



TEST REPORT nr. R16152001

Federal Communication Commission (FCC)

Test item

Description: QUARK – LOW POWER OEM UHF COMPACT RFID READER
Trademark: CAEN RFID
Model/Type: R1230CB
FCC ID: UVECAENRFID010

Test Specification

Standard: FCC Rules & Regulations, Title 47:2015
Part 15 paragraph(s): 203, 204, 207, 209 and 247
Tests details at page 3

Client's name: CAEN RFID S.r.l.

Address: Via Vetraria, 11 – 55049 Viareggio (LU) – ITALY

Manufacturer's name : Same as client

Address: --

Report

Tested by: G. Gandini – Technician

Approved by: R. Beghetto – Laboratory Manager

Date of issue: 13.10.16

Contents: 87 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	4
3. TESTING AND SAMPLING	4
4. OPERATIVE CONDITIONS	4
5. PHOTOGRAPH(S) OF EUT	5
5.1 PHOTOGRAPH(S) OF EUT	5
6. EQUIPMENT LIST	7
7. MEASUREMENT UNCERTAINTY	8
8. REFERENCE DOCUMENTS	9
9. DEVIATION FROM TEST SPECIFICATION	10
10. TEST CASE VERDICTS	10
11. RESULTS	11
11.1 ANTENNA REQUIREMENTS	12
11.2 RADIATED EMISSIONS	14
11.3 BAND EDGE	69
11.4 PEAK OUTPUT POWER	75
11.5 SPURIOUS EMISSION	80
11.6 MAXIMUM PERMISSIBLE EXPOSURE	87



1. Summary

Standard:

FCC Rules & Regulations, Title 47:2015

Part 15 paragraph(s): 203, 204, 207, 209 and 247 – only tests listed on the following table

Test specifications	Environmental Phenomena	Tests sequence	Result
Part 15.203	Antenna requirements	1	Complies
Part 15.207	Conducted emissions	--	N.A. (+)
Part 15.209	Radiated emissions	2	Complies
Part 15.247	Band edge	3	Complies
Part 15.209 and 15.247	Peak Output Power	4	Complies
Part 15.209	Spurious emission	5	Complies
Part 1.1310	Maximum permissible exposure	6	Complies

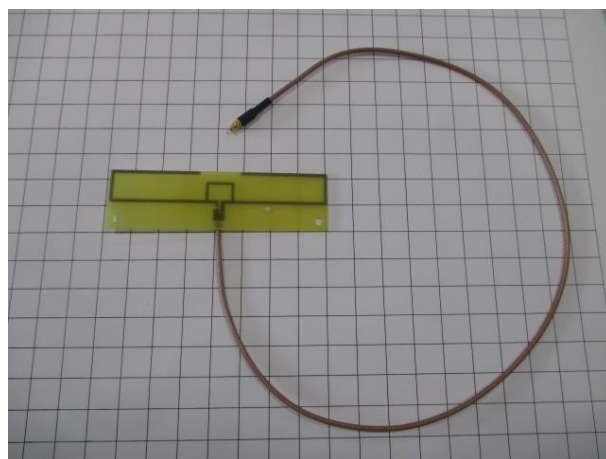
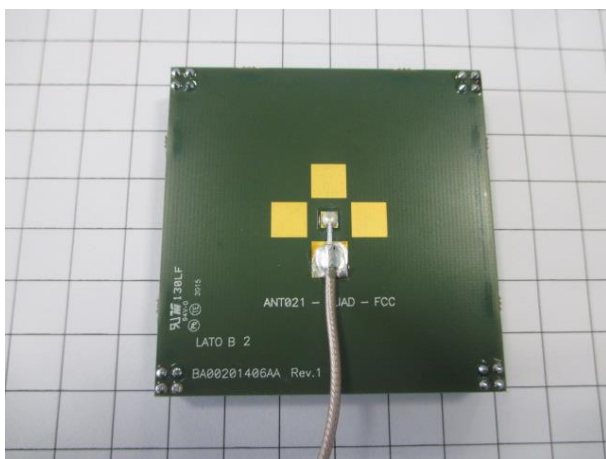
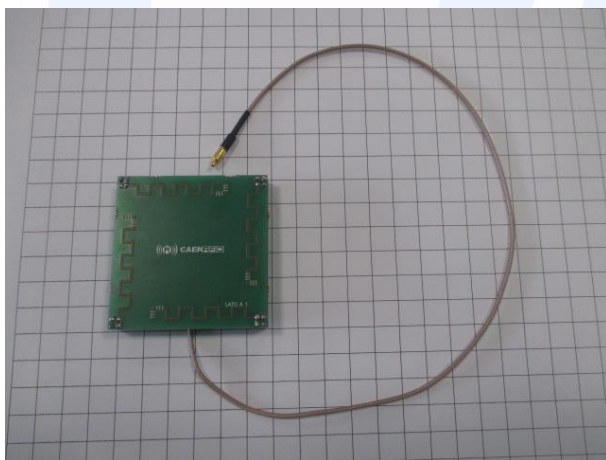
(+) Devices which only employ battery power. See FCC Part 15.207 (c)

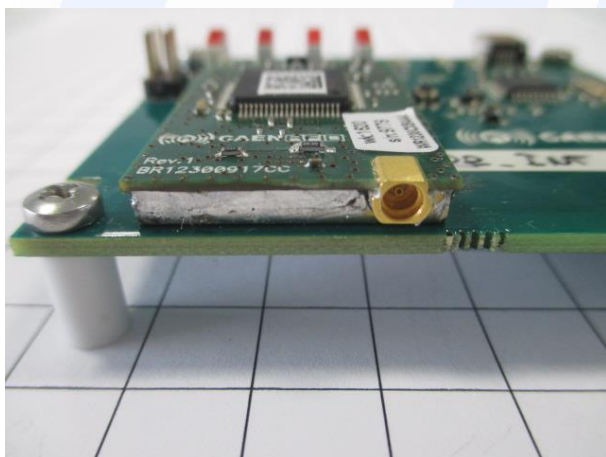
The Test Report was given to the Client representatives for necessary documentation of ratification of the tested equipment and it is valid for the FCC certification



5. Photograph(s) of EUT

5.1 Photograph(s) of EUT







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 '16	January '17
CMC S108	EMCO	3115	Horn Antenna	9811-5622	June '16	June '19
CMC S127	Schaffner	HLA6120	Loop Antenna	1191	November '13	November '18
CMC S164	Rohde & Schwarz	ESU26	EMC interference receiver	100052	January '16	January '17
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '16	January '17
CMC S227	Rohde & Schwarz	ESR7	EMI Test Receiver 7GHz	101121	January '16	January '17
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '15	November '16
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '15	November '16
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '15	November '16
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '15	November '16
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '15	November '16
CMC S271	Schwarzbeck	BBA 9106 + VHBB 9124	Biconical Antenna (30-300MHz)	831	June '16	June '19
CMC S287	Schwarzbeck	VUSLP 9111B	Log-periodic Antenna (200 MHz-3GHz)	9111B-203	June '16	June '19
CMC S288	CMC	W_sma_white	Joint Shielded Cable	W_001	November '15	November '16



7. Measurement uncertainty

Test	Expanded Uncertainty	note
Conducted Emission		
(50Ω/50μH AMN) - (9 kHz – 150 kHz)	±3,6 dB	1
(50Ω/50μH AMN) - (150 kHz – 30 MHz)	±3,0 dB	1
(Voltage probe) - (150 kHz – 30 MHz)	±2,9 dB	1
(50Ω/5μH AMN) - (150 kHz – 108 MHz)	±2,6 dB	1
Discontinuous Conducted Emission		
Conducted Emission (50Ω/50μH AMN) - (150 kHz – 30 MHz)	±3,0 dB	1
Disturbance Power (30 MHz – 300 MHz)		
	±3,4 dB	1
Radiated Emission		
(0,150 MHz – 30 MHz)	±3,8 dB	1
(30 MHz – 1000 MHz)	±3,8 dB	1
(1 GHz – 6 GHz)	±4,3 dB	1
Electromagnetic field EMF		
	±10,5 %	1
Harmonic current emissions test		
	±1,2 %	1
Voltage fluctuation and flicker test		
	±3,8 %	1
Insertion loss test		
	±2,0 dB	1
Radiated electromagnetic disturbance test (loop antenna)		
	±1,5 dB	1
Radiated electromagnetic field immunity test		
	0,81 V/m at 3V/m	1
Pulse modulated radiated electromagnetic field immunity test		
	0,81 V/m at 3V/m	1
Injected currents immunity test		
	0,45 V at 3V	1
Bulk current		
	3,7 mA at 60 mA	1
Power frequency magnetic field immunity test		
	0,23 A/m at 10 A/m	1
Effective radiated power (F < 1GHz)		
	±3,8 dB	1
Effective radiated power (F > 1GHz)		
	±5,5 dB	1
Frequency error		
	< 1x10 ⁻⁷	1
Modulation bandwidth		
	< 1x10 ⁻⁷	1
Conducted RF power and spurious emission		
	±0,7 dB	1
Adjacent channel power		
	±1,2 dB	1
Blocking		
	±1,2 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

Rev_16_01 date 09/02/2016

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 15:2015	--
ANSI C63.4:2014	American National Standard for Methods of Measuring of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz – 40 GHz
ANSI C63.10:2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
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

None

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.

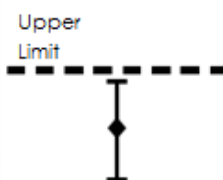
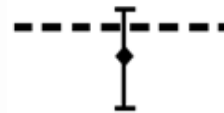
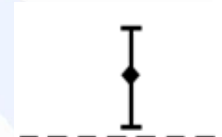


11. Results

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 complies with the requirement.	The sample complies with the requirement.	The sample does not comply with the requirement.	The sample does not comply with the requirement.
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 Antenna requirements

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.203 and 15.204
- DA 00-705
- 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

--
Measurement uncertainty: See clause 7 of this test report

Test specification

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of § 15.211, § 15.213, § 15.217, § 15.219, or § 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31 (d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded

Environmental conditions

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



Result

Antenna Type	External R.F. power amplifier	Gain	Remarks	Results
QUAD Circular Polarized Quadrifilar Antenna	Not Present	0,7 dBi	--	Complies
External dedicated antenna	Not Present	1,3 dBi	--	Complies

Result: The requirements are met



11.2 Radiated emissions

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part. 15.209
- DA 00-705
- 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 S108, CMC S127, CMC S164, CMC S271, CMC S287
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Enclosure
Frequency range: 0,009 MHz – 10000 MHz
Antenna polarization: Horizontal (H) – Vertical (V)
EUT – Antenna distance:
10 m for frequencies $\leq$ 1000 MHz
3 m for frequencies $>$ 1000 MHz

Environmental conditions

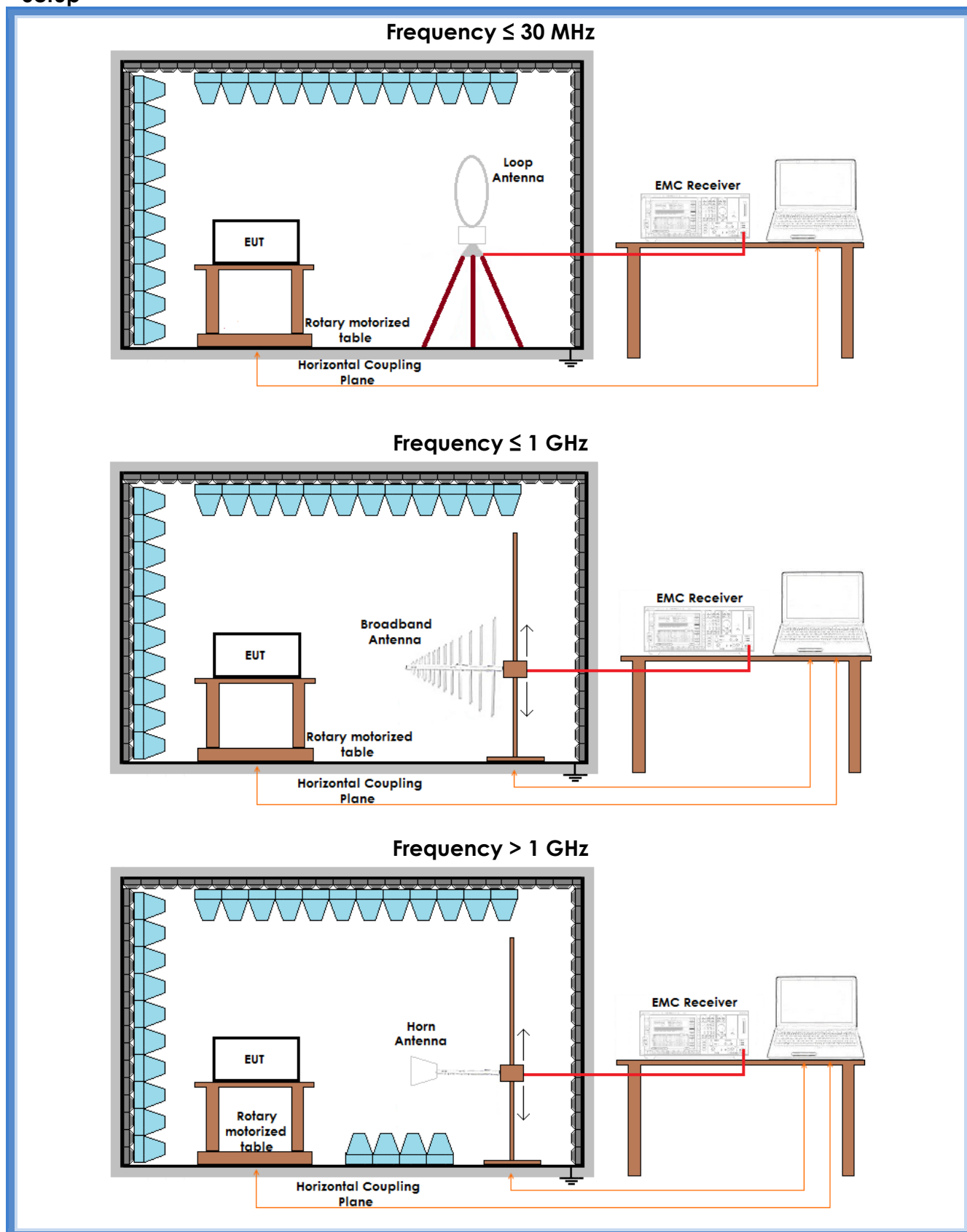
Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
22	100	45

Acceptance limits

Frequency range (MHz)	Limits [dB(μ V/m)]
0,009 to 0,490	107,60 to 72,89
0,490 to 1,705	52,89 to 42,05
1,705 to 30	48,63
30 to 88	40
88 to 216	43,52
216 to 960	46,02
Above 960	53,98
Above 1000	53,98

Remarks: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Setup





Result

Polarization	Frequency Range (MHz)	Graphs	Remarks	Result
V	30 – 300	G16152030	Lowest channel	Complies
V	30 – 300	G16152033	Medium channel	Complies
V	30 – 300	G16152034	Highest channel	Complies
V	300 – 1000	G16152036	Highest channel	Complies
V	300 – 1000	G16152039	Medium channel	Complies
V	300 – 1000	G16152040	Lowest channel	Complies
V	1000 – 10000	G16152060	Lowest channel	Complies
V	1000 – 10000	G16152061	Medium channel	Complies
V	1000 – 10000	G16152068	Highest channel	Complies
H	30 – 300	G16152031	Lowest channel	Complies
H	30 – 300	G16152032	Medium channel	Complies
H	30 – 300	G16152035	Highest channel	Complies
H	300 – 1000	G16152037	Highest channel	Complies
H	300 – 1000	G16152038	Medium channel	Complies
H	300 – 1000	G16152041	Lowest channel	Complies
H	1000 – 10000	G16152059	Lowest channel	Complies
H	1000 – 10000	G16152062	Medium channel	Complies
H	1000 – 10000	G16152067	Highest channel	Complies
Loop	0,009 – 30	G16152056	Worst case	Complies
Remarks: QUAD Circular Polarized Quadrifilar Antenna. Peaks above the limits are due to the main transmitting frequencies				



Polarization	Frequency Range (MHz)	Graphs	Remarks	Result
V	300 – 1000	G16152044	Highest channel	Complies
V	300 – 1000	G16152045	Medium channel	Complies
V	300 – 1000	G16152048	Lowest channel	Complies
V	30 – 300	G16152049	Lowest channel	Complies
V	30 – 300	G16152052	Medium channel	Complies
V	30 – 300	G16152053	Highest channel	Complies
V	1000 – 10000	G16152057	Lowest channel	Complies
V	1000 – 10000	G16152064	Medium channel	Complies
V	1000 – 10000	G16152065	Highest channel	Complies
H	300 – 1000	G16152043	Highest channel	Complies
H	300 – 1000	G16152046	Medium channel	Complies
H	300 – 1000	G16152047	Lowest channel	Complies
H	30 – 300	G16152050	Lowest channel	Complies
H	30 – 300	G16152051	Medium channel	Complies
H	30 – 300	G16152054	Highest channel	Complies
H	1000 – 10000	G16152058	Lowest channel	Complies
H	1000 – 10000	G16152063	Medium channel	Complies
H	1000 – 10000	G16152066	Highest channel	Complies
Loop	0,009 – 30	G16152055	Worst case	Complies
Remarks: External dedicated antenna. Peaks above the limits are due to the main transmitting frequencies				

Graphs Legend

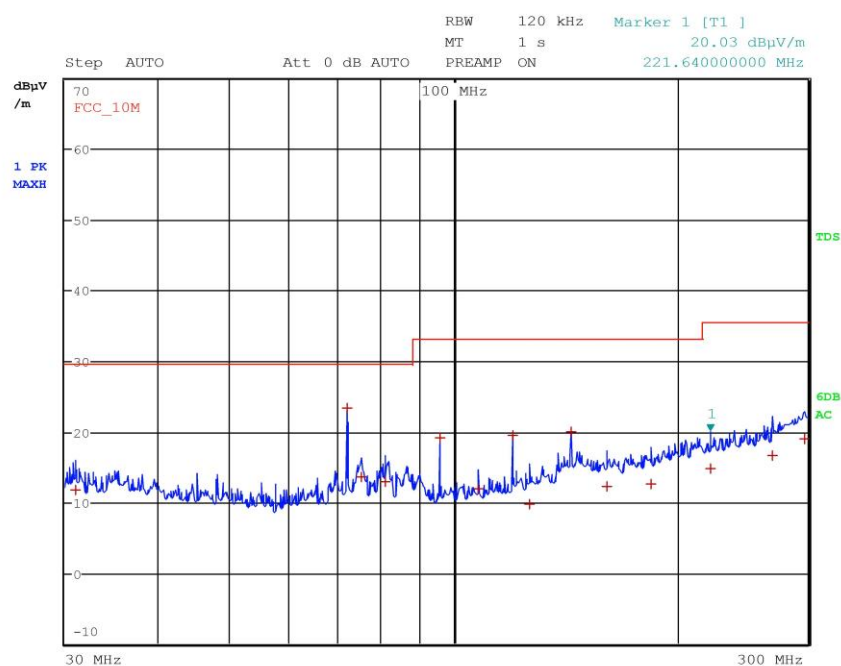
PK: Peak; QP [1s] (quasi-peak at 1 second) values are marked with a +
AV: Average; AV [1s] (average at 1 second) values are marked with a x



Graphs

G16152030

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152030
Test Spec





Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152030
Test Spec

Final Measurement

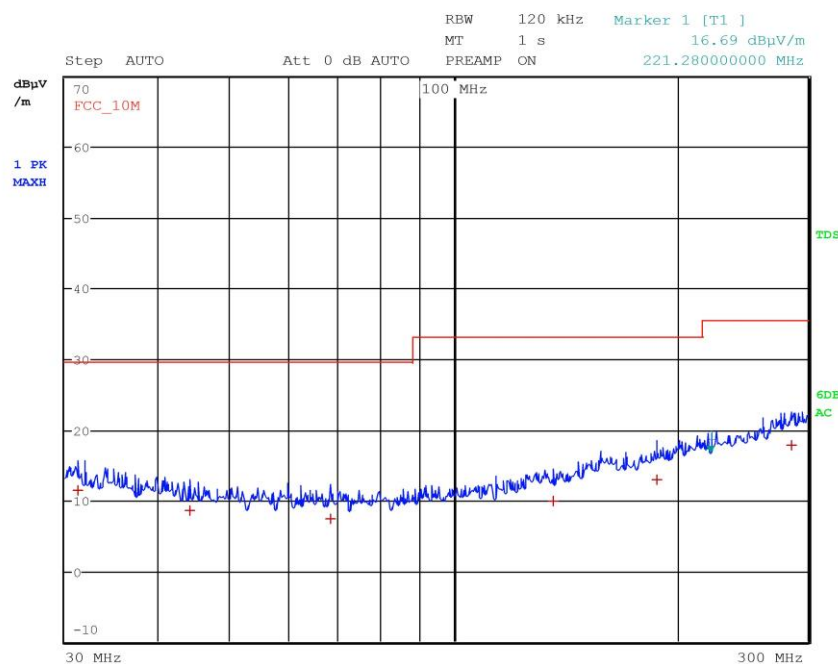
Meas Time: 1 s
Margin: 6 dB
Subranges: 14

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	30.960000000 MHz	11.69	Quasi Peak	-17.85
1	72.000000000 MHz	23.29	Quasi Peak	-6.25
1	75.120000000 MHz	13.68	Quasi Peak	-15.86
1	80.920000000 MHz	12.91	Quasi Peak	-16.63
1	96.000000000 MHz	19.16	Quasi Peak	-13.90
1	107.960000000 MHz	11.86	Quasi Peak	-21.20
1	120.000000000 MHz	19.50	Quasi Peak	-13.56
1	126.480000000 MHz	9.72	Quasi Peak	-23.34
1	144.000000000 MHz	20.06	Quasi Peak	-13.00
1	160.560000000 MHz	12.23	Quasi Peak	-20.83
1	184.080000000 MHz	12.68	Quasi Peak	-20.38
1	221.640000000 MHz	14.72	Quasi Peak	-20.84
1	268.680000000 MHz	16.61	Quasi Peak	-18.95
1	296.880000000 MHz	18.92	Quasi Peak	-16.64



G16152031

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152031
Test Spec



Final Measurement

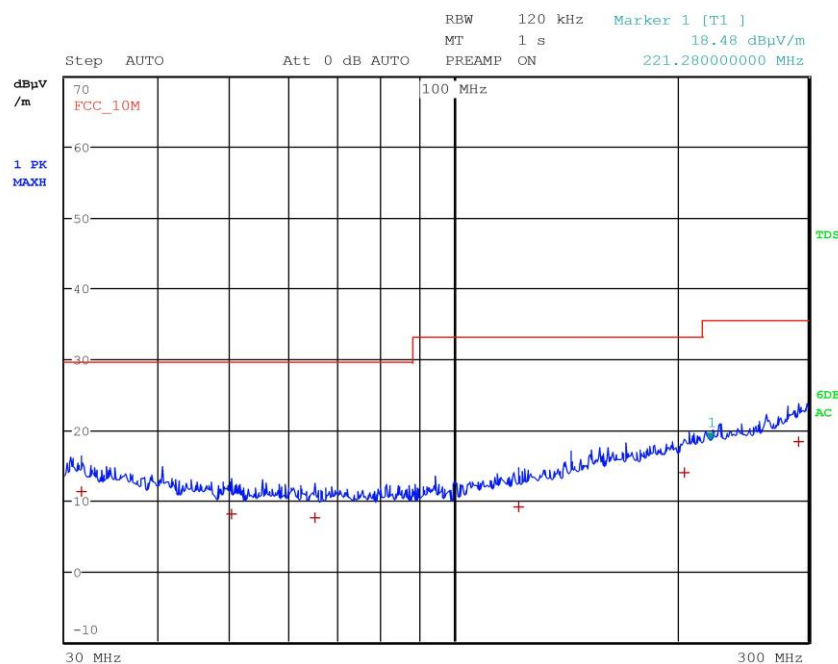
Meas Time: 1 s
Margin: 20 dB
Subranges: 6

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	31.240000000 MHz	11.40	Quasi Peak	-18.14
1	44.080000000 MHz	8.49	Quasi Peak	-21.05
1	68.280000000 MHz	7.38	Quasi Peak	-22.16
1	136.280000000 MHz	10.00	Quasi Peak	-23.06
1	188.040000000 MHz	12.98	Quasi Peak	-20.08
1	284.640000000 MHz	17.81	Quasi Peak	-17.75



G16152032

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152032
Test Spec



Final Measurement

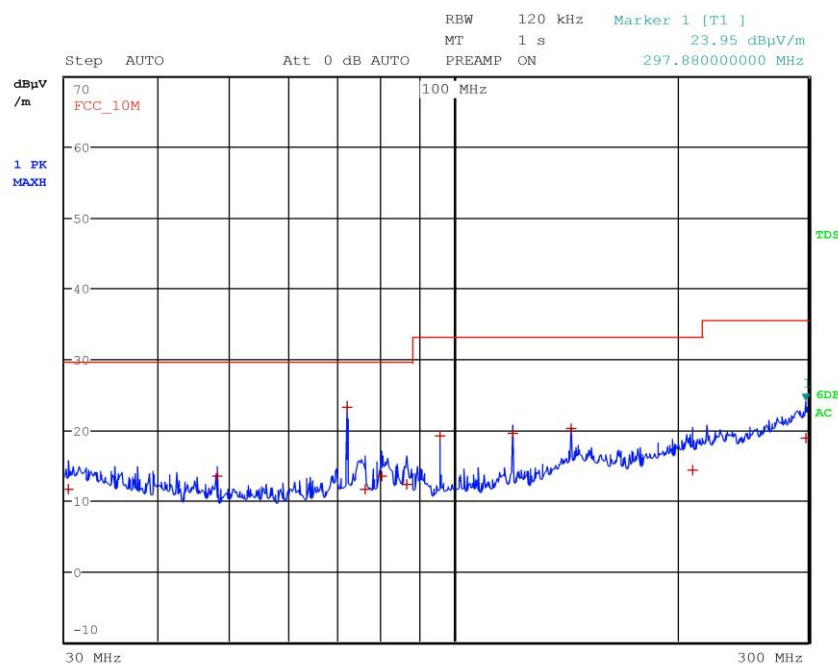
Meas Time: 1 s
Margin: 20 dB
Subranges: 6

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	31.600000000 MHz	11.19	Quasi Peak	-18.35
1	50.200000000 MHz	8.00	Quasi Peak	-21.54
1	65.000000000 MHz	7.55	Quasi Peak	-21.99
1	122.560000000 MHz	9.11	Quasi Peak	-23.95
1	204.320000000 MHz	14.03	Quasi Peak	-19.03
1	291.760000000 MHz	18.30	Quasi Peak	-17.26



G16152033

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152033
Test Spec



Final Measurement

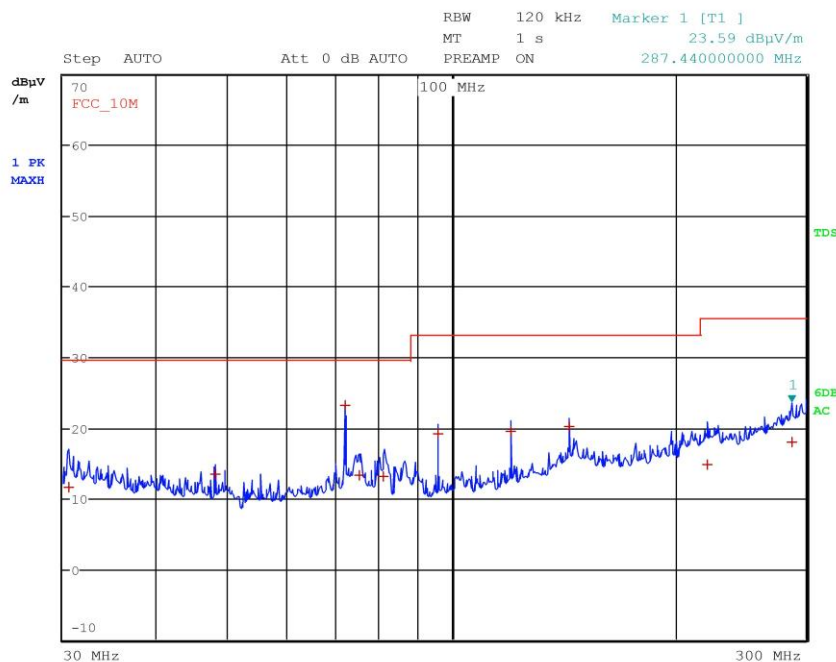
Meas Time: 1 s
Margin: 20 dB
Subranges: 11

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	30.280000000 MHz	11.66	Quasi Peak	-17.88
1	48.000000000 MHz	13.44	Quasi Peak	-16.10
1	72.000000000 MHz	23.27	Quasi Peak	-6.27
1	76.080000000 MHz	11.63	Quasi Peak	-17.91
1	79.920000000 MHz	13.45	Quasi Peak	-16.09
1	86.560000000 MHz	12.21	Quasi Peak	-17.33
1	96.000000000 MHz	19.20	Quasi Peak	-13.86
1	120.000000000 MHz	19.56	Quasi Peak	-13.50
1	144.000000000 MHz	20.11	Quasi Peak	-12.95
1	209.680000000 MHz	14.31	Quasi Peak	-18.75
1	297.880000000 MHz	18.79	Quasi Peak	-16.77



G16152034

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152034
Test Spec



Final Measurement

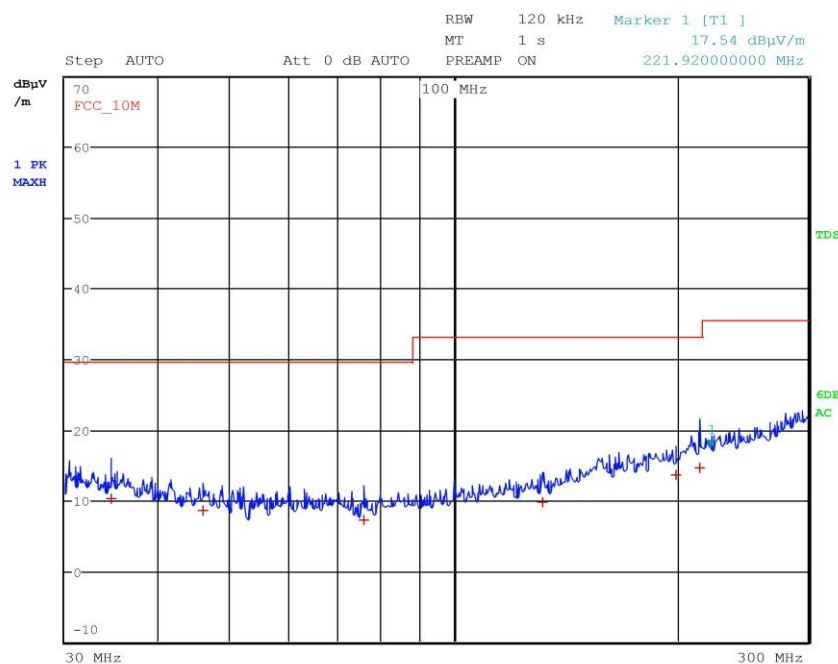
Meas Time: 1 s
Margin: 20 dB
Subranges: 10

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	30.560000000 MHz	11.61	Quasi Peak	-17.93
1	48.000000000 MHz	13.41	Quasi Peak	-16.13
1	72.000000000 MHz	23.26	Quasi Peak	-6.28
1	75.040000000 MHz	13.21	Quasi Peak	-16.33
1	80.880000000 MHz	13.18	Quasi Peak	-16.36
1	96.000000000 MHz	19.19	Quasi Peak	-13.87
1	120.000000000 MHz	19.50	Quasi Peak	-13.56
1	144.000000000 MHz	20.11	Quasi Peak	-12.95
1	220.720000000 MHz	14.78	Quasi Peak	-20.78
1	287.440000000 MHz	18.03	Quasi Peak	-17.53



G16152035

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152035
Test Spec



Final Measurement

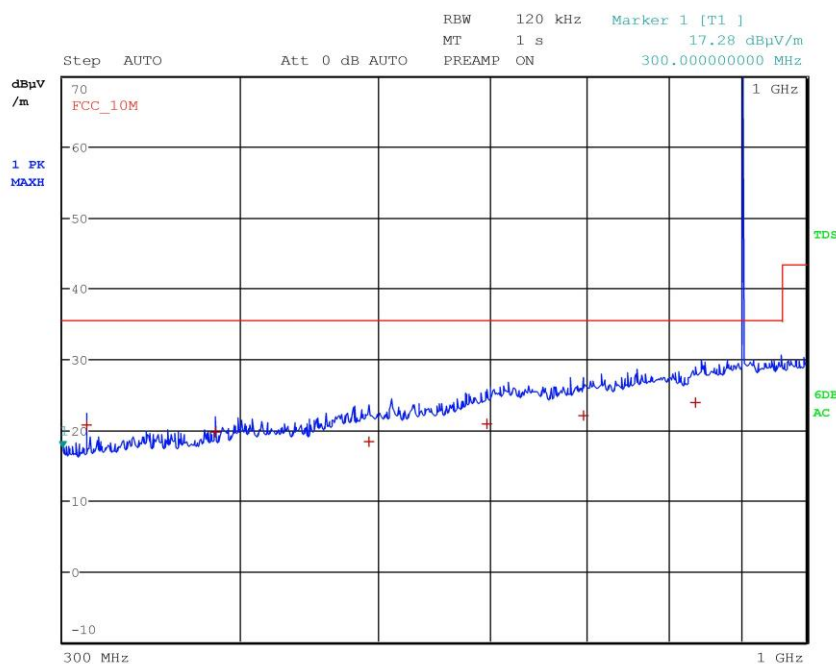
Meas Time: 1 s
Margin: 20 dB
Subranges: 6

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	34.600000000 MHz	10.32	Quasi Peak	-19.22
1	46.000000000 MHz	8.50	Quasi Peak	-21.04
1	75.680000000 MHz	7.19	Quasi Peak	-22.35
1	131.760000000 MHz	9.83	Quasi Peak	-23.23
1	199.280000000 MHz	13.55	Quasi Peak	-19.51
1	214.000000000 MHz	14.67	Quasi Peak	-18.39



G16152036

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152036
Test Spec



Final Measurement

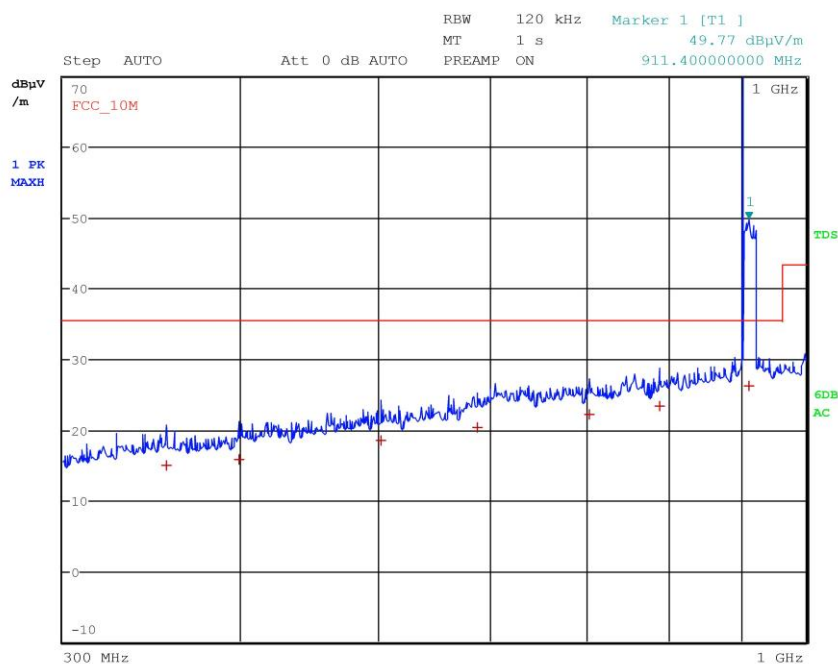
Meas Time: 1 s
Margin: 20 dB
Subranges: 6

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	311.960000000 MHz	20.60	Quasi Peak	-14.96
1	384.000000000 MHz	19.67	Quasi Peak	-15.89
1	492.440000000 MHz	18.25	Quasi Peak	-17.31
1	596.520000000 MHz	20.84	Quasi Peak	-14.72
1	697.440000000 MHz	22.06	Quasi Peak	-13.50
1	835.720000000 MHz	23.87	Quasi Peak	-11.69



G16152037

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152037
Test Spec



Final Measurement

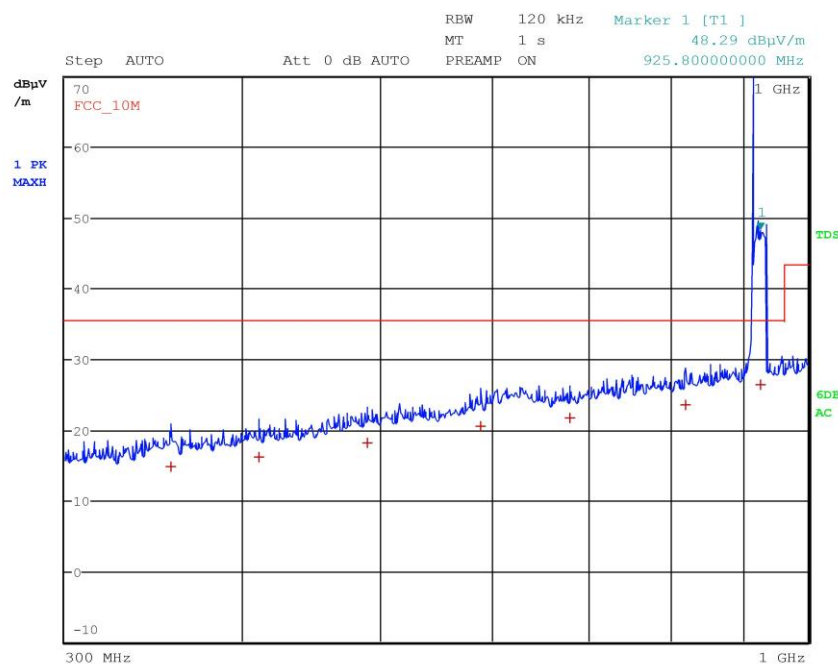
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	354.520000000 MHz	14.88	Quasi Peak	-20.68
1	398.880000000 MHz	15.85	Quasi Peak	-19.71
1	502.360000000 MHz	18.57	Quasi Peak	-16.99
1	586.680000000 MHz	20.39	Quasi Peak	-15.17
1	703.800000000 MHz	22.23	Quasi Peak	-13.33
1	789.080000000 MHz	23.30	Quasi Peak	-12.26
1	902.760000000 MHz	99.44	Quasi Peak	63.88
1	911.400000000 MHz	26.22	Quasi Peak	-9.34



G16152038

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152038
Test Spec



Final Measurement

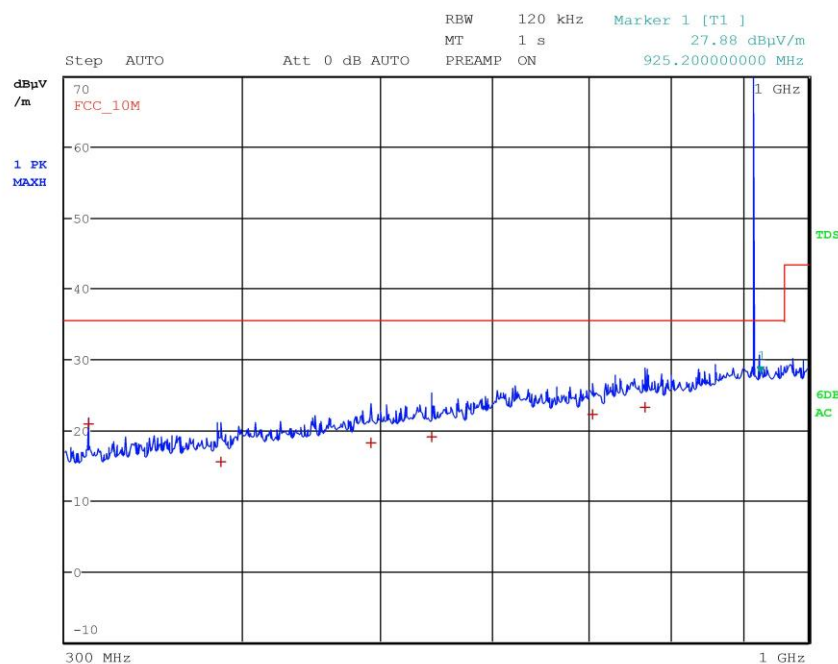
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	356.040000000 MHz	14.85	Quasi Peak	-20.71
1	411.040000000 MHz	16.12	Quasi Peak	-19.44
1	490.080000000 MHz	18.15	Quasi Peak	-17.41
1	588.640000000 MHz	20.51	Quasi Peak	-15.05
1	680.360000000 MHz	21.67	Quasi Peak	-13.89
1	819.240000000 MHz	23.49	Quasi Peak	-12.07
1	914.760000000 MHz	107.48	Quasi Peak	71.92
1	925.800000000 MHz	26.31	Quasi Peak	-9.25



G16152039

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152039
Test Spec



Final Measurement

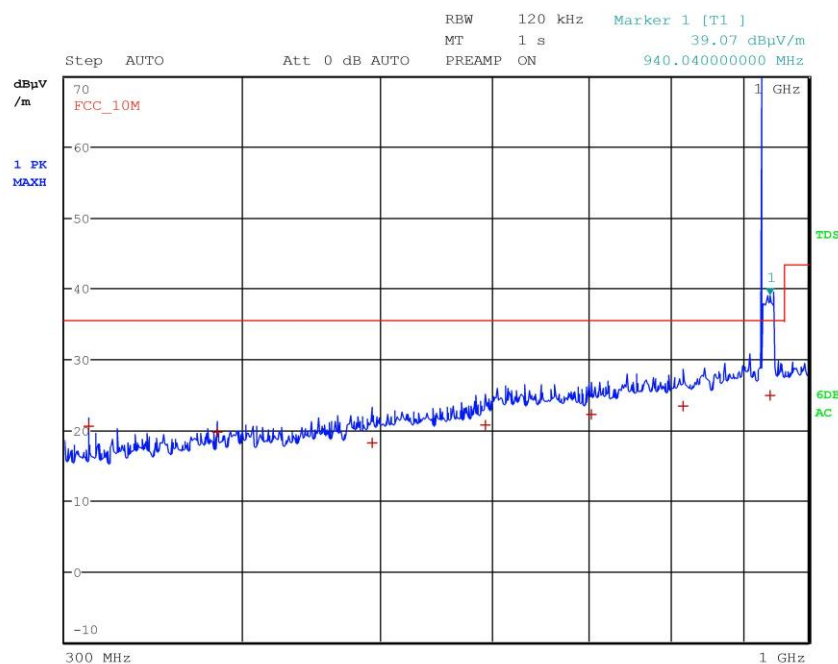
Meas Time: 1 s
Margin: 20 dB
Subranges: 7

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	312.00000000 MHz	20.89	Quasi Peak	-14.67
1	386.00000000 MHz	15.47	Quasi Peak	-20.09
1	492.24000000 MHz	18.23	Quasi Peak	-17.33
1	543.56000000 MHz	18.91	Quasi Peak	-16.65
1	705.68000000 MHz	22.20	Quasi Peak	-13.36
1	767.44000000 MHz	23.14	Quasi Peak	-12.42
1	914.76000000 MHz	82.50	Quasi Peak	46.94



G16152040

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152040
Test Spec



Final Measurement

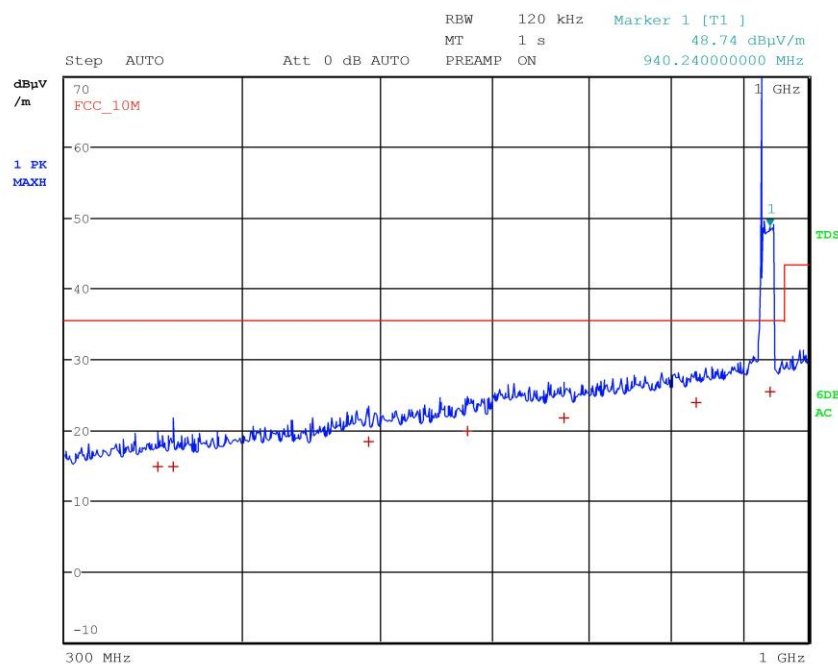
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	311.960000000 MHz	20.52	Quasi Peak	-15.04
1	383.960000000 MHz	19.66	Quasi Peak	-15.90
1	493.120000000 MHz	18.22	Quasi Peak	-17.34
1	593.240000000 MHz	20.62	Quasi Peak	-14.94
1	703.560000000 MHz	22.23	Quasi Peak	-13.33
1	816.680000000 MHz	23.37	Quasi Peak	-12.19
1	927.240000000 MHz	89.75	Quasi Peak	54.19
1	940.040000000 MHz	24.82	Quasi Peak	-10.74



G16152041

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152041
Test Spec



Final Measurement

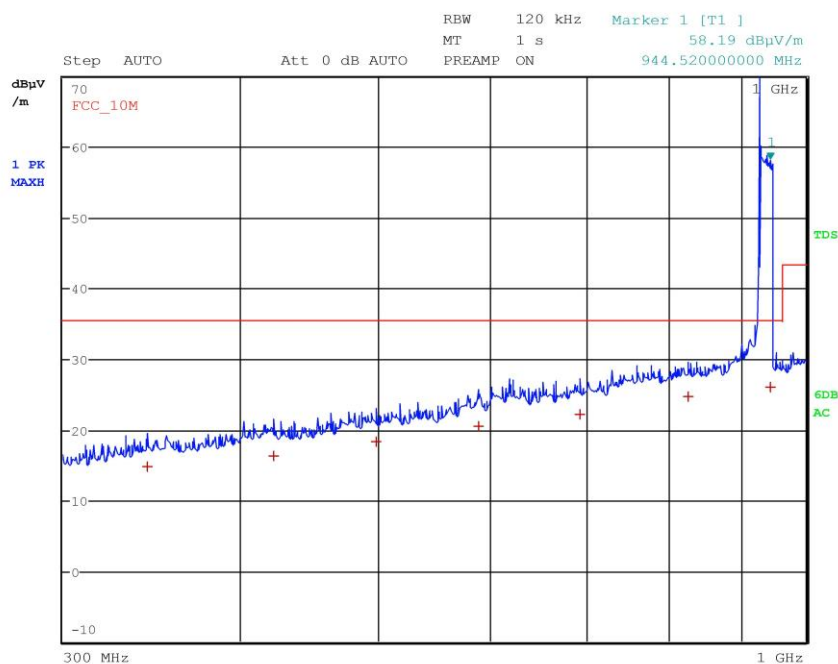
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	348.520000000 MHz	14.86	Quasi Peak	-20.70
1	357.880000000 MHz	14.73	Quasi Peak	-20.83
1	491.080000000 MHz	18.24	Quasi Peak	-17.32
1	575.320000000 MHz	19.89	Quasi Peak	-15.67
1	673.040000000 MHz	21.64	Quasi Peak	-13.92
1	833.920000000 MHz	23.89	Quasi Peak	-11.67
1	927.240000000 MHz	107.88	Quasi Peak	72.32
1	940.240000000 MHz	25.41	Quasi Peak	-10.15



G16152043

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152043
Test Spec



Final Measurement

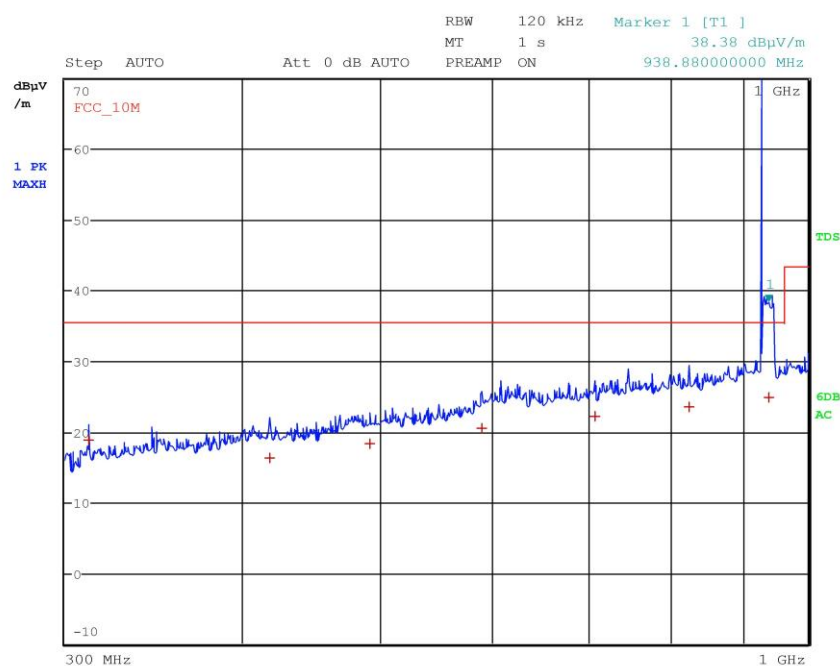
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	343.720000000 MHz	14.77	Quasi Peak	-20.79
1	422.440000000 MHz	16.24	Quasi Peak	-19.32
1	498.200000000 MHz	18.32	Quasi Peak	-17.24
1	588.560000000 MHz	20.49	Quasi Peak	-15.07
1	693.000000000 MHz	22.13	Quasi Peak	-13.43
1	825.400000000 MHz	24.66	Quasi Peak	-10.90
1	927.240000000 MHz	110.40	Quasi Peak	74.84
1	944.520000000 MHz	26.01	Quasi Peak	-9.55



G16152044

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152044
Test Spec



Final Measurement

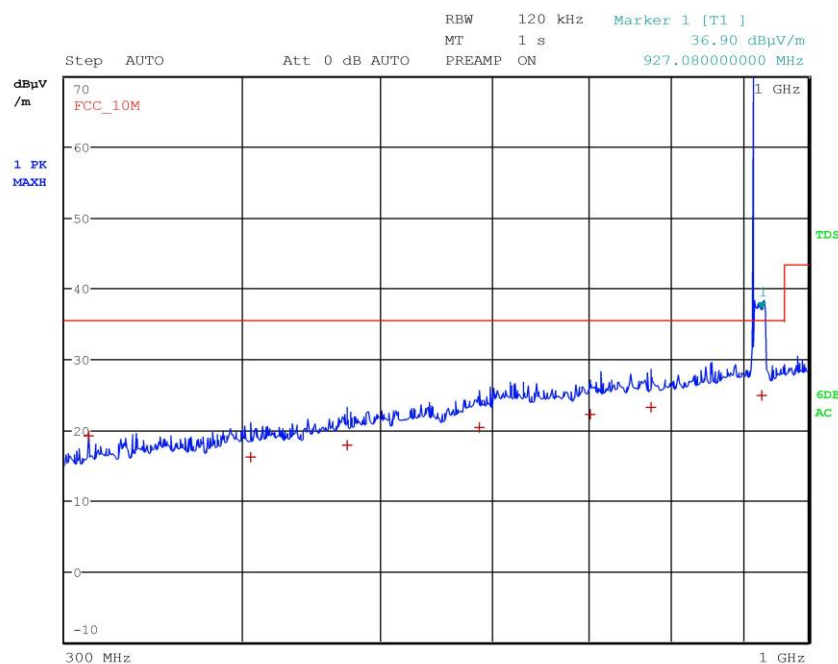
Meas Time: 1 s
Margin: 20 dB
Subranges: 7

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	311.960000000 MHz	18.82	Quasi Peak	-16.74
1	418.360000000 MHz	16.24	Quasi Peak	-19.32
1	491.960000000 MHz	18.26	Quasi Peak	-17.30
1	589.040000000 MHz	20.56	Quasi Peak	-15.00
1	707.280000000 MHz	22.26	Quasi Peak	-13.30
1	824.760000000 MHz	23.52	Quasi Peak	-12.04
1	938.880000000 MHz	24.83	Quasi Peak	-10.73



G16152045

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152045
Test Spec



Final Measurement

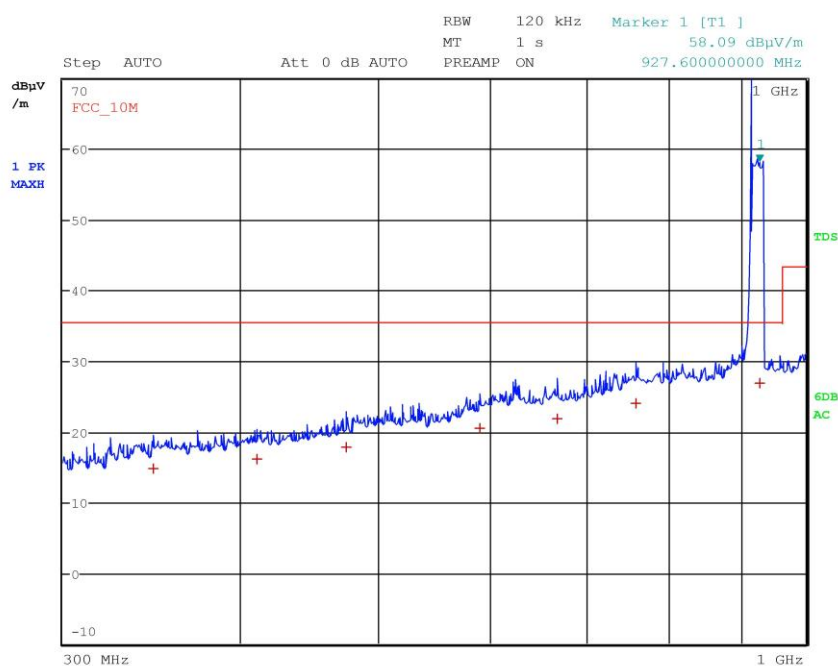
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	312.00000000 MHz	19.11	Quasi Peak	-16.45
1	405.24000000 MHz	16.12	Quasi Peak	-19.44
1	473.92000000 MHz	17.76	Quasi Peak	-17.80
1	586.84000000 MHz	20.40	Quasi Peak	-15.16
1	702.48000000 MHz	22.22	Quasi Peak	-13.34
1	775.36000000 MHz	23.17	Quasi Peak	-12.39
1	914.76000000 MHz	94.91	Quasi Peak	59.35
1	927.08000000 MHz	24.96	Quasi Peak	-10.60



G16152046

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152046
Test Spec



Final Measurement

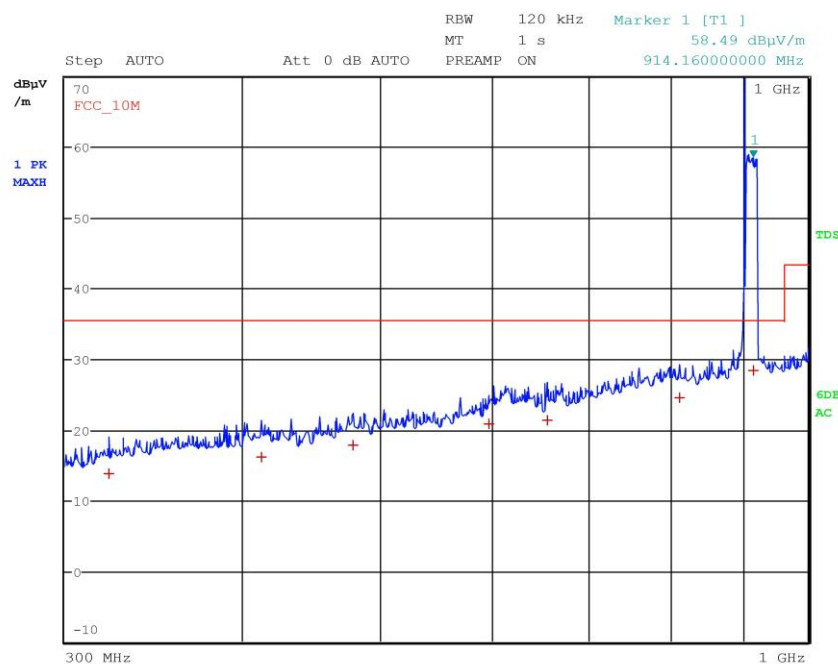
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	347.320000000 MHz	14.81	Quasi Peak	-20.75
1	410.680000000 MHz	16.17	Quasi Peak	-19.39
1	474.960000000 MHz	17.83	Quasi Peak	-17.73
1	589.120000000 MHz	20.57	Quasi Peak	-14.99
1	668.480000000 MHz	21.79	Quasi Peak	-13.77
1	759.080000000 MHz	24.02	Quasi Peak	-11.54
1	914.760000000 MHz	112.71	Quasi Peak	77.15
1	927.600000000 MHz	26.97	Quasi Peak	-8.59



G16152047

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152047
Test Spec



Final Measurement

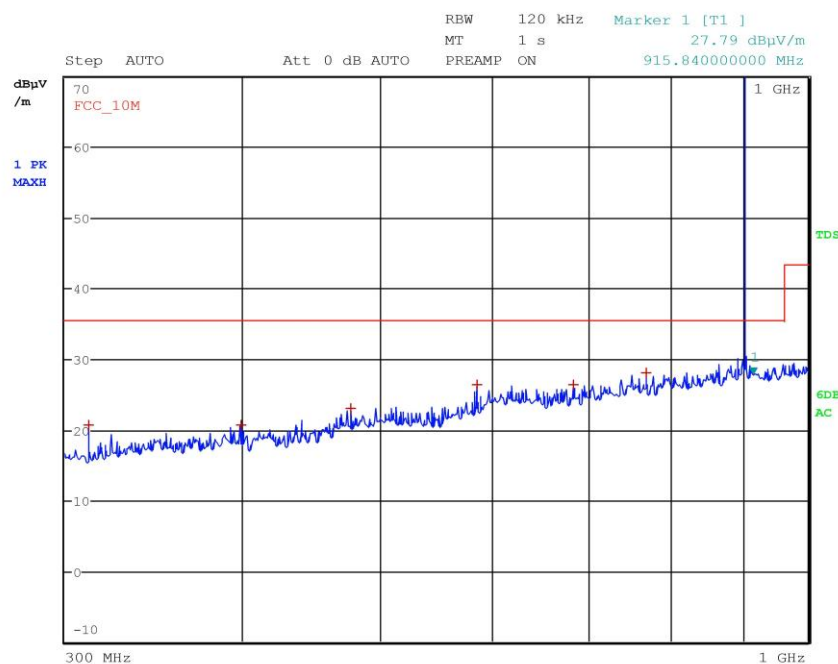
Meas Time: 1 s
Margin: 20 dB
Subranges: 8

Trace	Frequency	Level (dB μ V/m)	Detector	Delta Limit/dB
1	322.28000000 MHz	13.70	Quasi Peak	-21.86
1	412.64000000 MHz	16.19	Quasi Peak	-19.37
1	478.80000000 MHz	17.81	Quasi Peak	-17.75
1	596.60000000 MHz	20.82	Quasi Peak	-14.74
1	655.72000000 MHz	21.43	Quasi Peak	-14.13
1	811.76000000 MHz	24.48	Quasi Peak	-11.08
1	902.76000000 MHz	110.92	Quasi Peak	75.36
1	914.16000000 MHz	28.48	Quasi Peak	-7.08



G16152048

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152048
Test Spec



Final Measurement

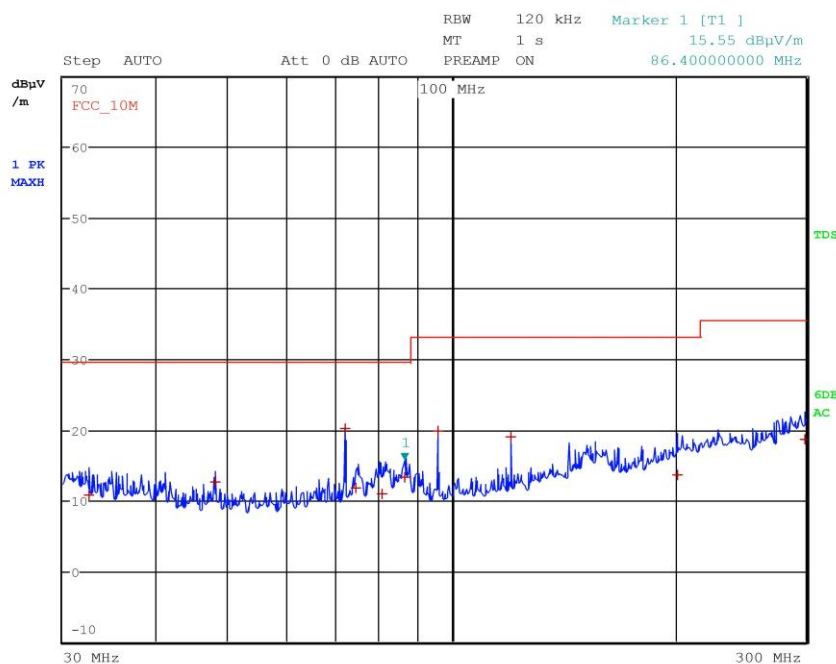
Meas Time: 1 s
Margin: 20 dB
Subranges: 6

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	311.960000000 MHz	20.71	Max Peak	-14.85
1	399.080000000 MHz	20.72	Max Peak	-14.84
1	476.560000000 MHz	23.05	Max Peak	-12.51
1	584.720000000 MHz	26.37	Max Peak	-9.19
1	683.120000000 MHz	26.40	Max Peak	-9.16
1	769.720000000 MHz	28.14	Max Peak	-7.42



G16152049

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152049
Test Spec



Final Measurement

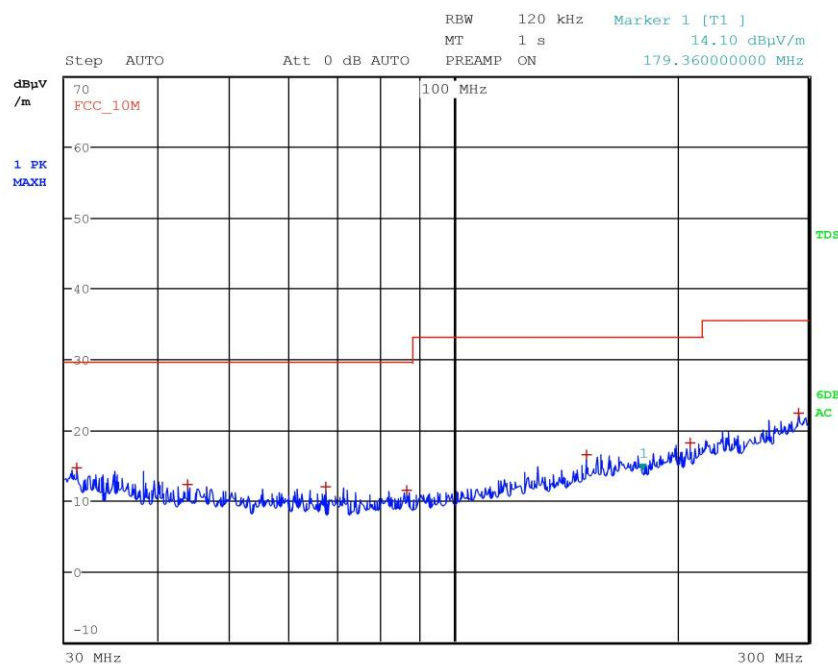
Meas Time: 1 s
Margin: 20 dB
Subranges: 10

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	32.520000000 MHz	10.75	Quasi Peak	-18.79
1	48.000000000 MHz	12.66	Quasi Peak	-16.88
1	72.000000000 MHz	20.13	Quasi Peak	-9.41
1	74.360000000 MHz	11.75	Quasi Peak	-17.79
1	80.680000000 MHz	11.01	Quasi Peak	-18.53
1	86.400000000 MHz	13.27	Quasi Peak	-16.27
1	96.000000000 MHz	19.89	Quasi Peak	-13.17
1	120.000000000 MHz	19.04	Quasi Peak	-14.02
1	201.200000000 MHz	13.68	Quasi Peak	-19.38
1	298.440000000 MHz	18.62	Quasi Peak	-16.94



G16152050

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152050
Test Spec



Final Measurement

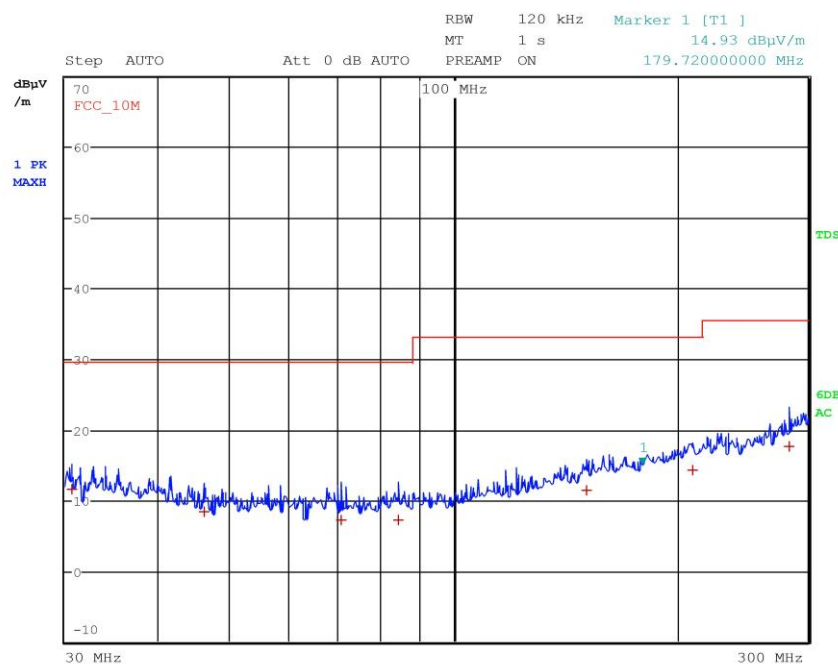
Meas Time: 1 s
Margin: 20 dB
Subranges: 7

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	31.120000000 MHz	14.54	Max Peak	-15.00
1	43.880000000 MHz	12.26	Max Peak	-17.28
1	67.160000000 MHz	11.87	Max Peak	-17.67
1	86.520000000 MHz	11.48	Max Peak	-18.06
1	150.960000000 MHz	16.47	Max Peak	-16.59
1	207.800000000 MHz	18.21	Max Peak	-14.85
1	291.720000000 MHz	22.42	Max Peak	-13.14



G16152051

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152051
Test Spec



Final Measurement

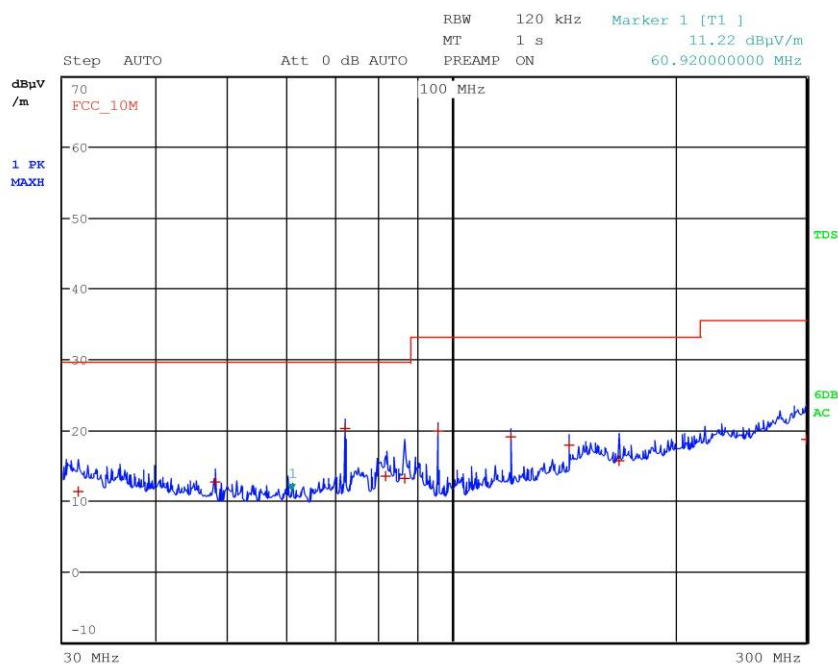
Meas Time: 1 s
Margin: 20 dB
Subranges: 7

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	30.600000000 MHz	11.55	Quasi Peak	-17.99
1	46.240000000 MHz	8.36	Quasi Peak	-21.18
1	70.560000000 MHz	7.27	Quasi Peak	-22.27
1	84.320000000 MHz	7.23	Quasi Peak	-22.31
1	151.200000000 MHz	11.47	Quasi Peak	-21.59
1	209.600000000 MHz	14.26	Quasi Peak	-18.80
1	283.280000000 MHz	17.67	Quasi Peak	-17.89



G16152052

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152052
Test Spec



Final Measurement

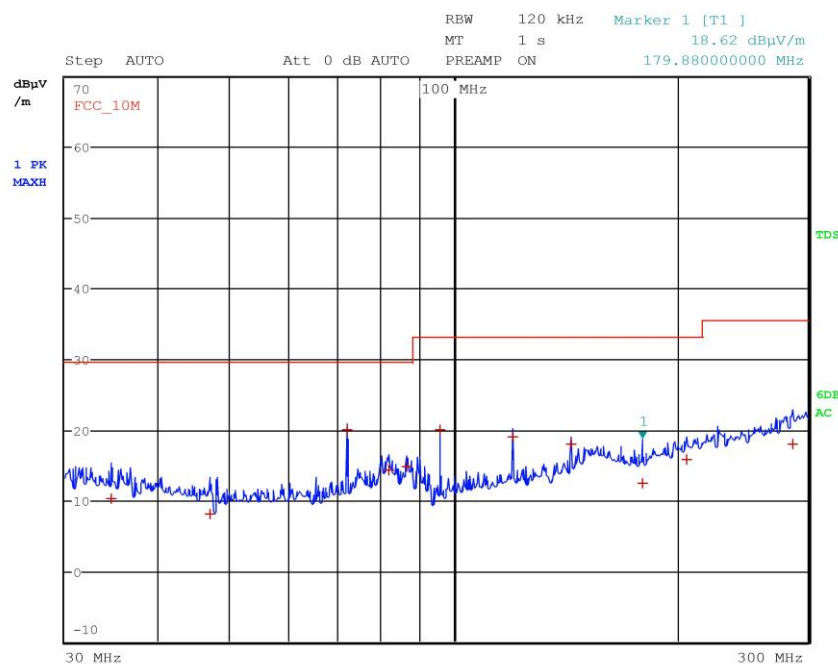
Meas Time: 1 s
Margin: 20 dB
Subranges: 10

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	31.480000000 MHz	11.33	Quasi Peak	-18.21
1	48.000000000 MHz	12.68	Quasi Peak	-16.86
1	72.000000000 MHz	20.10	Quasi Peak	-9.44
1	81.520000000 MHz	13.38	Quasi Peak	-16.16
1	86.360000000 MHz	13.13	Quasi Peak	-16.41
1	96.000000000 MHz	19.90	Quasi Peak	-13.16
1	120.000000000 MHz	19.05	Quasi Peak	-14.01
1	144.000000000 MHz	17.84	Quasi Peak	-15.22
1	167.960000000 MHz	15.58	Quasi Peak	-17.48
1	299.440000000 MHz	18.66	Quasi Peak	-16.90



G16152053

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezzo 16152053
Test Spec



Final Measurement

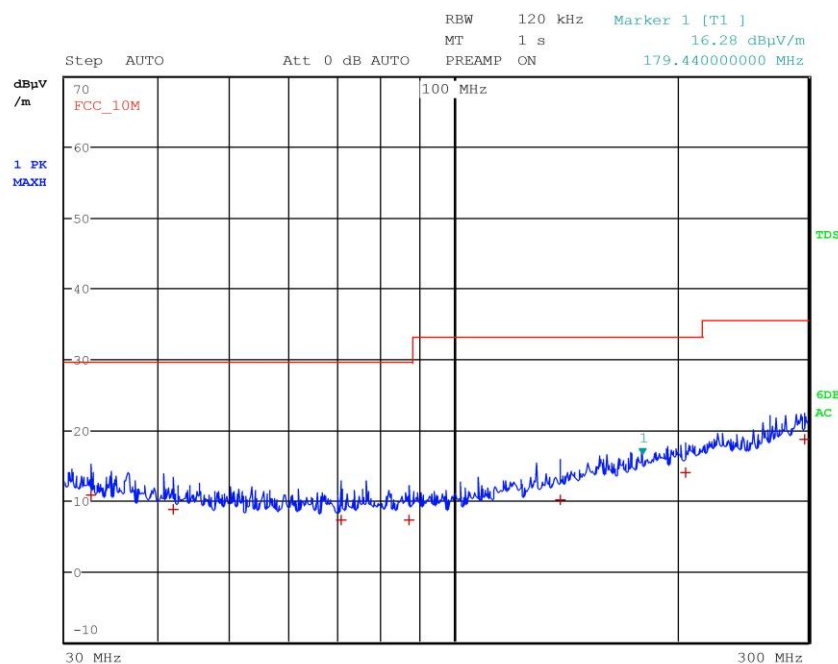
Meas Time: 1 s
Margin: 20 dB
Subranges: 11

Trace	Frequency	Level (dBμV/m)	Detector	Delta Limit/dB
1	34.640000000 MHz	10.31	Quasi Peak	-19.23
1	47.080000000 MHz	8.11	Quasi Peak	-21.43
1	72.000000000 MHz	20.08	Quasi Peak	-9.46
1	81.760000000 MHz	14.26	Quasi Peak	-15.28
1	86.600000000 MHz	14.72	Quasi Peak	-14.82
1	96.000000000 MHz	19.94	Quasi Peak	-13.12
1	120.000000000 MHz	19.04	Quasi Peak	-14.02
1	144.000000000 MHz	17.92	Quasi Peak	-15.14
1	179.880000000 MHz	12.52	Quasi Peak	-20.54
1	206.120000000 MHz	15.80	Quasi Peak	-17.26
1	286.400000000 MHz	18.00	Quasi Peak	-17.56



G16152054

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152054
Test Spec



Final Measurement

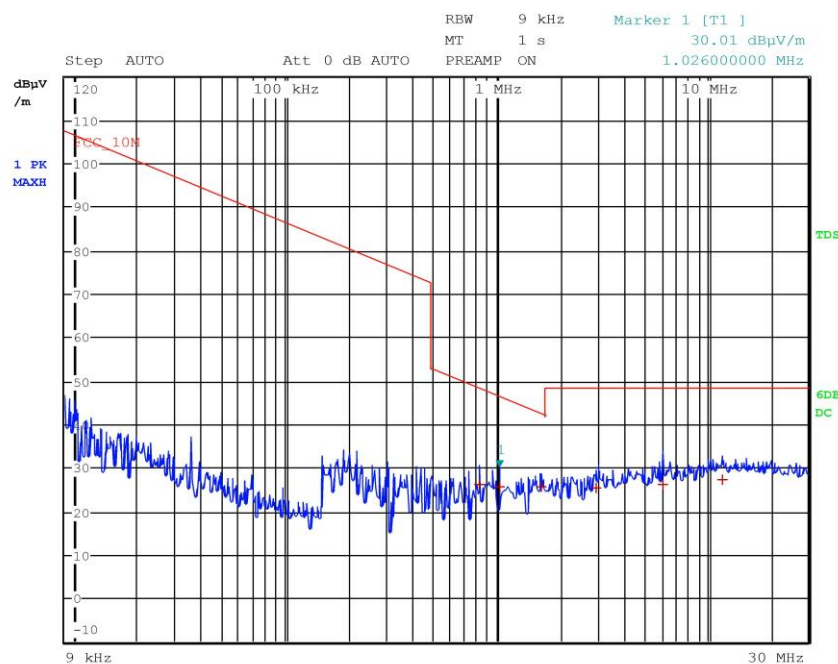
Meas Time: 1 s
Margin: 20 dB
Subranges: 7

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	32.520000000 MHz	10.70	Quasi Peak	-18.84
1	42.000000000 MHz	8.66	Quasi Peak	-20.88
1	70.680000000 MHz	7.25	Quasi Peak	-22.29
1	87.160000000 MHz	7.30	Quasi Peak	-22.24
1	139.160000000 MHz	10.05	Quasi Peak	-23.01
1	205.000000000 MHz	13.96	Quasi Peak	-19.10
1	296.800000000 MHz	18.66	Quasi Peak	-16.90



G16152055

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition
Operator Bertezolo 16152055
Test Spec



Final Measurement

Meas Time: 1 s
Margin: 20 dB
Subranges: 6

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	830.00000000 kHz	26.12	Quasi Peak	-22.19
1	1.026000000 MHz	25.77	Quasi Peak	-20.70
1	1.618000000 MHz	25.56	Quasi Peak	-16.95
1	2.946000000 MHz	25.29	Quasi Peak	-23.34
1	6.178000000 MHz	26.20	Quasi Peak	-22.43
1	11.770000000 MHz	27.24	Quasi Peak	-21.39