



TEST REPORT nr. R14158701

Federal Communication Commission (FCC)

Industry Canada (IC)

Test item

Description.....: TRANSMITTER UNIT

Trademark.....: WISYCOM

Model/Type: MTB40S

Test Specification

Standard: FCC Rules & Regulations, Title 47:2014

Part 74 paragraph(s): 861

IC Industry Canada, RSS-123:2011

Client's name: WISYCOM S.r.l.

Address: Via Spin, 156 – 36060 Romano d'Ezzelino (VI) – ITALY

Manufacturer's name : Same as client

Address: --

Report

Tested by: A. Bertezolo – Technician

Approved by: R. Beghetto – Laboratory Manager

Date of issue: 09.04.15

Contents.....: 77 pages

This test report shall not be reproduced except in full without the written approval of CMC.
The test results presented in this report relate only to the item tested.



Index

1. SUMMARY	3
2. DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)	4
2.1 TEST SITE	5
3. TESTING AND SAMPLING	6
4. OPERATIVE CONDITIONS	6
5. PHOTOGRAPH(S) OF EUT	7
5.1 PHOTOGRAPH(S) OF EUT	7
5.2 PHOTOGRAPH(S) OF SETUP	10
6. EQUIPMENT LIST	11
7. MEASUREMENT UNCERTAINTY	12
8. REFERENCE DOCUMENTS	13
9. DEVIATION FROM TEST SPECIFICATION	14
10. TEST CASE VERDICTS	14
11. RESULTS	15
11.1 PEAK OUTPUT POWER (CONDUCTED)	16
11.2 FREQUENCY ERROR VS. VOLTAGE	24
11.3 FREQUENCY ERROR VS. TEMPERATURE	27
11.4 CHARACTERISTICS OF THE AUDIO MODULATION CIRCUITRY	30
11.5 OCCUPIED BANDWIDTH	32
11.6 ATTENUATION POWER	40
11.7 RADIATED SPURIOUS (TRANSMITTER)	48



1. Summary

Standard:

FCC Rules & Regulations, Title 47:2014
Part 74 paragraph(s): 861
IC Industry Canada, RSS-123:2011

Test specifications	Environmental Phenomena	Tests sequence	Result
FCC – Title 47 Part 74.861 IC – RSS-123 cl. 5.1	Peak Output Power	1	Complies
FCC – Title 47 Part 74.861 IC – RSS-123 cl. 5.1	Frequency Error vs. Voltage	2	Complies
FCC – Title 47 Part 74.861 IC – RSS-123 cl. 5.1	Frequency Error vs. Temperature	3	Complies
FCC – Title 47 Part 74.861 IC – RSS-123 cl. 5.2	Characteristic of the Audio Modulation	4	Complies
FCC – Title 47 Part 74.861 IC – RSS-123 cl. 5.1	Occupied Bandwidth	5	Complies
FCC – Title 47 Part 74.861 IC – RSS-123 cl. 5.5	Attenuation Power	6	Complies
FCC – Title 47 Part 74.861 IC – RSS-Gen Issue 4	Radiated Spurious	7	Complies

The Test Report was given to the Client representatives for necessary documentation of ratification of the tested equipment and it is valid for the FCC and IC certification



2. Description of Equipment under test (EUT)

Power supply : 3 Vdc from battery

Serial Number : T3245098

Type of equipment : ☒ Transmitter Unit
☐ Receiver Unit

Type of station : ☐ Fixed station
☒ Portable station
☐ Mobile station

Frequency band : 470 – 608 MHz
614 – 698 MHz

Modulation : Wide band FM with pre-emphasis

Information on antenna : ☐ Integrated
☐ External
☒ Other: Dedicated
Gain: 0 dBi

FCC ID : POUMTB40SUS

IC CODE : 11967A-MTB40SUSX



FCC SAR evaluation : Reference document KDB 447498;

Product description:

- Transmission frequency range 470 – 698 MHz;
- Test separation distance > 50 mm;
- Peak Output Power of channel (see also cl. 11.1 of this test report), including tolerance = 19,33 dBm + 1 dB (measurement uncertainty) = 20,33 dBm (107,9 mW)

According to cl. 4.3.1 2) and KDB 447498 Table Appendix B the maximum allowed power level shall be 164 mW for frequency up to 835 MHz.

Peak Output Power = 107,9 mW < 164 mW

IC SAR evaluation..... : Reference document NOTICE 2013-DRS0911;

Product description:

- Transmission frequency range 470 – 698 MHz;
- Test separation distance > 50 mm;
- Peak Output Power of channel (see also cl. 11.1 of this test report), including tolerance = 19,33 dBm + 1 dB (measurement uncertainty) = 20,33 dBm (107,9 mW)

According to cl. 2.5.1 Table 1 of NOTICE 2013-DRS0911 the maximum allowed power level shall be 130 mW for frequency up to 835 MHz.

Peak Output Power = 107,9 mW < 130 mW

2.1 Test Site

Company..... : CMC Centro Misure Compatibilità S.r.l.

Address : Via dell'Elettronica, 12/C
36016 Thiene (VI) – ITALY

Test site facility's IC registration number : 9055A



3. Testing and sampling

Date of receipt of test item : 07.08.14

Testing start date..... : 22.10.14

Testing end date : 31.10.14

Samples tested nr..... : 1

Sampling procedure. : Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion

Internal identification : adhesive label with the product number P140897

4. Operative conditions

EUT exercising : EUT in continuous transmission at maximum power

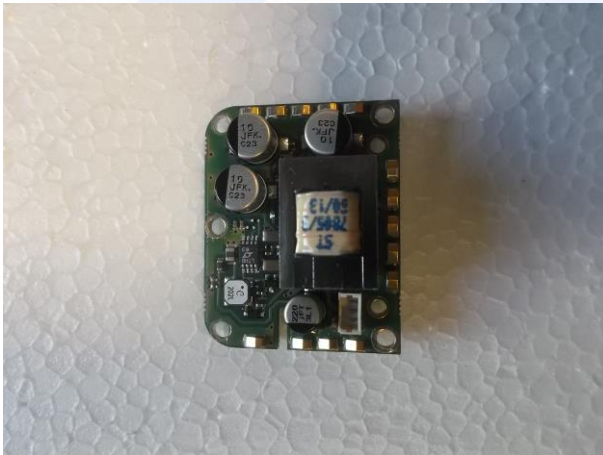


5. Photograph(s) of EUT

5.1 Photograph(s) of EUT

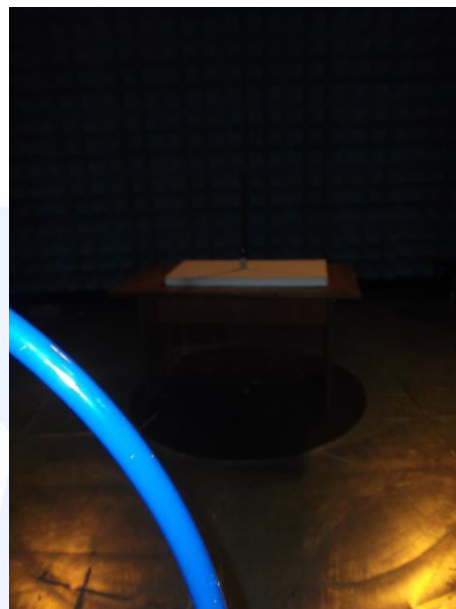








5.2 Photograph(s) of setup





6. Equipment list

<i>Id. number</i>	<i>Manufacturer</i>	<i>Model</i>	<i>Description</i>	<i>Serial number</i>	<i>Last calibration</i>	<i>Due date calibration</i>
CMC S010	Rohde & Schwarz	ESH3-Z2	Impulses Limiting Device	- - -	January '14	January '15
CMC S108	EMCO	3115	Horn Antenna	9811-5622	May '13	May '16
CMC S127	Schaffner	HLA6120	Loop Antenna	1191	January '13	January '16
CMC S129	Rohde & Schwarz	ESPI7	Receiver	836.914/004	January '14	January '15
CMC S136	Schwarzbeck	VULB 9163	Broadband Antenna	9136-205	May '13	May '16
CMC S164	Rohde & Schwarz	ESU26	EMC interference receiver	100052	January '14	January '15
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '14	January '15
CMC S227	Rohde & Schwarz	ESR7	EMI Test Receiver 7GHz	101121	January '14	January '15



7. Measurement uncertainty

Test	Expanded Uncertainty	note
Conducted Emission		
(50Ω/50μH AMN) - (9 kHz – 150 kHz)	±3.8 dB	1
(50Ω/50μH AMN) - (150 kHz – 30 MHz)	±3.3 dB	1
(Voltage probe) - (150 kHz – 30 MHz)	±3.3 dB	1
(50Ω/5μH AMN) - (150 kHz – 108 MHz)	±2.8 dB	1
Discontinuous Conducted Emission		
Conducted Emission (50Ω/50μH AMN) - (150 kHz – 30 MHz)	±3.3 dB	1
Disturbance Power (30 MHz – 300 MHz)		
	±3.9 dB	1
Radiated Emission		
(0,150 MHz – 30 MHz)	±4.3 dB	1
(30 MHz – 1000 MHz)	±4.4 dB	1
(1 GHz – 6 GHz)	±4.6 dB	1
Electromagnetic field EMF		
	±15.0 %	1
Harmonic current emissions test		
	±2.7 %	1
Voltage fluctuation and flicker test		
	±2.9 %	1
Insertion loss test		
	±2.7 dB	1
Radiated electromagnetic disturbance test (loop antenna)		
	±2.7 dB	1
Radiated electromagnetic field immunity test		
	0.77 V/m at 3V/m	1
Pulse modulated radiated electromagnetic field immunity test		
	0.77 V/m at 3V/m	1
Injected currents immunity test		
	0.48 V at 3V	1
Bulk current		
	5.3 mA at 60 mA	1
Power frequency magnetic field immunity test		
	0.1 A/m at 10 A/m	1
Effective radiated power (F < 1GHz)		
	±4.4 dB	1
Effective radiated power (F > 1GHz)		
	±3.9 dB	1
Effective conducted power		
	1 dB	1
Frequency error		
	< 1x10 ⁻⁷	1
Modulation bandwidth		
	< 1x10 ⁻⁷	1
Adjacent channel power		
	±2.6 dB	1
Blocking		
	±2.6 dB	1
Electrostatic discharge immunity test		
		2
Electrical fast transients / burst immunity test		
		2
Surge immunity test		
		2
Pulse magnetic field immunity test		
		2
Damped oscillatory magnetic field immunity test		
		2
Short interruption immunity test		
		2
Voltage transient emission test		
	±2.2 %	1
Transient immunity test		
		2

Notes

Note 1:

The expanded uncertainty reported according to EN55016-4-2:2011 is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of p = 95%

Note 2:

It has been demonstrated that the used test equipment meets the specified requirements in the standard with at least a 95% confidence, covering factor k = 2.



8. Reference documents

Reference no.	Description
FCC Rules and Regulation Title 47 part 74.861:2014	--
IC Industry Canada. RSS-123:2011	Spectrum Management and Telecommunications Radio Standards Specification Licensed Low-Power Radio Apparatus
RSS-GEN Issue 4 – November 2014	General Requirements for Compliance of Radio Apparatus
Internal Procedure PM001 rev. 2.0 (Quality Manual)	Measure Procedure
Internal procedure INC_M rev. 8.2 (Quality Manual)	Measurement uncertainty calculation



9. Deviation from test specification

In agreement with the client, emission tests were performed with peak detector.

At the frequencies where the measures exceed the limit or within 6 dB from it, the test was repeated with quasi-peak detector and/or average detector.

10. Test case verdicts

Test case does not apply to the test object..... : N.A.

Test item does meet the requirement..... : Complies

Test item does not meet the requirement..... : Does not comply

Test not performed : N.E.



11. Results

In this clause tests results are reported.

Measurement uncertainty is in accordance with document CMC INC_M rev. 8.2.

Judgement of compliance:

Case 1	Case 2	Case 3	Case 4
The sample is Complies.	The sample is Complies.	The sample is Not Complies.	The sample is Not Complies.
The measurement results is within the specification limit when the measurement uncertainty is taken into account.	It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty although the measurement result is below the limit.	It is not possible to state compliance using a 95% coverage probability for the expanded uncertainty also the measurement result is upper the limit.	The measurement results is outside the specification limit when the measurement uncertainty is taken into account.

In agreement with ILAC-G8: 03/2009 Guidelines on the Reporting of Compliance with Specification.



11.1 Peak Output Power (Conducted)

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 74.861 (e)(1)(ii)
- IC; RSS 123 cl. 5.1
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Laboratory

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S227
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: antenna

Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
22	100	42

Acceptance limits

Frequency range (MHz)	RF Output Power
470 – 608 614 – 698	250 mW



Result

Frequency (MHz)	Graphs	Measured Peak Output Power (dBm)	Attenuation cable (dB)	Total Peak Output Power (dBm)	Peak Output Power (mW)	Remark
470,075	G14158739	17,87	1,2	19,07	80,72	--
539,000	G14158746	17,80	1,3	19,10	81,28	--
607,932	G14158730	18,03	1,3	19,33	85,70	--
614,075	G14158777	17,18	1,5	18,68	73,79	--
647,000	G14158768	17,32	1,4	18,72	74,47	--
697,975	G14158780	15,99	1,5	17,49	56,10	--

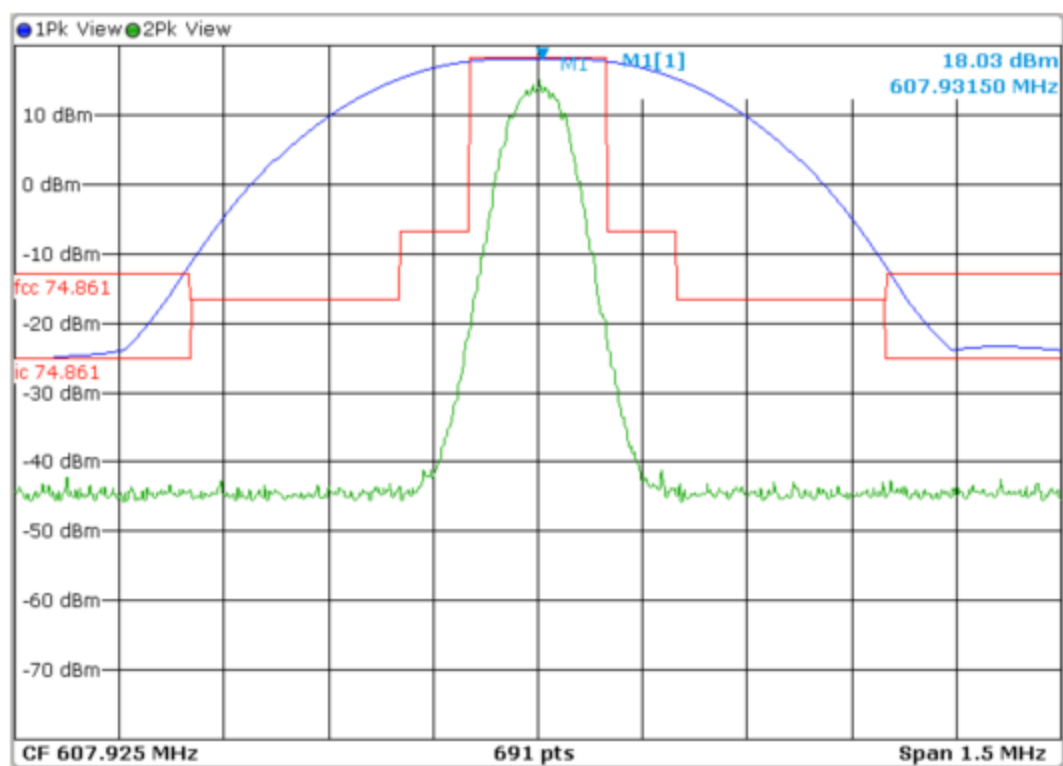


Graphs

G14158730

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx 607.925MHz 100mW
Operator Bertezzo 14158730
Test Spec
Note BW:3kHz VBW:30kHz

Diagram

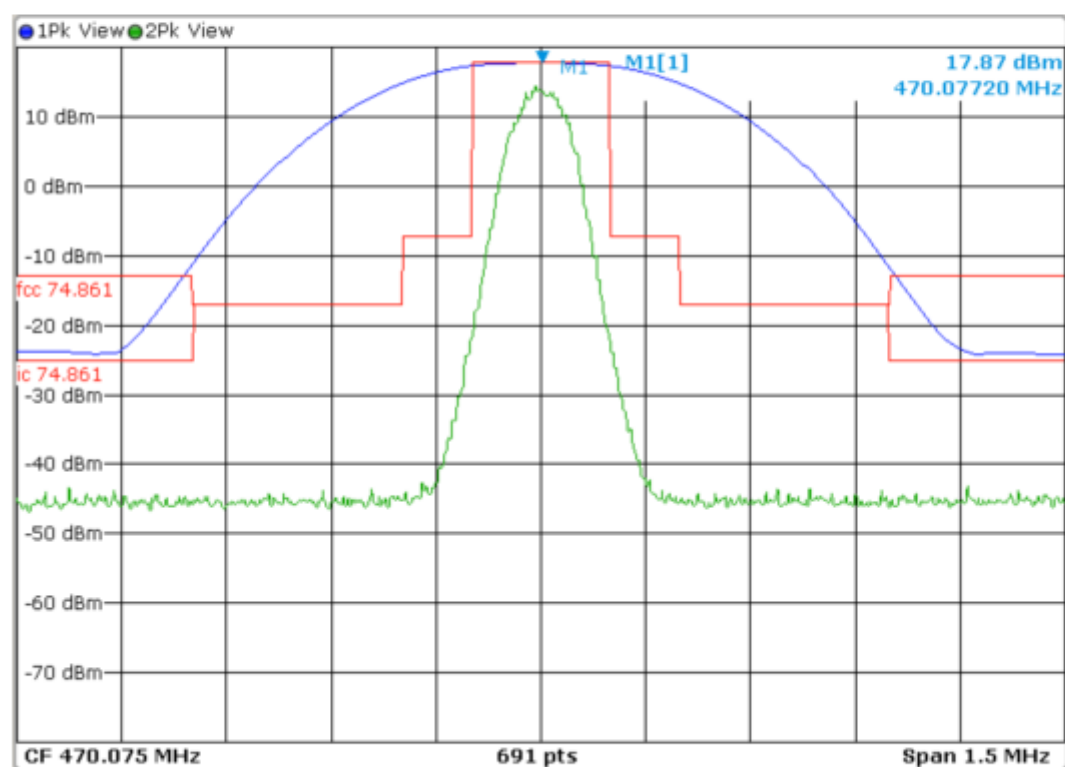




G14158739

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx 470.075MHz 100mW
Operator Bertezzo 14158739
Test Spec
Note BW:3kHz VBW:30kHz

Diagram

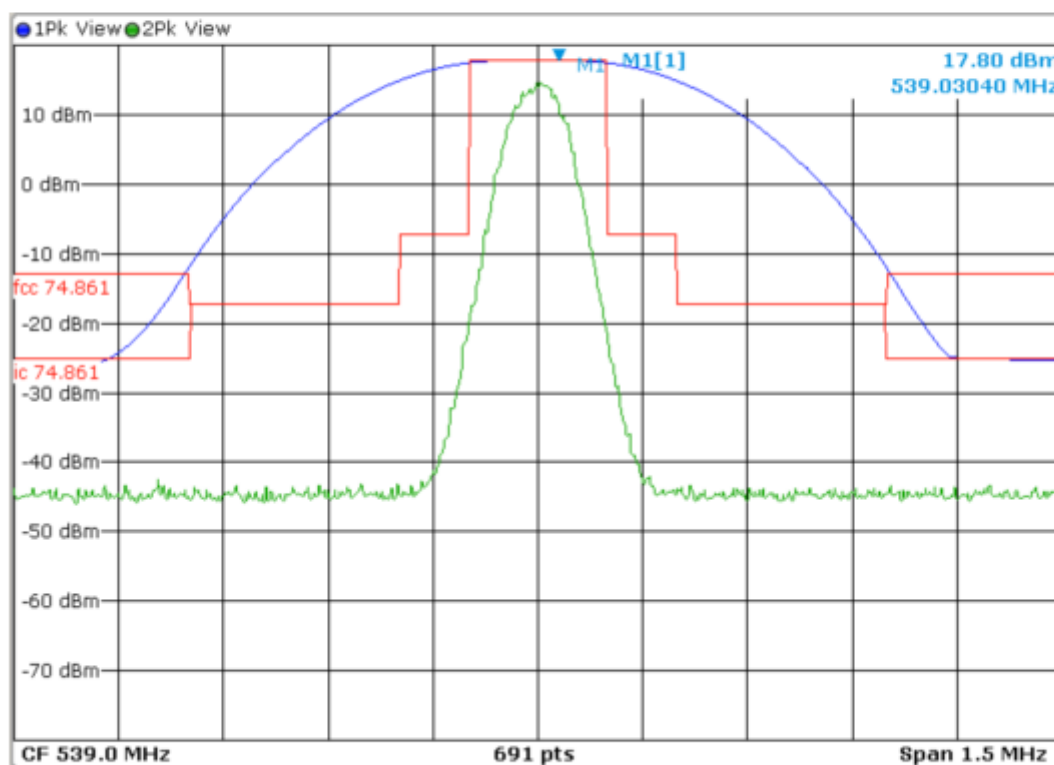




G14158746

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx 539.000MHz 100mW
Operator Bertezolo 14158746
Test Spec
Note BW:3kHz VBW:30kHz

Diagram

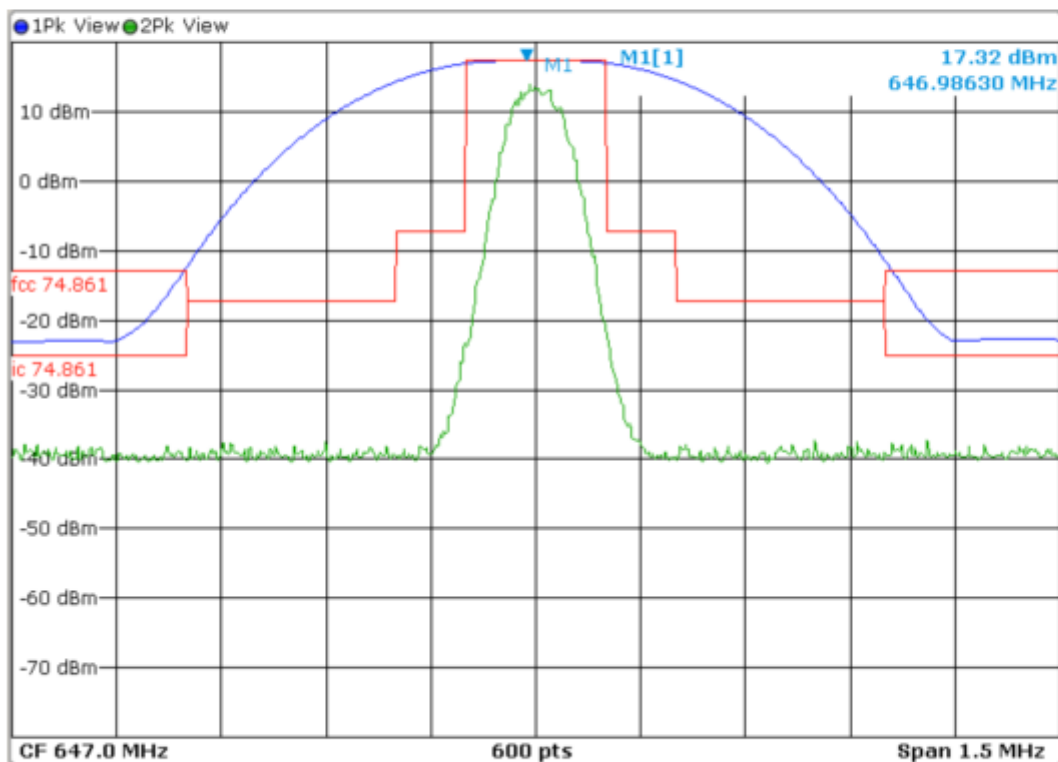




G14158768

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx 647.000MHz 100mW
Operator	Bertezzo 14158768
Test Spec	
Note	BW:3kHz VBW:30kHz

Diagram

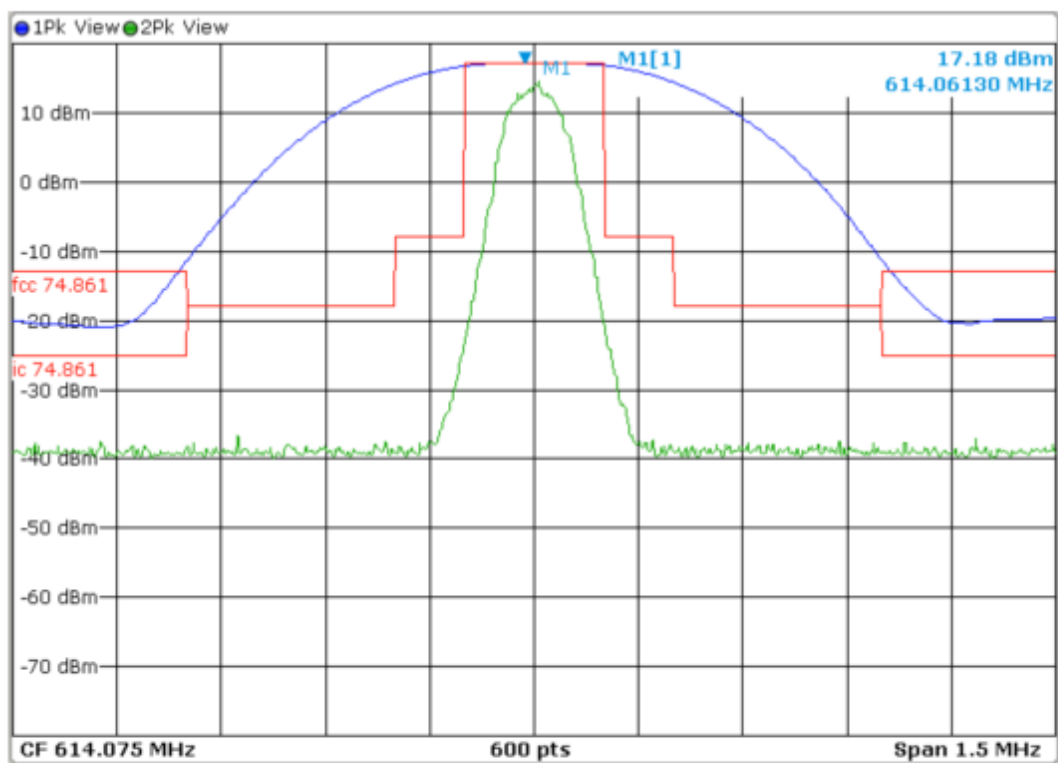




G14158777

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx 614.075MHz 100mW
Operator	Bertezzo 14158777
Test Spec	
Note	BW:3kHz VBW:30kHz

Diagram

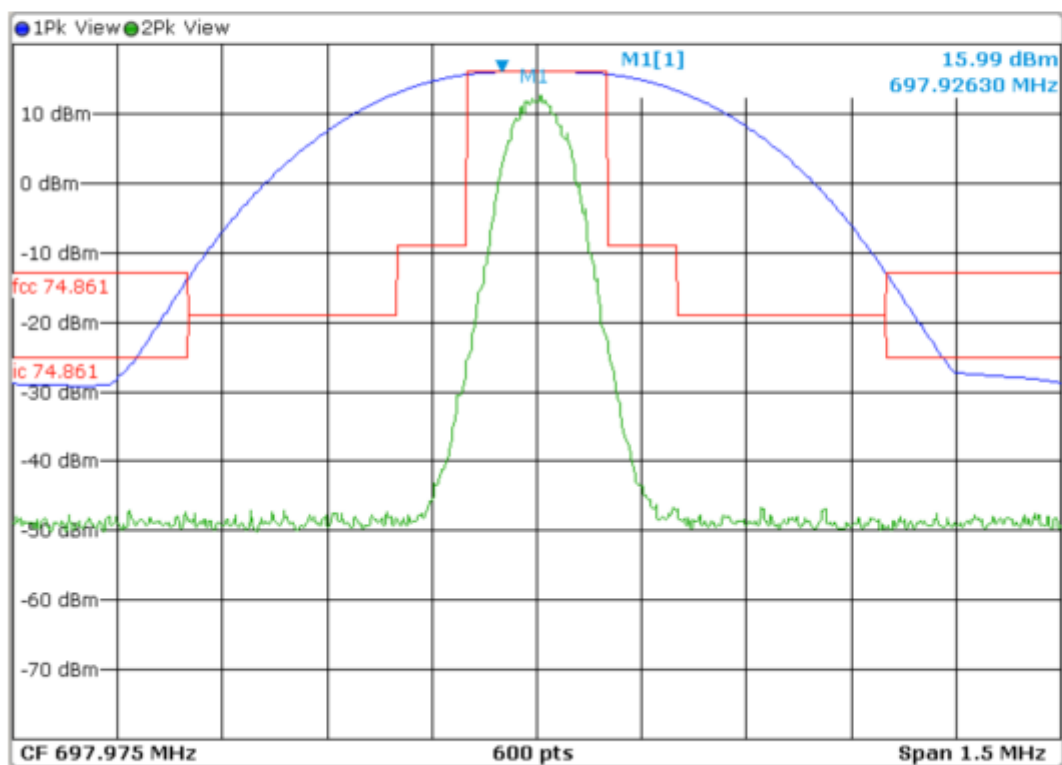




G14158780

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx 697.975MHz 100mW
Operator Bertezolo 14158780
Test Spec
Note BW:3kHz VBW:30kHz

Diagram



Result: The requirements are met



11.2 Frequency Error vs. Voltage

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 74.861 (e)(4)
- IC; RSS 123 cl. 5.1
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Laboratory

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S227
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Antenna

Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
22	100	42

Acceptance limits

The frequency tolerance of the transmitter shall be 0,005 percent



Result

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
470,075	3,45	40	0,0000085	0,085
470,075	3,20	60	0,0000128	0,128
470,075	3,00	30	0,0000064	0,064
470,075	2,80	30	0,0000064	0,064
470,075	2,60	40	0,0000085	0,085
470,075	2,40	10	0,0000021	0,021
470,075	2,20	10	0,0000021	0,021
470,075	2,10	*	*	*

* Switching off of the EUT

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
539,000	3,45	40	0,0000074	0,074
539,000	3,20	50	0,0000093	0,093
539,000	3,00	40	0,0000074	0,074
539,000	2,80	30	0,0000056	0,056
539,000	2,60	30	0,0000056	0,056
539,000	2,40	50	0,0000093	0,093
539,000	2,20	40	0,0000074	0,074
539,000	2,10	40	0,0000074	0,074

* Switching off of the EUT

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
607,925	3,45	50	0,0000082	0,082
607,925	3,20	70	0,0000115	0,115
607,925	3,00	40	0,0000066	0,066
607,925	2,80	60	0,0000099	0,099
607,925	2,60	70	0,0000115	0,115
607,925	2,40	60	0,0000099	0,099
607,925	2,20	40	0,0000066	0,066
607,925	2,10	50	0,0000082	0,082

* Switching off of the EUT



Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
614,075	3,45	40	0,0000065	0,065
614,075	3,20	30	0,0000049	0,049
614,075	3,00	40	0,0000065	0,065
614,075	2,80	70	0,0000114	0,114
614,075	2,60	70	0,0000114	0,114
614,075	2,40	60	0,0000098	0,098
614,075	2,20	40	0,0000065	0,065
614,075	2,10	40	0,0000065	0,065

* Switching off of the EUT

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
647,000	3,45	40	0,0000062	0,062
647,000	3,20	30	0,0000046	0,046
647,000	3,00	40	0,0000062	0,062
647,000	2,80	30	0,0000046	0,046
647,000	2,60	30	0,0000046	0,046
647,000	2,40	60	0,0000093	0,093
647,000	2,20	80	0,0000124	0,124
647,000	2,10	40	0,0000062	0,062

* Switching off of the EUT

Frequency (MHz)	Voltage (V)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
697,975	3,45	70	0,0000100	0,100
697,975	3,20	60	0,0000086	0,086
697,975	3,00	60	0,0000086	0,086
697,975	2,80	70	0,0000100	0,100
697,975	2,60	80	0,0000115	0,115
697,975	2,40	70	0,0000100	0,100
697,975	2,20	60	0,0000086	0,086
697,975	2,10	70	0,0000100	0,100

* Switching off of the EUT

Result: The requirements are met



11.3 Frequency Error vs. Temperature

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 74.861 (e)(4)
- IC; RSS 123 cl. 5.1
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Laboratory

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S227
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Antenna

Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
22	100	42

Acceptance limits

The frequency tolerance of the transmitter shall be 0,005 percent



Result

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
470,075	-30	90	0,0000191	0,191
470,075	-20	80	0,0000170	0,170
470,075	-10	90	0,0000191	0,191
470,075	0	70	0,0000149	0,149
470,075	10	60	0,0000128	0,128
470,075	20	83	0,0000177	0,177
470,075	30	80	0,0000170	0,170
470,075	40	70	0,0000149	0,149
470,075	50	80	0,0000170	0,170

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
539,000	-30	160	0,0000297	0,297
539,000	-20	170	0,0000315	0,315
539,000	-10	170	0,0000315	0,315
539,000	0	160	0,0000297	0,297
539,000	10	150	0,0000278	0,278
539,000	20	150	0,0000278	0,278
539,000	30	170	0,0000315	0,315
539,000	40	180	0,0000334	0,334
539,000	50	180	0,0000334	0,334

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
607,925	-30	160	0,0000263	0,263
607,925	-20	150	0,0000247	0,247
607,925	-10	160	0,0000263	0,263
607,925	0	160	0,0000263	0,263
607,925	10	170	0,0000280	0,280
607,925	20	183	0,0000301	0,301
607,925	30	180	0,0000296	0,296
607,925	40	170	0,0000280	0,280
607,925	50	180	0,0000296	0,296



Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
614,075	-30	160	0,0000261	0,261
614,075	-20	160	0,0000261	0,261
614,075	-10	150	0,0000244	0,244
614,075	0	150	0,0000244	0,244
614,075	10	170	0,0000277	0,277
614,075	20	150	0,0000244	0,244
614,075	30	160	0,0000261	0,261
614,075	40	170	0,0000277	0,277
614,075	50	180	0,0000293	0,293

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
647,000	-30	100	0,0000155	0,155
647,000	-20	100	0,0000155	0,155
647,000	-10	130	0,0000201	0,201
647,000	0	30	0,0000046	0,046
647,000	10	130	0,0000201	0,201
647,000	20	40	0,0000062	0,062
647,000	30	80	0,0000124	0,124
647,000	40	110	0,0000170	0,170
647,000	50	140	0,0000216	0,216

Frequency (MHz)	Temperature (°C)	Frequency Error (Hz)	Frequency Error (%)	Frequency Error (ppm)
697,975	-30	150	0,0000215	0,215
697,975	-20	140	0,0000201	0,201
697,975	-10	150	0,0000215	0,215
697,975	0	170	0,0000244	0,244
697,975	10	170	0,0000244	0,244
697,975	20	166	0,0000238	0,238
697,975	30	180	0,0000258	0,258
697,975	40	170	0,0000244	0,244
697,975	50	150	0,0000215	0,215

Result: The requirements are met



11.4 Characteristics of the Audio Modulation Circuitry

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 74.861 (e3)
- IC; RSS 123 cl. 5.2
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Laboratory

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC A201
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Antenna

Environmental conditions

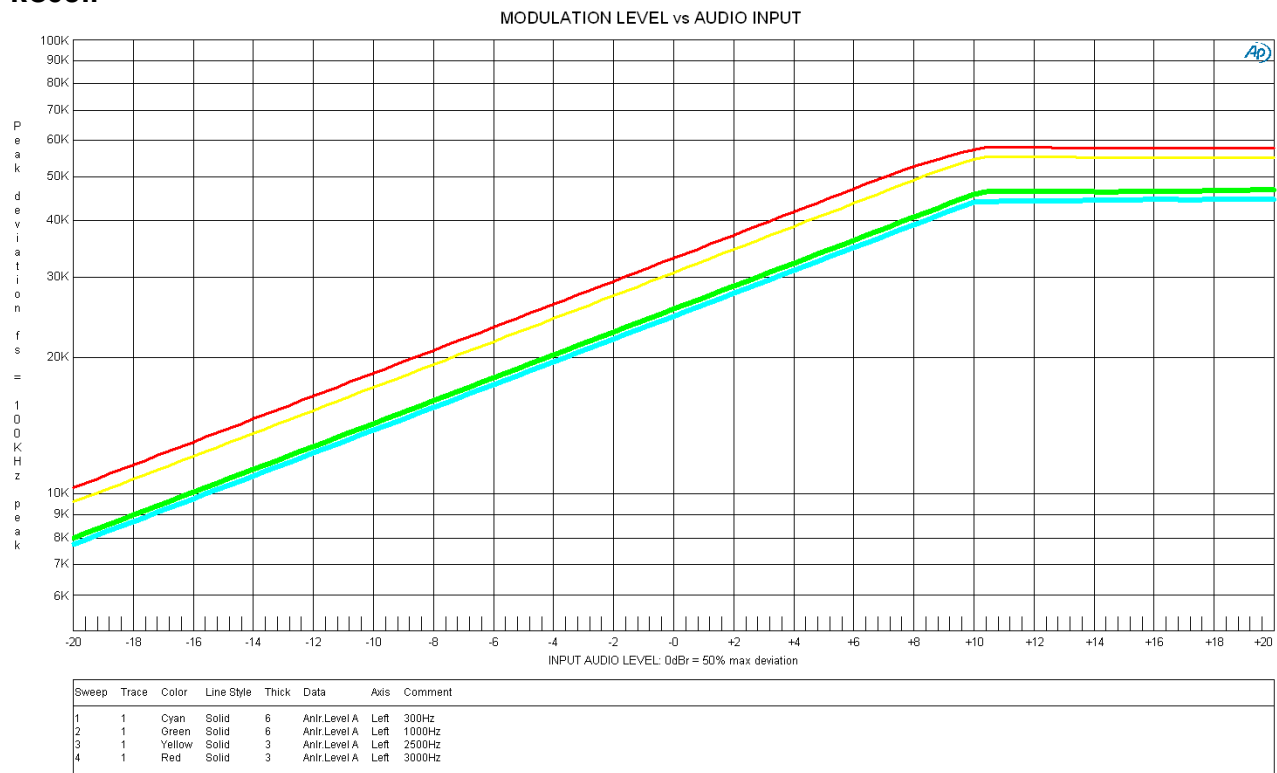
Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
20	100	45

Acceptance limits

A maximum deviation of ± 75 kHz is permitted when frequency modulation is employed



Result



Result: The requirements are met



11.5 Occupied bandwidth

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 74.861 (e)(5)
- IC; RSS 123 cl. 5.1
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Semi-Anechoic chamber

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S227
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Antenna

Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
20	100	42

Acceptance limits

The operating bandwidth shall not exceed 200 kHz



Result

Frequency (MHz)	Graph(s)	Bandwidth (kHz)	Result
470,075	G14158725	119,392185	Complies
539,000	G14158742	120,115774	Complies
607,925	G14158724	121,562952	Complies
614,075	G14158713	121,562952	Complies
647,000	G14158766	121,071429	Complies
697,975	G14158720	120,115774	Complies





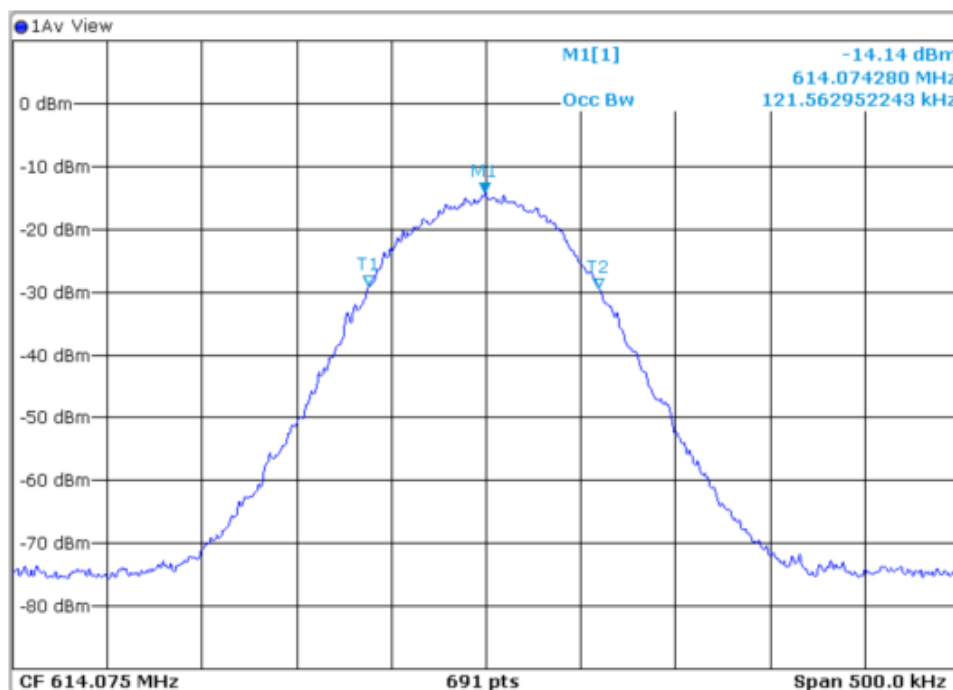
Graphs

G14158713

Settings

Center Frequency	614.07500000 MHz	Ref Level	10.00 dBm
Frequency Offset	0.0 Hz	Ref Level Offset	0.00 dB
Span	500.00000000 kHz	RF Att	40.0 dB
Start Frequency	613.82500000 MHz	Input Selection	INP2
Stop Frequency	614.32500000 MHz	Input Coupling	DC
RBW	3.00 kHz	Preamplifier State	Off
VBW	30.00 kHz	Preamplifier Value	0.0 dB
Sweep Time	631.62 μ s	Preselector	On

Diagram



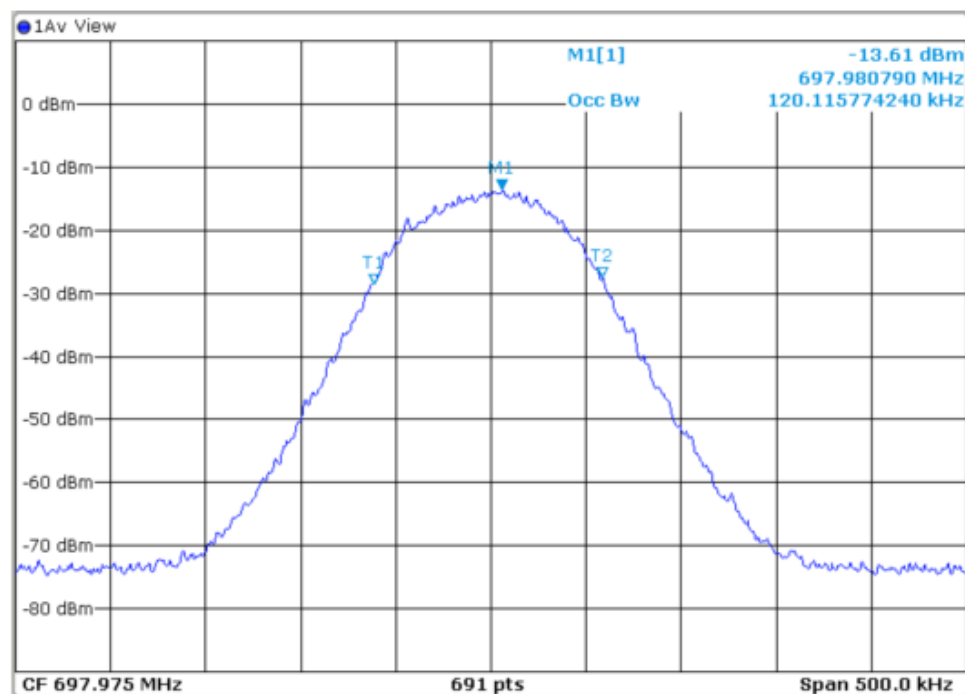


G14158720

Settings

Center Frequency	697.975000000 MHz	Ref Level	10.00 dBm
Frequency Offset	0.0 Hz	Ref Level Offset	0.00 dB
Span	500.000000000 kHz	RF Att	40.0 dB
Start Frequency	697.725000000 MHz	Input Selection	INP2
Stop Frequency	698.225000000 MHz	Input Coupling	DC
RBW	3.00 kHz	Preamplifier State	Off
VBW	30.00 kHz	Preamplifier Value	0.0 dB
Sweep Time	631.62 μ s	Preselector	On

Diagram



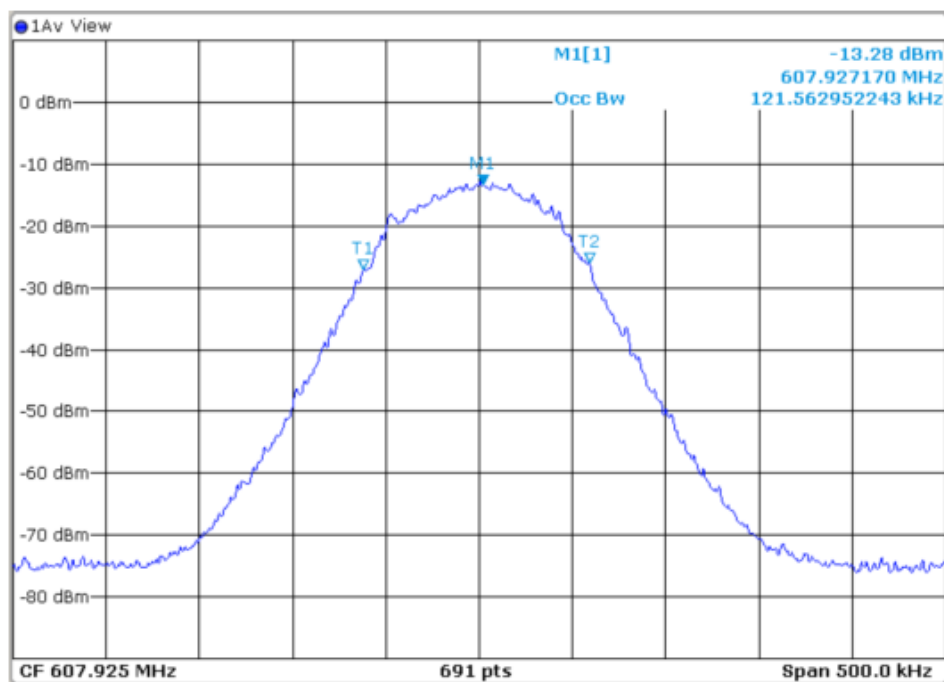


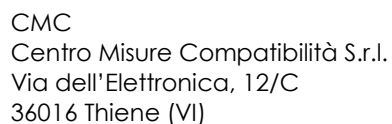
G14158724

Settings

Center Frequency	607.925000000 MHz	Ref Level	10.00 dBm
Frequency Offset	0.0 Hz	Ref Level Offset	0.00 dB
Span	500.000000000 kHz	RF Att	40.0 dB
Start Frequency	607.675000000 MHz	Input Selection	INP2
Stop Frequency	608.175000000 MHz	Input Coupling	DC
RBW	3.00 kHz	Preamplifier State	Off
VBW	30.00 kHz	Preamplifier Value	0.0 dB
Sweep Time	631.62 μ s	Preselector	On

Diagram



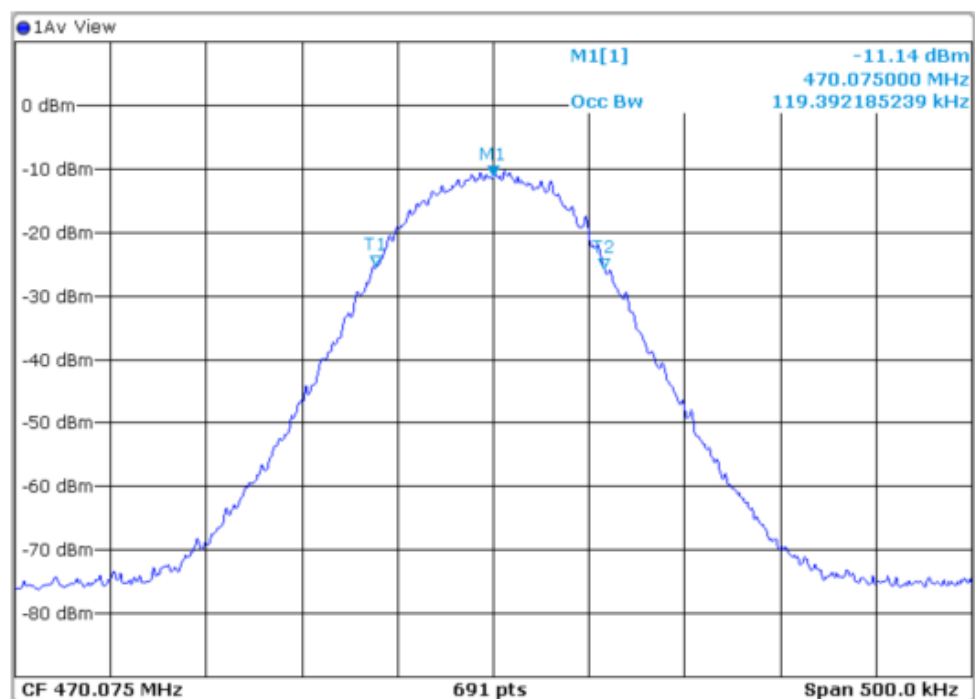


G14158725

Settings

Center Frequency	470.075000000 MHz	Ref Level	10.00 dBm
Frequency Offset	0.0 Hz	Ref Level Offset	0.00 dB
Span	500.000000000 kHz	RF Att	40.0 dB
Start Frequency	469.825000000 MHz	Input Selection	INP2
Stop Frequency	470.325000000 MHz	Input Coupling	DC
RBW	3.00 kHz	Preamplifier State	Off
VBW	30.00 kHz	Preamplifier Value	0.0 dB
Sweep Time	631.62 μ s	Preselector	On

Diagram



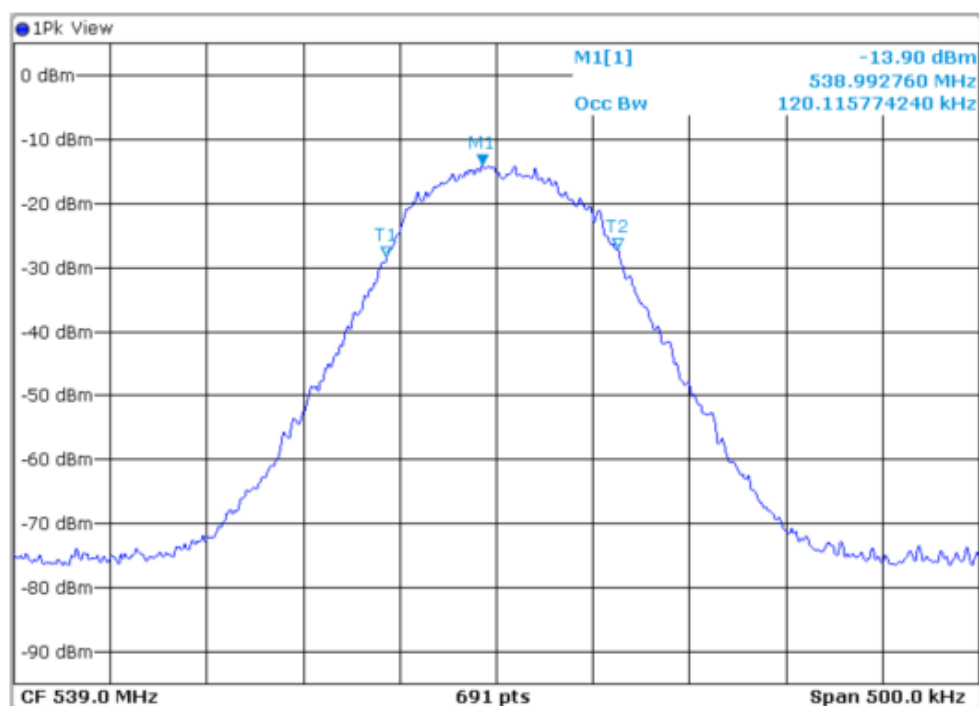


G14158742

Settings

Center Frequency	539.00000000 MHz	Ref Level	5.00 dBm
Frequency Offset	0.0 Hz	Ref Level Offset	0.00 dB
Span	500.00000000 kHz	RF Att	40.0 dB
Start Frequency	538.75000000 MHz	Input Selection	INP2
Stop Frequency	539.25000000 MHz	Input Coupling	DC
RBW	3.00 kHz	Preamplifier State	Off
VBW	30.00 kHz	Preamplifier Value	0.0 dB
Sweep Time	631.62 μ s	Preselector	On

Diagram



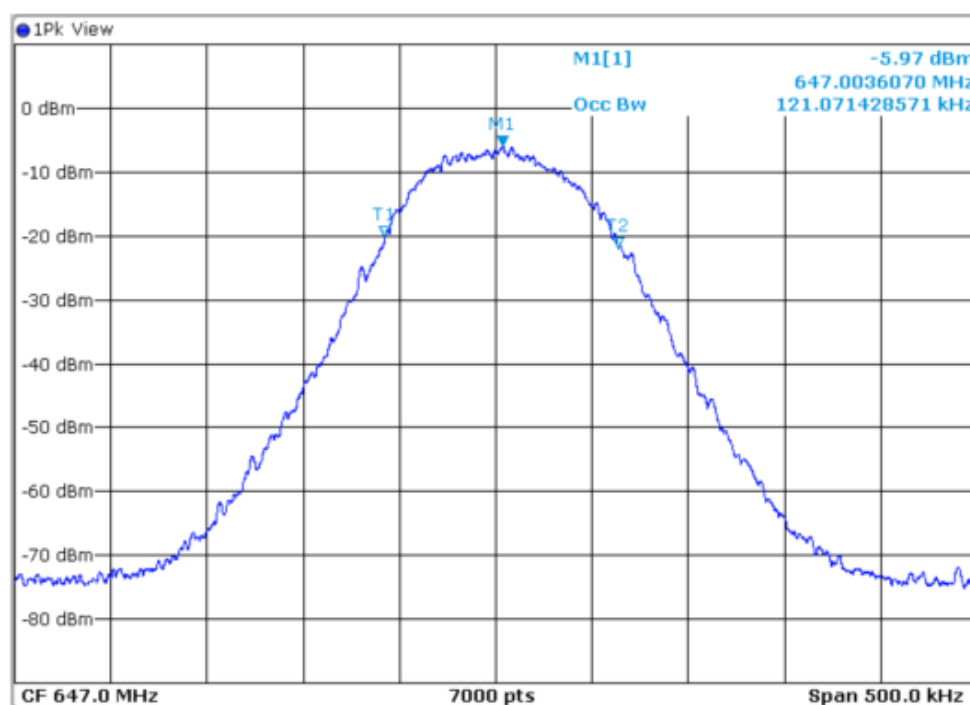


G14158766

Settings

Center Frequency	647.000000000 MHz	Ref Level	10.00 dBm
Frequency Offset	0.0 Hz	Ref Level Offset	0.00 dB
Span	500.000000000 kHz	RF Att	40.0 dB
Start Frequency	646.750000000 MHz	Input Selection	INP2
Stop Frequency	647.250000000 MHz	Input Coupling	DC
RBW	3.00 kHz	Preamplifier State	Off
VBW	30.00 kHz	Preamplifier Value	0.0 dB
Sweep Time	632.32 μ s	Preselector	On

Diagram



Result: The requirements are met