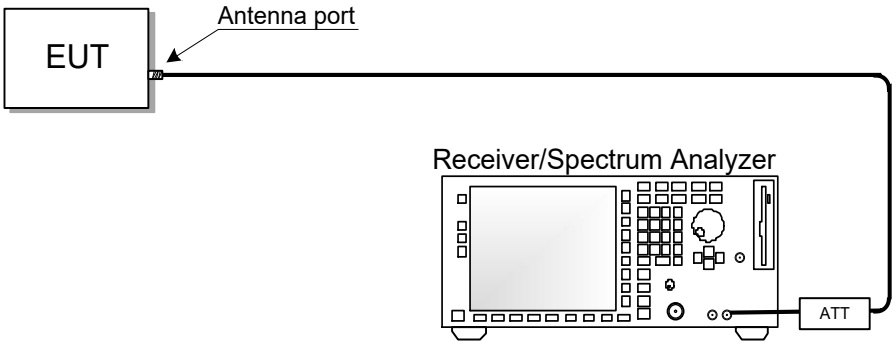


Figure 3.6-3: *Antenna port testing set-up*

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	18–33 °C
Relative humidity	20–70 %
Air pressure	860–1060 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 cycle	Next cal.
Thermo-hygrometer	Testo	175-H2	20012380/305	2025-01	2027-01
Thermo-hygrometer	Testo	175-H2	20013013/305	2025-01	2027-01
Barometer	Castle	GPB 3300	072015	2025-03	2026-03

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

Equipment	Manufacturer	Model no.	Asset no.	Cal cycle	Next cal.
EMI Receiver	Rohde & Schwarz	ESW44	101620	2025-08	2026-08
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767	2025-12	2026-12
EMI Receiver	Rohde & Schwarz	ESU8	100202	2025-08	2026-08
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254	2025-07	2026-07
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397	2026-02	2027-02
Antenna Trilog 25-2000 MHz	Schwarzbeck Mess-Elektronik	VULB9168	9168-242	2024-08	2027-08
Antenna Trilog 25MHz - 8GHz	Schwarzbeck Mess-Elektronik	VULB9162	9162-025	2024-08	2027-08
Antenna 1 - 18 GHz	Schwarzbeck Mess-Elektronik	STLP9148	STLP 9148-152	2024-10	2027-10
Antenna 1 - 18 GHz	Schwarzbeck Mess-Elektronik	STLP9148	STPL 9148-123	2024-08	2027-08
Double Ridge Horn Antenna	RFSpin	DRH40	061106A40	2023-05	2026-05
Broadband Amplifier	Schwarzbeck Mess-Elektronik	BBV9718C	00121	2025-12	2026-12
Broadband Bench Top Amplifier	Sage	STB-1834034030-KFKF-L1	18490-01	2025-07	2026-07
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
3m Semi anechoic chamber	Comtest	SAC-3	1711-150	2024-09	2026-09
Semi-anechoic chamber	Nemko Spa	10m semi-anechoic chamber	530	2025-10	2027-10
Software turntable and mast	Maturo	mcApp	8.1.0.5410	NCR	NCR
Coaxial cable	Rosenberger+Huber-Suhner	RE01+RE02	1.654+1.655	2026-01	2027-01
Coaxial cable	Huber + Suhner	Sucolex 102 EA	1.507	2025-12	2026-12

Notes: NCR - no calibration required, VOU - verify on use

Section 8 Testing data

8.1 Measuring AGC threshold level

8.1.1 References, definitions and limits

935210 D05 Indus Booster Basic Meas v01r04, Clause 3.2

The AGC threshold is to be determined as follows. In the case of fiber-optic distribution systems, the RF input port of the equipment under test (EUT) refers to the RF input of the supporting equipment RF to optical convertor; see also descriptions and diagrams for typical DAS booster systems in KDB Publication 935210 D02. Devices intended to be directly connected to an RF source (donor port) only need to be evaluated for any over-the-air transmit paths.

a) Connect a signal generator to the input of the EUT.

b) Connect a spectrum analyzer or power meter to the output of the EUT using appropriate attenuation as necessary.

c) The signal generator should initially be configured to produce either of the required test signals (i.e., broadband or narrowband).

d) Set the signal generator frequency to the center frequency of the EUT operating band.

e) While monitoring the output power of the EUT, measured using the methods of 3.5.3 or 3.5.4, increase the input level until a 1 dB increase in the input signal power no longer causes a 1 dB increase in the output signal power.

f) Record this level as the AGC threshold level.

g) Repeat the procedure with the remaining test signal.

8.1.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	March 10, 2026

Receiver reading P_R, reported at Test Data clause, was achieved adjusting input signal P_{IN} by a correction factor CF, to consider, where applicable, the insertion loss due to cables (CL) and attenuators (AL). This correction factor was pre-inserted in the firmware of the receiver and was applied by the instrument during the test. The following relationships apply:

$CF = CL + AL$

$P_R = P_{IN} + CF$

8.1.3 Observations, settings and special notes

AWGN5 signal with 95 MHz 99% OBW representative of a 100 MHz 5G NR channel used

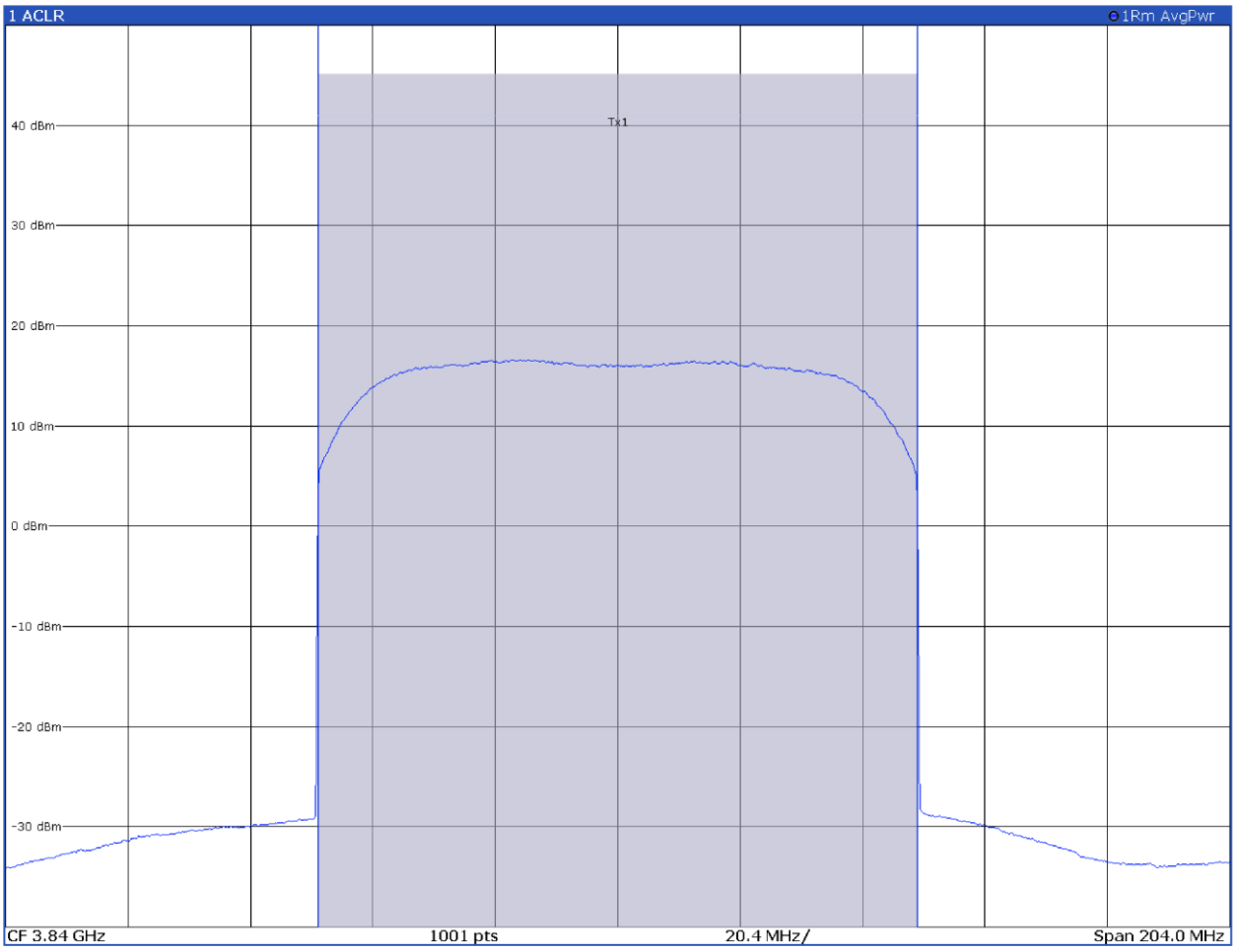
Spectrum analyzer settings:

Detector mode	RMS
Resolution bandwidth	100 kHz
Video bandwidth	300 kHz
Measurement mode	Power over emission bandwidth
Trace mode	Averaging
Measurement time	Auto

8.1.4 Test equipment used

Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397

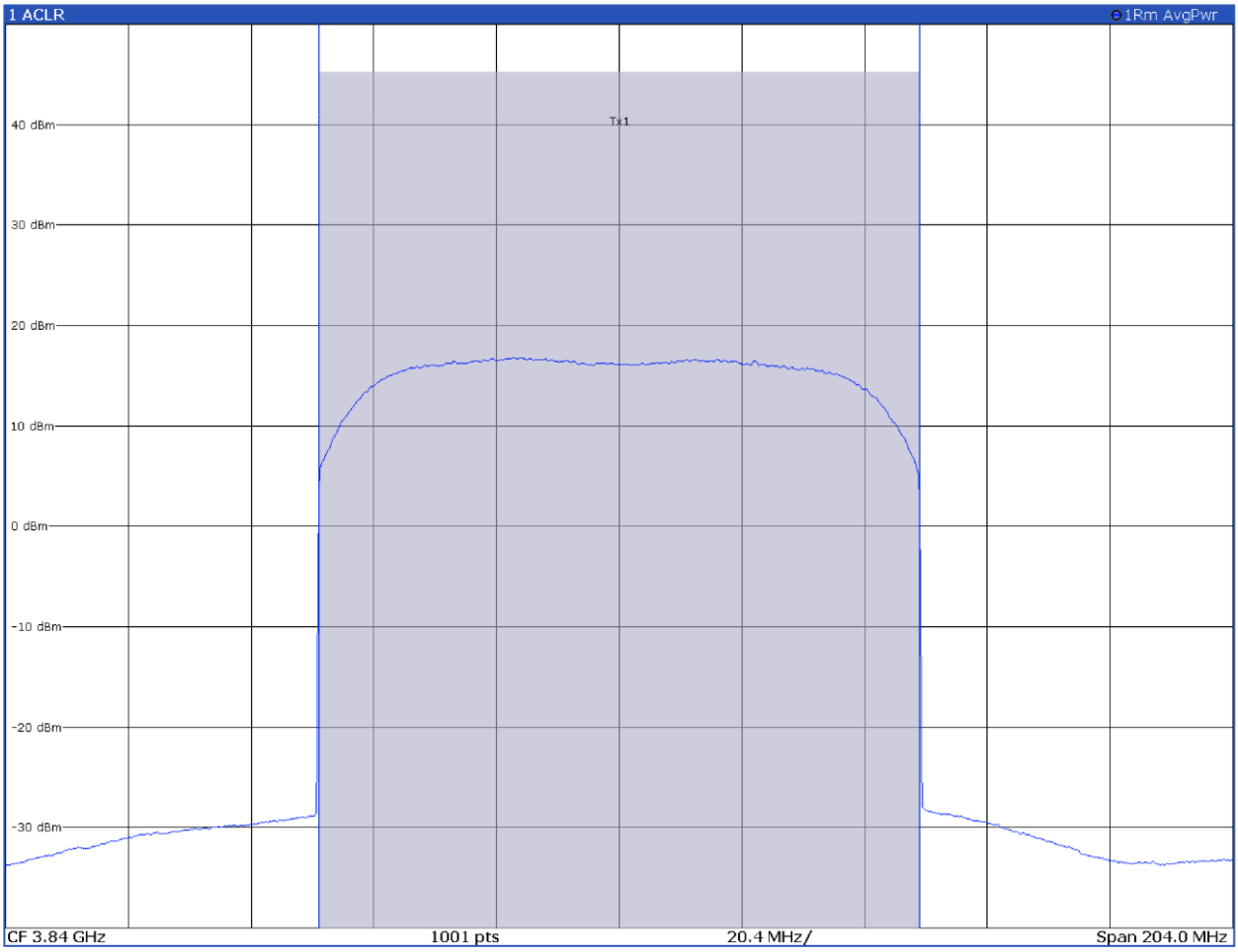
8.1.5 Test data



2 Result Summary — 5G NR DL FR1 100MHz

Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.08 dBm**
Tx Total			**45.08 dBm**

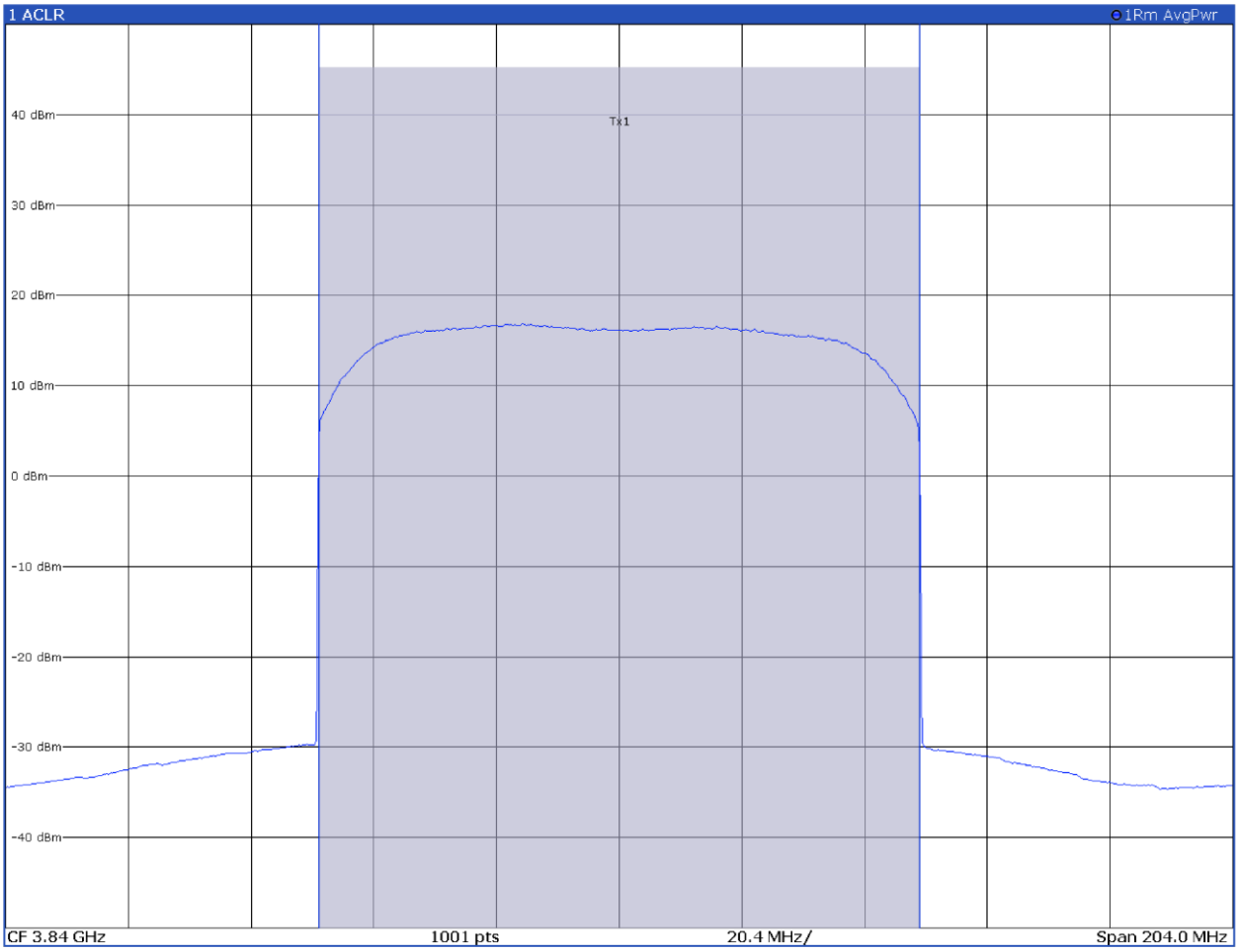
Figure 8.1-1: *Antenna port 1 output spectral plot with input at AGC threshold*



2 Result Summary — 5G NR DL FR1 100MHz

Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.24 dBm**
Tx Total			**45.24 dBm**

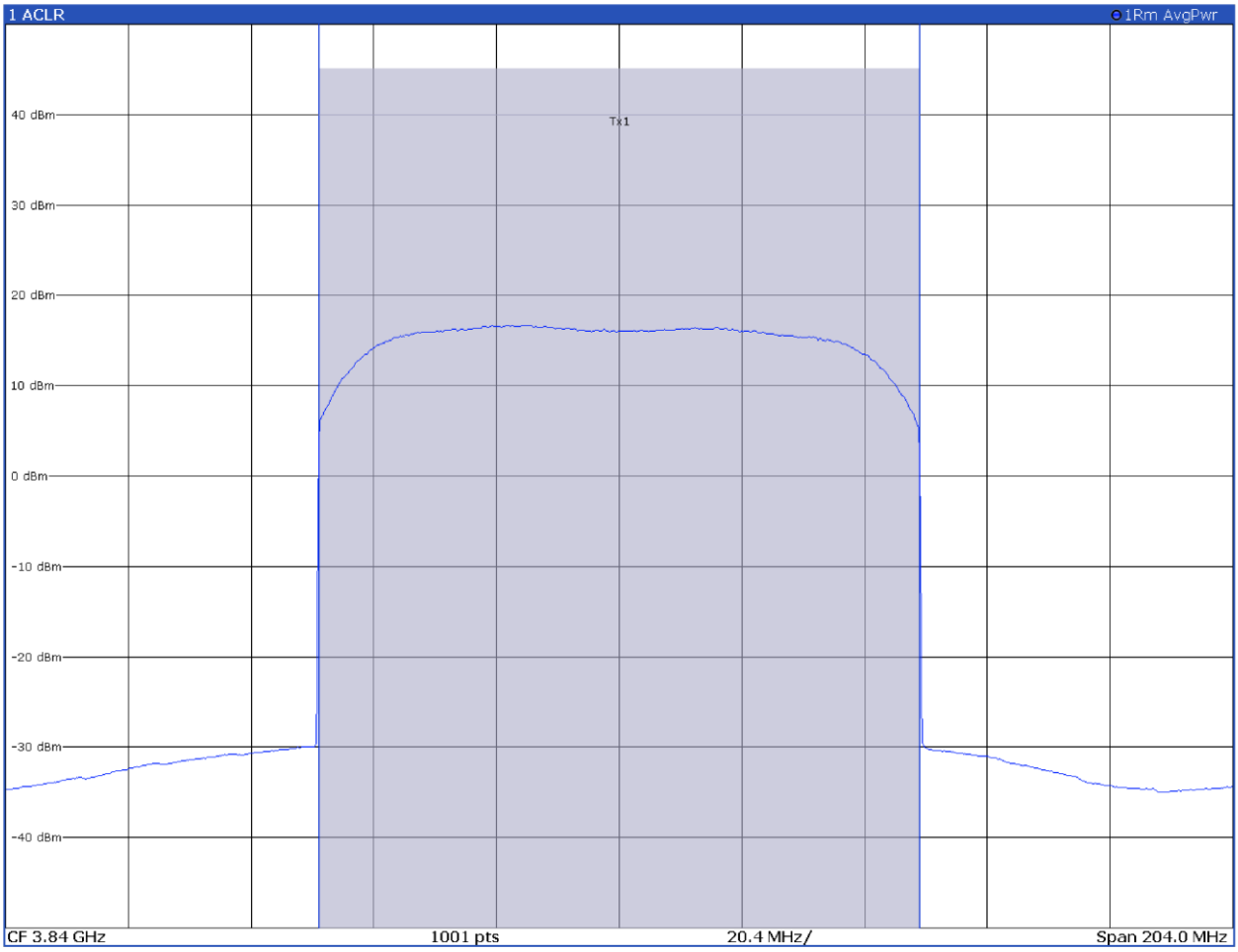
Figure 8.1-2: *Antenna port 1 output spectral plot with input at AGC threshold +1 dBm*



2 Result Summary — 5G NR DL FR1 100MHz

Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.22 dBm**
Tx Total			**45.22 dBm**

Figure 8.1-3: *Antenna port 2 output spectral plot with input at AGC threshold*



2 Result Summary		5G NR DL FR1 100MHz	
Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.13 dBm**
Tx Total			**45.13 dBm**

Figure 8.1-4: *Antenna port 2 output spectral plot with input at AGC threshold +1 dBm*

8.2 Out-of-band-rejection

8.2.1 References, definitions and limits

935210 D05 Indus Booster Basic Meas v01r04, Clause 3.3

A signal booster shall reject amplification of other signals outside of its passband. Adjust the internal gain control of the EUT (if so equipped) to the maximum gain for which equipment certification is sought.

8.2.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	March 18, 2026

Receiver reading P_R, reported at Test Data clause, was achieved adjusting input signal P_{IN} by a correction factor CF, to consider, where applicable, the insertion loss due to cables (CL) and attenuators (AL). This correction factor was pre-inserted in the firmware of the receiver and was applied by the instrument during the test. The following relationships apply:

CF = CL + AL

$P_R = P_{IN} + CF$

8.2.3 Observations, settings and special notes

CW signal used with a frequency sweep in the range ± 250 % of the passband with a dwell time of 10 ms

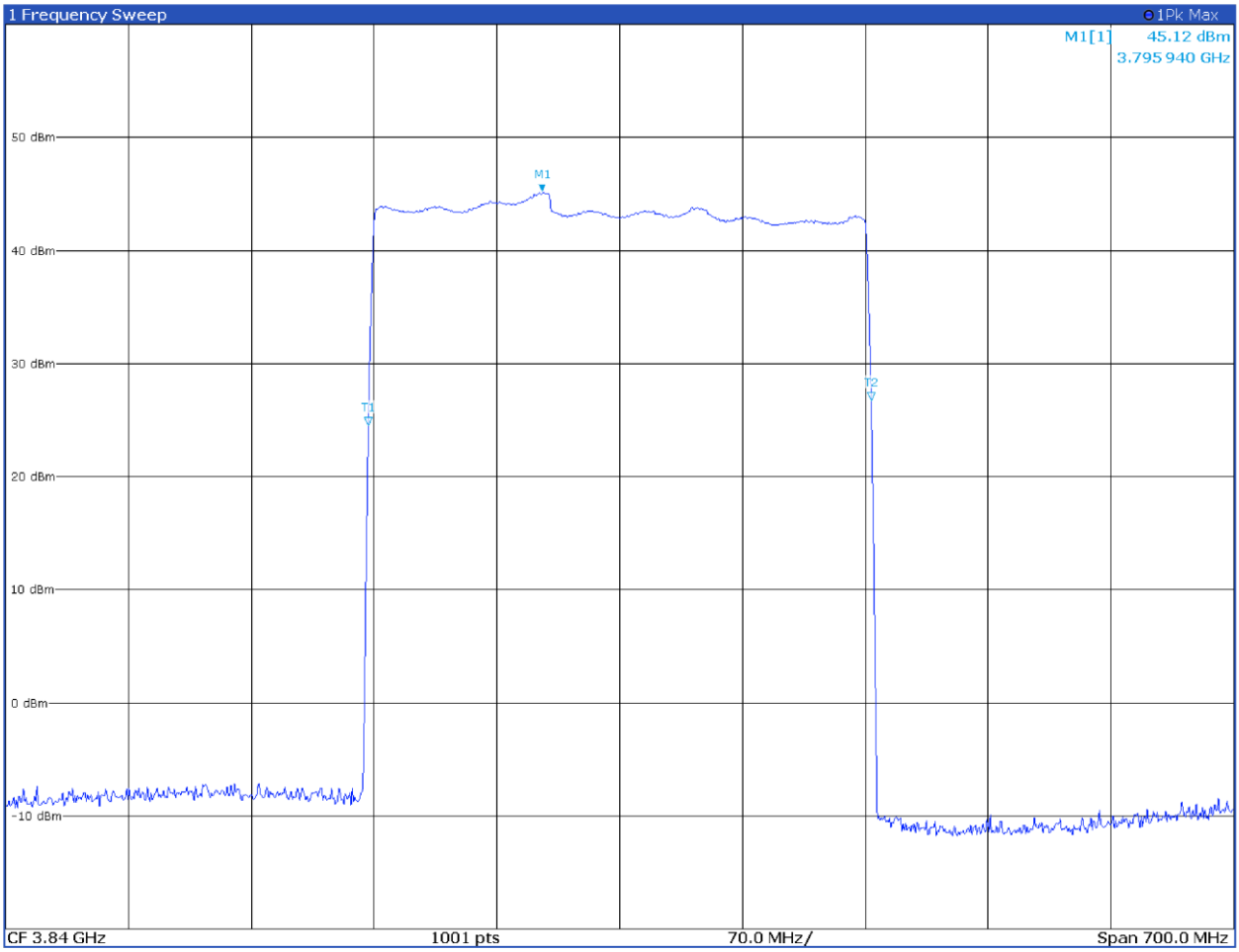
Spectrum analyzer settings:

Resolution bandwidth	1 % to 5 % of the EUT passband
Video bandwidth	≥3 × RBW
Frequency span	± 250 % of the passband
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
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397

8.2.5 Test data

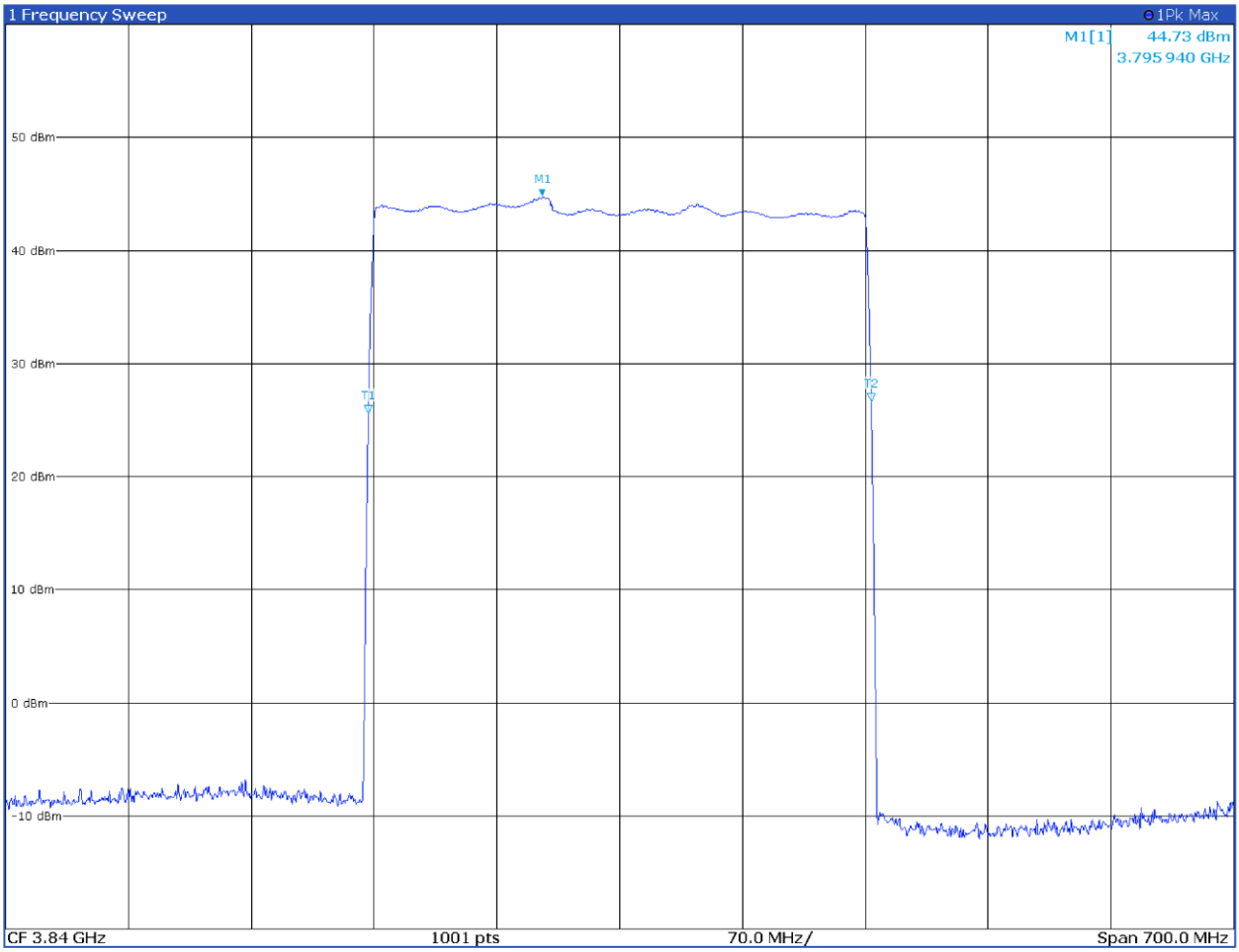


2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.795 94 GHz**	**45.12 dBm**	ndB	20.0 dB
T1		1	3.696 64 GHz	24.50 dBm	ndB down BW	**286.71 MHz**
T2		1	3.983 36 GHz	26.70 dBm	Q Factor	13.2

Figure 8.2-1: *Out-of-band-rejection 20dB BW spectral plot for Antenna port 1*

Test data, continued



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.795 94 GHz**	**44.73 dBm**	ndB	20.0 dB
T1		1	3.696 64 GHz	25.60 dBm	ndB down BW	**286.71 MHz**
T2		1	3.983 36 GHz	26.65 dBm	Q Factor	13.2

Figure 8.2-2: *Out-of-band-rejection 20dB BW spectral plot for Antenna port 2*

8.3 Input-versus-output signal comparison

8.3.1 References, definitions and limits

935210 D05 Indus Booster Basic Meas v01r04, Clause 3.4

A 26 dB bandwidth measurement shall be performed on the input signal and the output signal; alternatively, the 99% OBW can be measured and used.

8.3.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	March 16, 2026

Receiver reading P_R, reported at Test Data clause, was achieved adjusting input signal P_{IN} by a correction factor CF, to consider, where applicable, the insertion loss due to cables (CL) and attenuators (AL). This correction factor was pre-inserted in the firmware of the receiver and was applied by the instrument during the test. The following relationships apply:

CF = CL + AL

$P_R = P_{IN} + CF$

8.3.3 Observations, settings and special notes

AWGN5 signal with 95 MHz 99% OBW representative of a 100 MHz 5G NR channel used
EUT input power set to a level that is just below the AGC threshold, but not more than 0.5 dB below.
Repeated the test with the input signal amplitude set to 3 dB above the AGC threshold.

Spectrum analyzer settings:

Resolution bandwidth	of 1 % to 5 % of the OBW
Video bandwidth	≥3 × RBW
Frequency span	2 × to 5 × the emission bandwidth (EBW) or alternatively, the OBW
Detector mode	Peak
Trace mode	Max Hold

8.3.4 Test equipment used

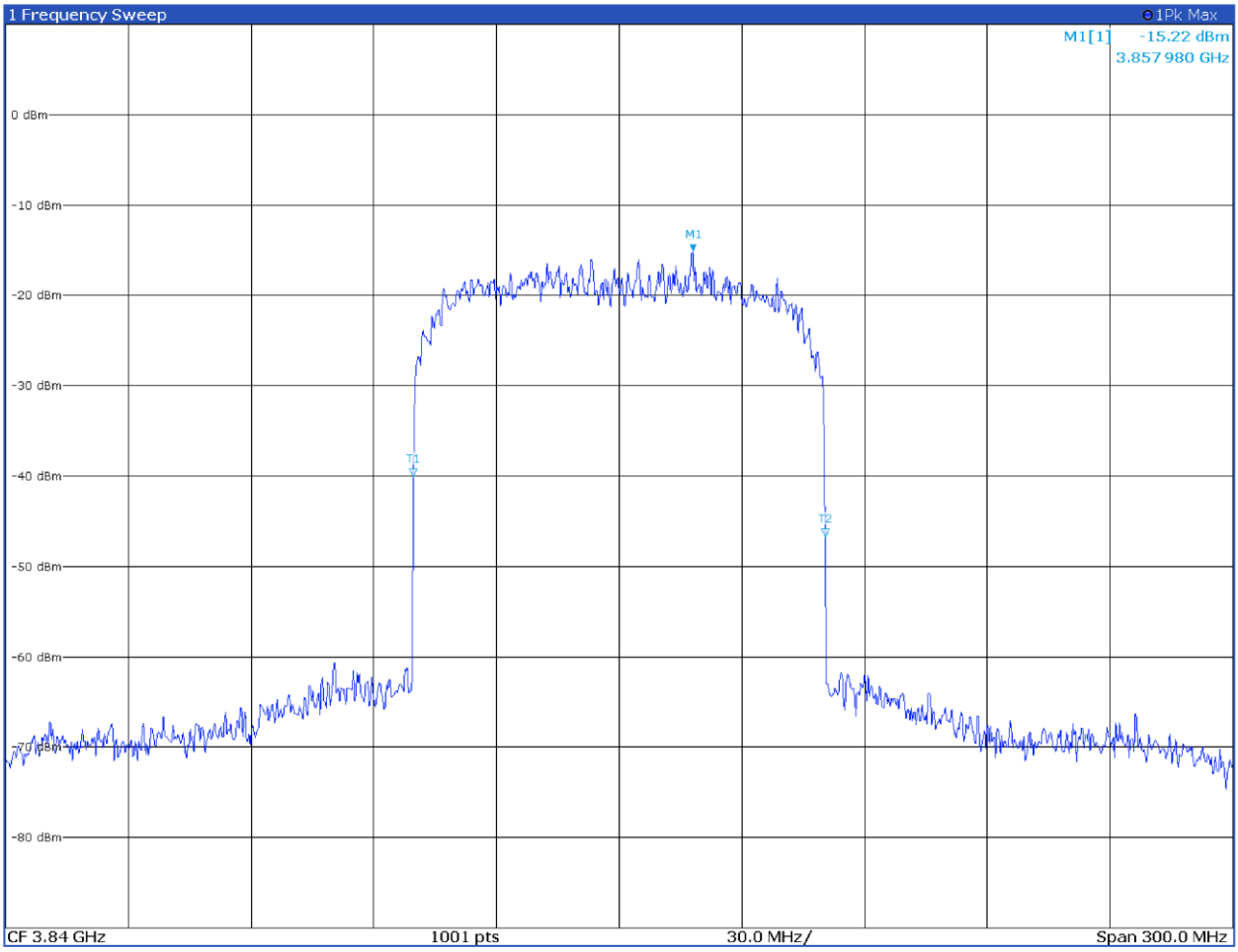
Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397

8.3.5 Test data

Table 8.3-1: *Occupied bandwidth results*

Antenna port	Signal measured	Input signal level	Frequency, MHz	99% OBW, MHz	26 dB BW, MHz
1	Input	AGC threshold	3840	94.8	100.7
1	Output	AGC threshold	3840	95.0	100.7
1	Output	AGC threshold +3 dB	3840	95.2	100.7
2	Input	AGC threshold	3840	94.8	100.7
2	Output	AGC threshold	3840	95.0	100.7
2	Output	AGC threshold +3 dB	3840	94.8	100.7

Test data, continued

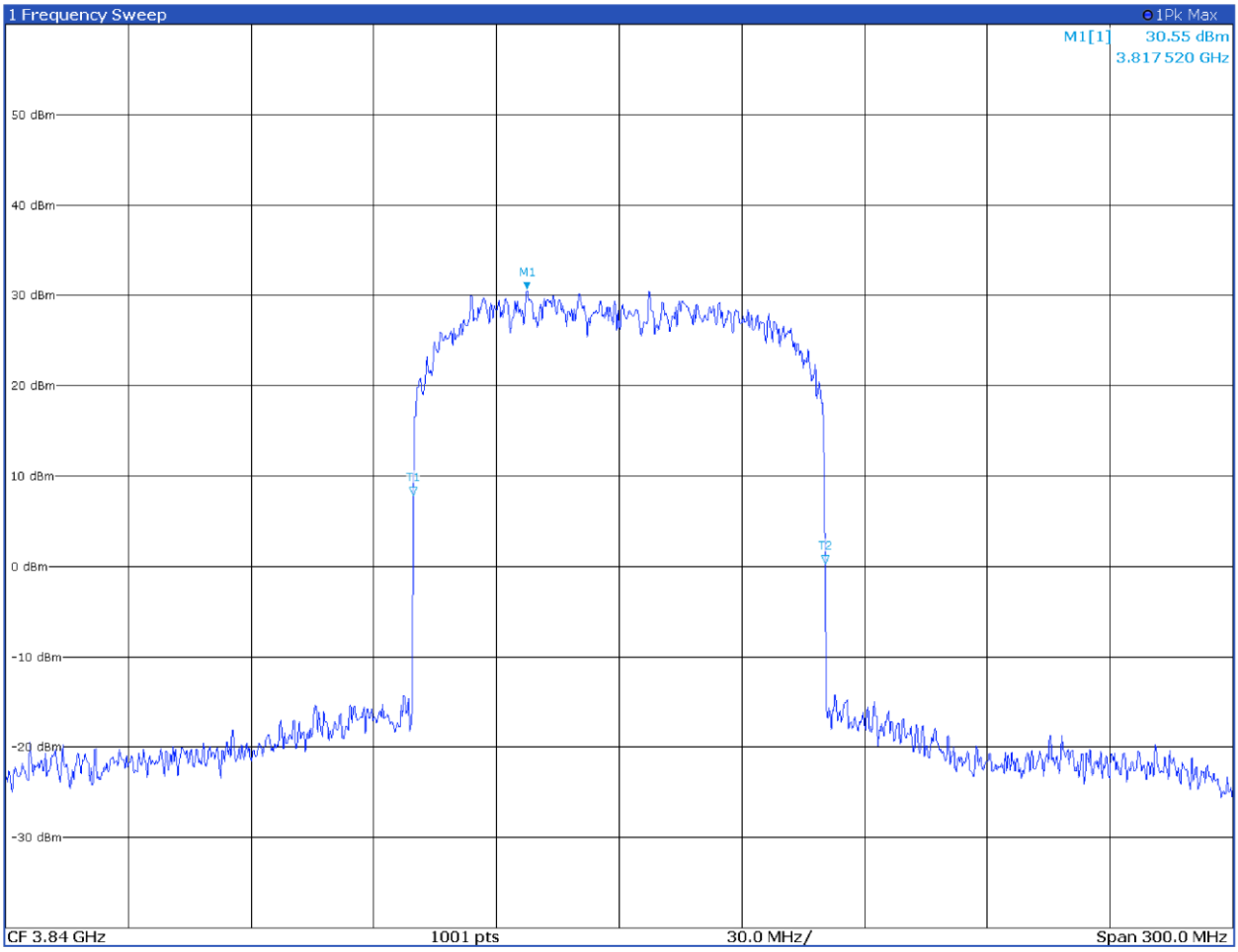


2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.857 98 GHz**	**-15.22 dBm**	ndB	26.0 dB
T1		1	3.789 65 GHz	-40.08 dBm	ndB down BW	**100.7 MHz**
T2		1	3.890 35 GHz	-46.78 dBm	Q Factor	38.3

Figure 8.3-1: *26 dB occupied bandwidth, antenna port 1 input signal at AGC threshold spectral plot*

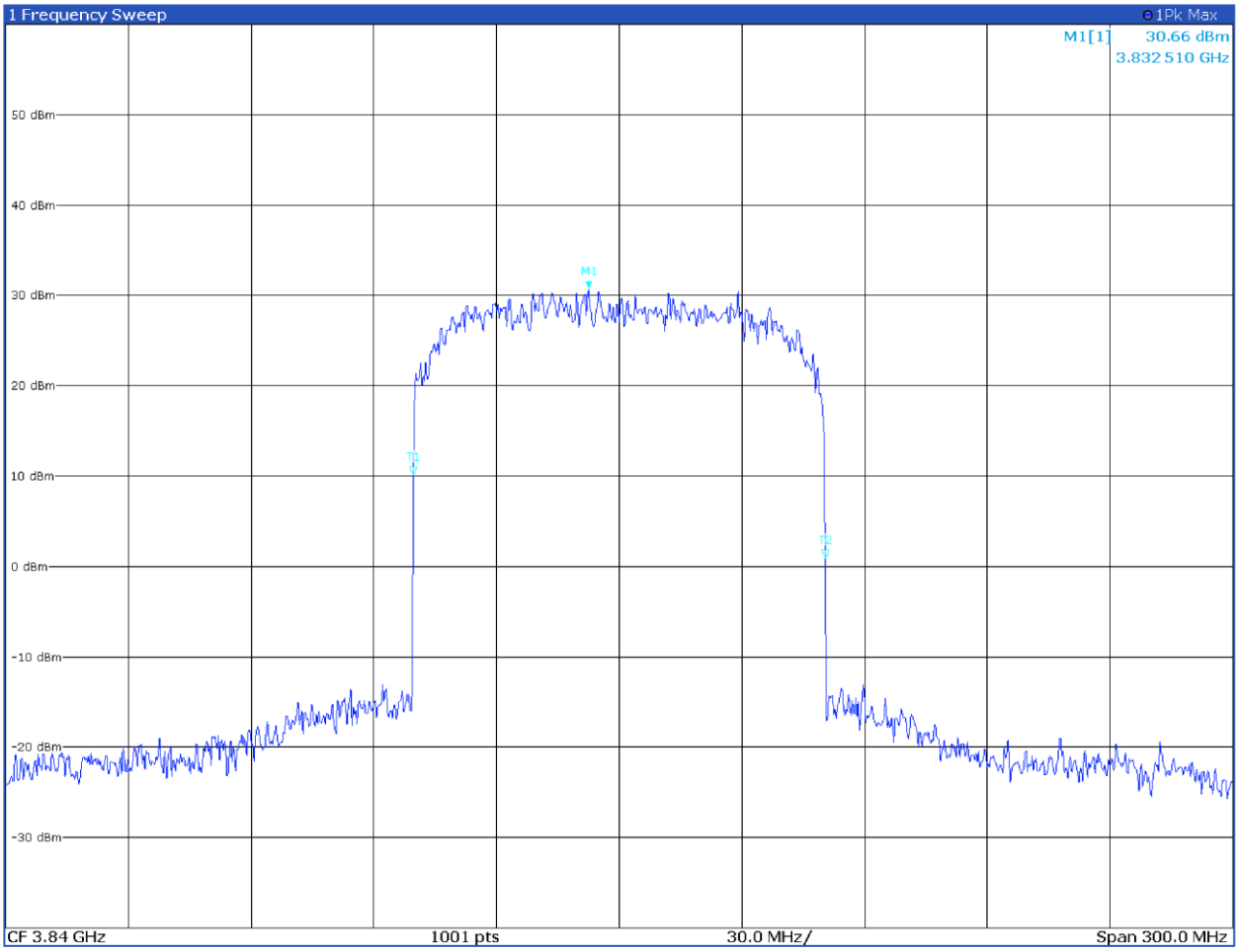
Test data, continued



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.817 52 GHz**	**30.55 dBm**	ndB	26.0 dB
T1		1	3.789 65 GHz	7.84 dBm	ndB down BW	**100.7 MHz**
T2		1	3.890 35 GHz	0.31 dBm	Q Factor	37.9

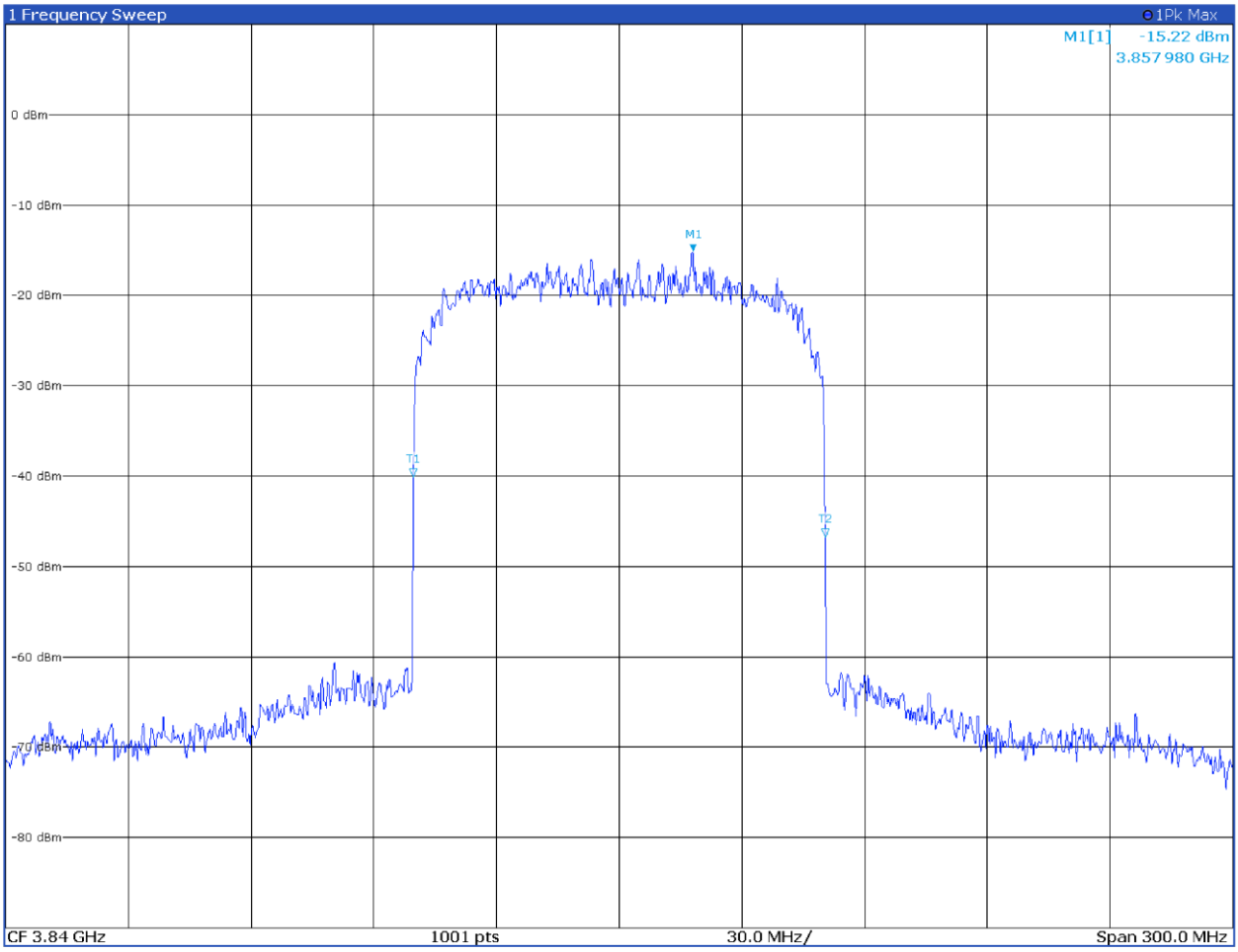
Figure 8.3-2: *26 dB occupied bandwidth, antenna port 1 output signal at AGC threshold spectral plot*



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.832 51 GHz**	**30.66 dBm**	ndB	26.0 dB
T1		1	3.789 65 GHz	10.14 dBm	ndB down BW	**100.7 MHz**
T2		1	3.890 35 GHz	0.92 dBm	Q Factor	38.1

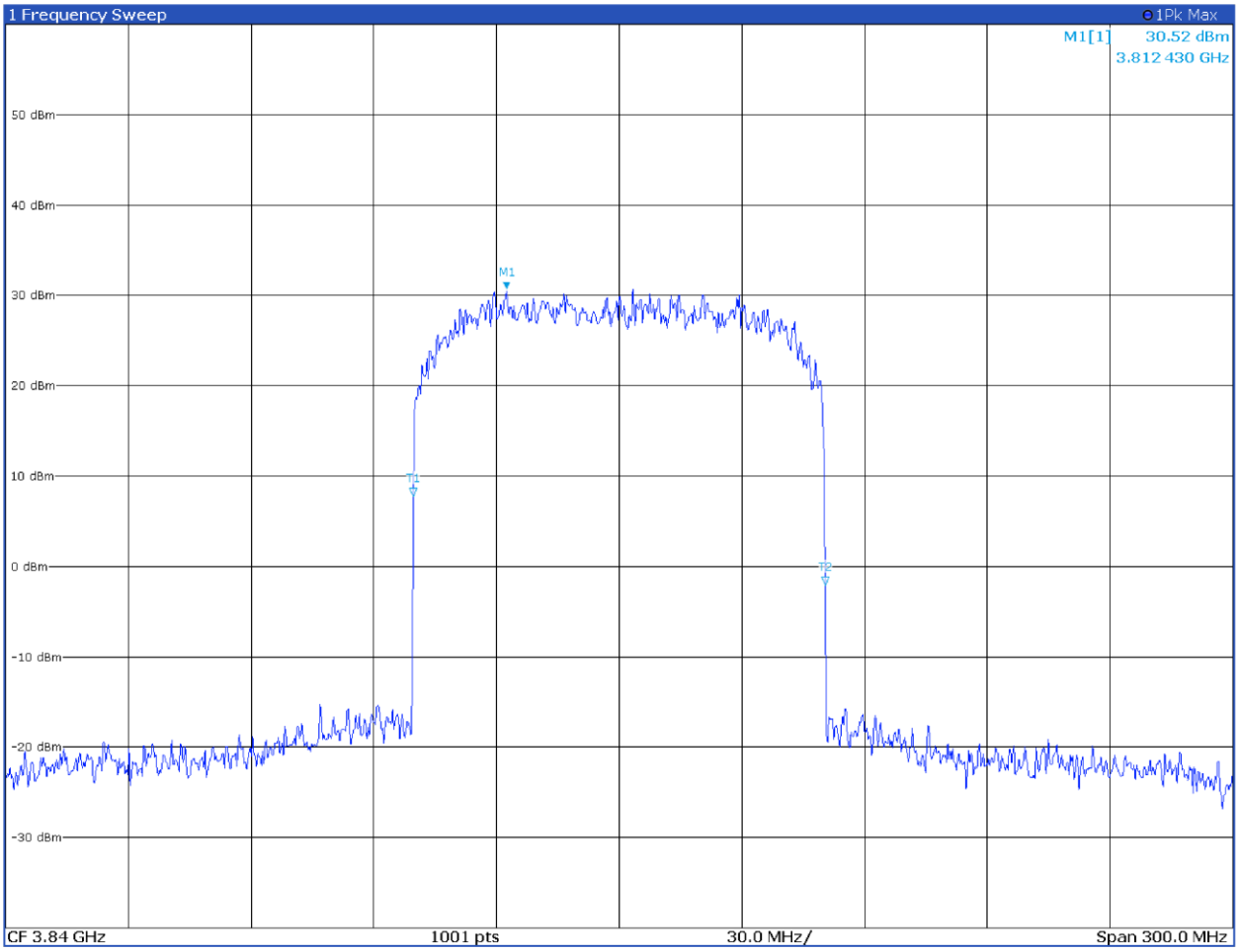
Figure 8.3-3: *26 dB occupied bandwidth, antenna port 1 output signal at AGC threshold +3 dB spectral plot*



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.857 98 GHz**	**-15.22 dBm**	ndB	26.0 dB
T1		1	3.789 65 GHz	-40.08 dBm	ndB down BW	**100.7 MHz**
T2		1	3.890 35 GHz	-46.78 dBm	Q Factor	38.3

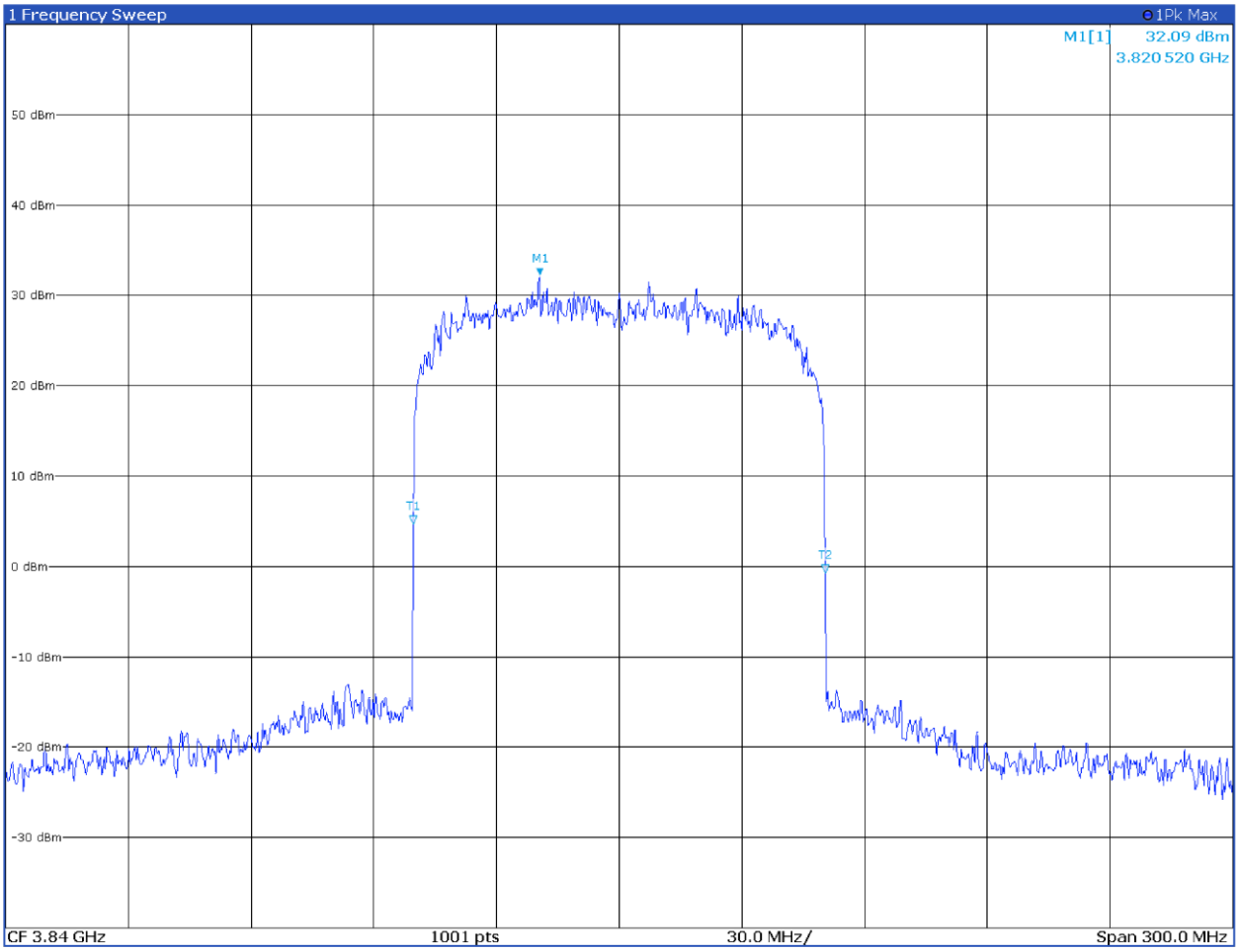
Figure 8.3-4: *26 dB occupied bandwidth, antenna port 2 input signal at AGC threshold spectral plot*



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.812 43 GHz**	**30.52 dBm**	ndB	26.0 dB
T1		1	3.789 65 GHz	7.77 dBm	ndB down BW	**100.7 MHz**
T2		1	3.890 35 GHz	-2.07 dBm	Q Factor	37.9

Figure 8.3-5: *26 dB occupied bandwidth, antenna port 2 output signal at AGC threshold spectral plot*

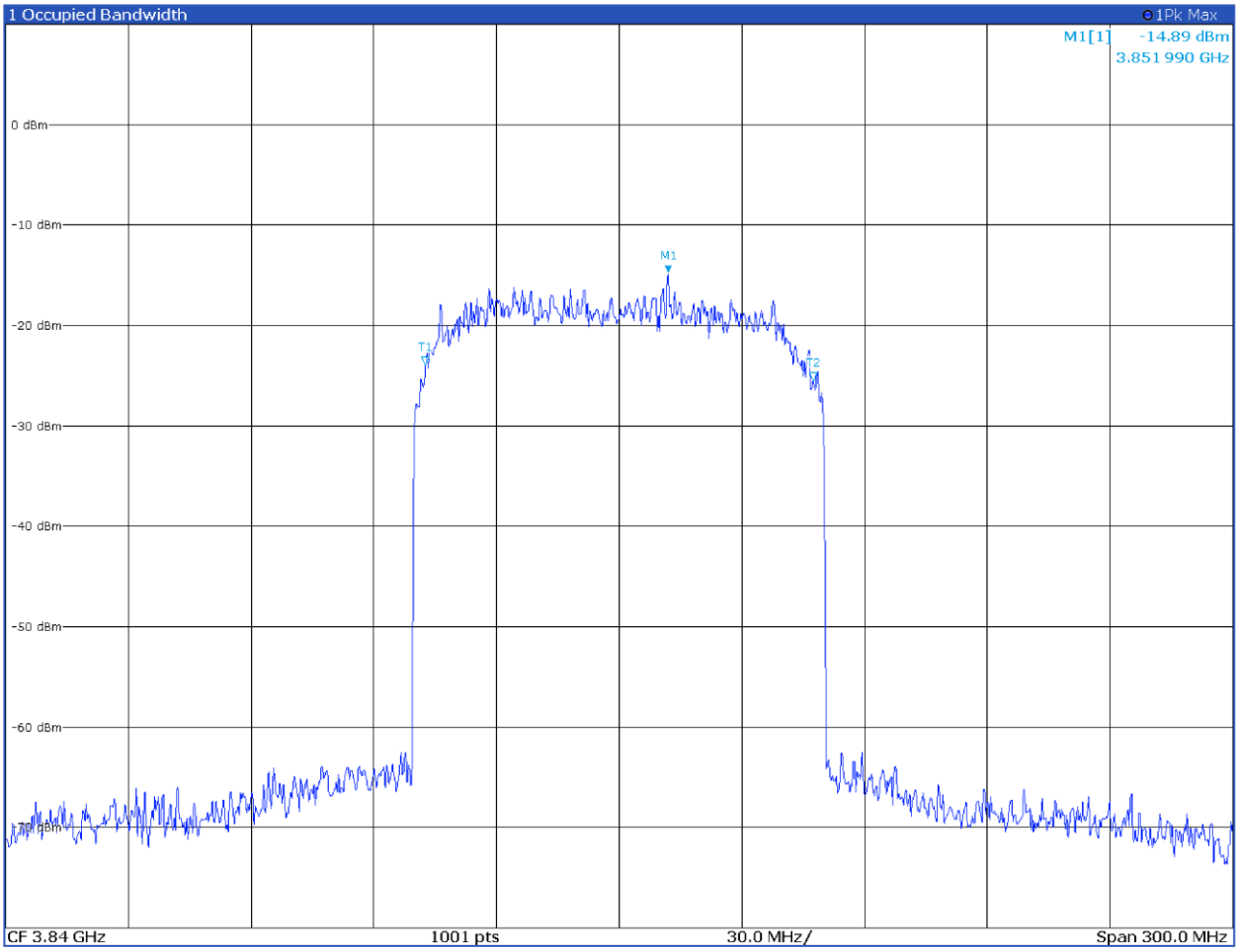


2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.820 52 GHz**	**32.09 dBm**	ndB	26.0 dB
T1		1	3.789 65 GHz	4.63 dBm	ndB down BW	**100.7 MHz**
T2		1	3.890 35 GHz	-0.71 dBm	Q Factor	37.9

Figure 8.3-6: *26 dB occupied bandwidth, antenna port 2 output signal at AGC threshold +3 dB spectral plot*

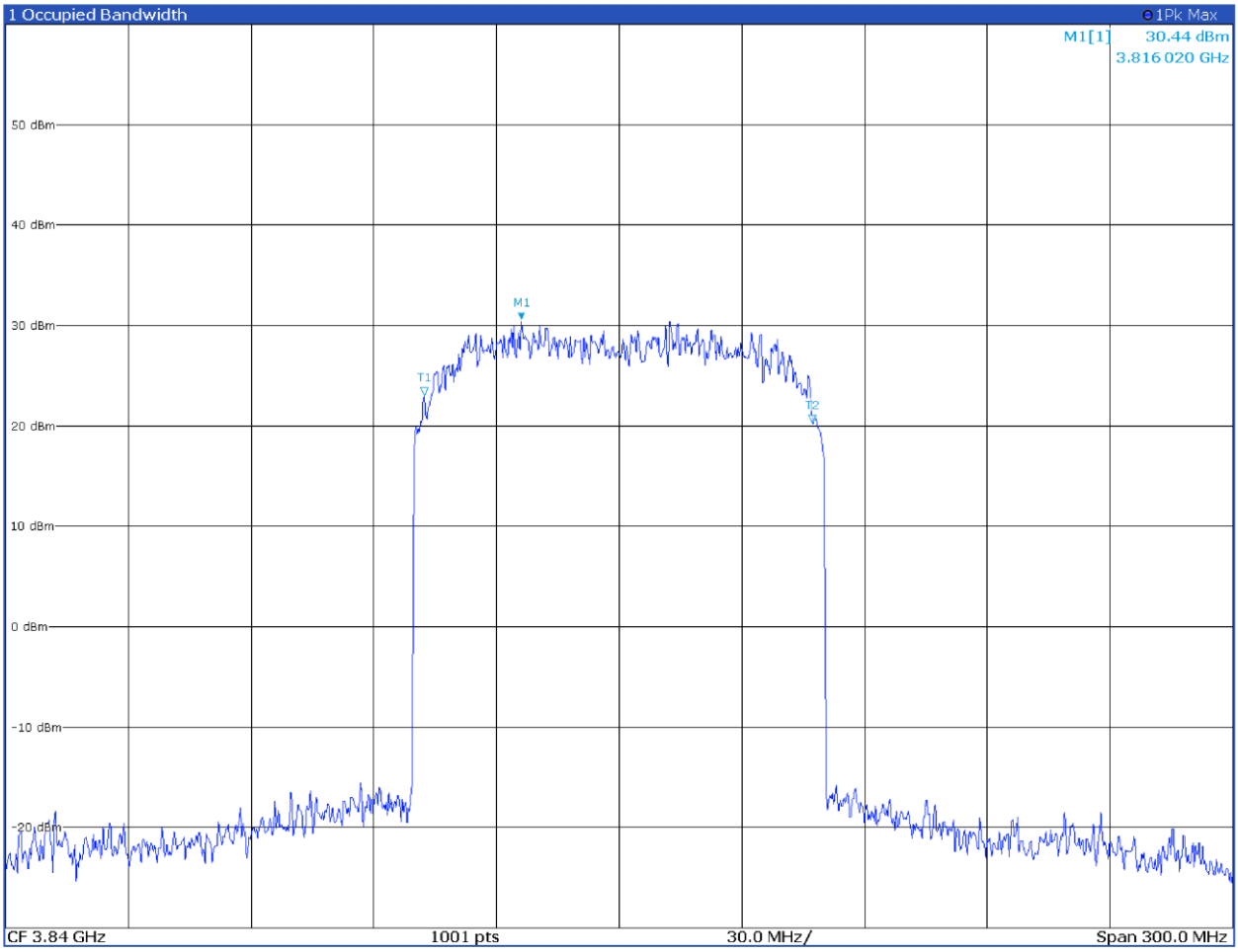
Test data, continued



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.851 99 GHz**	**-14.89 dBm**	Occ Bw	**94.794 250 037 MHz**
T1		1	3.792 632 GHz	-23.93 dBm	Occ Bw Centroid	3.840 029 225 GHz
T2		1	3.887 426 GHz	-25.48 dBm	Occ Bw Freq Offset	29.224 929 135 kHz

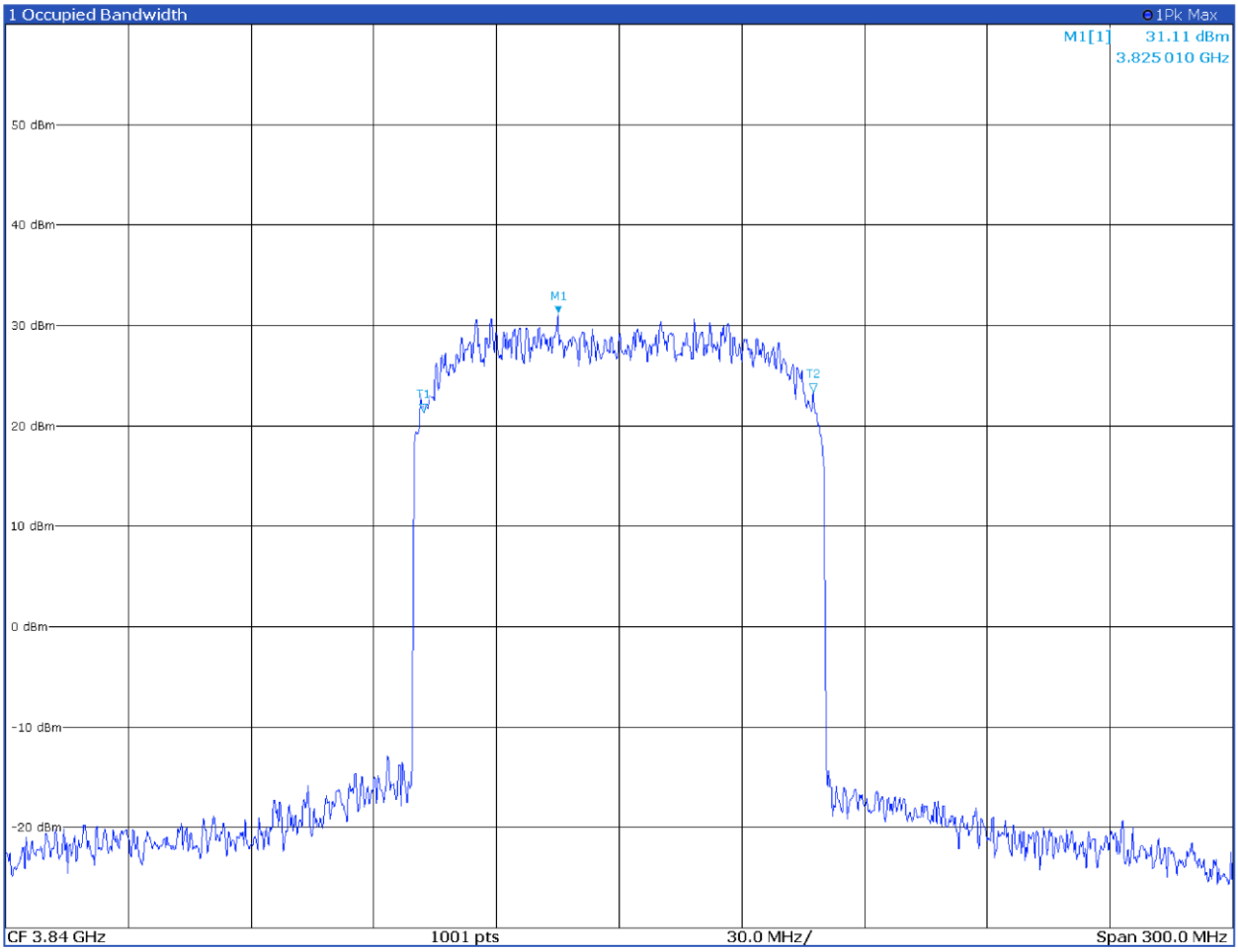
Figure 8.3-7: *99% occupied bandwidth, antenna port 1 input signal at AGC threshold spectral plot*



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.816 02 GHz**	**30.44 dBm**	Occ Bw	**94.975 084 919 MHz**
T1		1	3.792 274 GHz	23.01 dBm	Occ Bw Centroid	3.839 761 641 GHz
T2		1	3.887 249 GHz	20.20 dBm	Occ Bw Freq Offset	-238.358 699 446 kHz

Figure 8.3-8: *99% occupied bandwidth, antenna port 1 output signal at AGC threshold spectral plot*

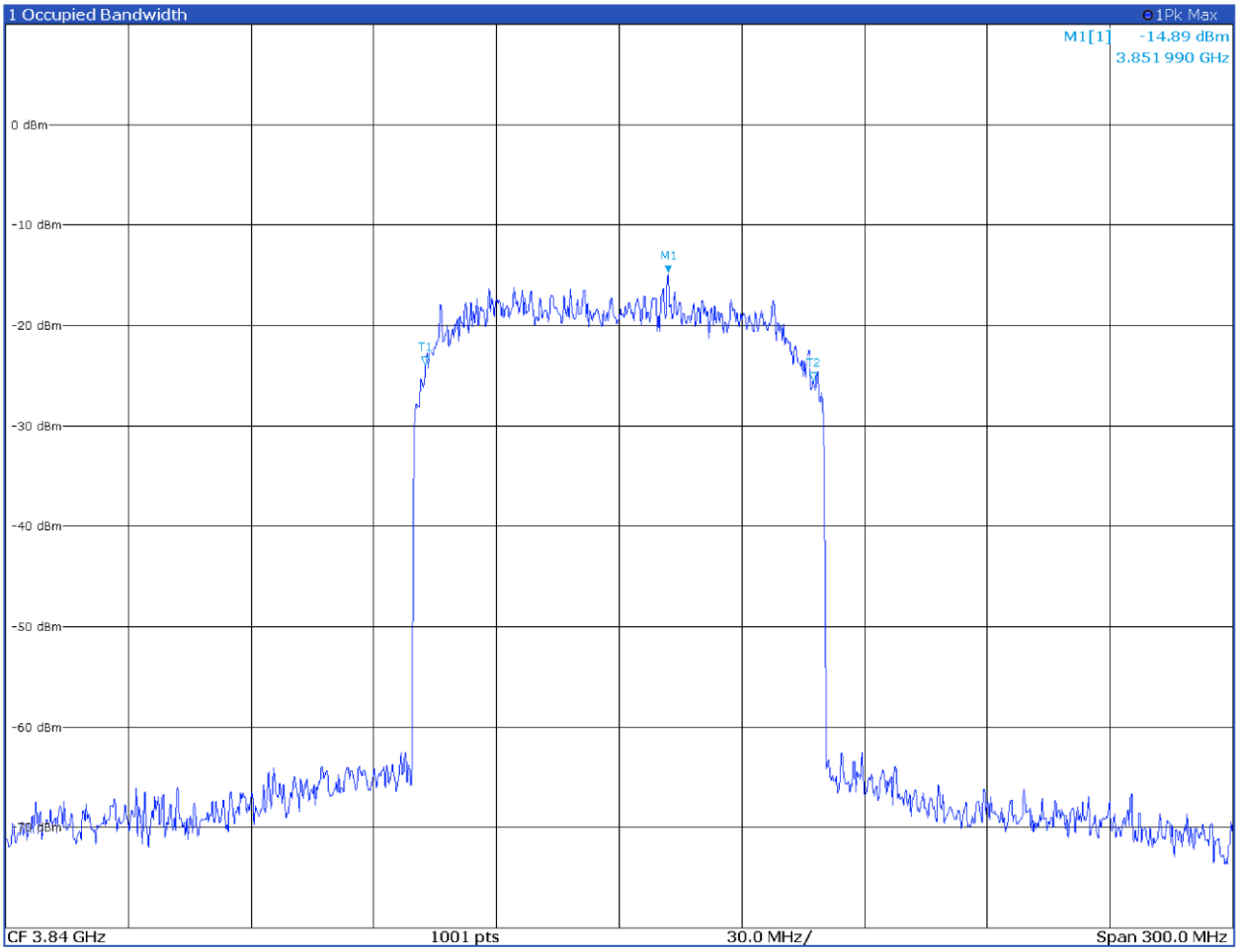


2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.825 01 GHz**	**31.11 dBm**	Occ Bw	**95.178 773 874 MHz**
T1		1	3.792 207 GHz	21.31 dBm	Occ Bw Centroid	3.839 796 493 GHz
T2		1	3.887 386 GHz	23.34 dBm	Occ Bw Freq Offset	-203.507 403 36 kHz

Figure 8.3-9: *99% occupied bandwidth, antenna port 1 output signal at AGC threshold +3 dB spectral plot*

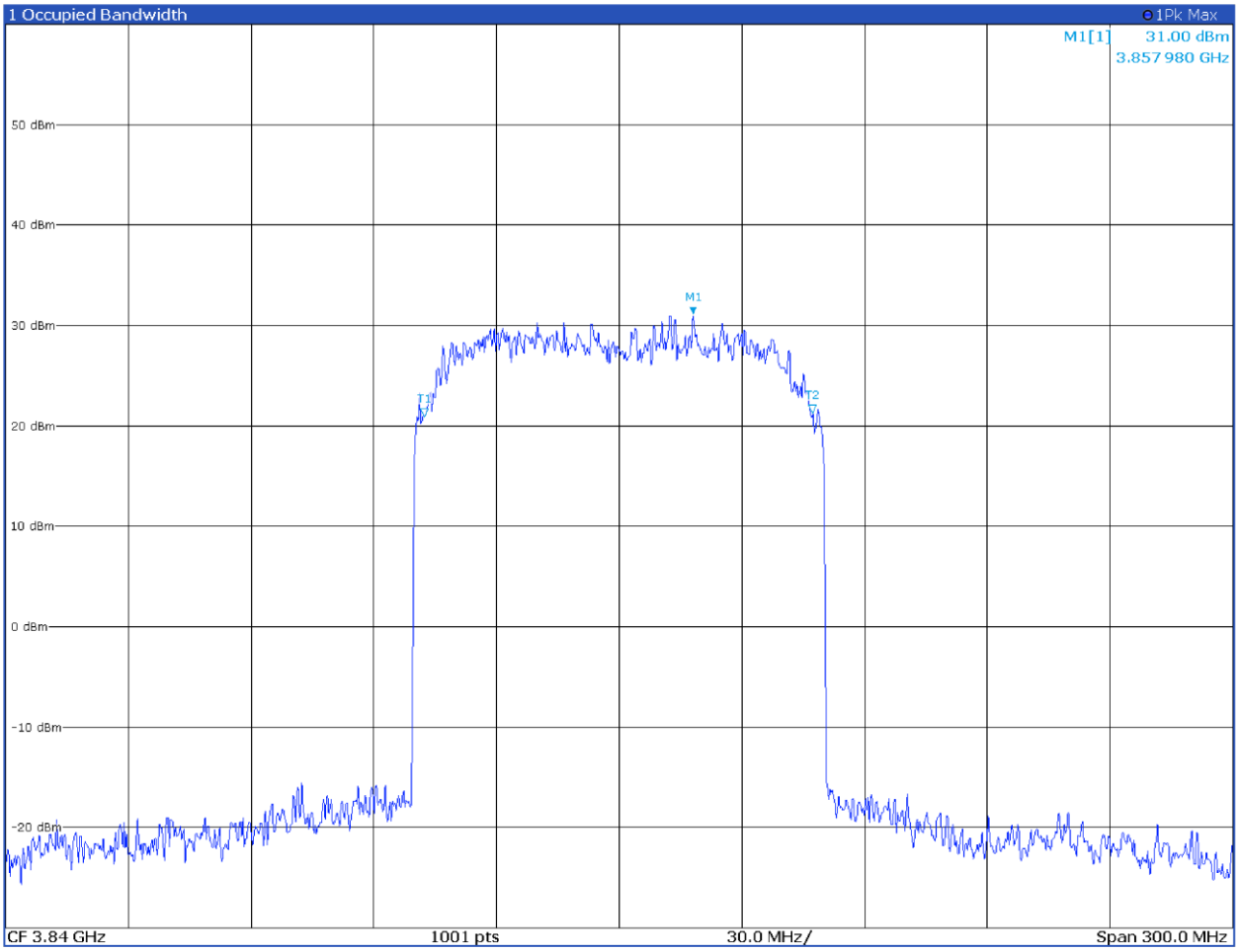
Test data, continued



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.851 99 GHz**	**-14.89 dBm**	Occ Bw	**94.794 250 037 MHz**
T1		1	3.792 632 GHz	-23.93 dBm	Occ Bw Centroid	3.840 029 225 GHz
T2		1	3.887 426 GHz	-25.48 dBm	Occ Bw Freq Offset	29.224 929 135 kHz

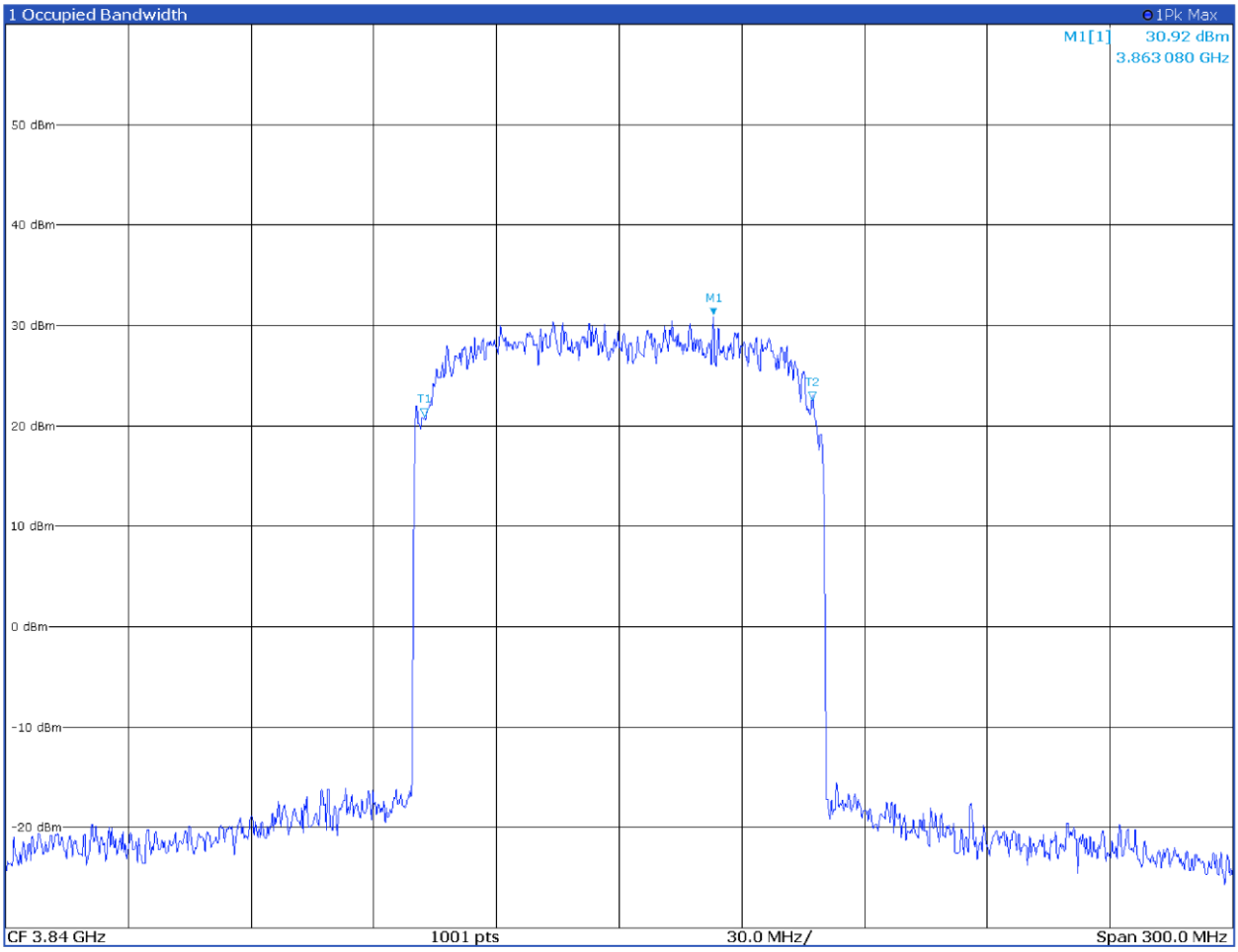
Figure 8.3-10: *99% occupied bandwidth, antenna port 2 input signal at AGC threshold spectral plot*



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.857 98 GHz**	**31.00 dBm**	Occ Bw	**95.039 807 175 MHz**
T1		1	3.792 241 GHz	20.88 dBm	Occ Bw Centroid	3.839 760 567 GHz
T2		1	3.887 28 GHz	21.22 dBm	Occ Bw Freq Offset	-239.432 934 465 kHz

Figure 8.3-11: *99% occupied bandwidth, antenna port 2 output signal at AGC threshold spectral plot*



2 Marker Table

Type	Ref	Trc	X-Value	Y-Value	Function	Function Result
M1		1	**3.863 08 GHz**	**30.92 dBm**	Occ Bw	**94.834 903 431 MHz**
T1		1	3.792 309 GHz	20.87 dBm	Occ Bw Centroid	3.839 726 336 GHz
T2		1	3.887 144 GHz	22.52 dBm	Occ Bw Freq Offset	-273.663 846 545 kHz

Figure 8.3-12: *99% occupied bandwidth, antenna port 2 output signal at AGC threshold +3 dB spectral plot*

8.4 Mean output power and amplifier/booster gain

8.4.1 References, definitions and limits

FCC §27.50(j)

(j) The following power requirements apply to stations transmitting in the 3700-3980 MHz band:

(1) The power of each fixed or base station transmitting in the 3700-3980 MHz band and located in any county with population density of 100 or fewer persons per square mile, based upon the most recently available population statistics from the Bureau of the Census, is limited to an equivalent isotropically radiated power (EIRP) of 3280 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

(2) The power of each fixed or base station transmitting in the 3700-3980 MHz band and situated in any geographic location other than that described in paragraph (j)(1) of this section is limited to an EIRP of 1640 Watts/MHz. This limit applies to the aggregate power of all antenna elements in any given sector of a base station.

(3) Mobile and portable stations are limited to 1 Watt EIRP. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(4) Equipment employed must be authorized in accordance with the provisions of § 27.51. Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (j)(5) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

(5) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, and any other relevant factors, so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

8.4.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	February 10, 2022

Receiver reading P_R, reported at Test Data clause, was achieved adjusting input signal P_{IN} by a correction factor CF, to consider, where applicable, the insertion loss due to cables (CL) and attenuators (AL). This correction factor was pre-inserted in the firmware of the receiver and was applied by the instrument during the test. The following relationships apply:

$CF = CL + AL$

$P_R = P_{IN} + CF$

8.4.3 Observations, settings and special notes

Input and output power was measured with a spectrum analyzer per ANSI C63.26 Paragraph 5.2.4.4.
AWGN5 signal with 95 MHz 99% OBW representative of a 100 MHz 5G NR channel used
EUT input power set to a level that is just below the AGC threshold, but not more than 0.5 dB below.
Repeated the test with the input signal amplitude set to 3 dB above the AGC threshold.
PAR measure is performed by the “CCDF” function installed on Spectrum analyzer that provides average power, peak power and PAR.

Spectrum analyzer settings:

Detector mode	RMS
Resolution bandwidth	100 kHz
Video bandwidth	300 kHz
Measurement mode	Power over emission bandwidth
Trace mode	Averaging
Measurement time	Auto

8.4.4 Test equipment used

Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397

8.4.5 Test data

Table 8.4-1: *Output power measurement results*

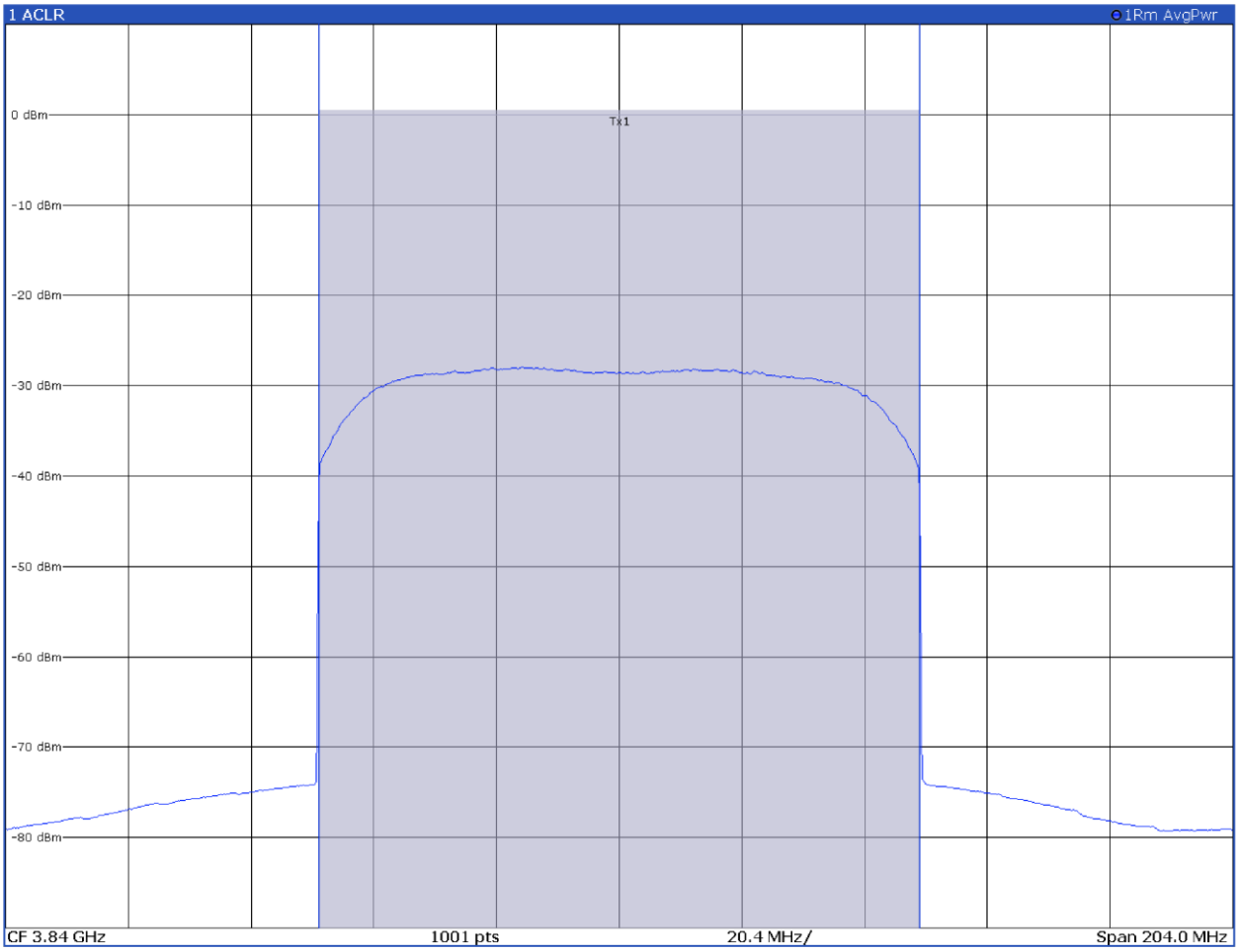
Antenna port	Input signal level	Frequency, MHz	RF input power, dBm	RF output power, dBm	RF output power, W	Gain, dB
1	AGC threshold	3840	0.5	45.1	32.4	44.6
1	AGC threshold +3 dB	3840	3.5	45.1	32.4	41.6
2	AGC threshold	3840	0.5	45.2	33.1	44.7
2	AGC threshold +3 dB	3840	3.5	45.2	33.1	41.7

Amplifier gain = measured RF output power (dBm) – measured RF input power (dBm)

The maximum antenna gain declared by the customer is 13 dBi. So the EIRP (dBm) = RF output power (dBm) + Antenna Gain (dB) = 58.2 dBm, corresponding to 661 W for each antenna. The total EIRP of 1322 W (MIMO configuration) results less than the limit of 1640 W/MHz.

Table 8.4-2: *Complementary Cumulative Distribution Function (CCDF) of the PAPR reduction measurement results*

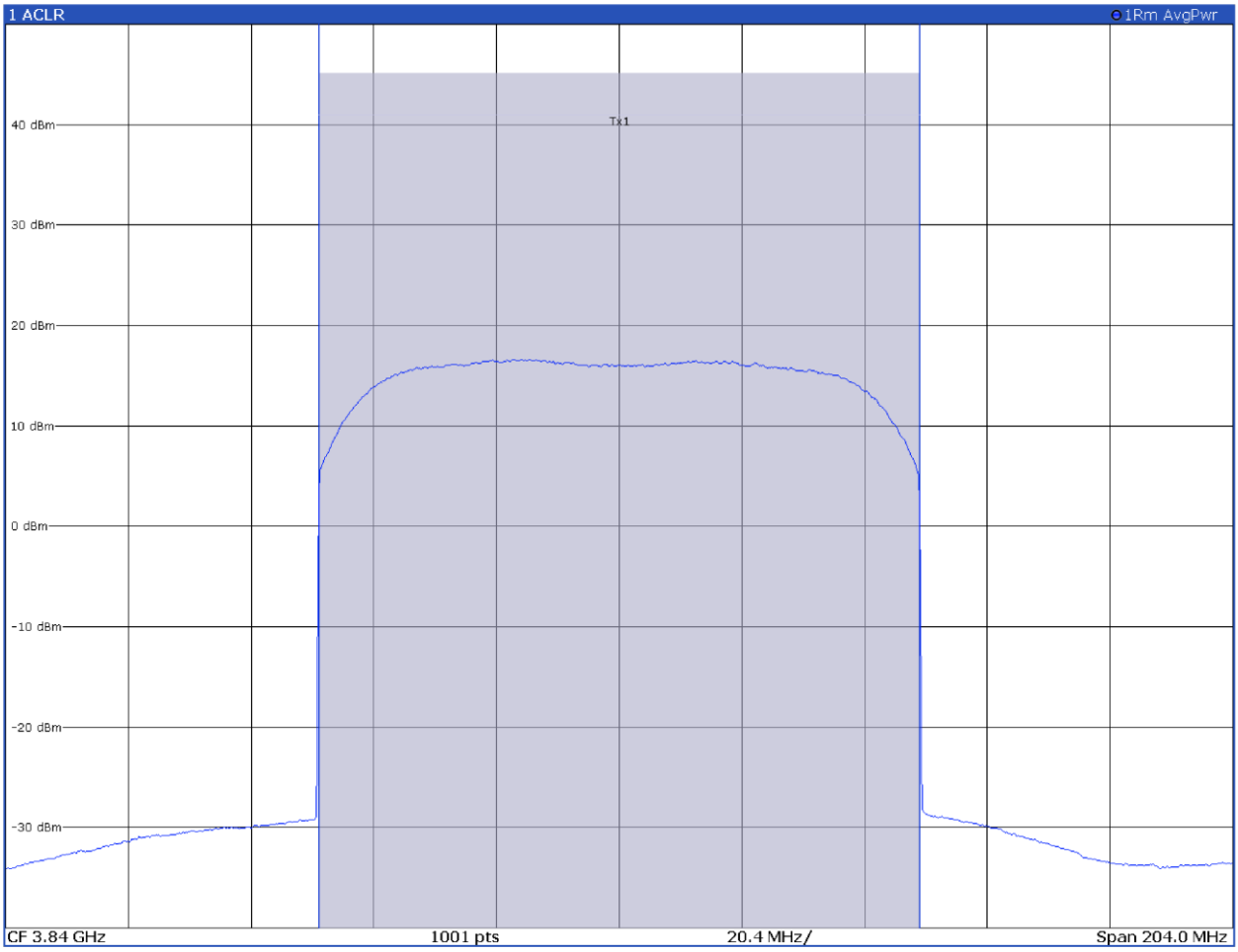
Antenna port	Input signal level	Frequency, MHz	0.1% CCDF, dB	PAPR reduction limit, dB	Margin, dB
1	AGC threshold	3840	8.40	13.00	-4.60
1	AGC threshold +3 dB	3840	8.30	13.00	-4.50
2	AGC threshold	3840	8.30	13.00	-4.50
2	AGC threshold +3 dB	3840	8.40	13.00	-4.60



2 Result Summary — 5G NR DL FR1 100MHz

Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**0.49 dBm**
Tx Total			**0.49 dBm**

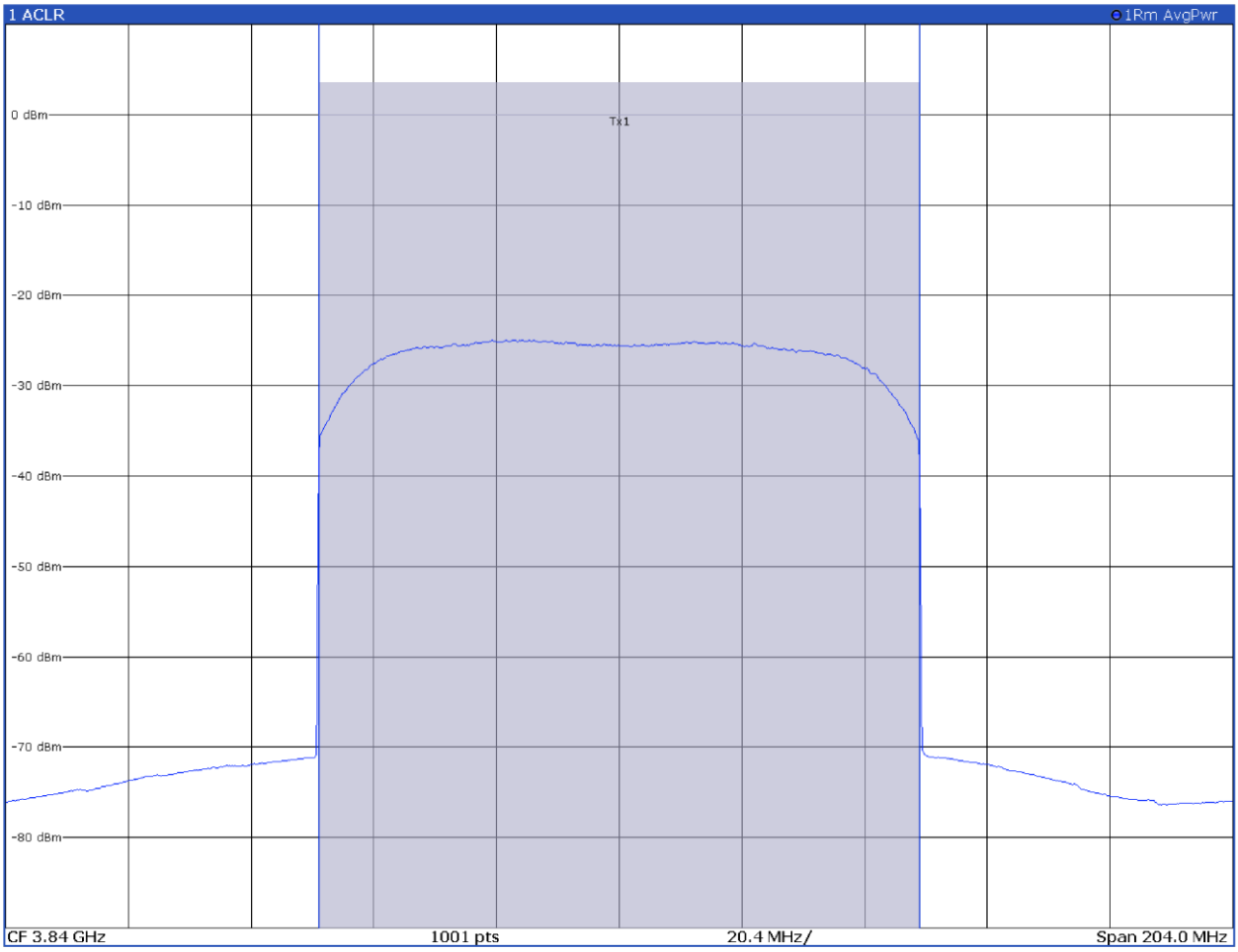
Figure 8.4-1: *Input power at antenna port 1 with input signal at AGC threshold*



2 Result Summary — 5G NR DL FR1 100MHz

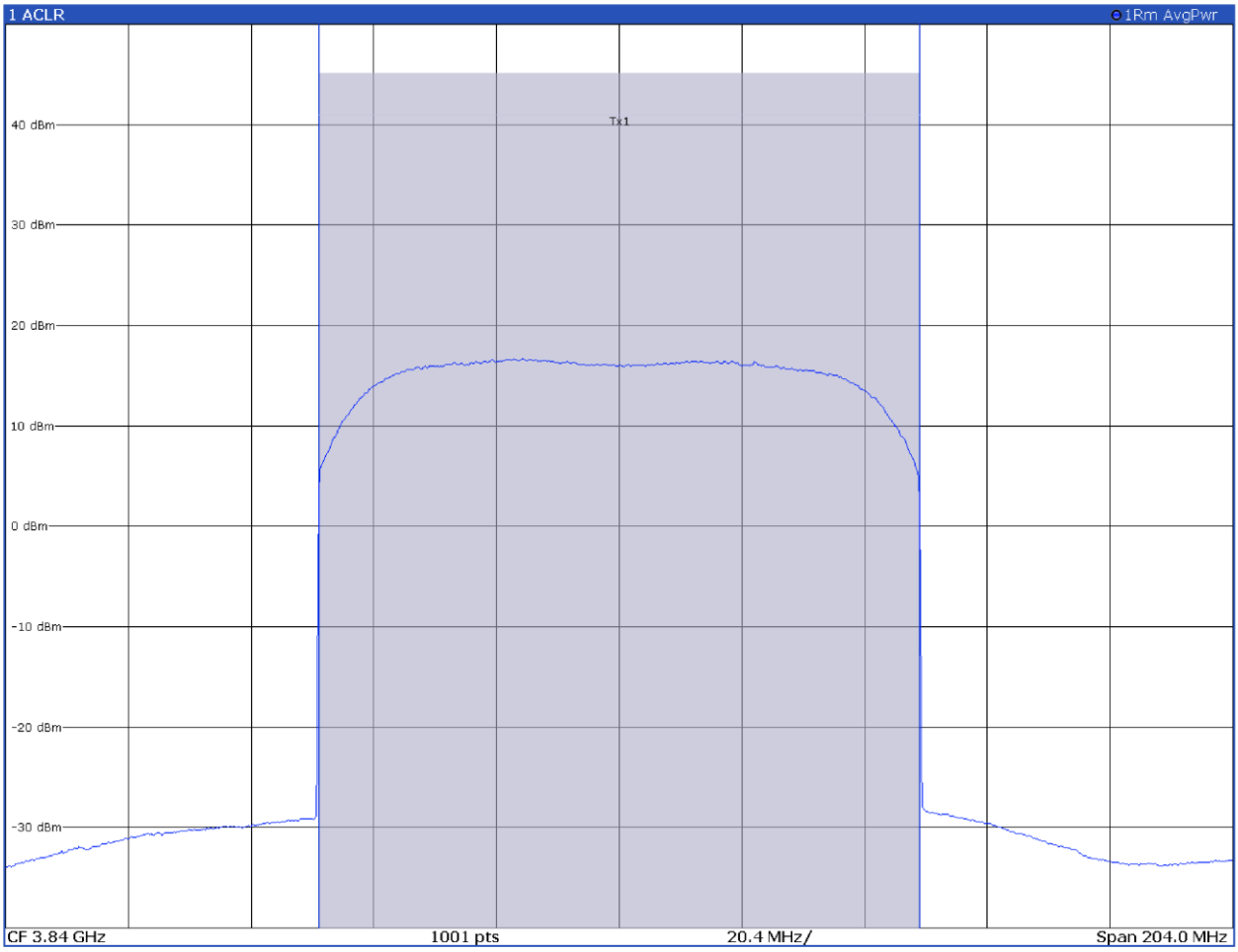
Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.08 dBm**
Tx Total			**45.08 dBm**

Figure 8.4-2: *Output power at antenna port 1 with input signal at AGC threshold*



2 Result Summary		5G NR DL FR1 100MHz	
Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**3.52 dBm**
Tx Total			**3.52 dBm**

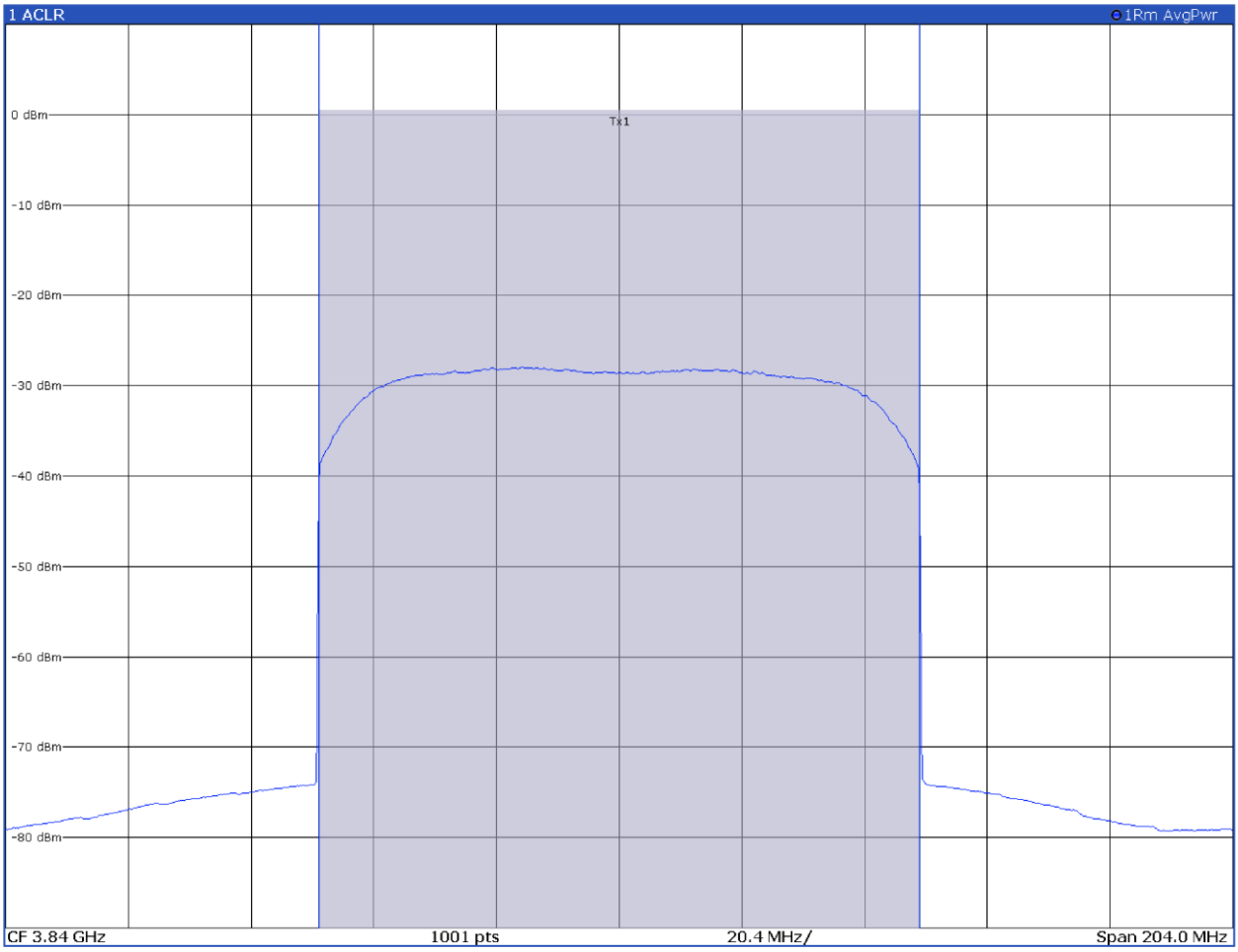
Figure 8.4-3: *Input power at antenna port 1 with input signal at AGC threshold +3 dB*



2 Result Summary — 5G NR DL FR1 100MHz

Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.12 dBm**
Tx Total			**45.12 dBm**

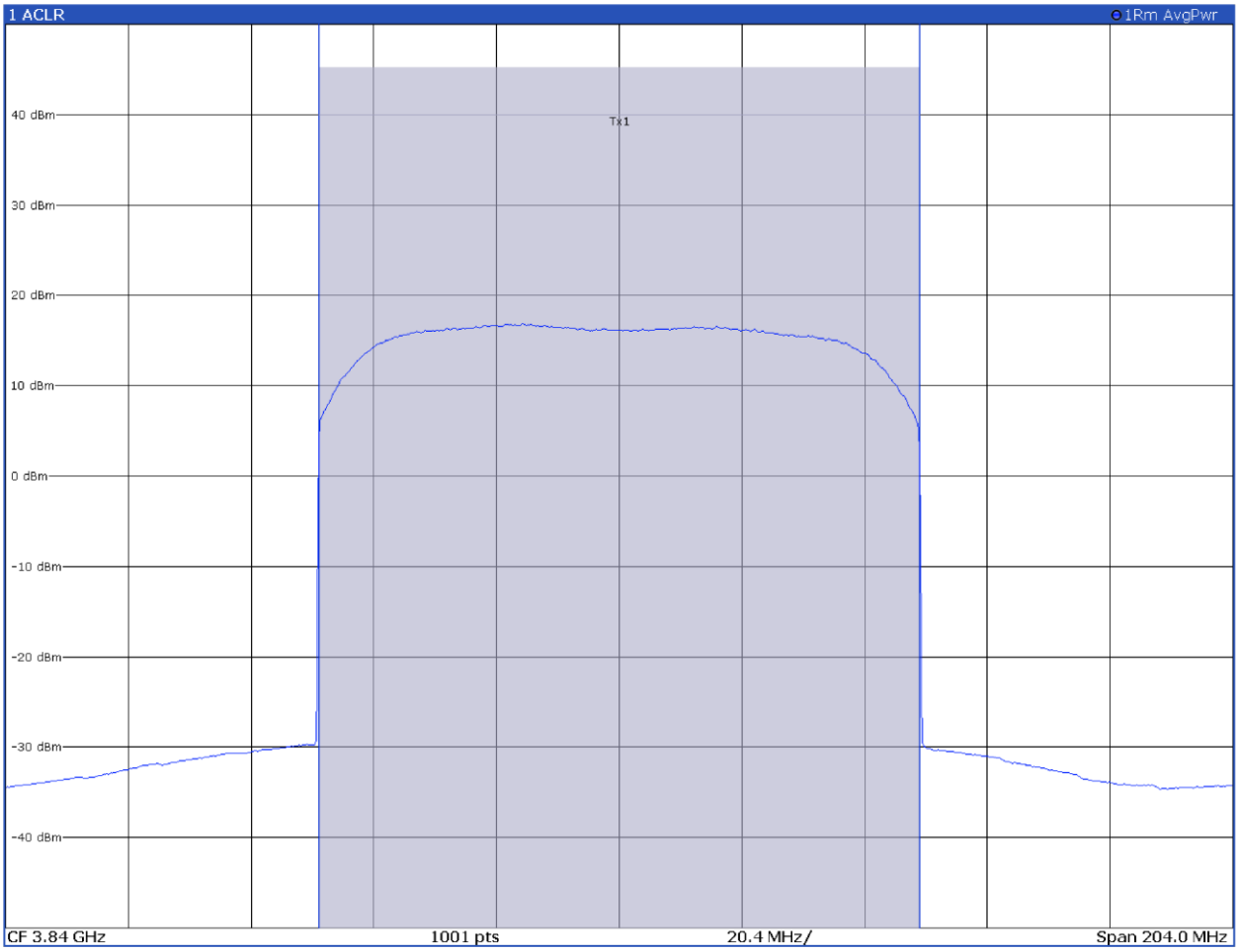
Figure 8.4-4: *Output power at antenna port 1 with input signal at AGC threshold +3 dB*



2 Result Summary — 5G NR DL FR1 100MHz

Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**0.49 dBm**
Tx Total			**0.49 dBm**

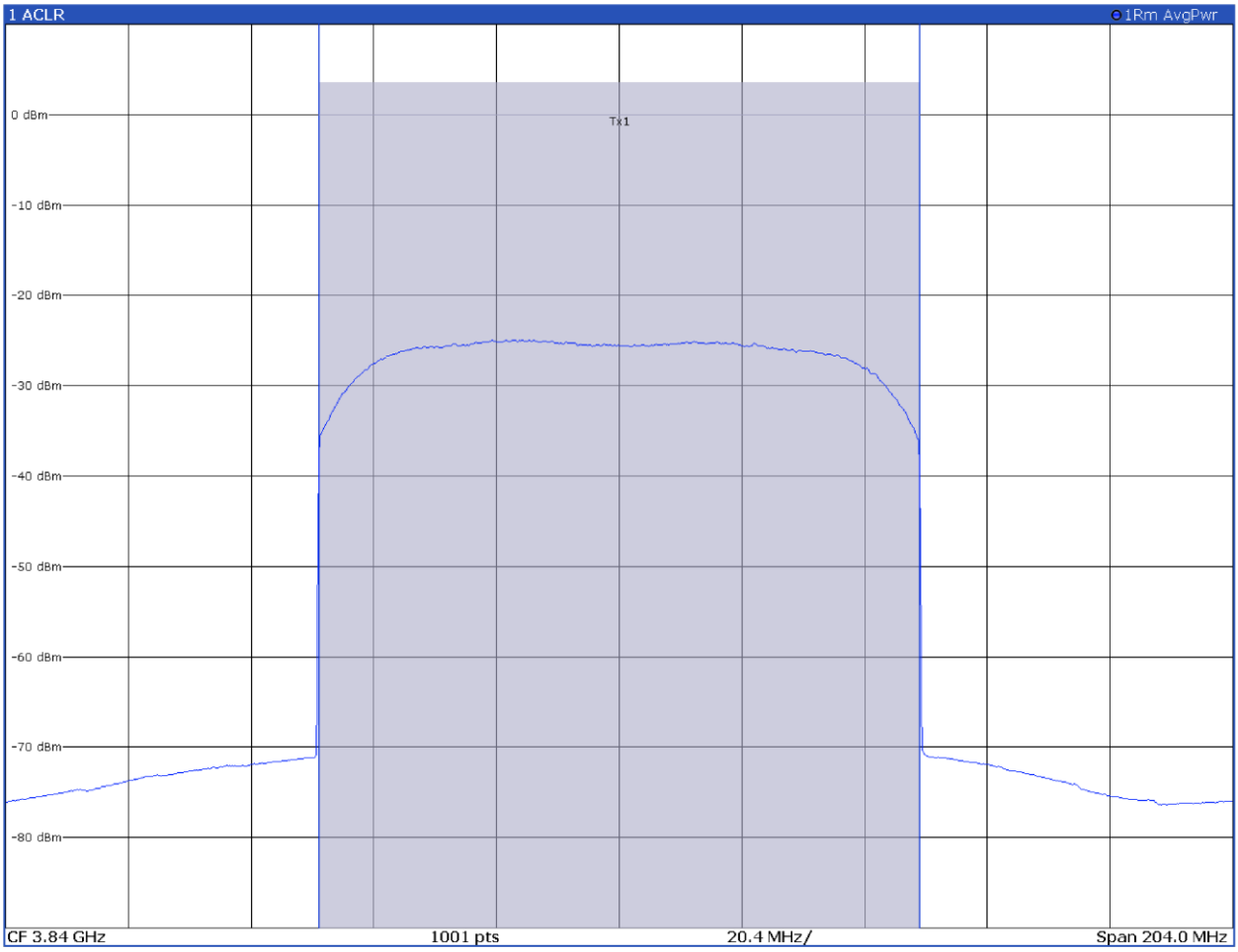
Figure 8.4-5: *Input power at antenna port 2 with input signal at AGC threshold*



2 Result Summary — 5G NR DL FR1 100MHz

Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.22 dBm**
Tx Total			**45.22 dBm**

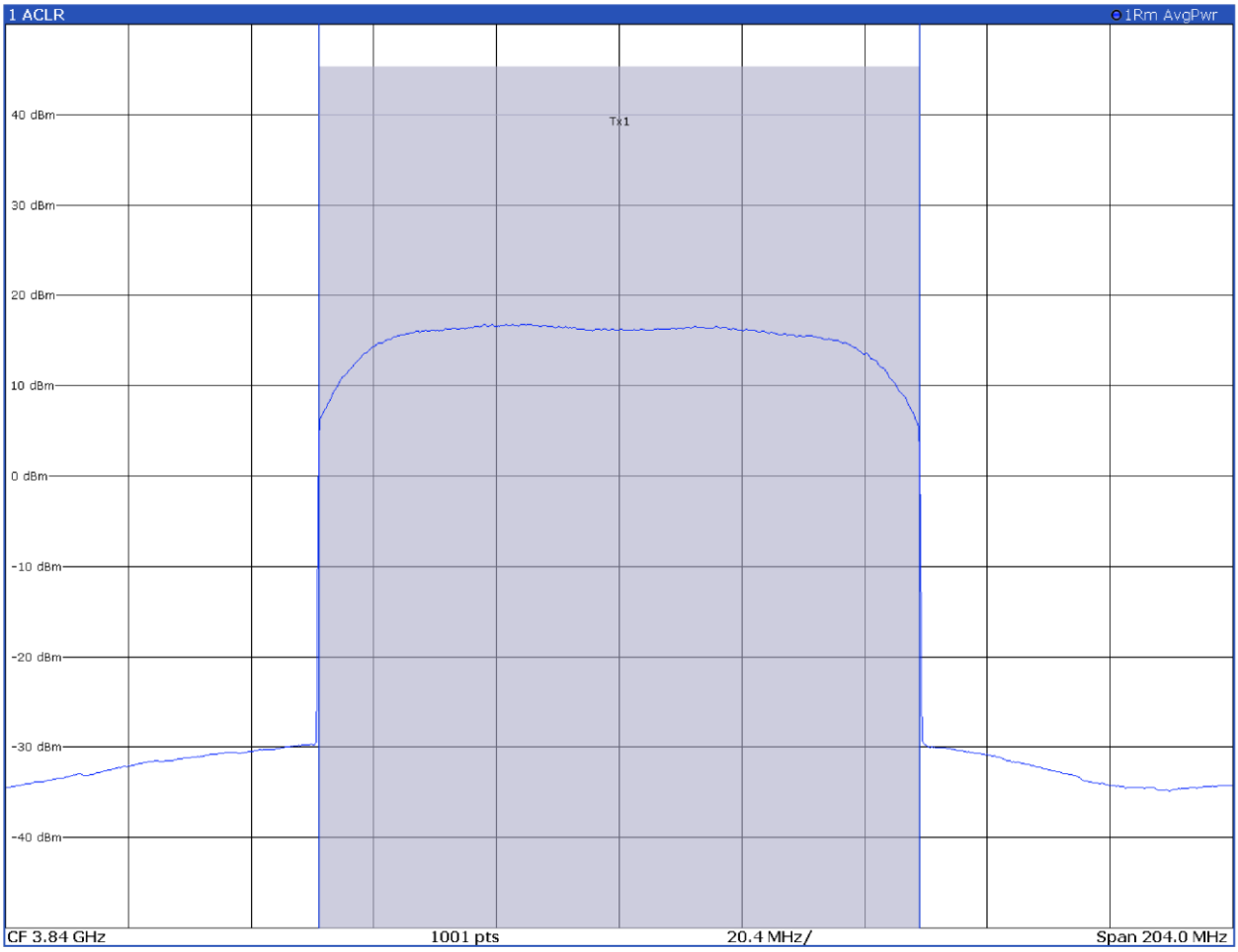
Figure 8.4-6: *Output power at antenna port 2 with input signal at AGC threshold*



2 Result Summary — 5G NR DL FR1 100MHz

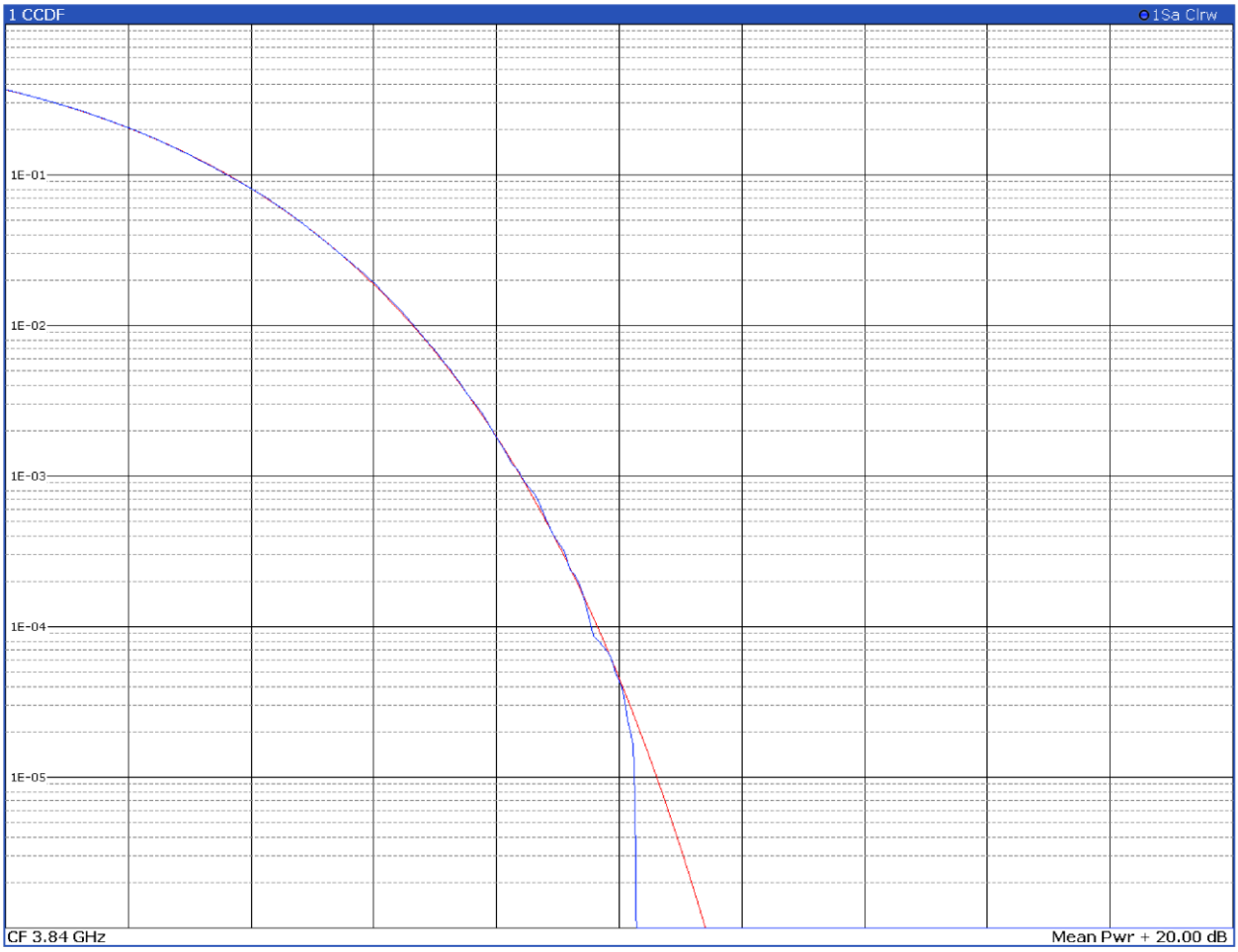
Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**3.52 dBm**
Tx Total			**3.52 dBm**

Figure 8.4-7: *Input power at antenna port 2 with input signal at AGC threshold +3 dB*



2 Result Summary		5G NR DL FR1 100MHz	
Channel	Bandwidth	Offset	Power
Tx1 (Ref)	100.000 MHz		**45.25 dBm**
Tx Total			**45.25 dBm**

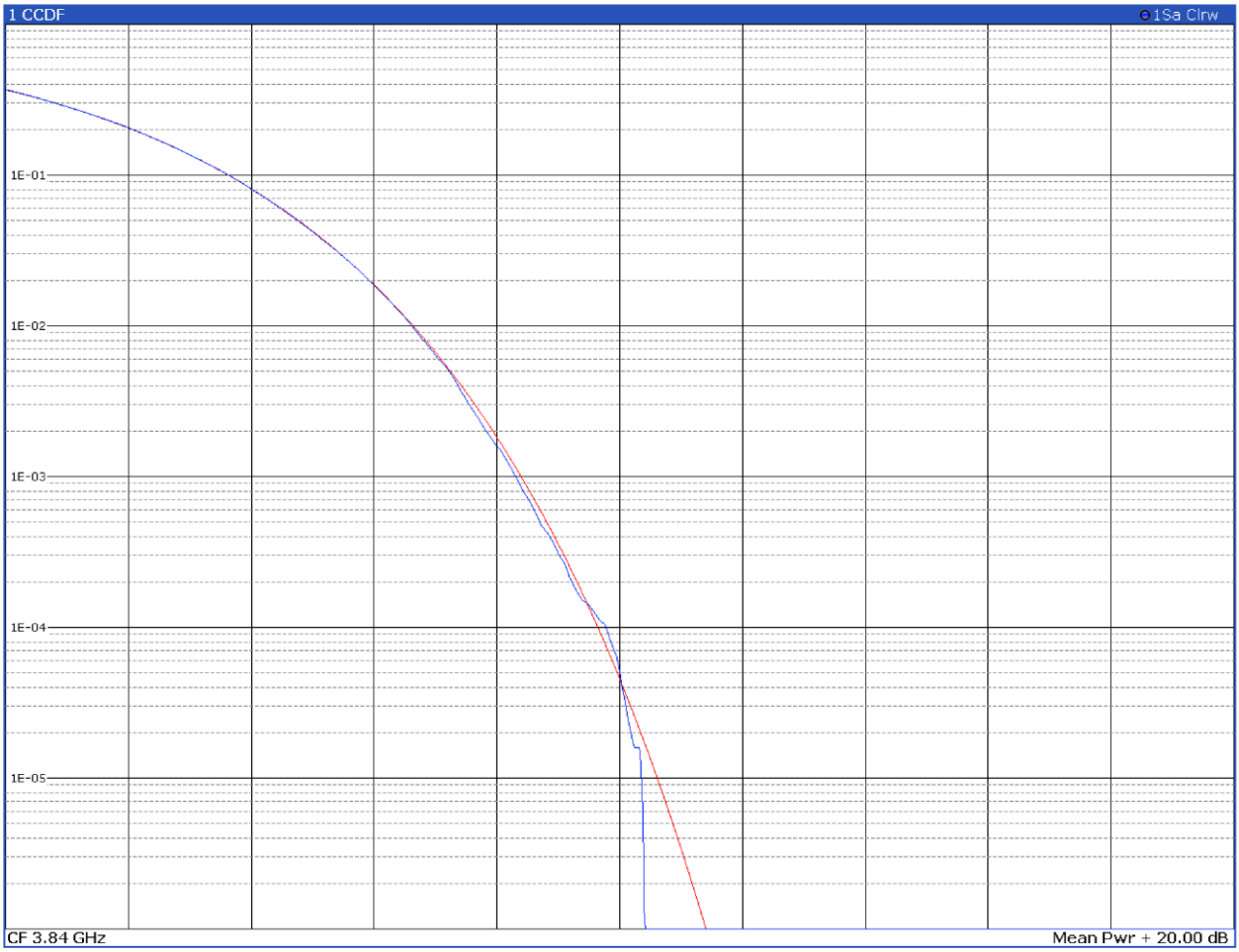
Figure 8.4-8: *Output power at antenna port 2 with input signal at AGC threshold +3 dB*



2 Result Summary — Samples: 100000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	**45.16 dBm**	**55.43 dBm**	**10.27 dB**	3.60 dB	6.66 dB	8.40 dB	9.54 dB

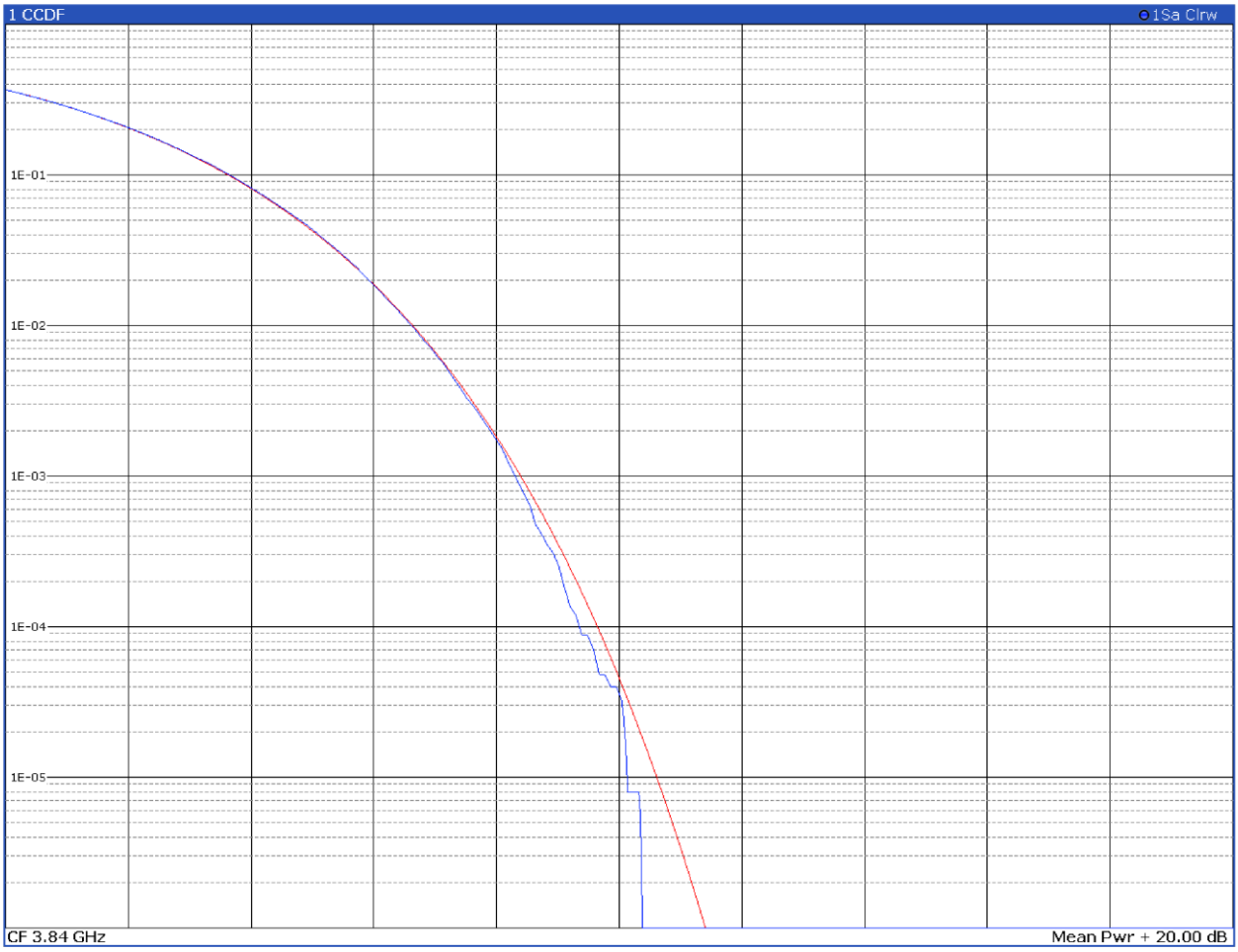
Figure 8.4-9: *PAPR at antenna port 1 with input signal at AGC threshold*



2 Result Summary — Samples: 100000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	**47.51 dBm**	**57.91 dBm**	**10.40 dB**	3.62 dB	6.62 dB	8.30 dB	9.78 dB

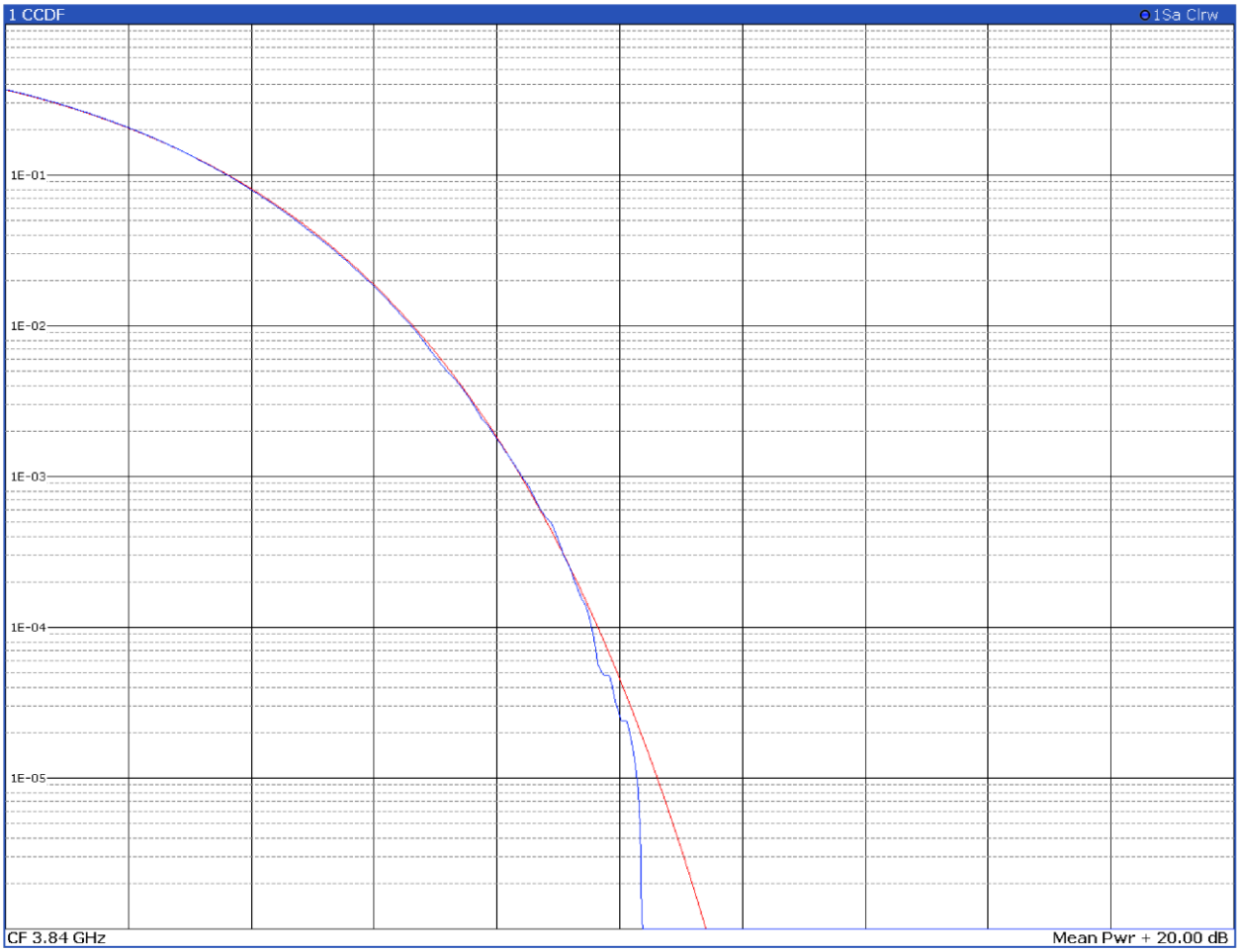
Figure 8.4-10: *PAPR at antenna port 1 with input signal at AGC threshold +3 dB*



2 Result Summary — Samples: 100000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	**45.44 dBm**	**55.82 dBm**	**10.37 dB**	3.64 dB	6.62 dB	8.30 dB	9.34 dB

Figure 8.4-11: *PAPR at antenna port 2 with input signal at AGC threshold*



2 Result Summary — Samples: 100000

	Mean	Peak	Crest	10%	1%	0.1%	0.01%
Trace 1	**45.65 dBm**	**56.01 dBm**	**10.36 dB**	3.60 dB	6.60 dB	8.40 dB	9.54 dB

Figure 8.4-12: *PAPR at antenna port 2 with input signal at AGC threshold +3 dB*

8.5 Out-of-band/out-of-block emissions conducted measurements

8.5.1 References, definitions and limits

FCC §27.53(l)

(l) 3.7 GHz Service. The following emission limits apply to stations transmitting in the 3700-3980 MHz band:

(1) For base station operations in the 3700-3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed −13 dBm/MHz. Compliance with this paragraph (l)(1) 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.

8.5.2 Test summary

Verdict	Pass		
Tested by	P. Barbieri	Test date	March 18, 2026

Receiver reading P_R, reported at Test Data clause, was achieved adjusting input signal P_{IN} by a correction factor CF, to consider, where applicable, the insertion loss due to cables (CL) and attenuators (AL). This correction factor was pre-inserted in the firmware of the receiver and was applied by the instrument during the test. The following relationships apply:

$CF = CL + AL$

$P_R = P_{IN} + CF$

8.5.3 Observations, settings and special notes

AWGN5 signal with 95 MHz 99% OBW representative of a 100 MHz 5G NR channel used
EUT input power set to a level that is just below the AGC threshold, but not more than 0.5 dB below.
Repeated the test with the input signal amplitude set to 3 dB above the AGC threshold.
Test performed with one single carrier and two adjacent carriers.
Limit line (−13 dBm/MHz) was adjusted for MIMO operation by 3 dB*: −13 dBm – 3 dB = −16 dBm
Limit line (−16 dBm/MHz) was adjusted for RBW reduction to 100 kHz by -10 dBm = -10 log (1 MHz / 0.1 MHz)
*MIMO correction factor for 2 antenna ports: $10 \times \text{Log}_{10}(2) = 3.01$ dB

Spectrum analyser settings for spurious emissions in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block:

Resolution bandwidth:	100 kHz
Video bandwidth:	3 x RBW
Detector mode:	RMS
Trace mode:	Averaging

Input signal frequency

Lower block edge intermodulation products:	3750 MHz and 3850 MHz
Upper block edge intermodulation products:	3930 MHz and 3830 MHz
Lower block edge, single carrier:	3750 MHz
Upper block edge, single carrier:	3930 MHz

8.5.4 Test equipment used

Equipment	Manufacturer	Model no.	Asset no.
Spectrum Analyzer	Rohde & Schwarz	FSW43	101767
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263254
RF Vector Signal Generator	Rohde & Schwarz	SMBV100A	263397

8.5.5 Test data

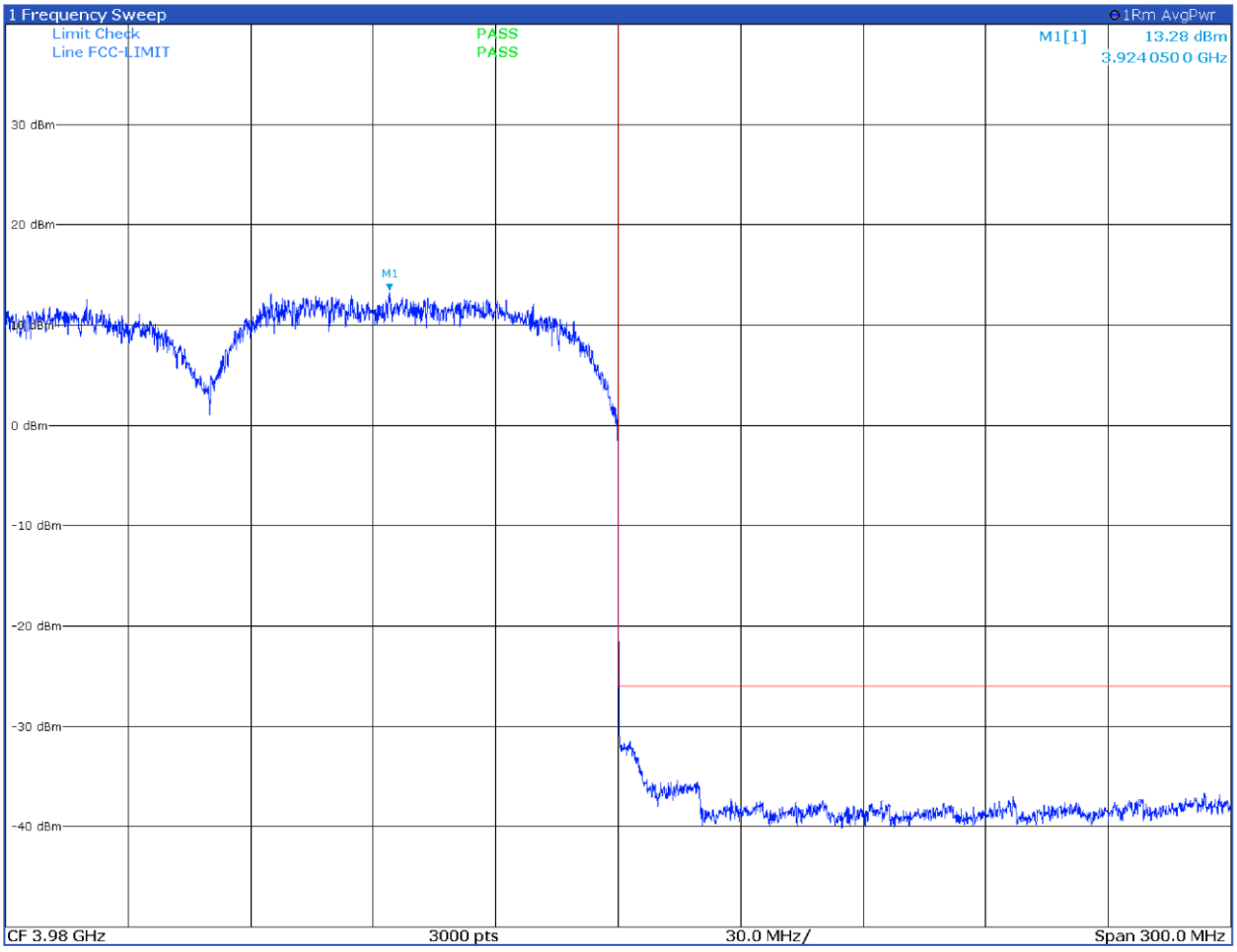


Figure 8.5-1: *Antenna port 1 upper block edge intermodulation products with input signal at AGC threshold*

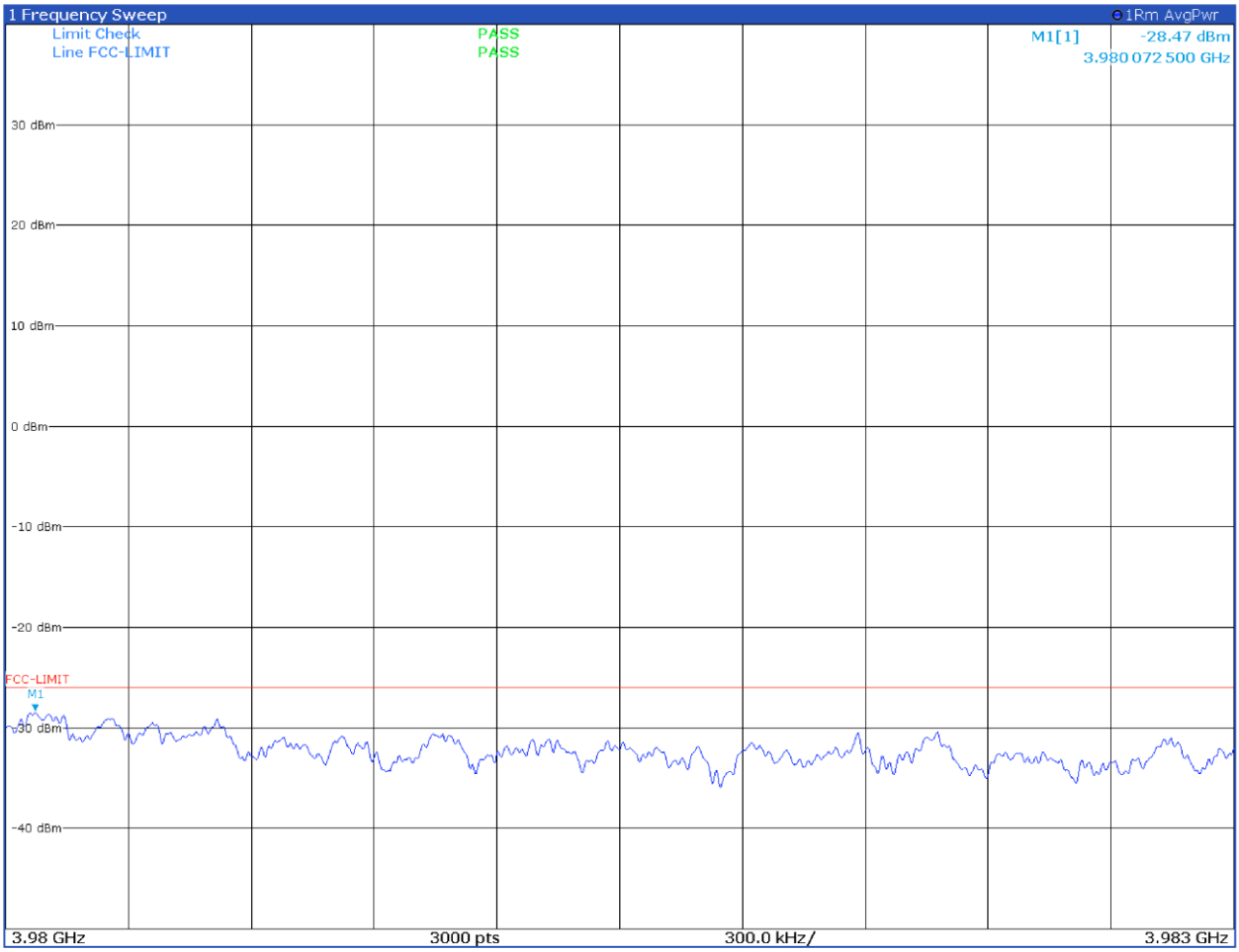


Figure 8.5-2: *Antenna port 1 upper block edge intermodulation products with input signal at AGC threshold*

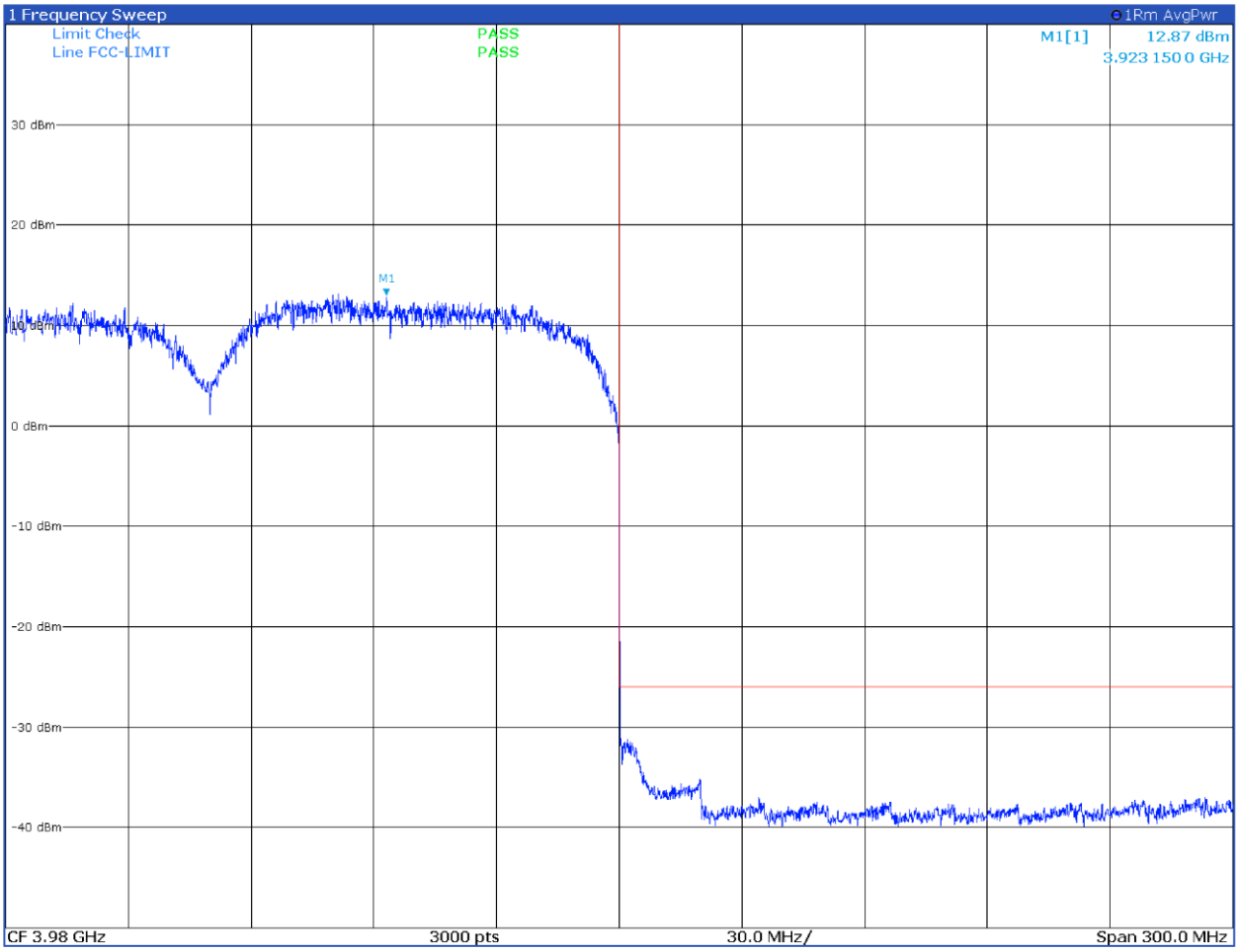


Figure 8.5-3: *Antenna port 1 upper block edge intermodulation products with input signal at AGC threshold +3 dB*

Test data, continued

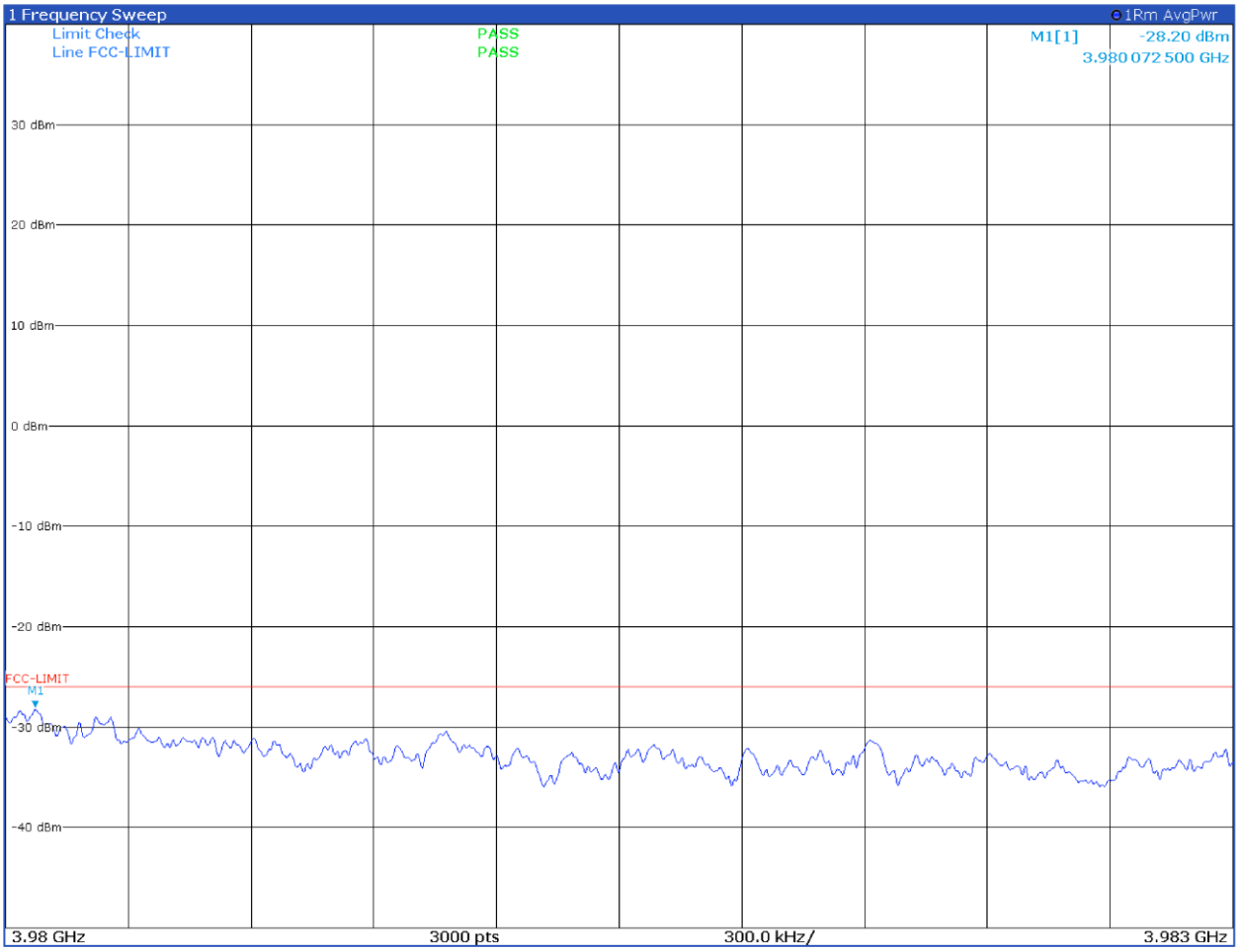


Figure 8.5-4: *Antenna port 1 upper block edge intermodulation products with input signal at AGC threshold +3 dB*

Test data, continued

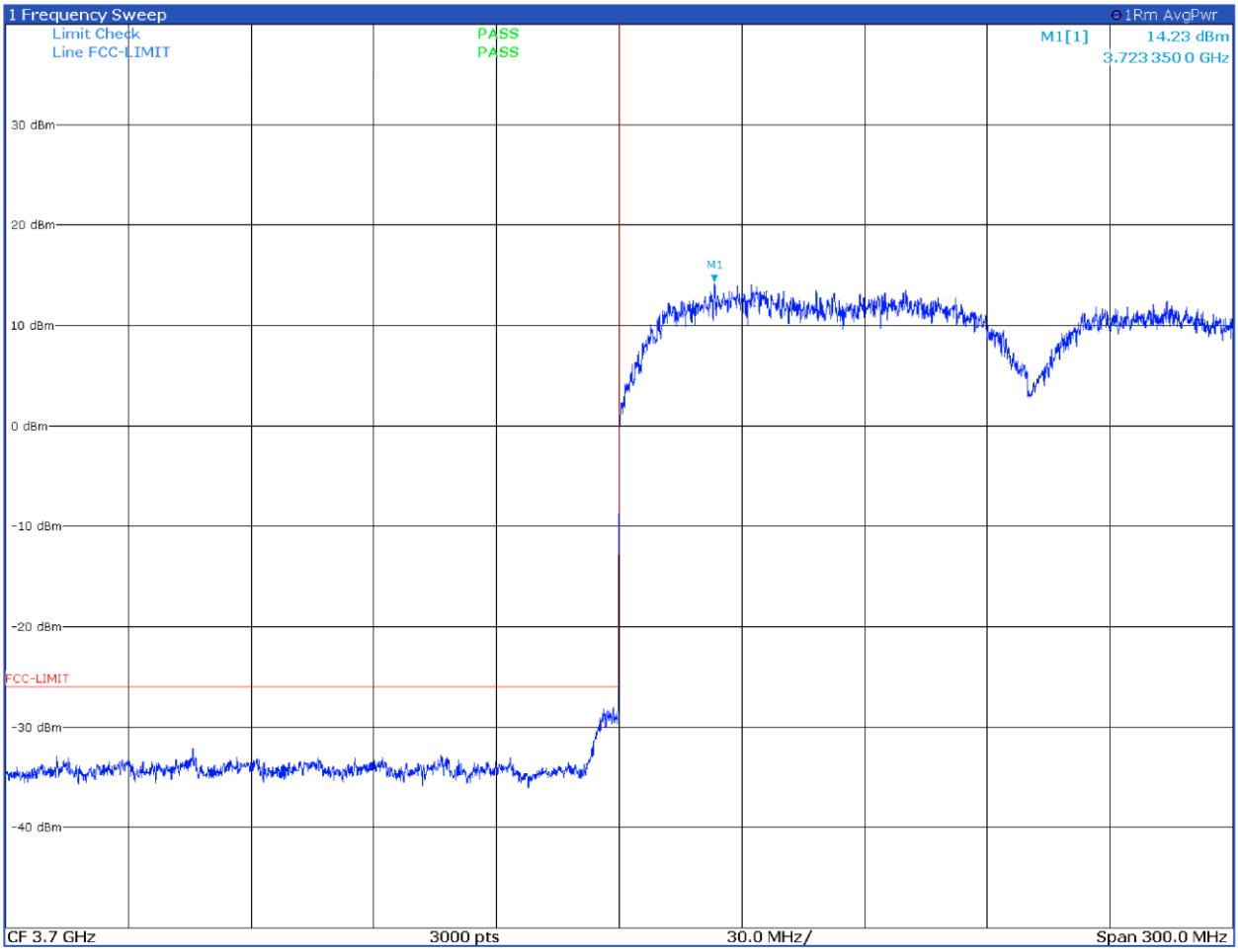


Figure 8.5-5: *Antenna port 1 lower block edge intermodulation products with input signal at AGC threshold*

Test data, continued

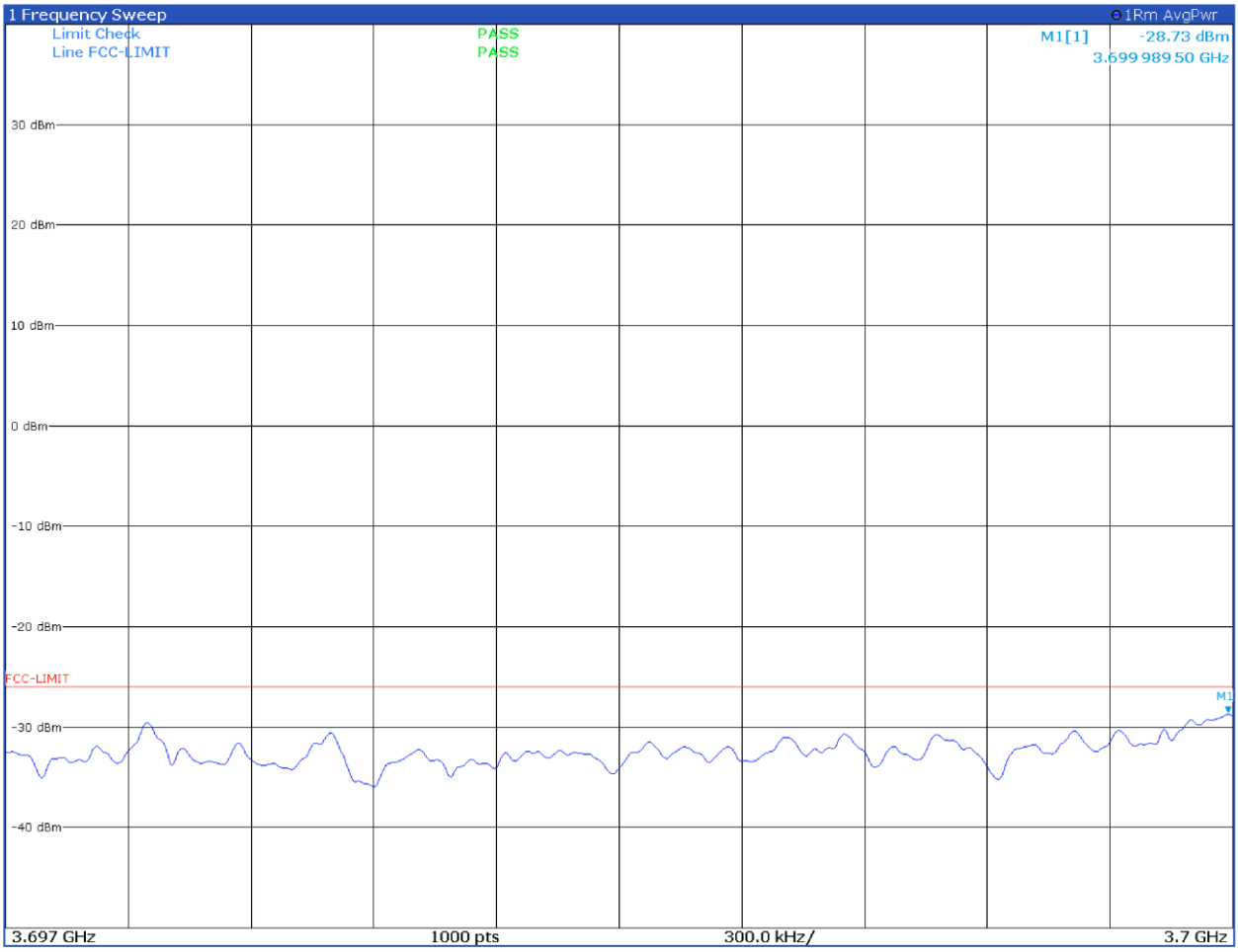


Figure 8.5-6: *Antenna port 1 lower block edge intermodulation products with input signal at AGC threshold*

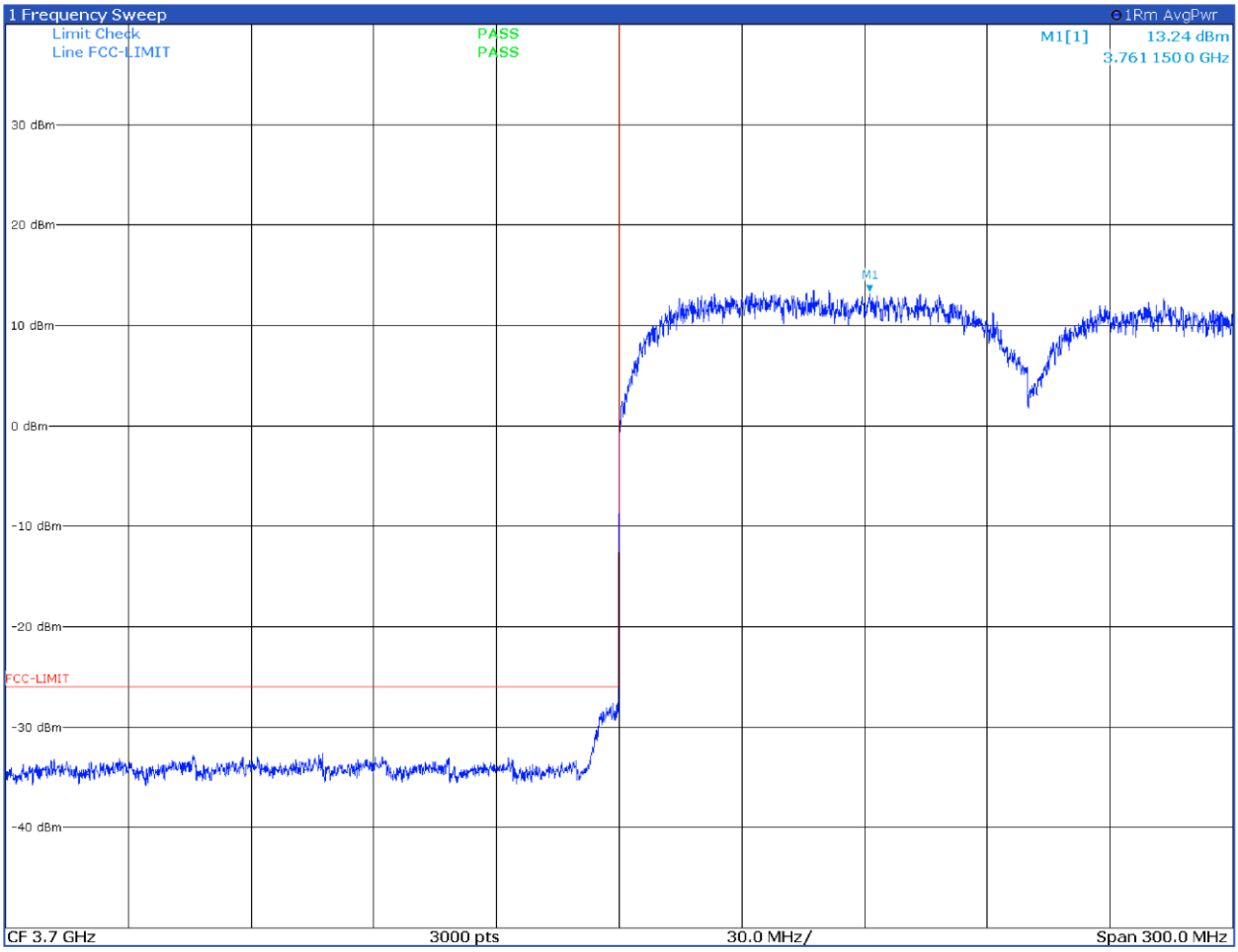


Figure 8.5-7: *Antenna port 1 lower block edge intermodulation products with input signal at AGC threshold +3 dB*

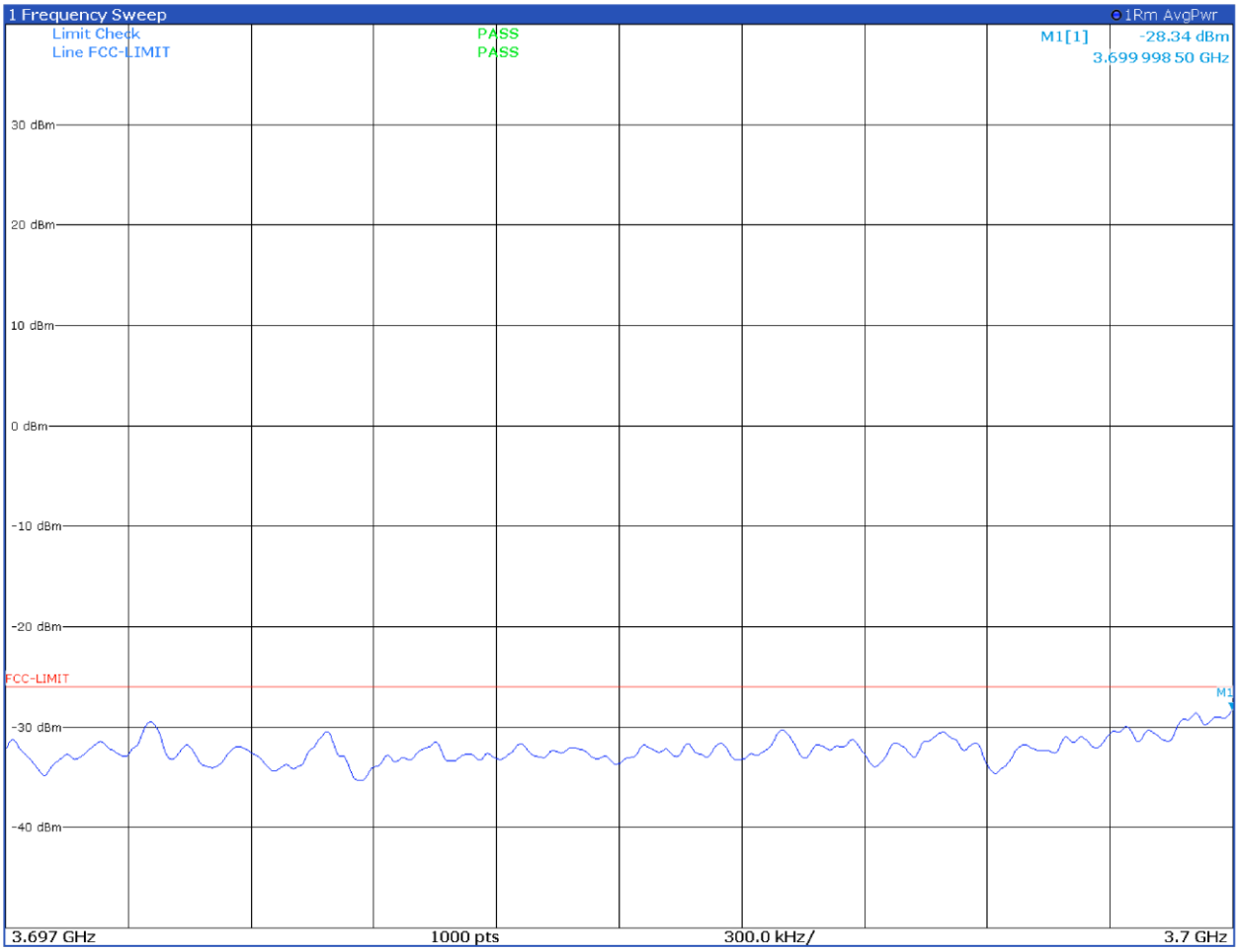


Figure 8.5-8: *Antenna port 1 lower block edge intermodulation products with input signal at AGC threshold +3 dB*

Test data, continued

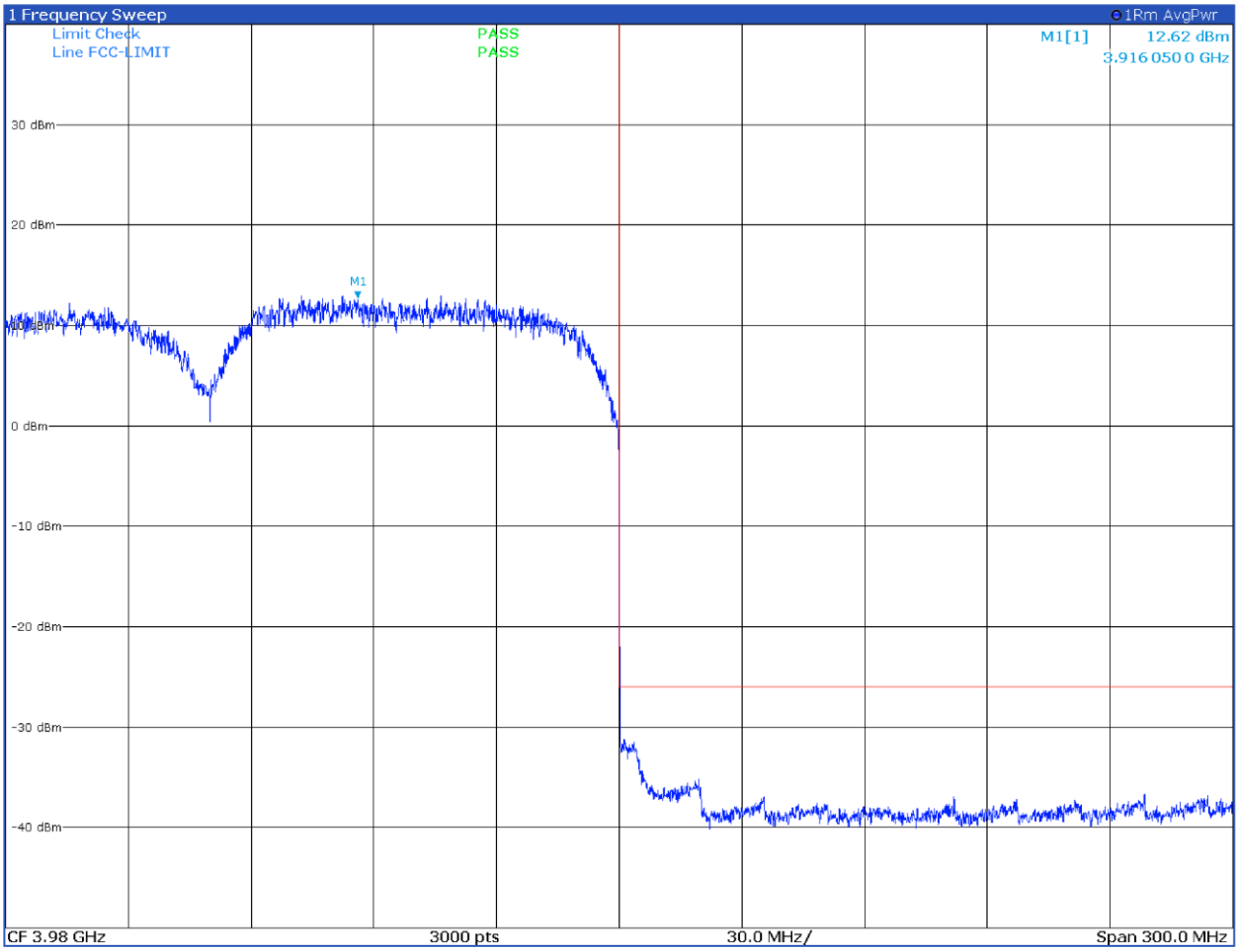


Figure 8.5-9: *Antenna port 2 upper block edge intermodulation products with input signal at AGC threshold*

Test data, continued

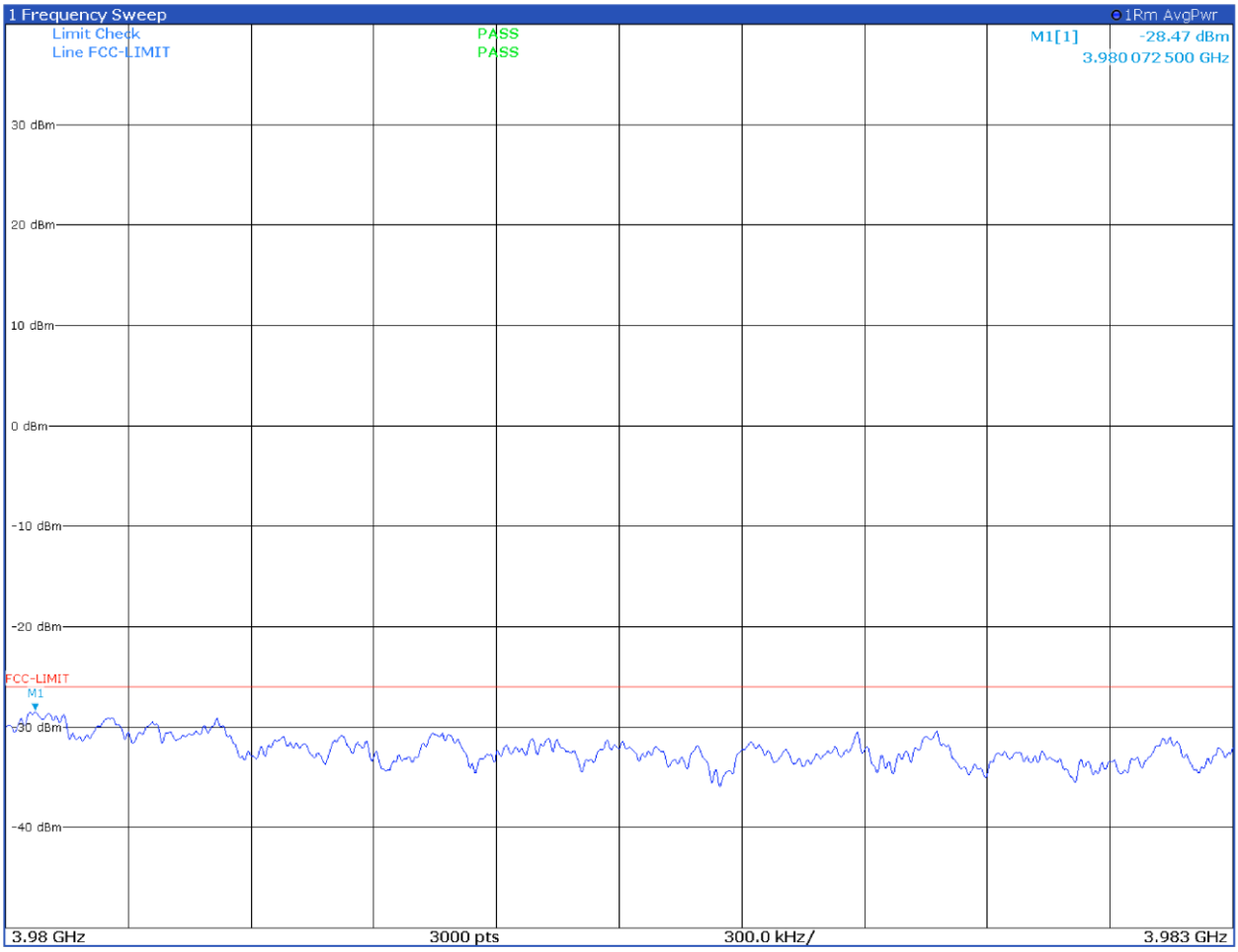


Figure 8.5-10: *Antenna port 2 upper block edge intermodulation products with input signal at AGC threshold*

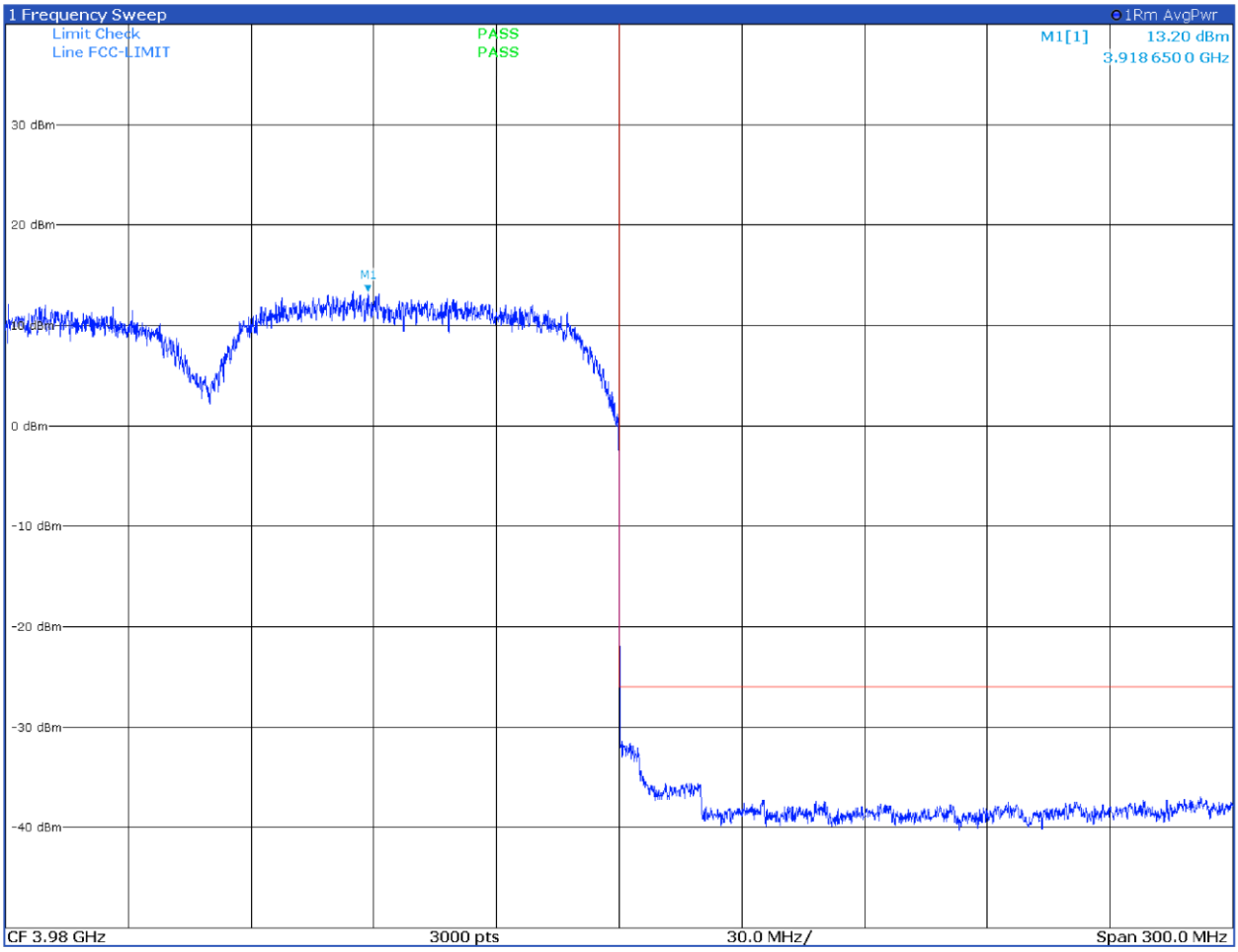


Figure 8.5-11: *Antenna port 2 upper block edge intermodulation products with input signal at AGC threshold +3 dB*

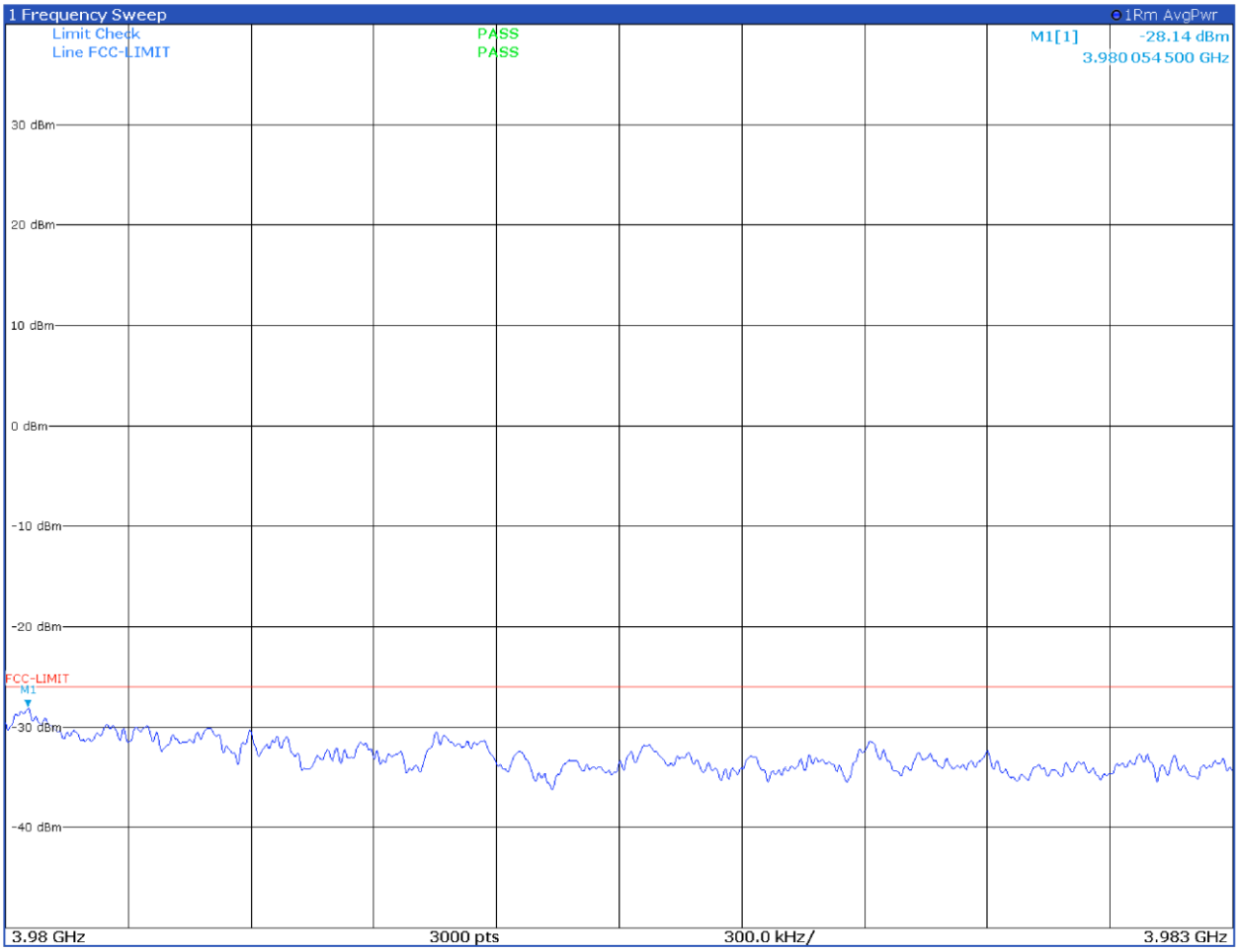


Figure 8.5-12: *Antenna port 2 upper block edge intermodulation products with input signal at AGC threshold +3 dB*

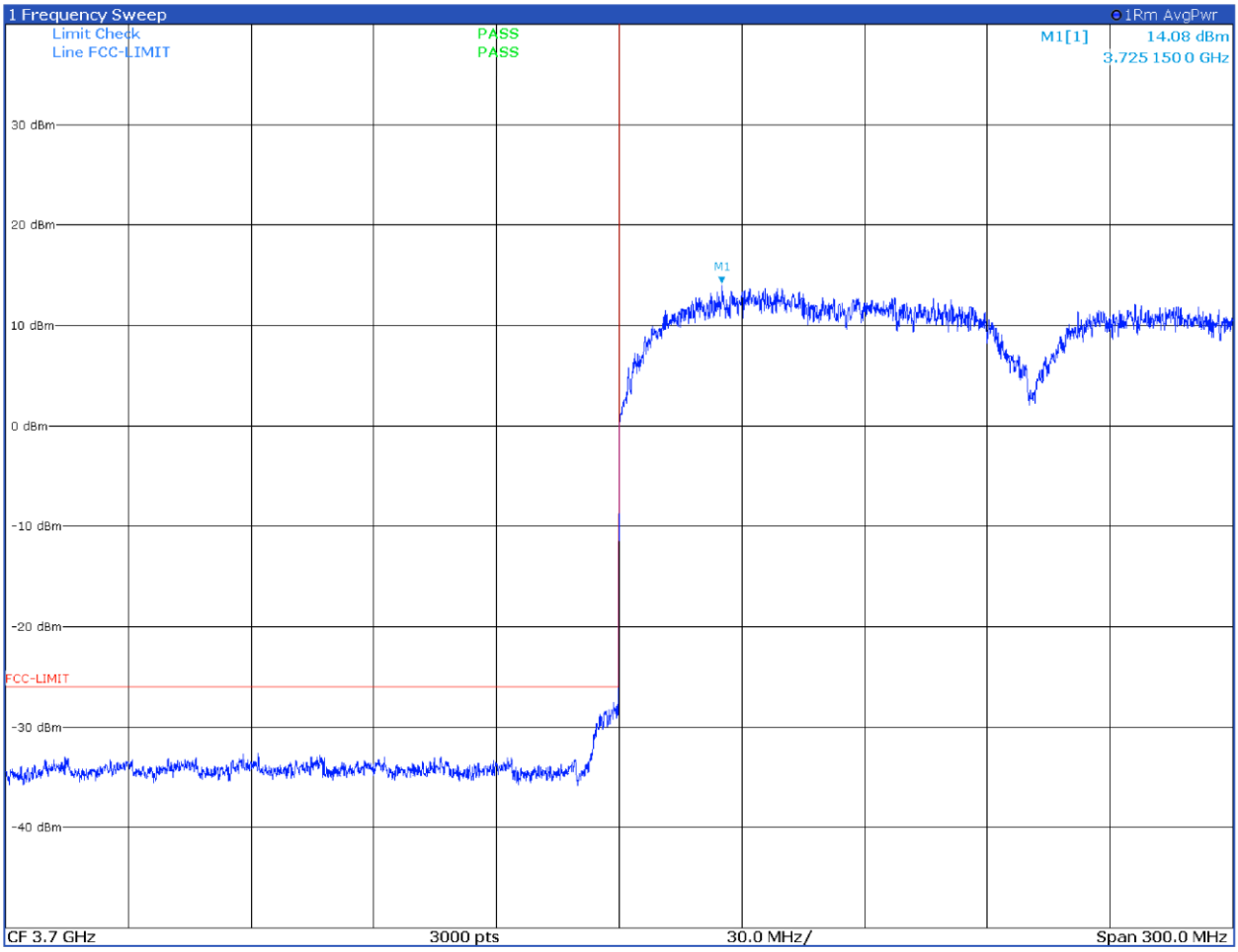


Figure 8.5-13: *Antenna port 2 lower block edge intermodulation products with input signal at AGC threshold*

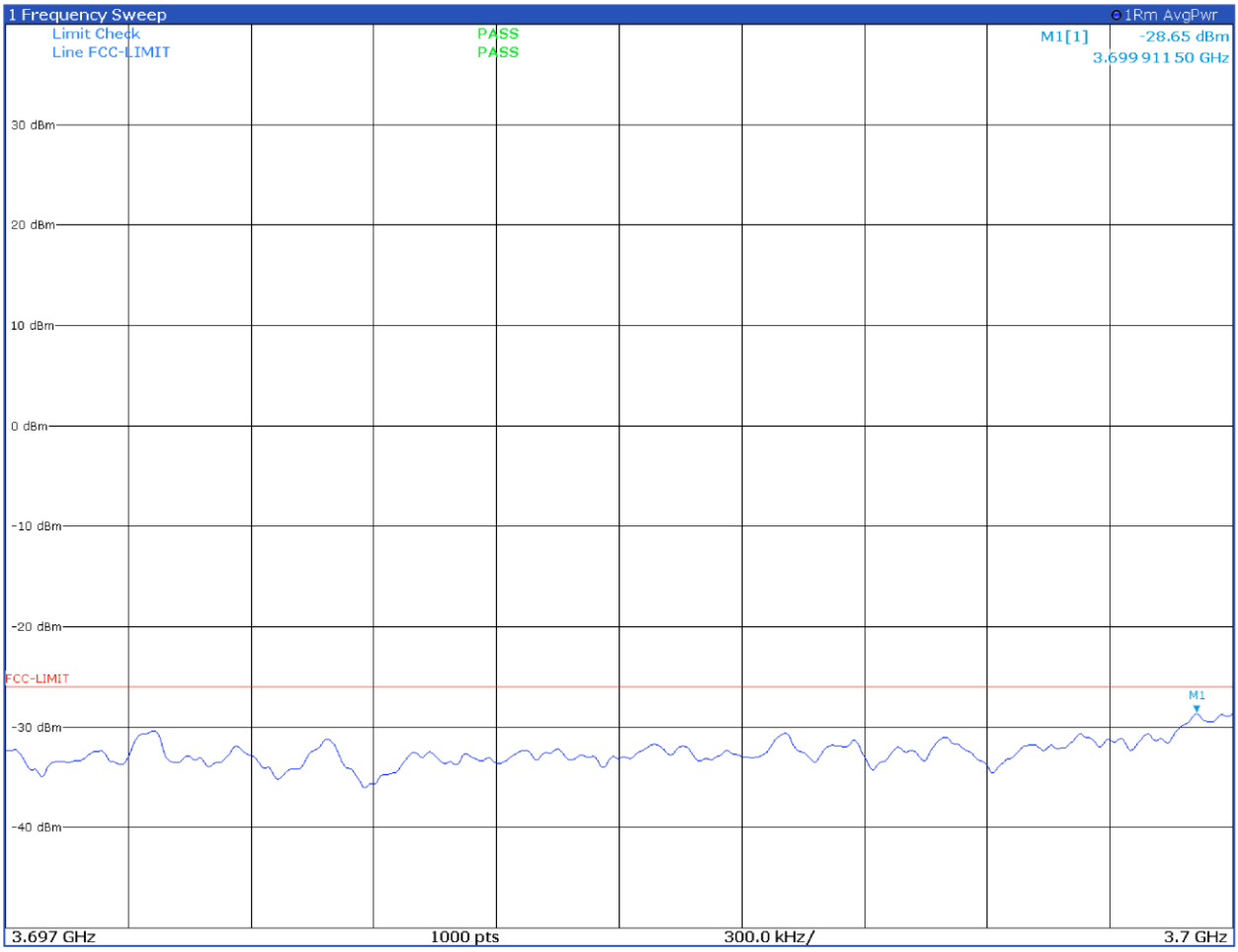


Figure 8.5-14: *Antenna port 2 lower block edge intermodulation products with input signal at AGC threshold*

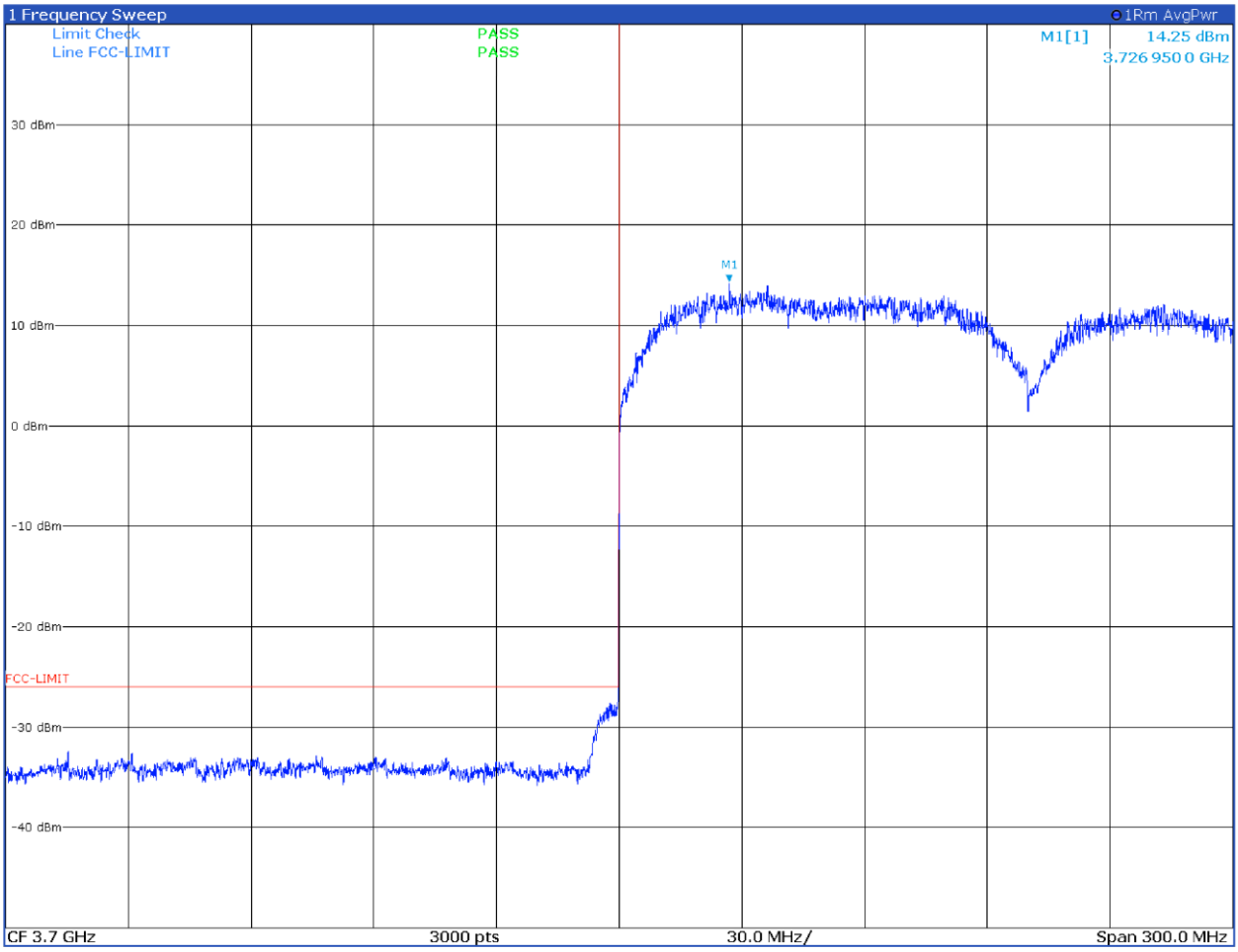


Figure 8.5-15: *Antenna port 2 lower block edge intermodulation products with input signal at AGC threshold +3 dB*

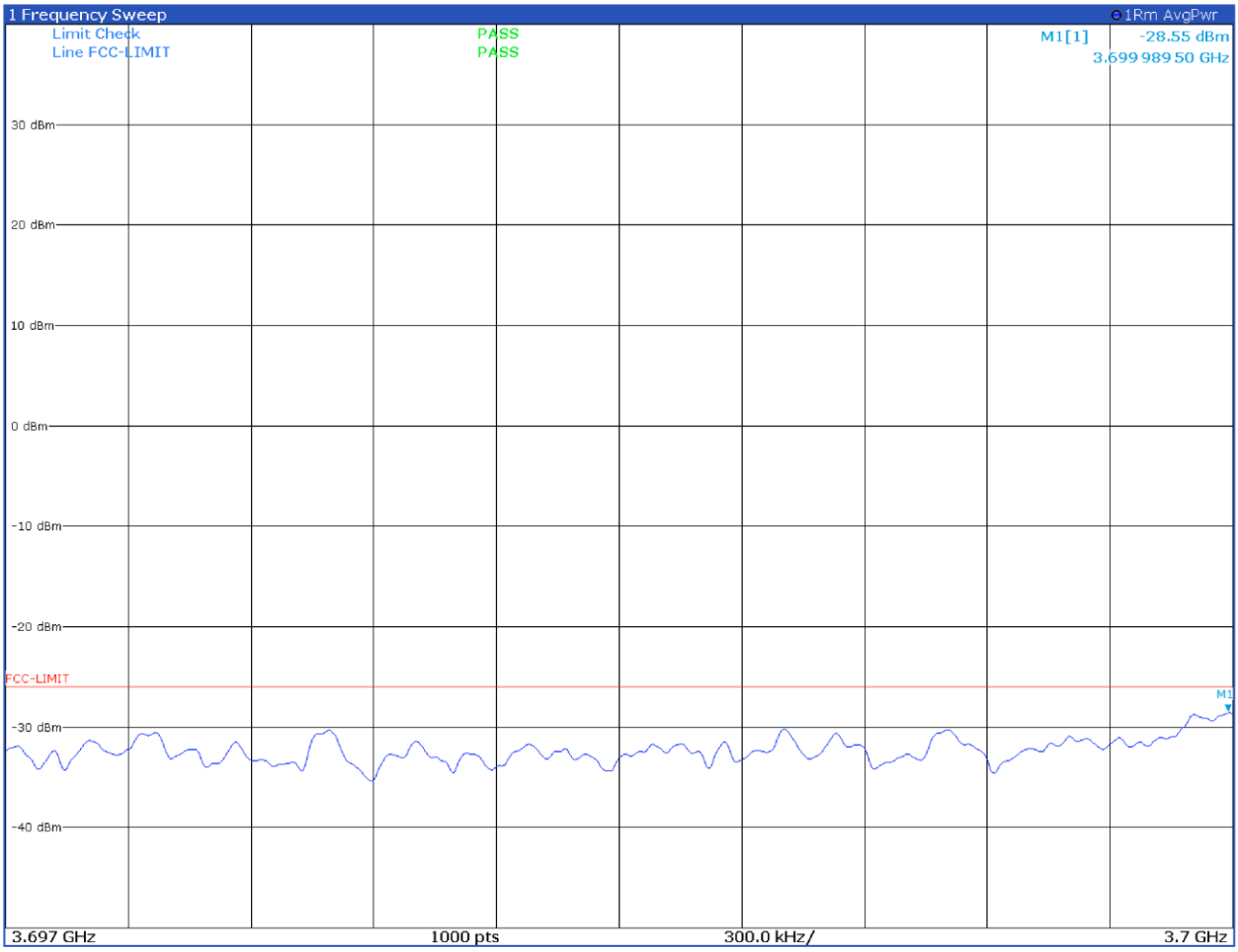


Figure 8.5-16: *Antenna port 2 lower block edge intermodulation products with input signal at AGC threshold +3 dB*

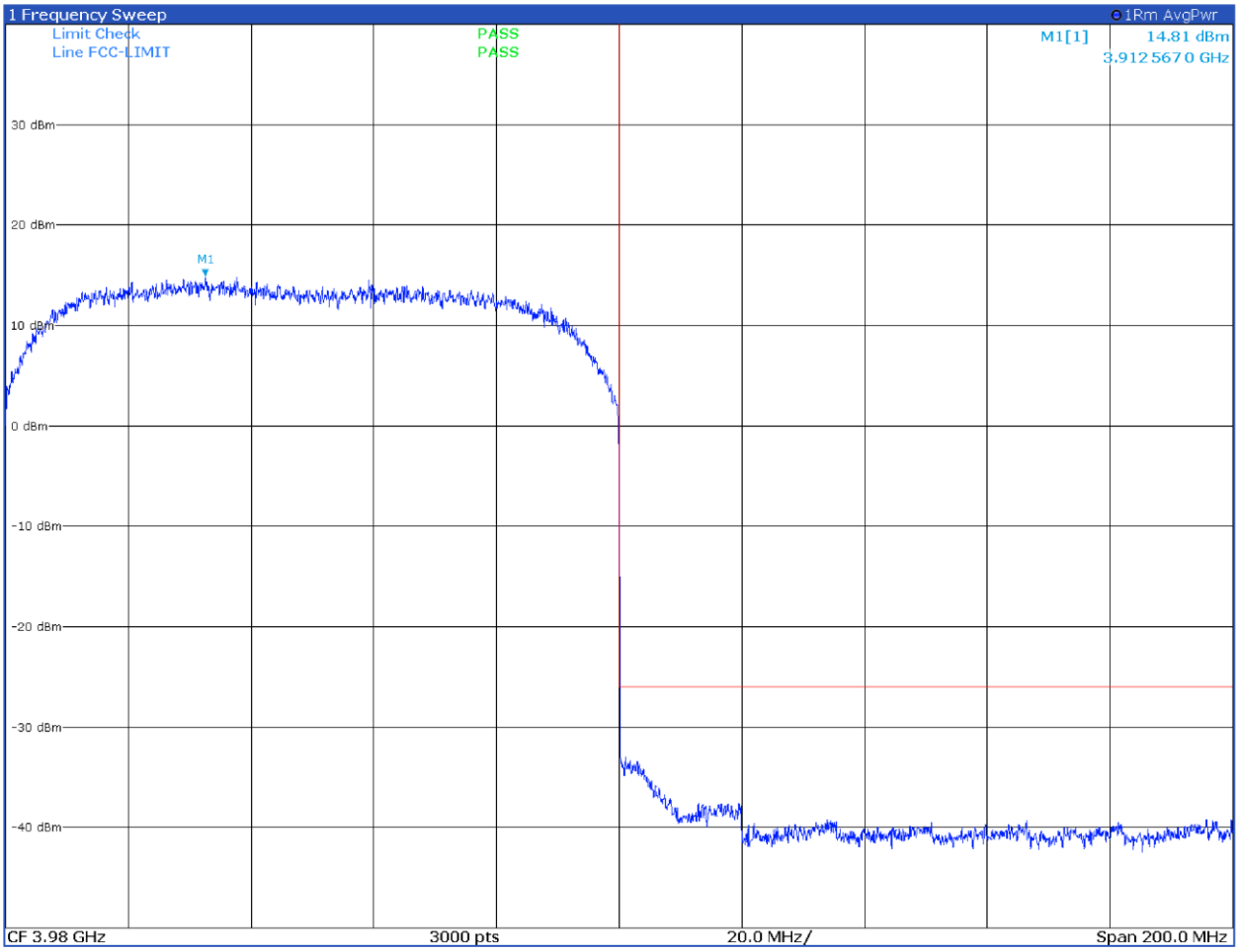


Figure 8.5-17: *Antenna port 1 single carrier upper block edge with input signal at AGC threshold*

Test data, continued

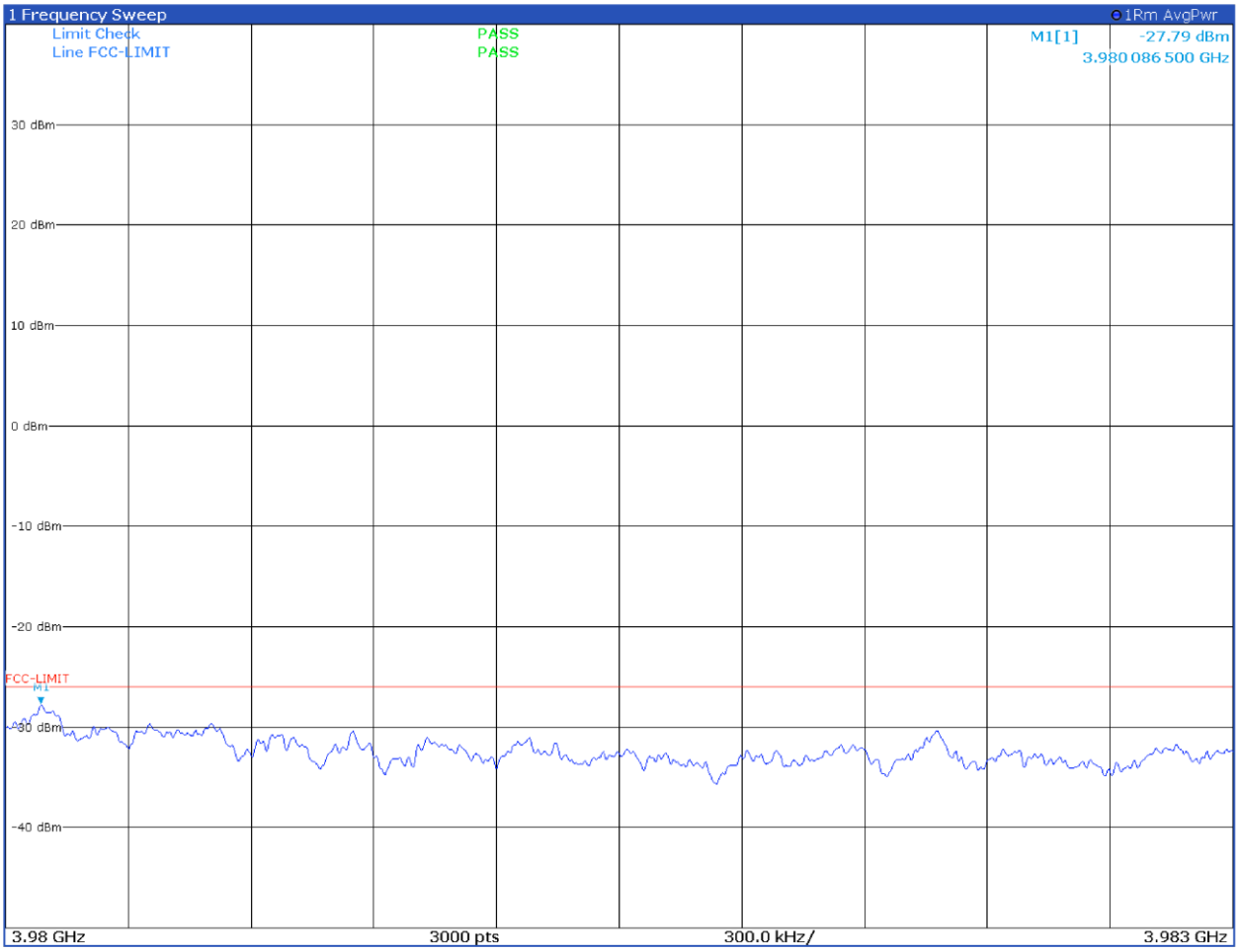


Figure 8.5-18: *Antenna port 1 single carrier upper block edge with input signal at AGC threshold*

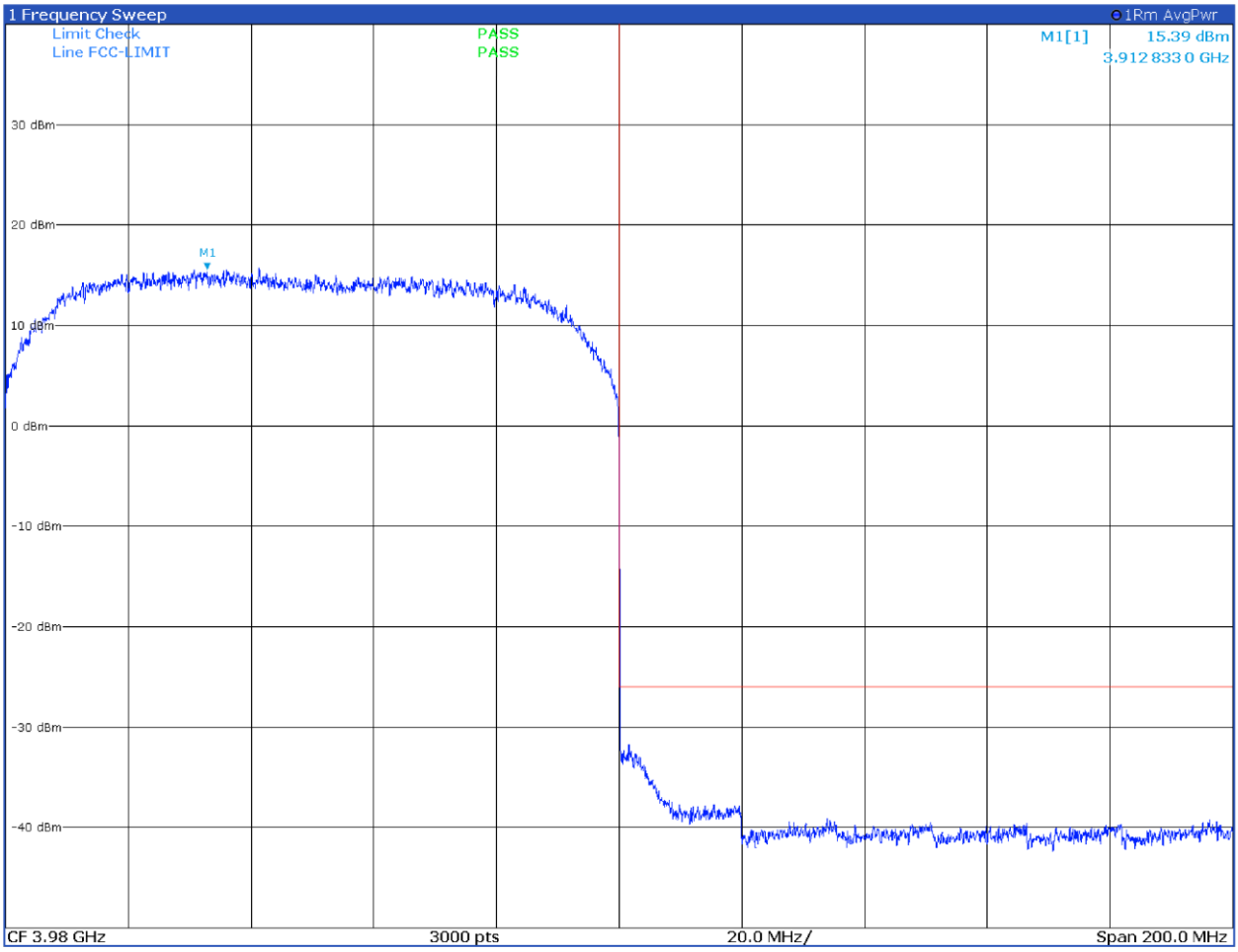


Figure 8.5-19: *Antenna port 1 single carrier upper block edge with input signal at AGC threshold +3 dB*

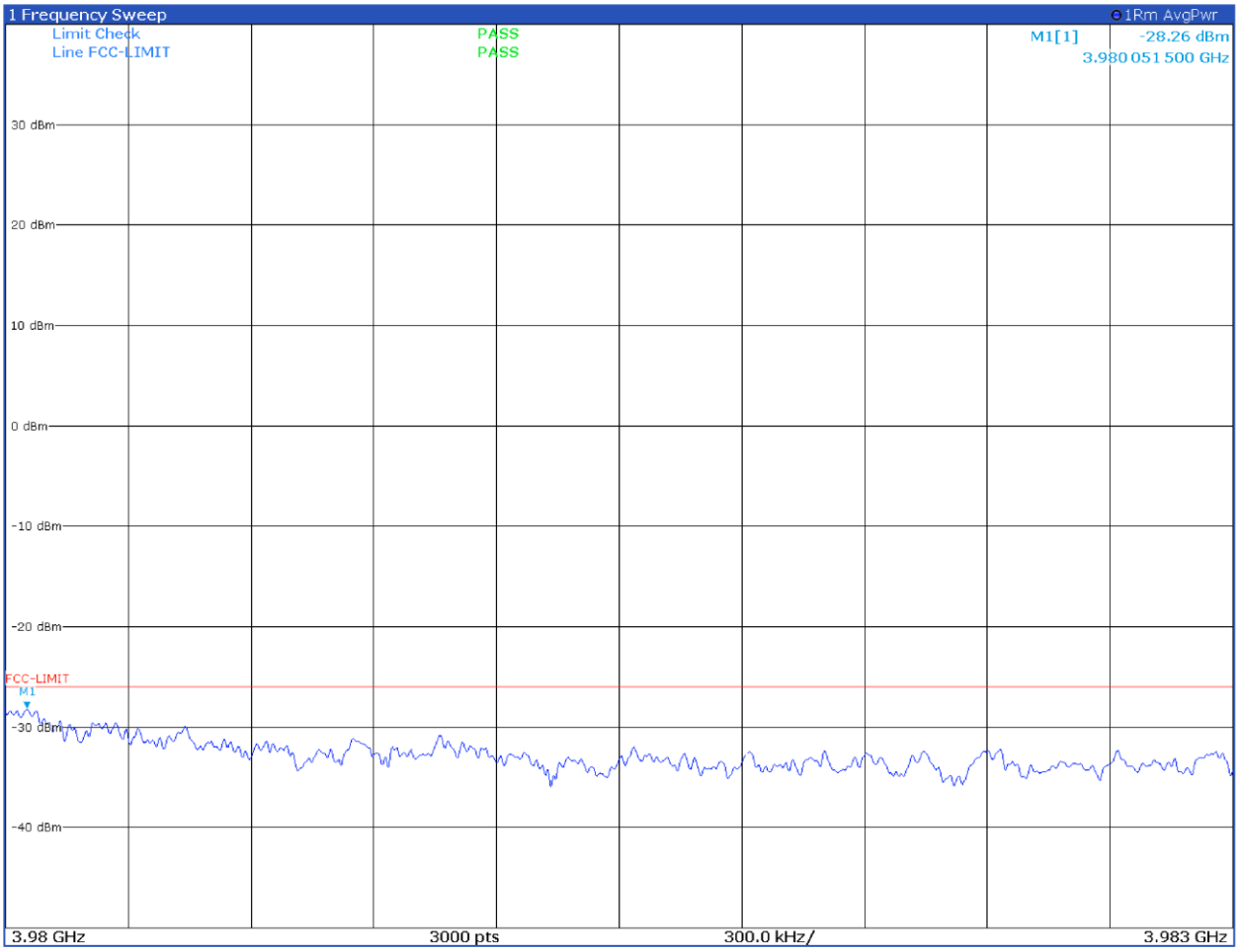


Figure 8.5-20: *Antenna port 1 single carrier upper block edge with input signal at AGC threshold +3 dB*

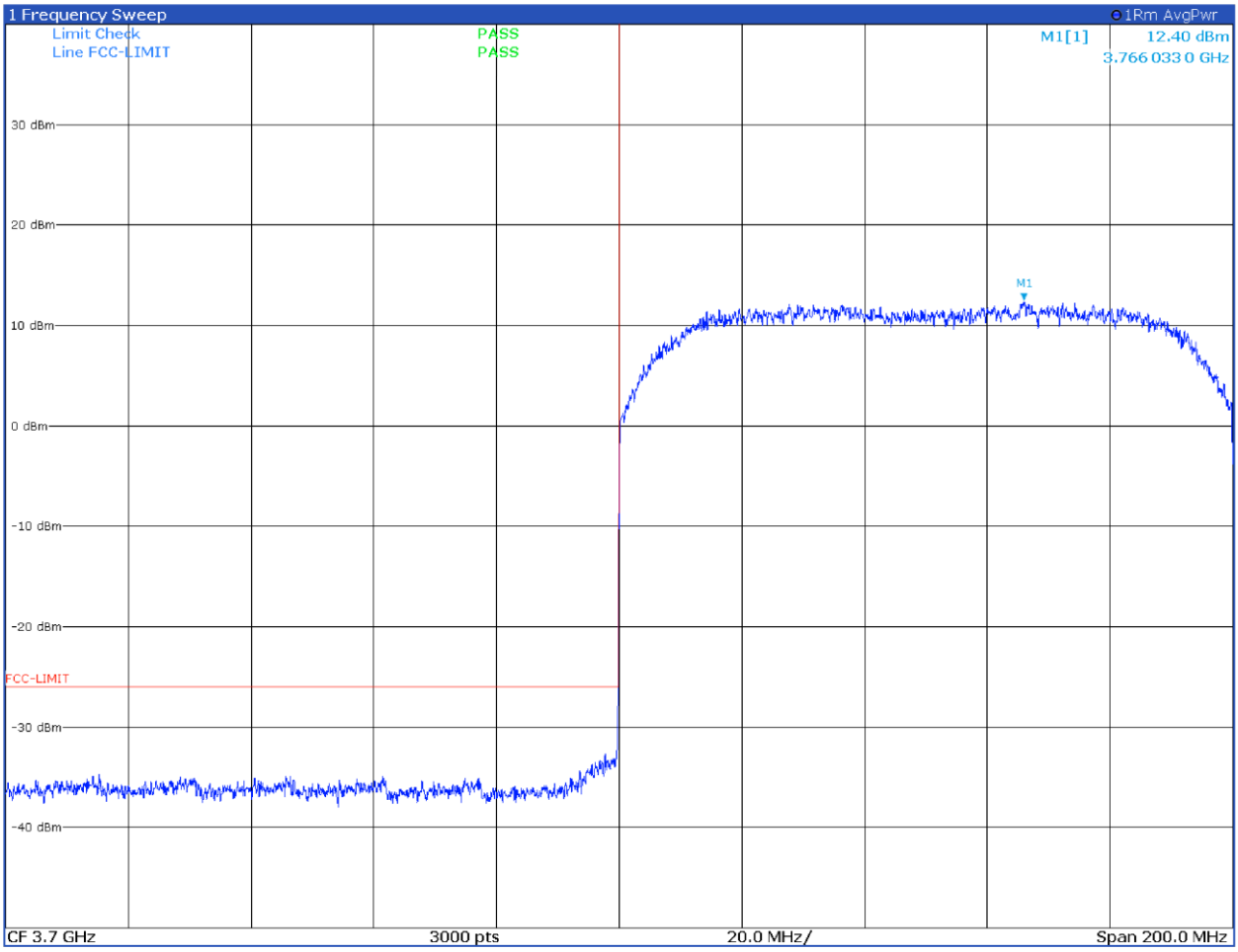


Figure 8.5-21: *Antenna port 1 single carrier lower block edge with input signal at AGC threshold*

Test data, continued

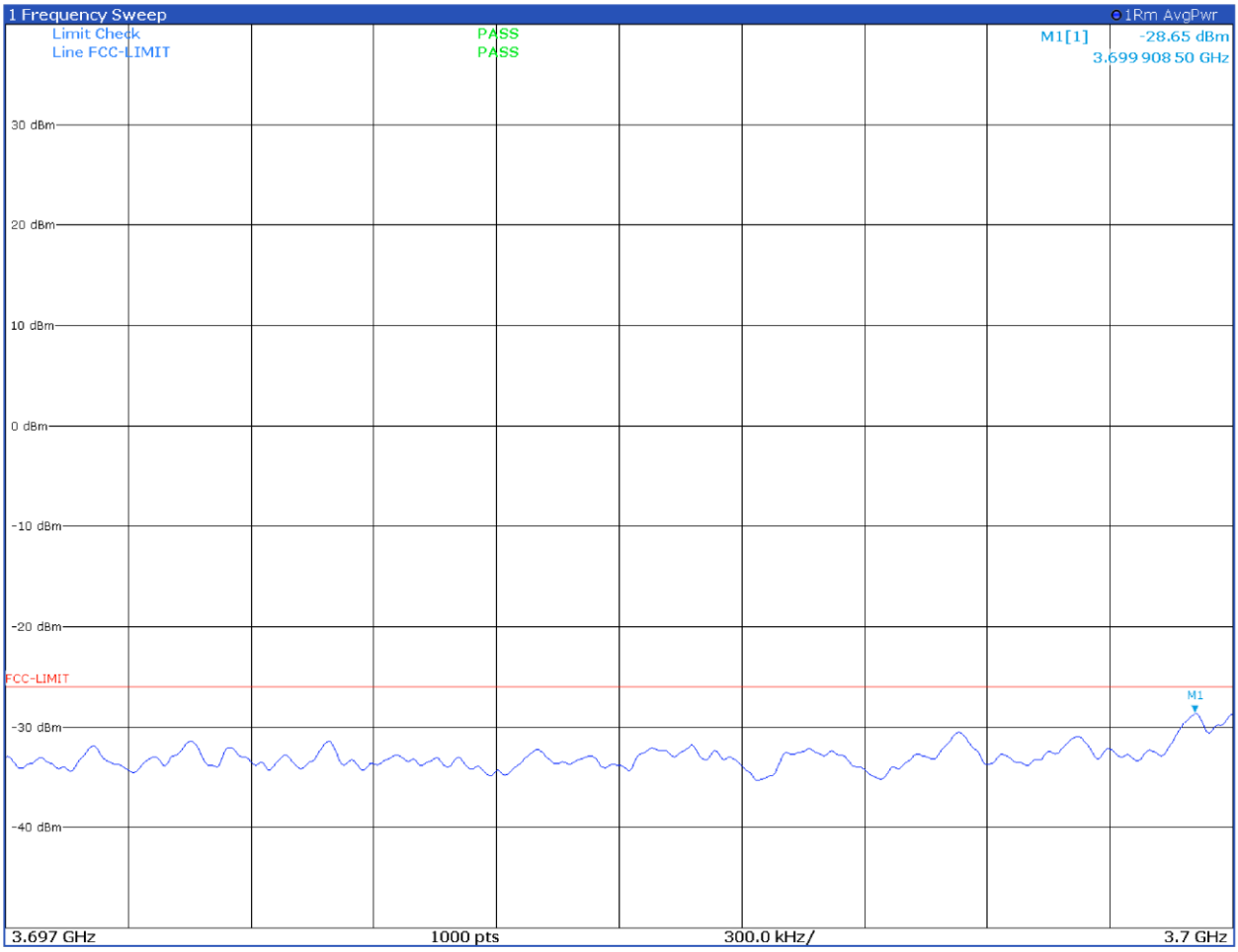


Figure 8.5-22: *Antenna port 1 single carrier lower block edge with input signal at AGC threshold*

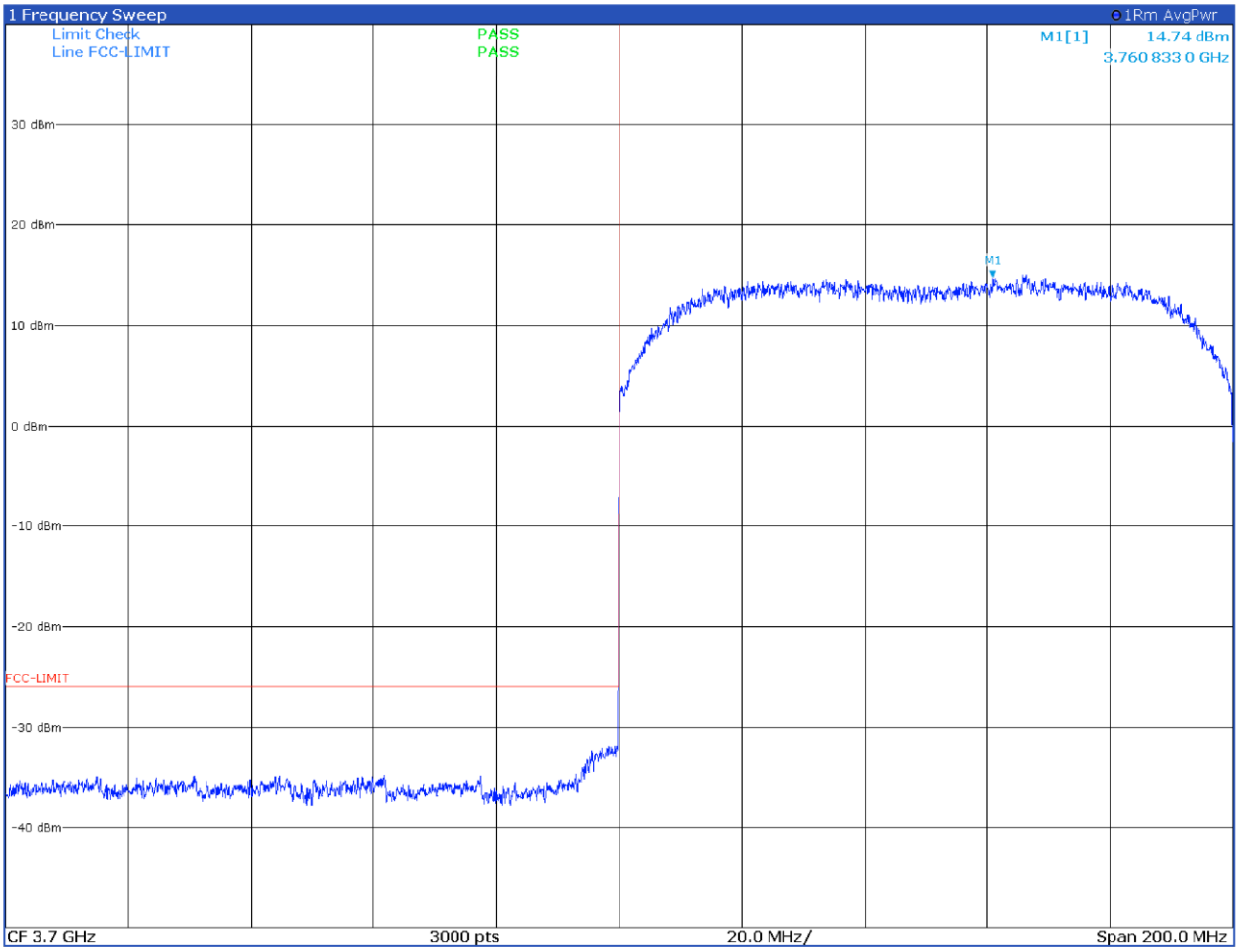


Figure 8.5-23: *Antenna port 1 single carrier lower block edge with input signal at AGC threshold +3 dB*

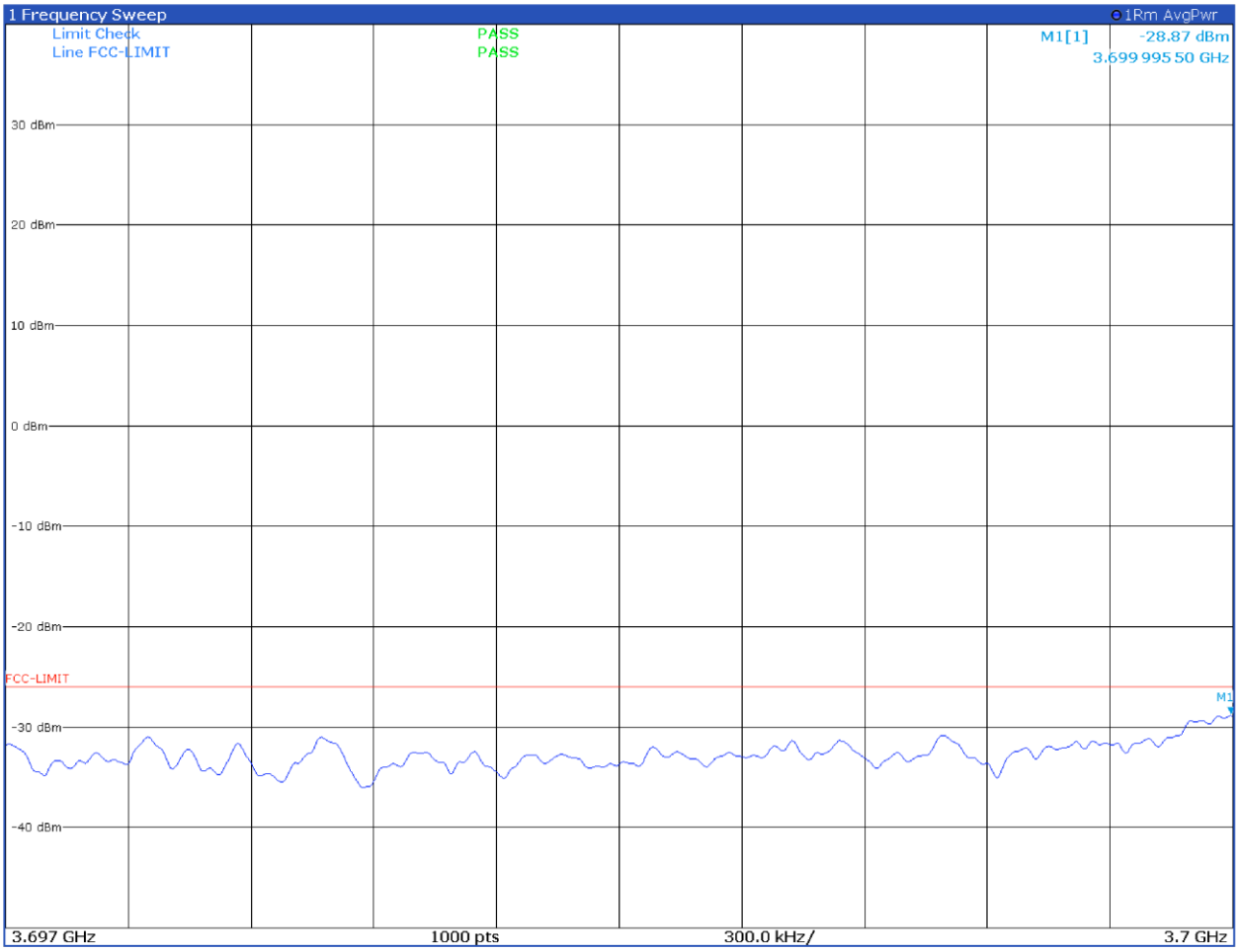


Figure 8.5-24: *Antenna port 1 single carrier lower block edge with input signal at AGC threshold +3 dB*

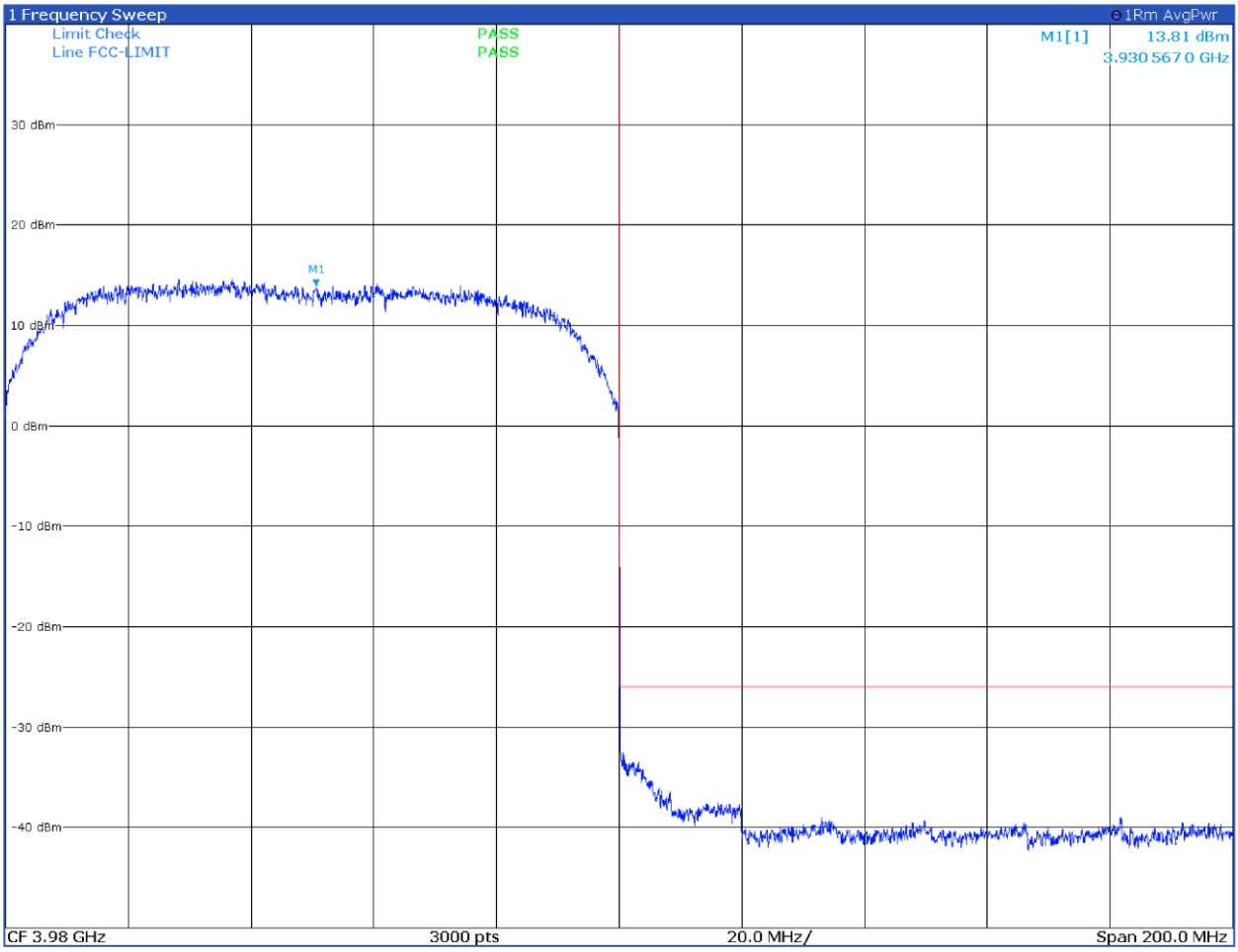


Figure 8.5-25: *Antenna port 2 single carrier upper block edge with input signal at AGC threshold*

Test data, continued

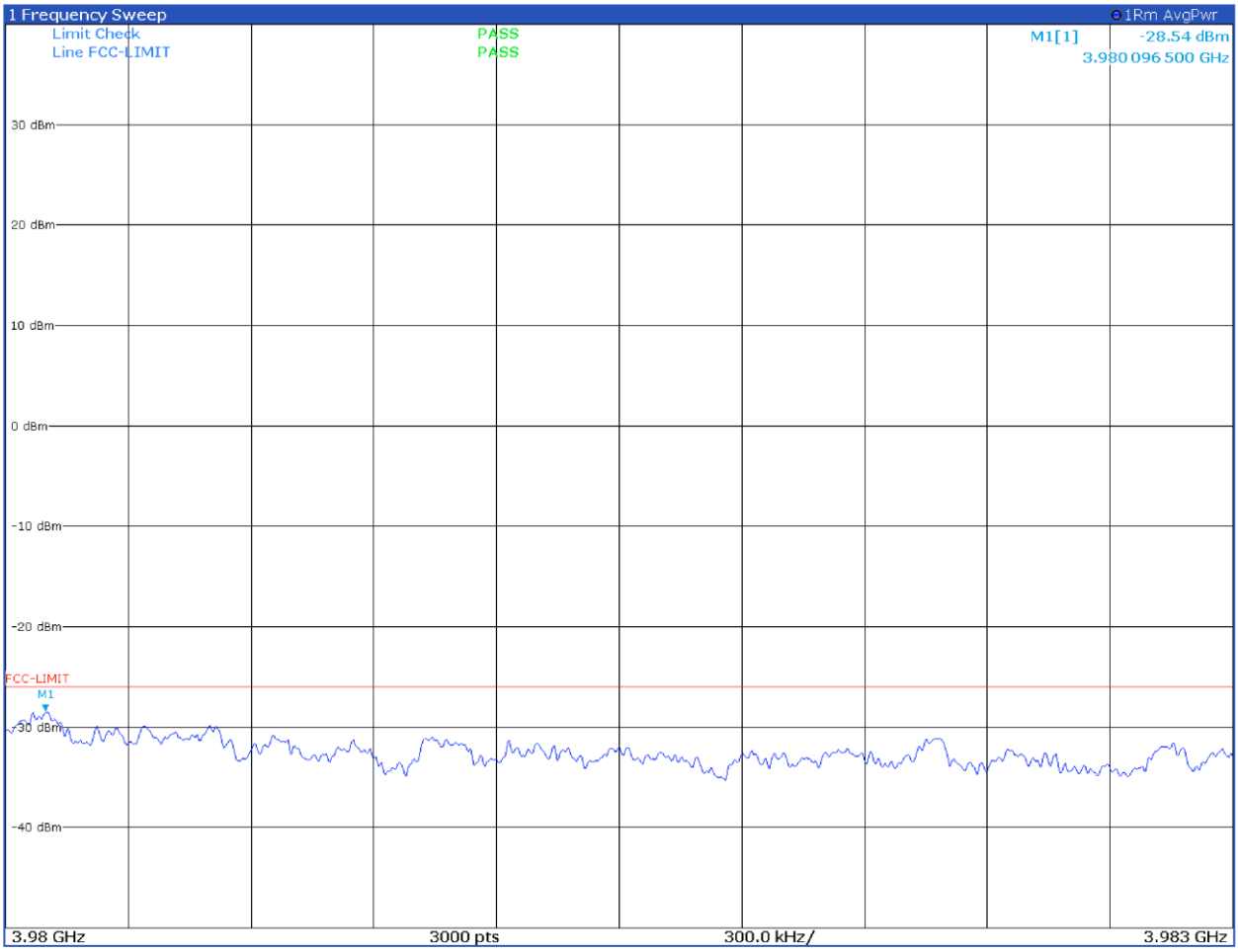


Figure 8.5-26: *Antenna port 2 single carrier upper block edge with input signal at AGC threshold*

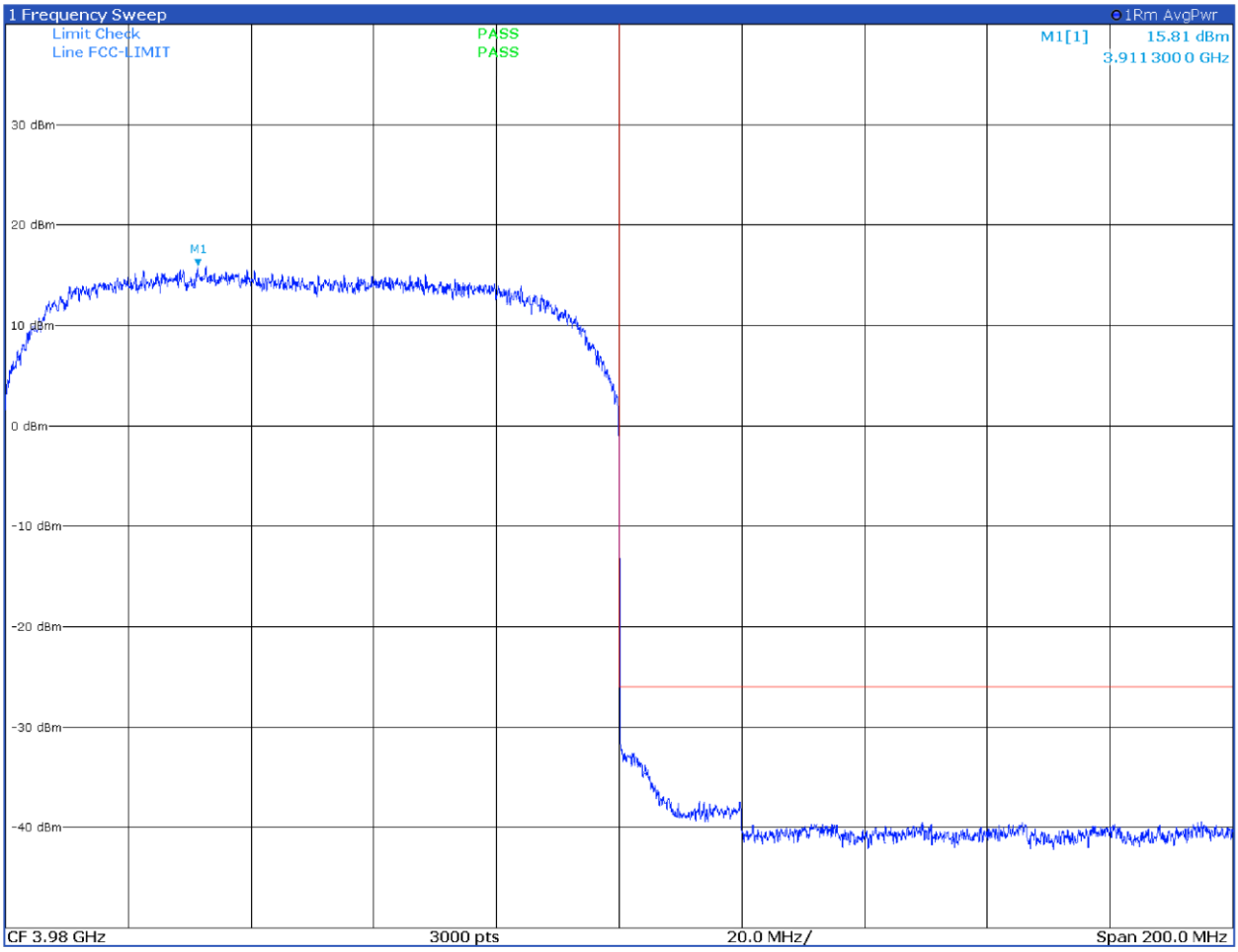


Figure 8.5-27: *Antenna port 2 single carrier upper block edge with input signal at AGC threshold +3 dB*

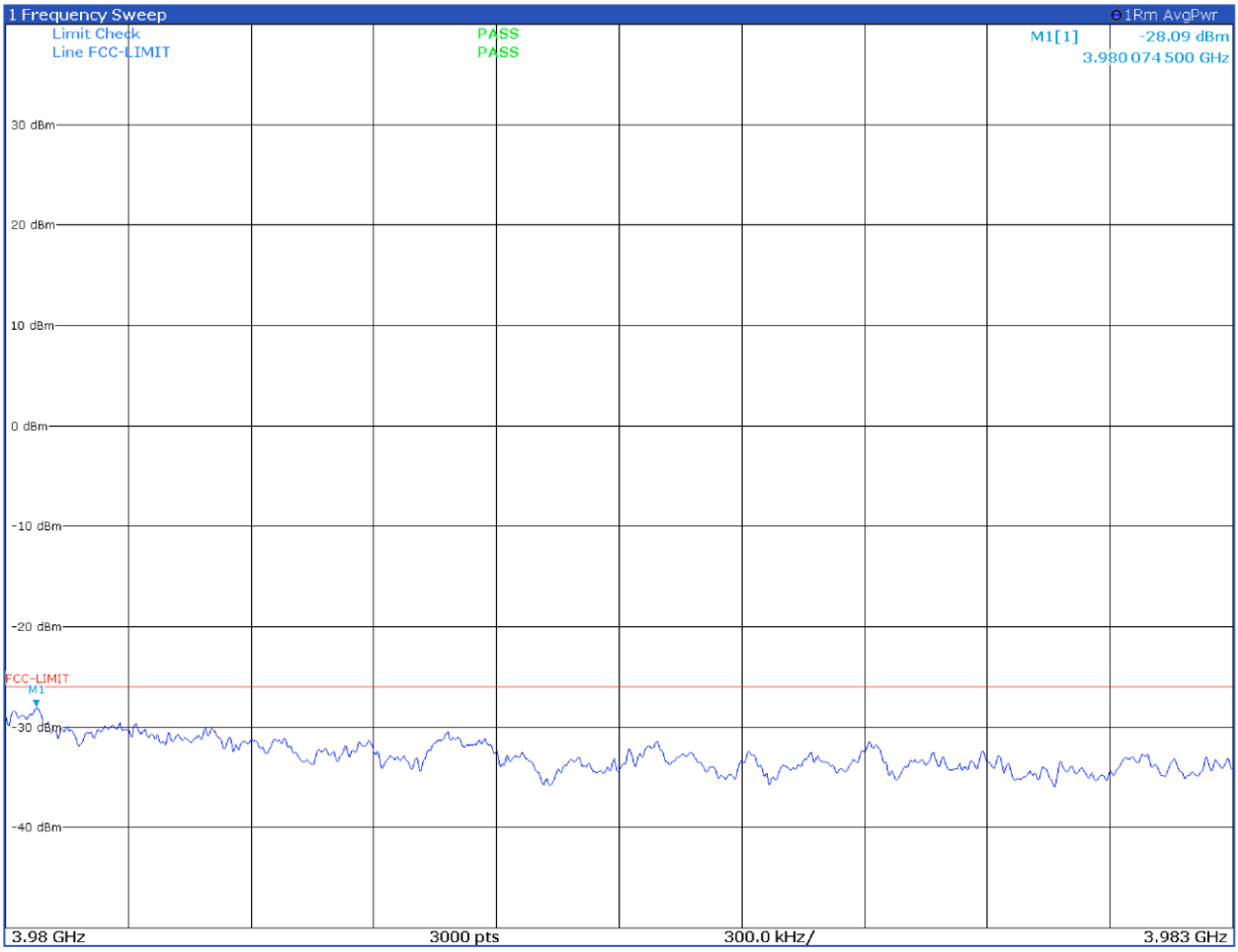


Figure 8.5-28: *Antenna port 2 single carrier upper block edge with input signal at AGC threshold +3 dB*

Test data, continued

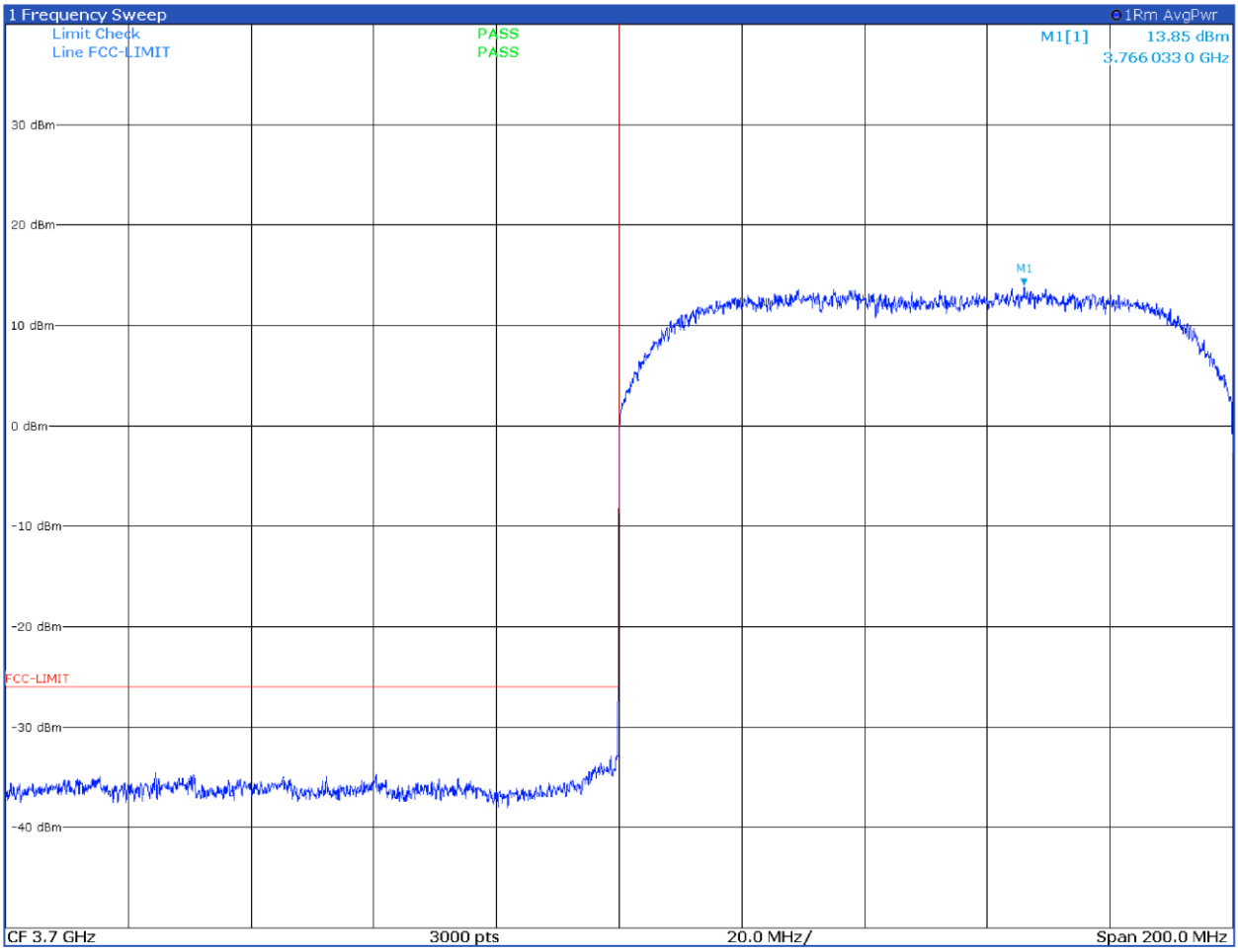


Figure 8.5-29: *Antenna port 2 single carrier lower block edge with input signal at AGC threshold*

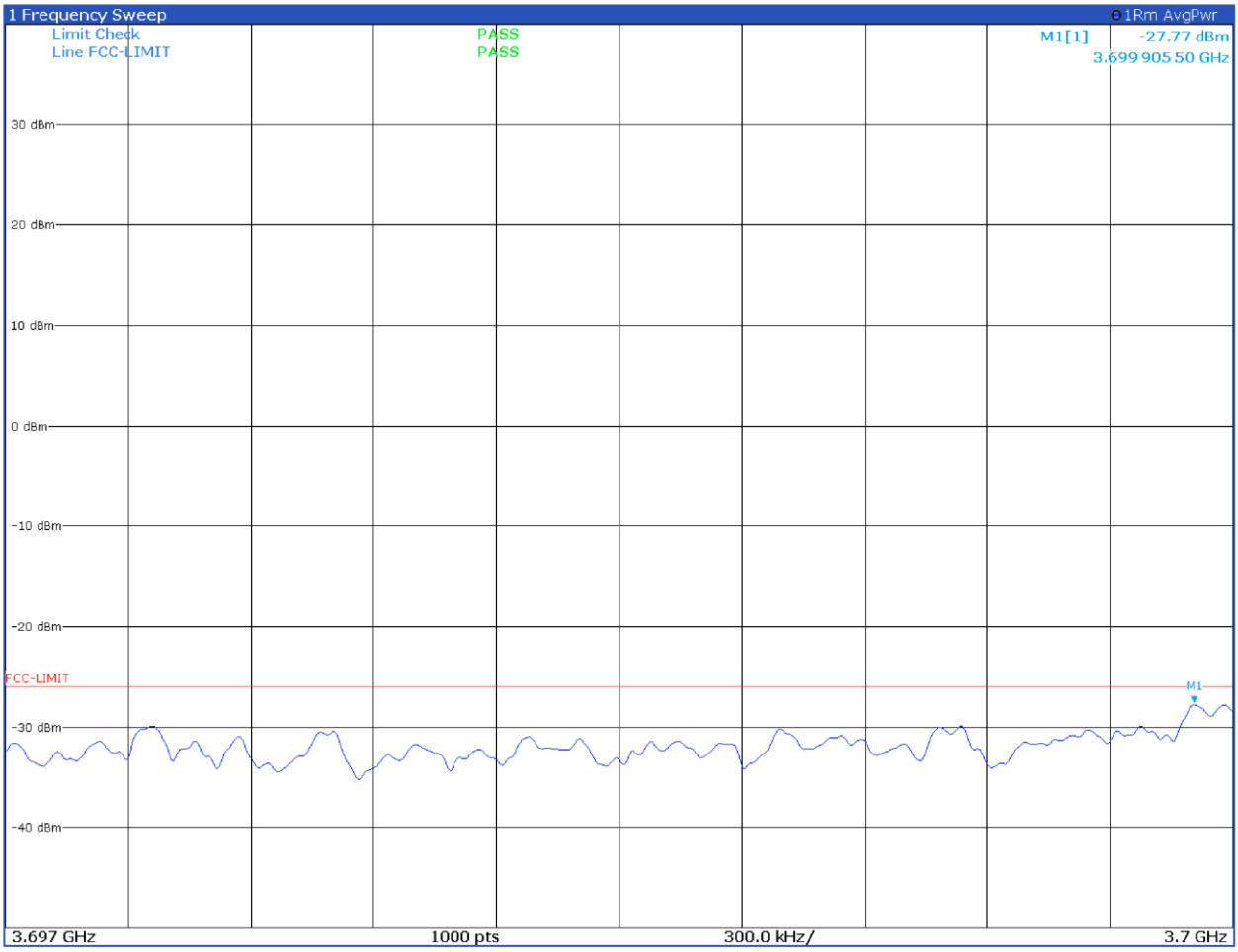


Figure 8.5-30: *Antenna port 2 single carrier lower block edge with input signal at AGC threshold*

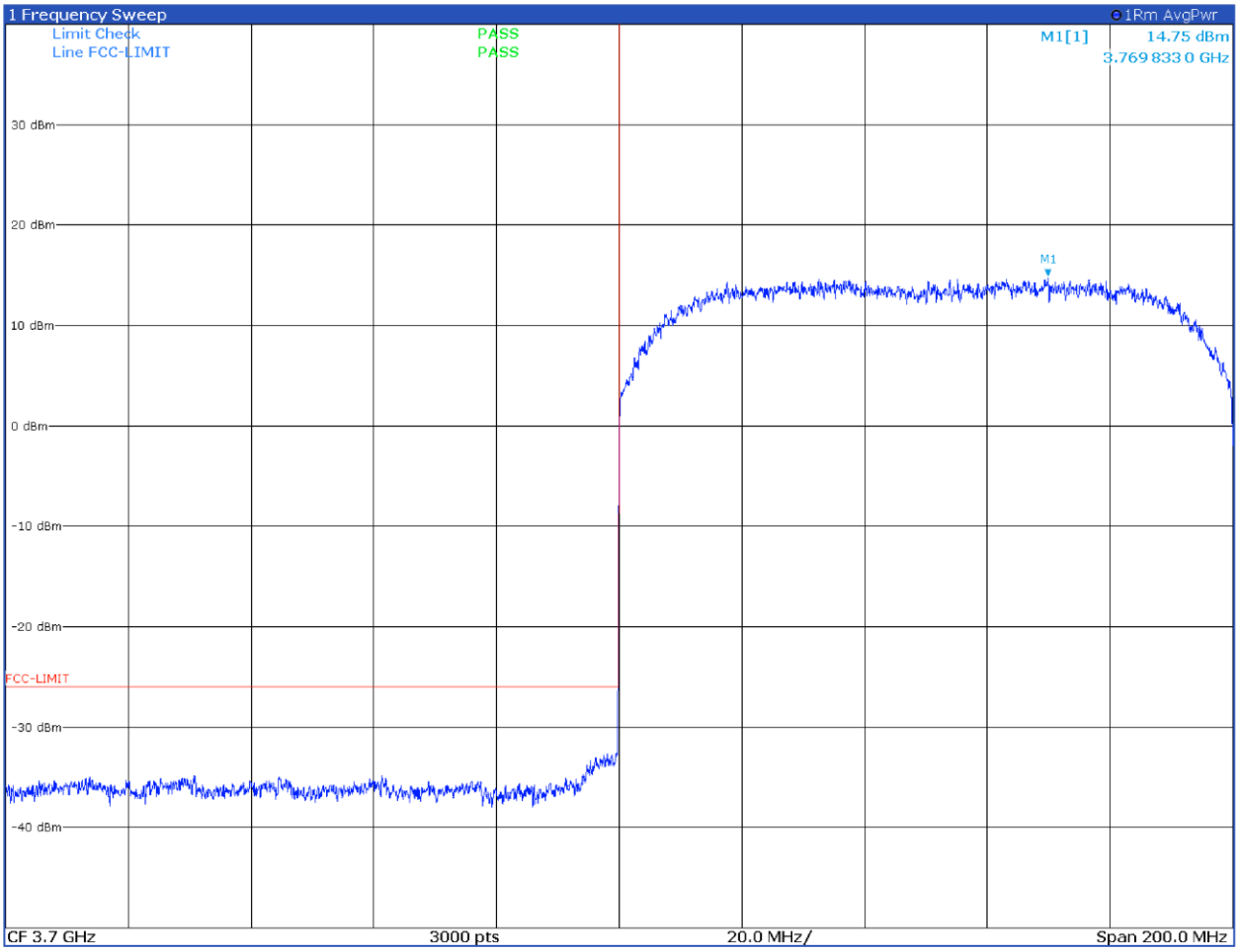


Figure 8.5-31: *Antenna port 2 single carrier lower block edge with input signal at AGC threshold +3 dB*

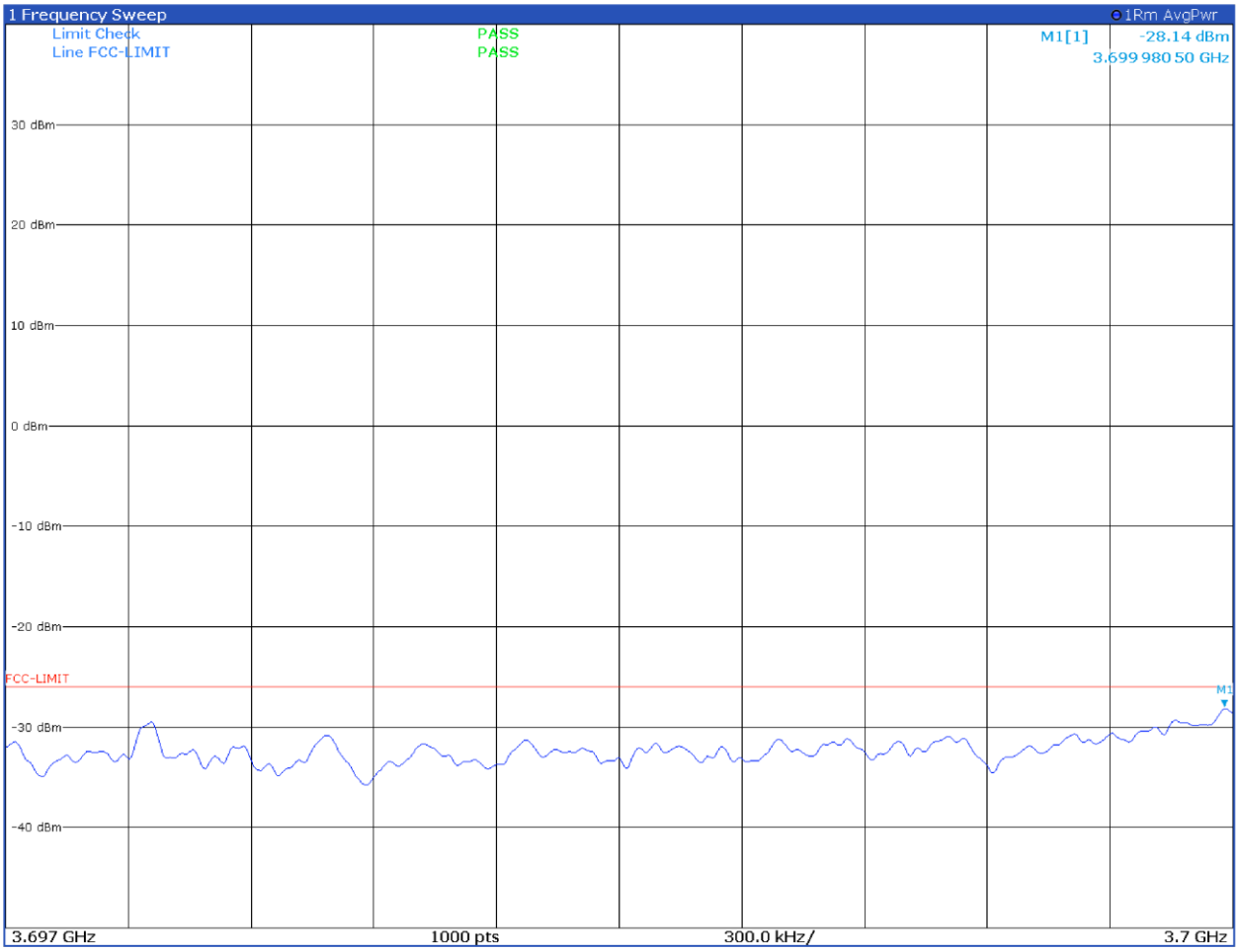


Figure 8.5-32: *Antenna port 2 single carrier lower block edge with input signal at AGC threshold +3 dB*