



11.7 Band edge

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247
- KDB 558074 D01 DTS Meas Guidance v03r02
- RSS 210 Annex 8
- Internal procedure PM001
- See clause 4 of this test report

Test configuration

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 S136, CMC S164, CMC S206
Measurement uncertainty: See clause 7 of this test report

Test specification

See FCC Part 15.247

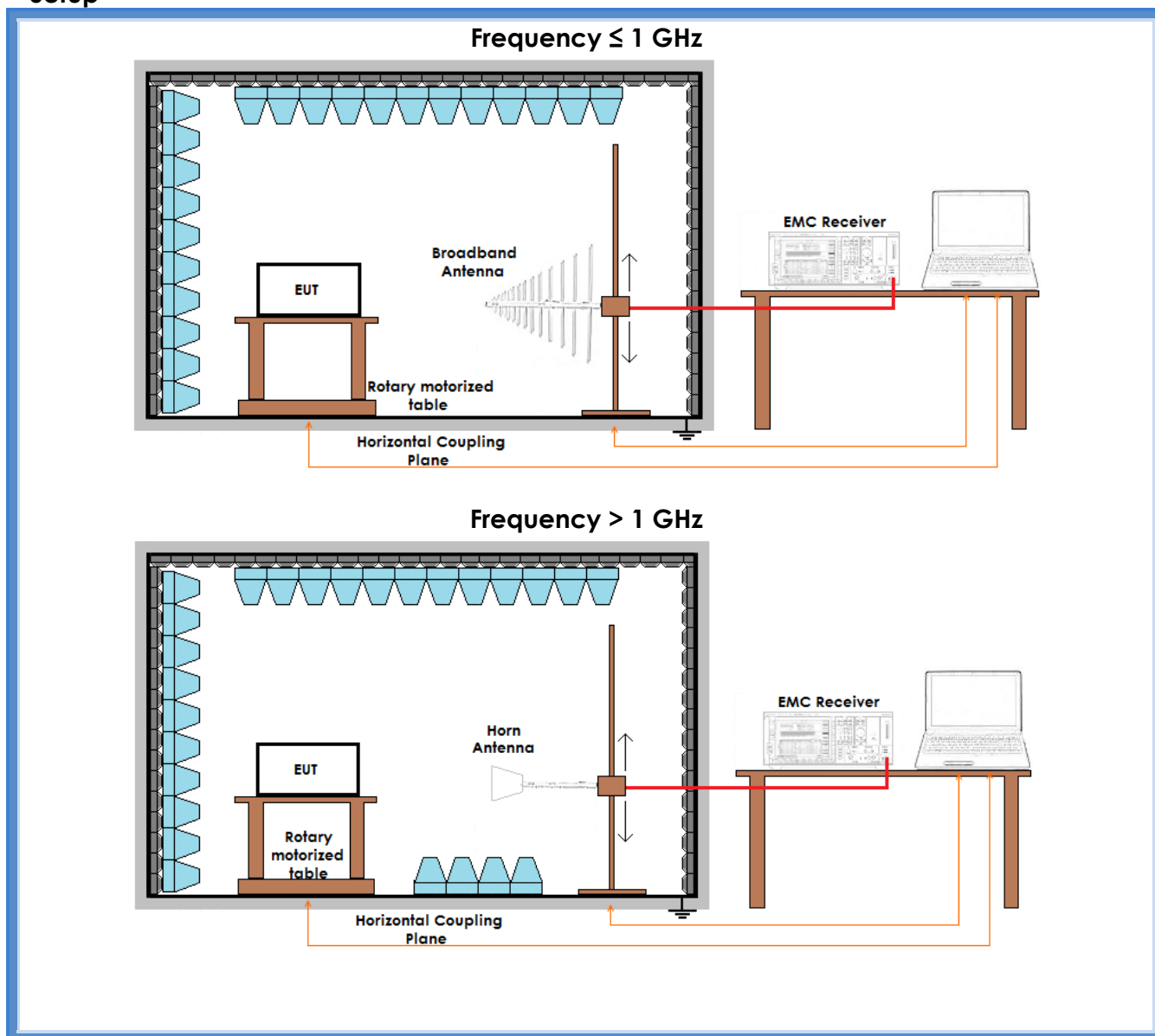
Environmental conditions

Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
21	98	49

Acceptance limits: operation within the band 902 – 928 MHz



Setup



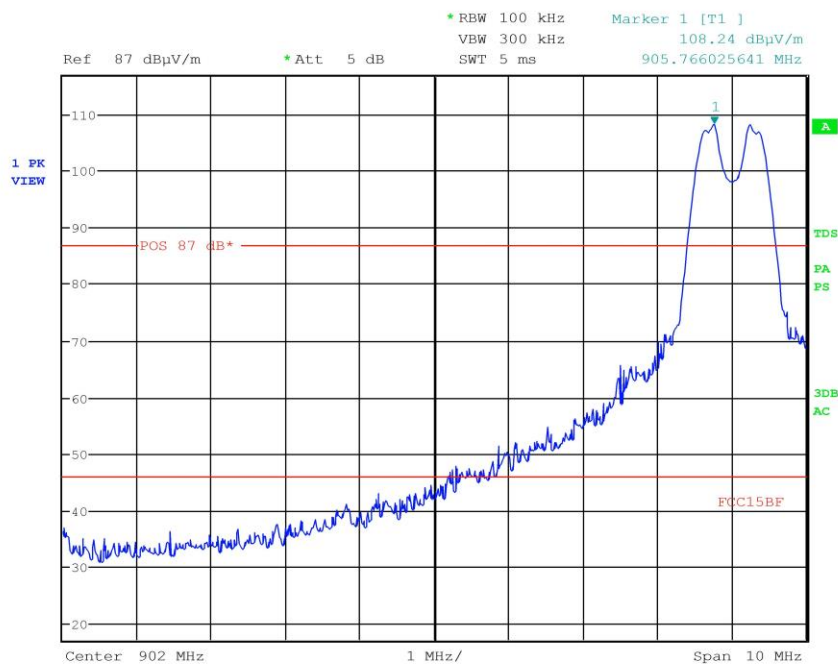
Result

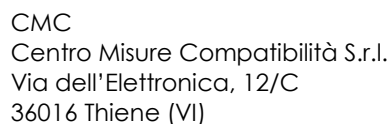
Frequency (MHz)	Graph(s) – No hopping	Results	
906	G14116915	F _L : 905,77 MHz	Complies
	G14116989		
924	G14116946	F _H : 923,75MHz	Complies
	G14116990		



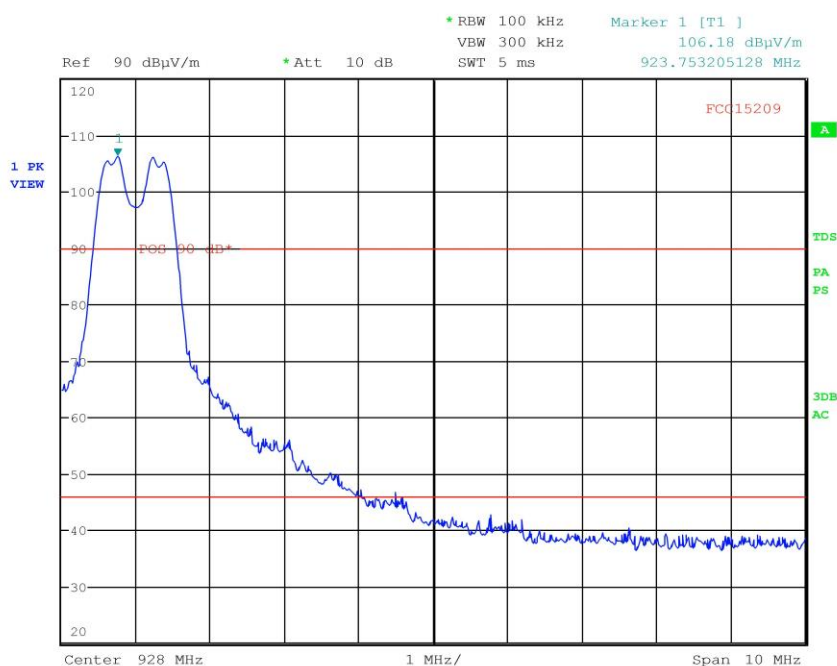
Graphs

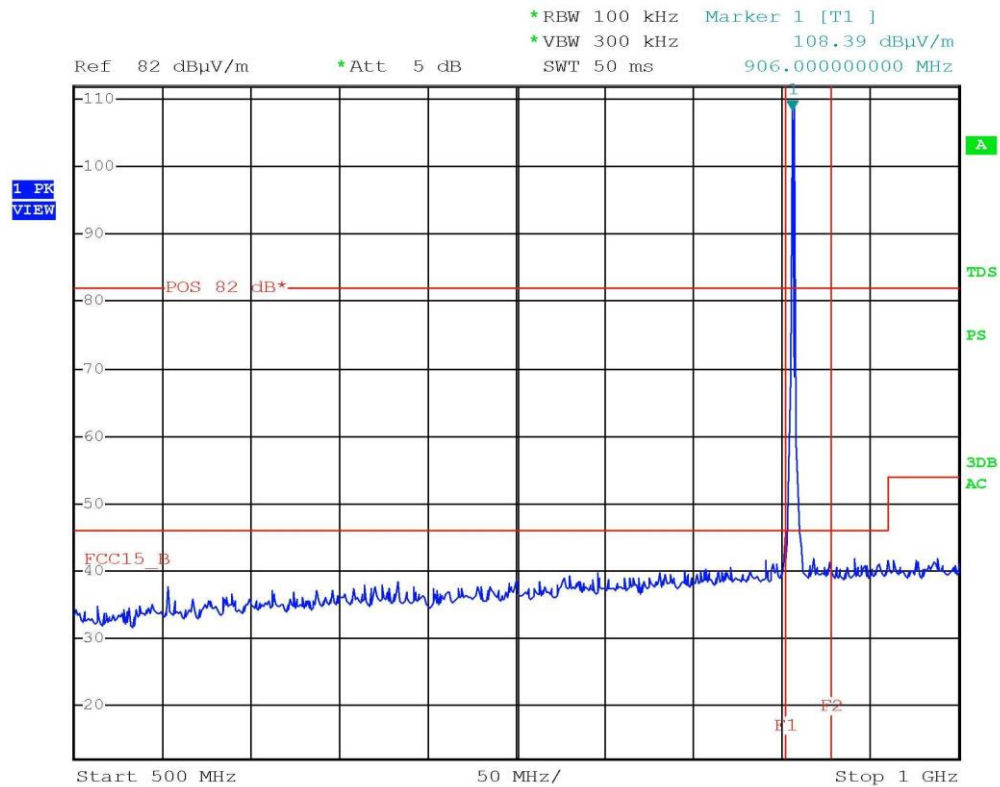
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition TX f min
Operator Bertezolo 14116915
Test Spec



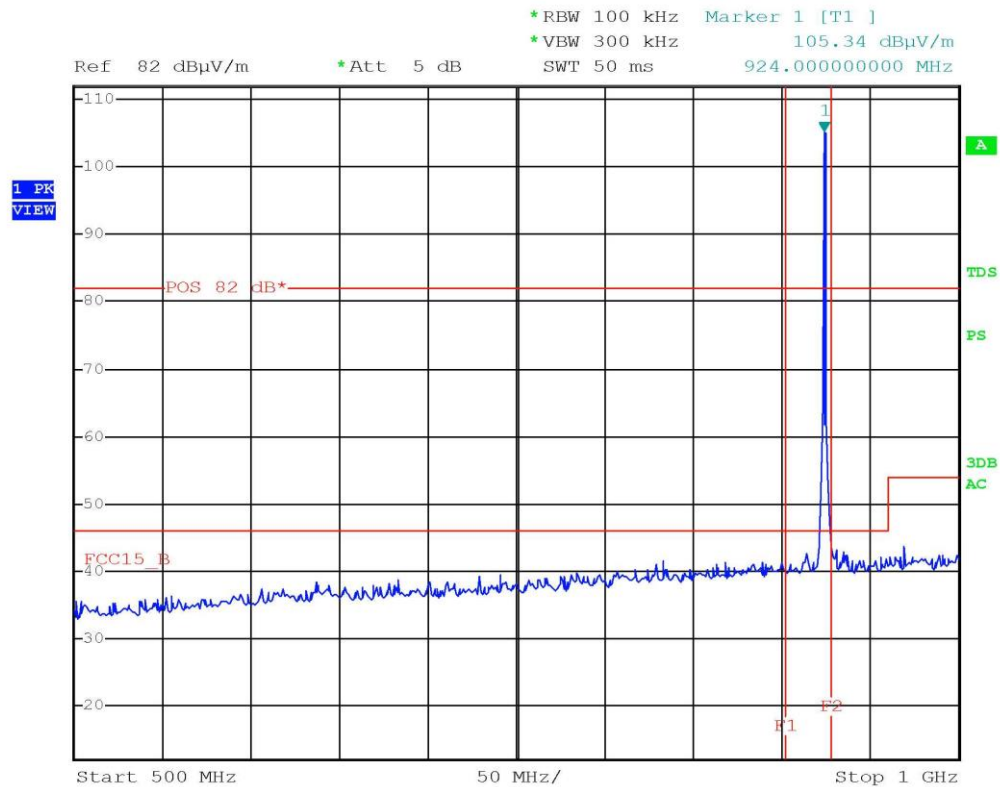


Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	TX f max
Operator	Bertezzo 14116946
Test Spec	





Bertezzo 14116989 Tx Fmin



Bertezzo 14116990 Tx Fmax

Result: The requirements are met



11.8 Fundamental emission output power

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247
- KDB 558074 D01 DTS Meas Guidance v03r02
- RSS 210 Annex 8
- Internal procedure PM001
- See clause 4 of this test report

Test configuration

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 S136, CMC S164
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Enclosure
Antenna polarization: Horizontal (H) – Vertical (V)
EUT – Antenna distance: 3 m

Environmental conditions

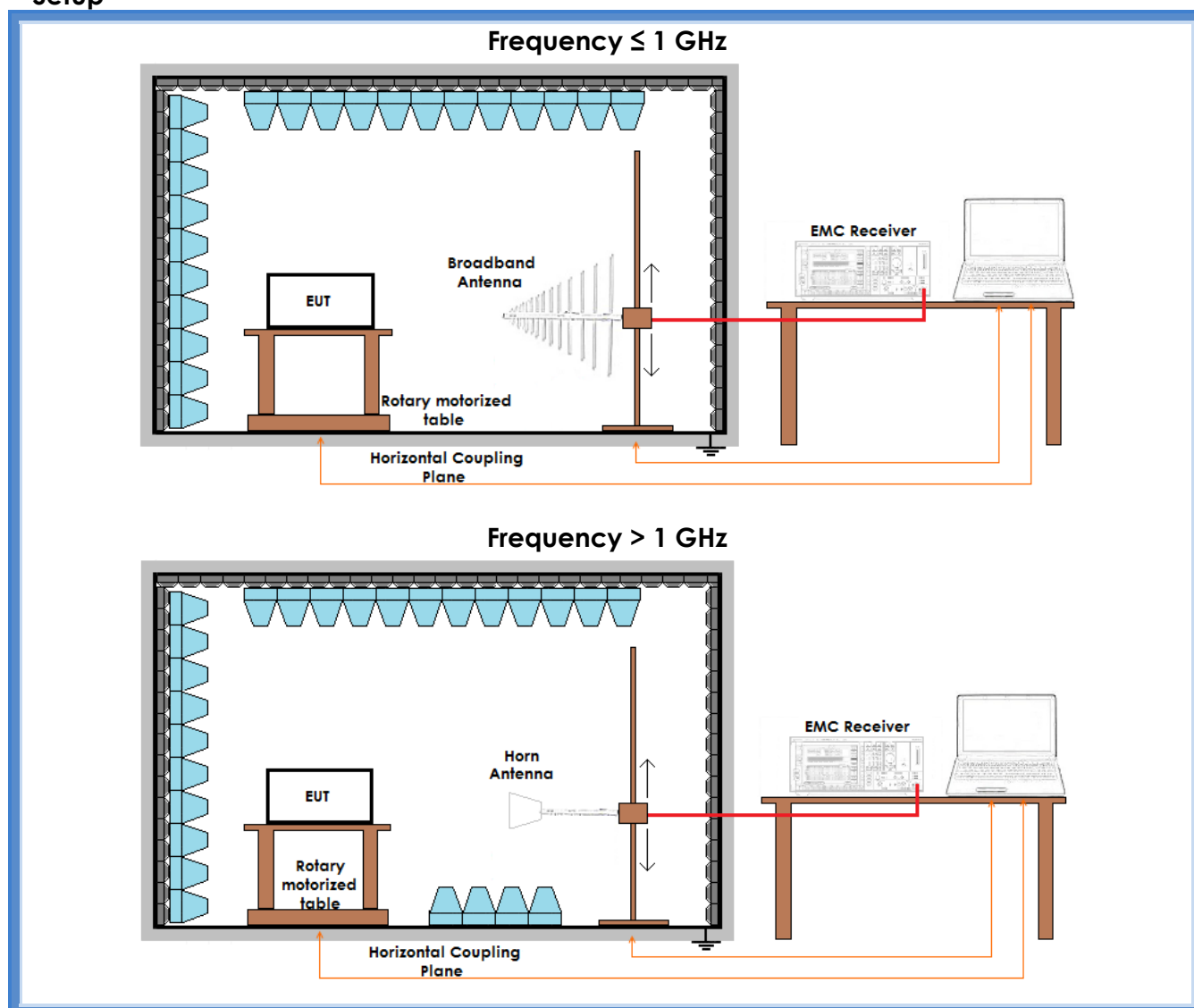
Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
22	98	50

Acceptance limits:

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt



Setup





Result

Frequency (MHz)	Polarization	Graphs	Measured PK level (dB μ V/m)	Peak Output Power (mW)	Remarks
906	Horizontal	G141169A04	95,28	0,58	--
906	Vertical	G141169A05	107,48	9,66	--
916	Horizontal	G141169A07	93,61	0,39	--
916	Vertical	G141169A06	105,91	6,73	--
924	Horizontal	G141169A08	92,28	0,29	--
924	Vertical	G141169A09	106,24	7,26	--

Remarks

$P = (E \times d)^2 / (30 \times G)$

Where:

E = the measured maximum fundamental field strength in V/m

G = the numeric gain of the transmitting antenna: 1,74 (2,4 dBi)

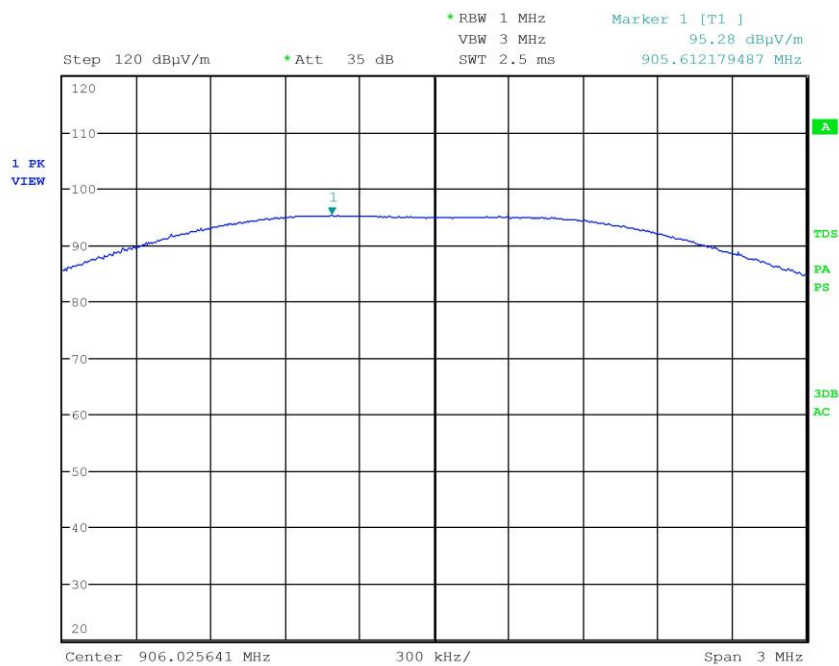
d = the distance in meters from which the field strength was measured (3 m)

P = the power in watts



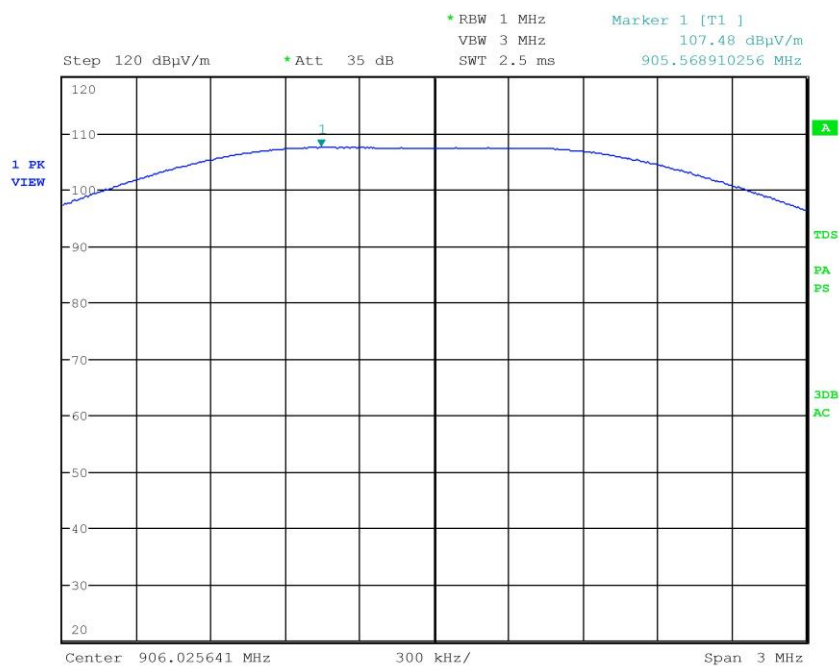
Graphs

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx f min
Operator Bertezolo 141169A04
Test Spec
Horiz



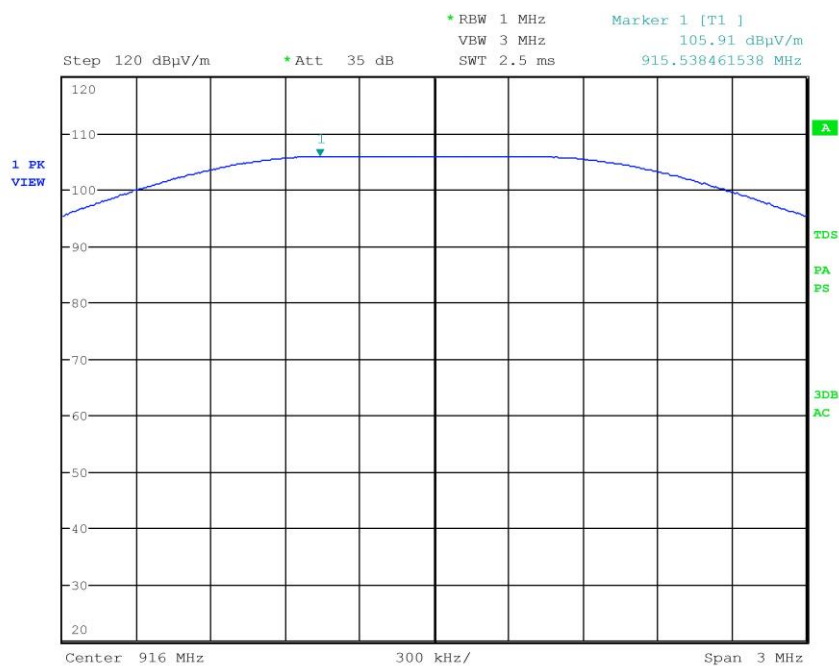


Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx f min
Operator Bertezolo 141169A05
Test Spec
Vert



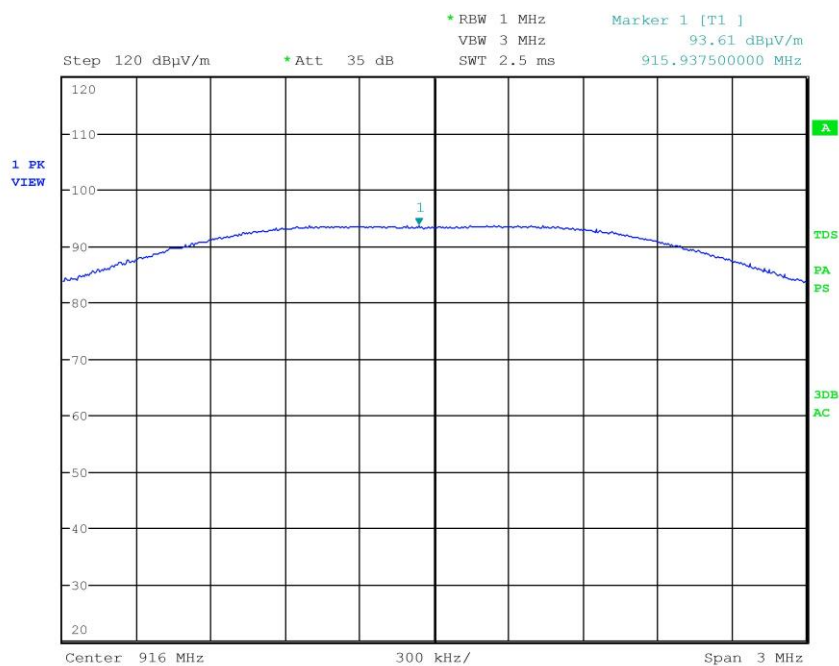


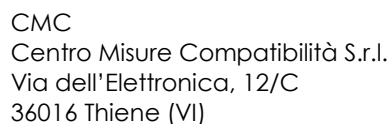
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx f med
Operator Bertezolo 141169A06
Test Spec
Vert



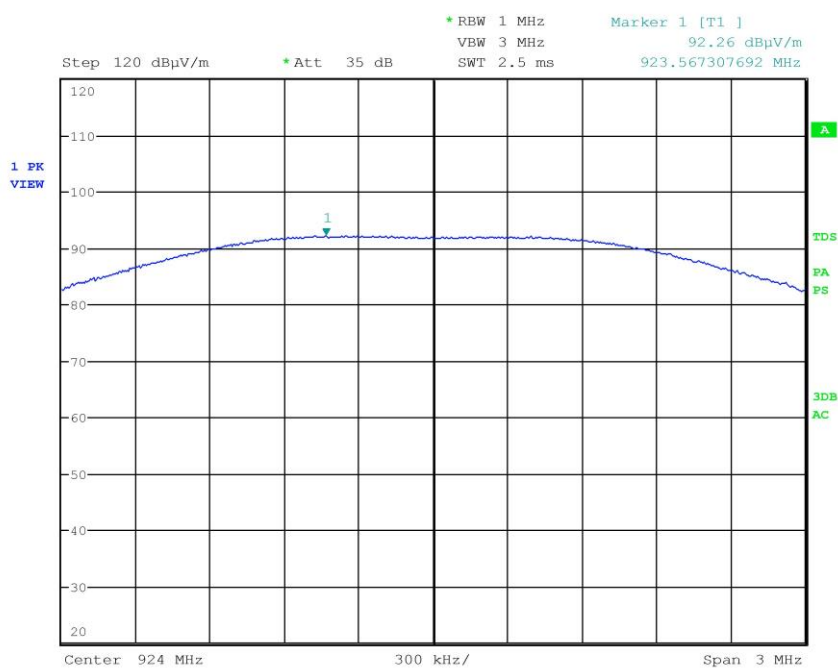


Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx f med
Operator Bertezolo 141169A07
Test Spec
Horiz



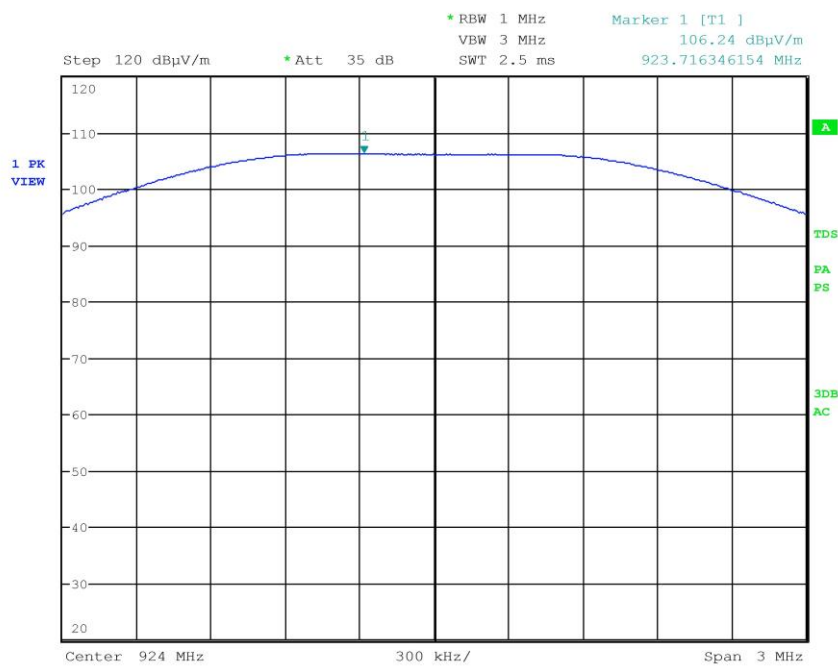


Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx f max
Operator	Bertezzo 141169A08
Test Spec	
Horiz	





Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx f max
Operator Bertezolo 141169A09
Test Spec
Vert



Result: The requirements are met



11.9 Maximum power spectral density level in the fundamental emission

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.247
- KDB 558074 D01 DTS Meas Guidance v03r02 cl. 10.2
- RSS 210 Annex 8
- Internal procedure PM001
- See clause 4 of this test report

Test configuration

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 S136, CMC S206
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Enclosure
Antenna polarization: Horizontal (H) – Vertical (V)
EUT – Antenna distance: 3 m

Environmental conditions

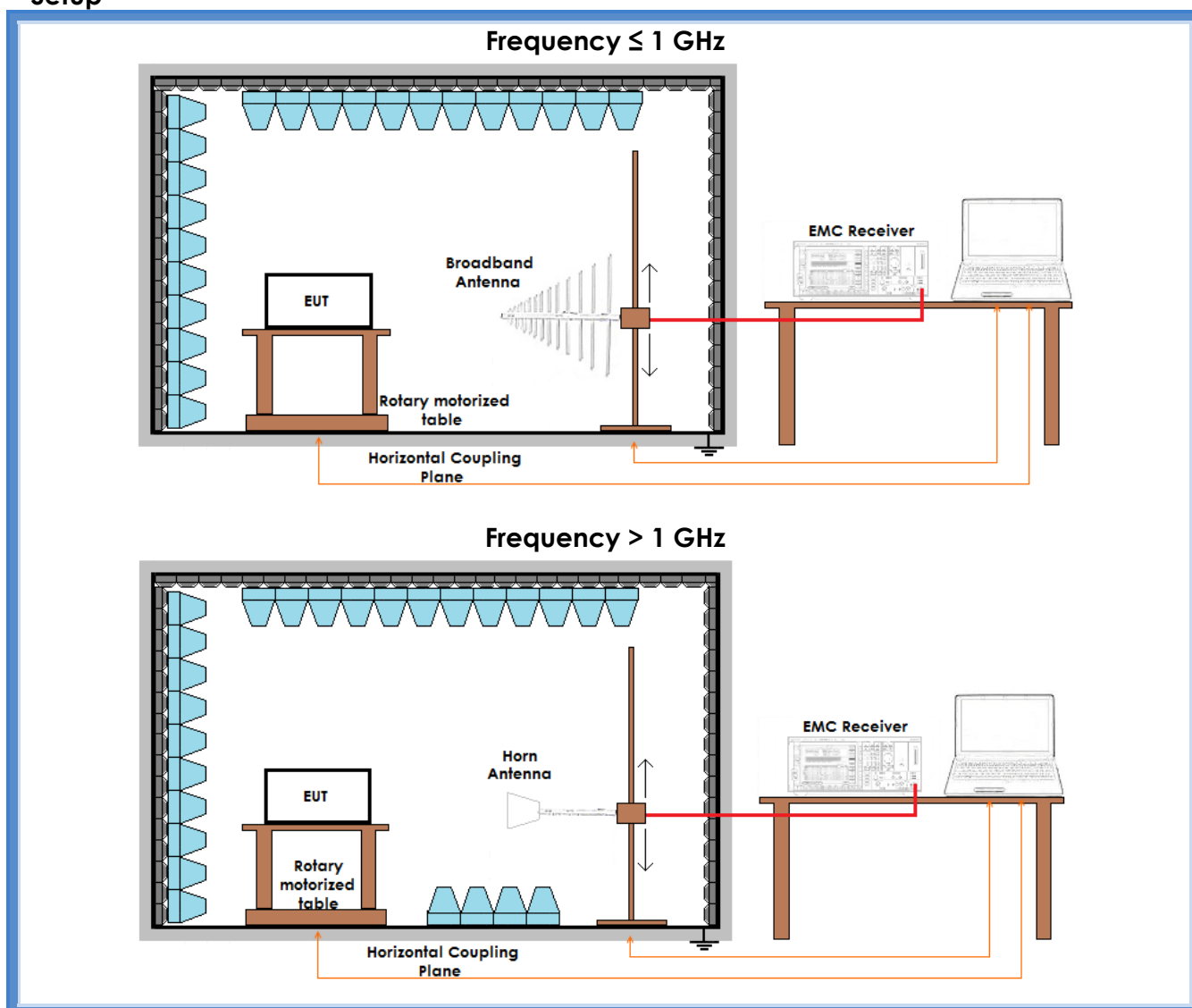
Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
22	98	50

Acceptance limits:

Frequency Range	Power Spectral Density
902 – 928 MHz	8 dBm / 6,31 mW



Setup





Result

Frequency (MHz)	Polarization	Graphs	Measured PK level (dB μ V/m)	Power Spectral Density (mW)	Remarks
906	Horizontal	G14116995	86,48	0,077	--
906	Vertical	G14116996	99,15	1,419	--
916	Horizontal	G14116993	89,48	0,153	--
916	Vertical	G14116994	104,44	4,799	--
924	Horizontal	G14119692	91,18	0,227	--
924	Vertical	G14119691	98,06	1,104	--

Remarks

$P = (E \times d)^2 / (30 \times G)$

Where:

E = the measured maximum fundamental field strength in V/m

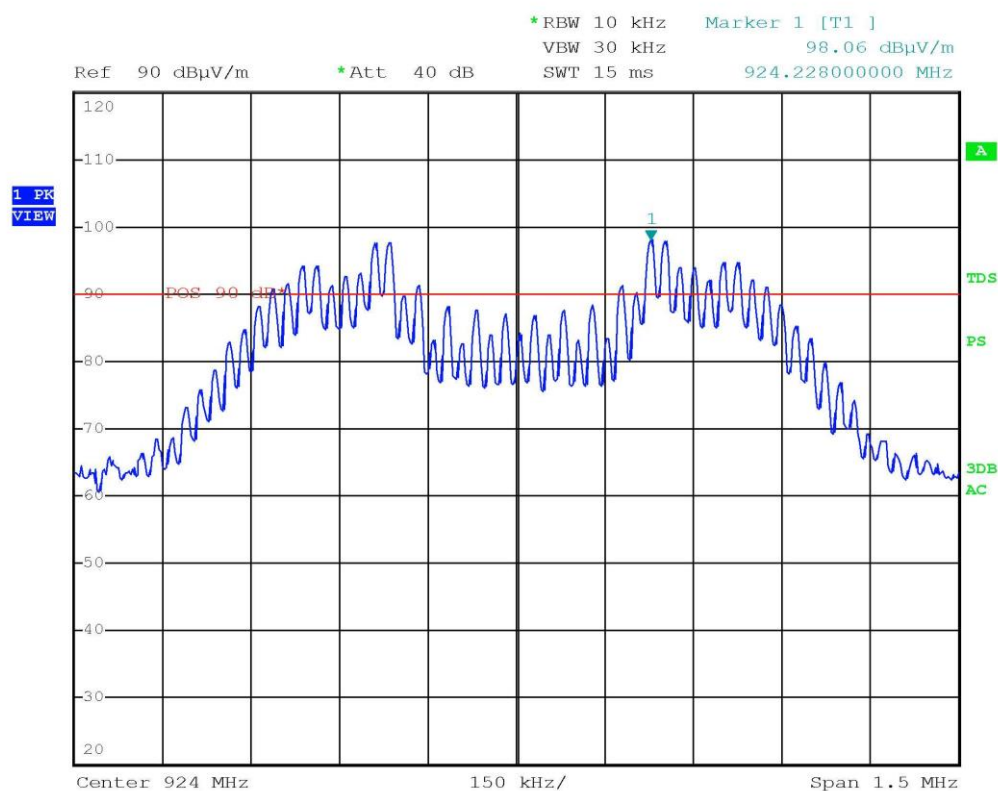
G = the numeric gain of the transmitting antenna: 1,74 (2,4 dBi)

d = the distance in meters from which the field strength was measured (3 m)

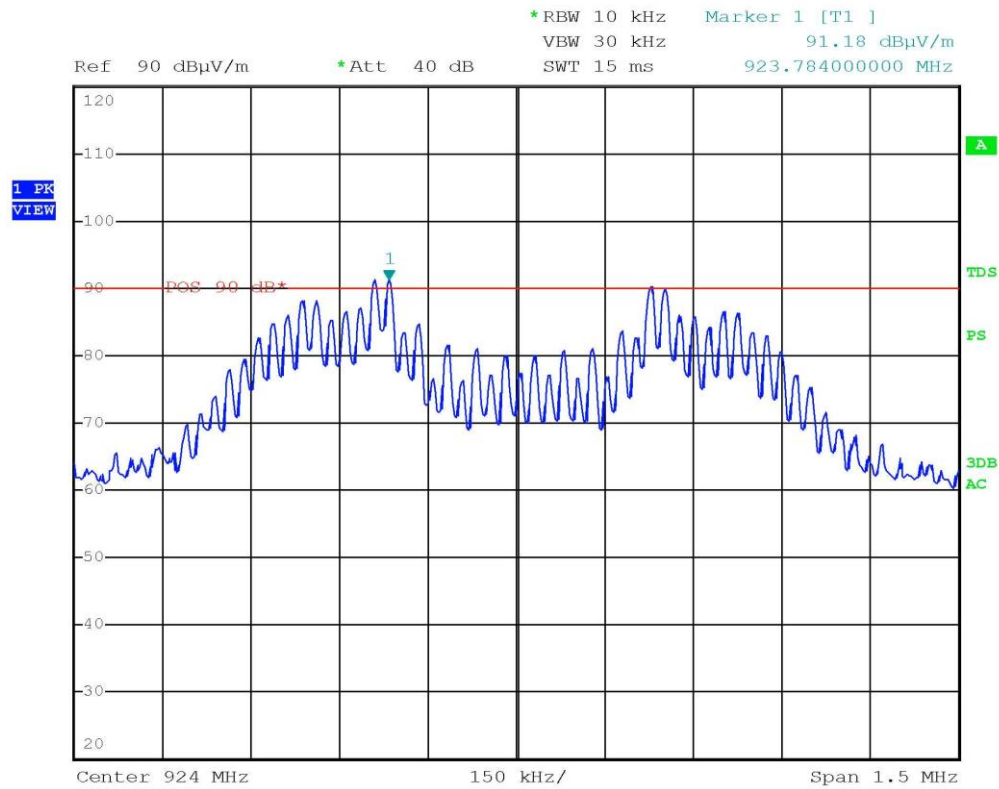
P = the power in watts



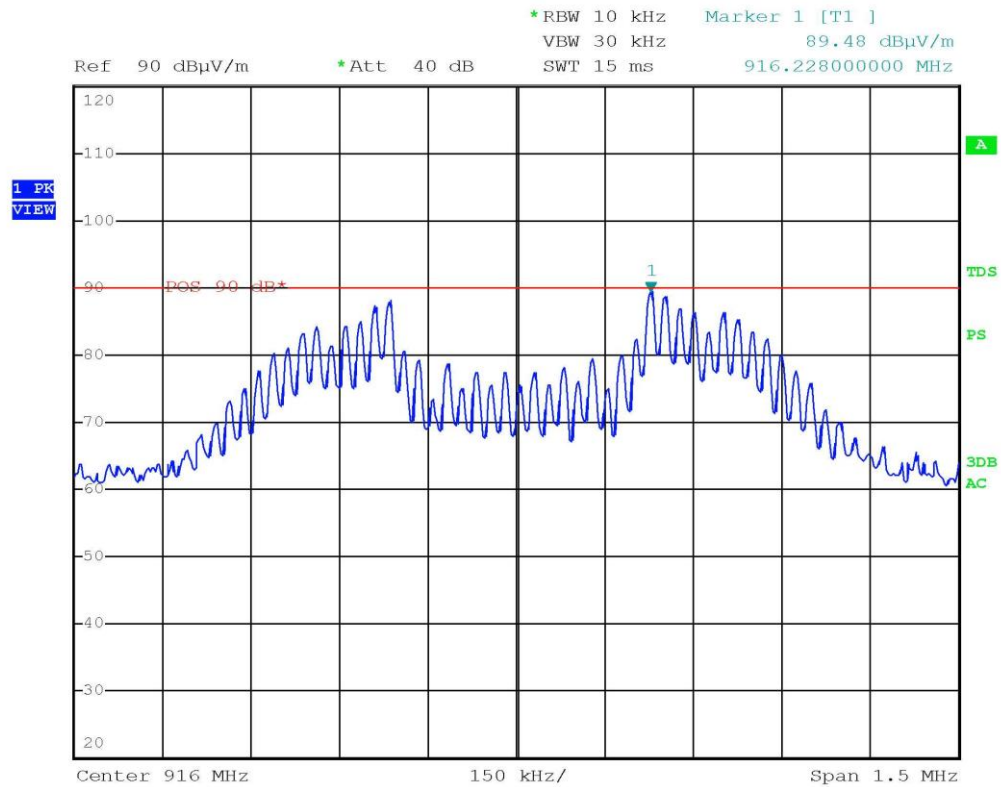
Graphs



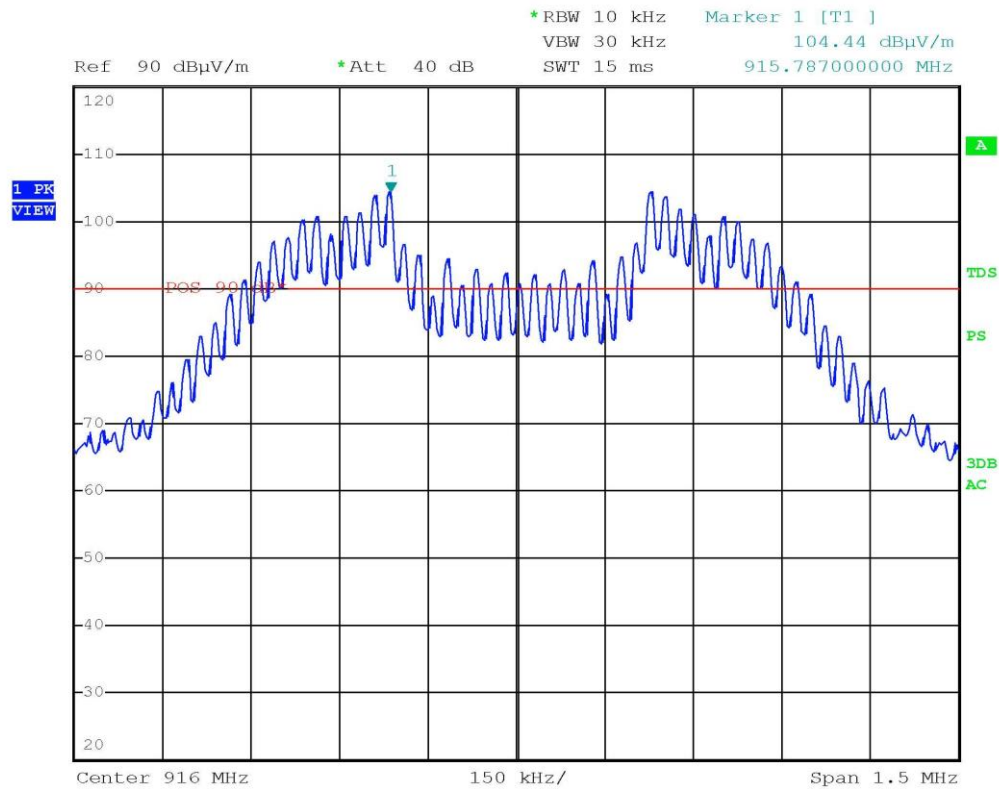
Bertezzolo 14116991 Tx Fmax - VERT



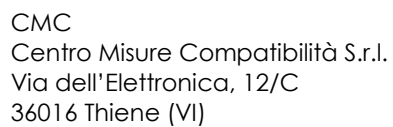
Bertezzo 14116992 Tx Fmax - HORIZ

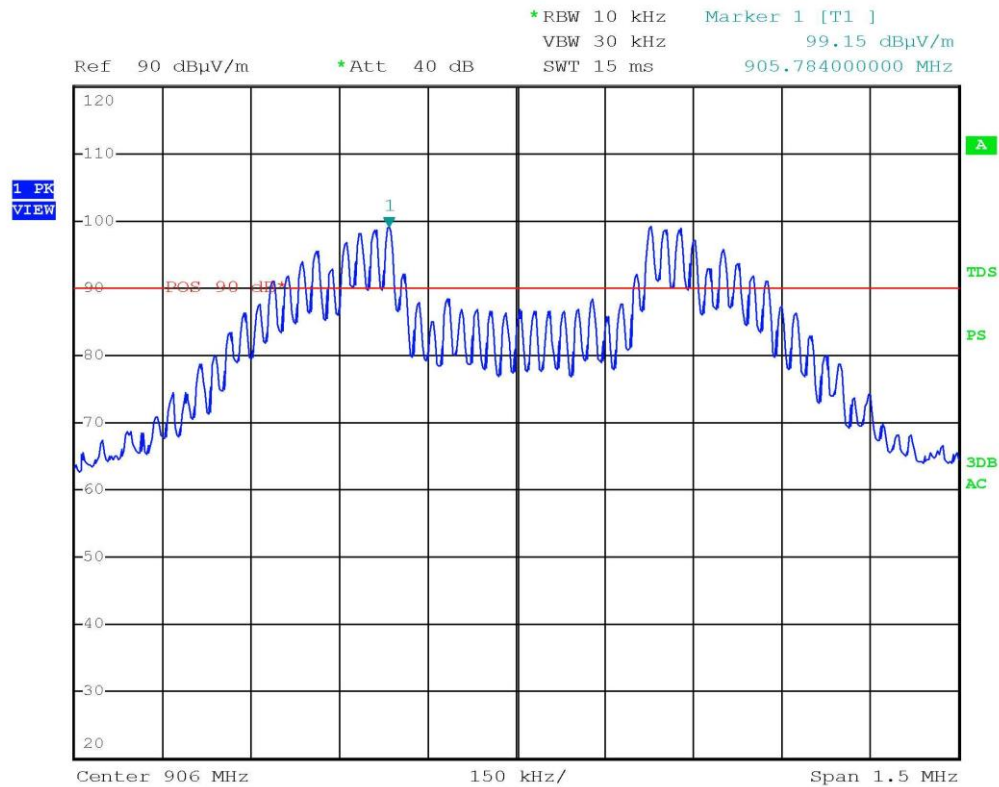


Bertezzo 14116993 Tx Fmed - HORIZ



Bertezzolo 14116994 Tx Fmed - VERT





Bertezzo 14116996 Tx Fmin - VERT

Result: The requirements are met



11.10 Spurious Emission

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.209
- Internal procedure PM001
- See clause 4 of this test report

Test configuration

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 S136, CMC S164
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Enclosure
Antenna polarization: Horizontal (H) – Vertical (V)
EUT – Antenna distance: 3 m
Detector AV + Peak

Environmental conditions

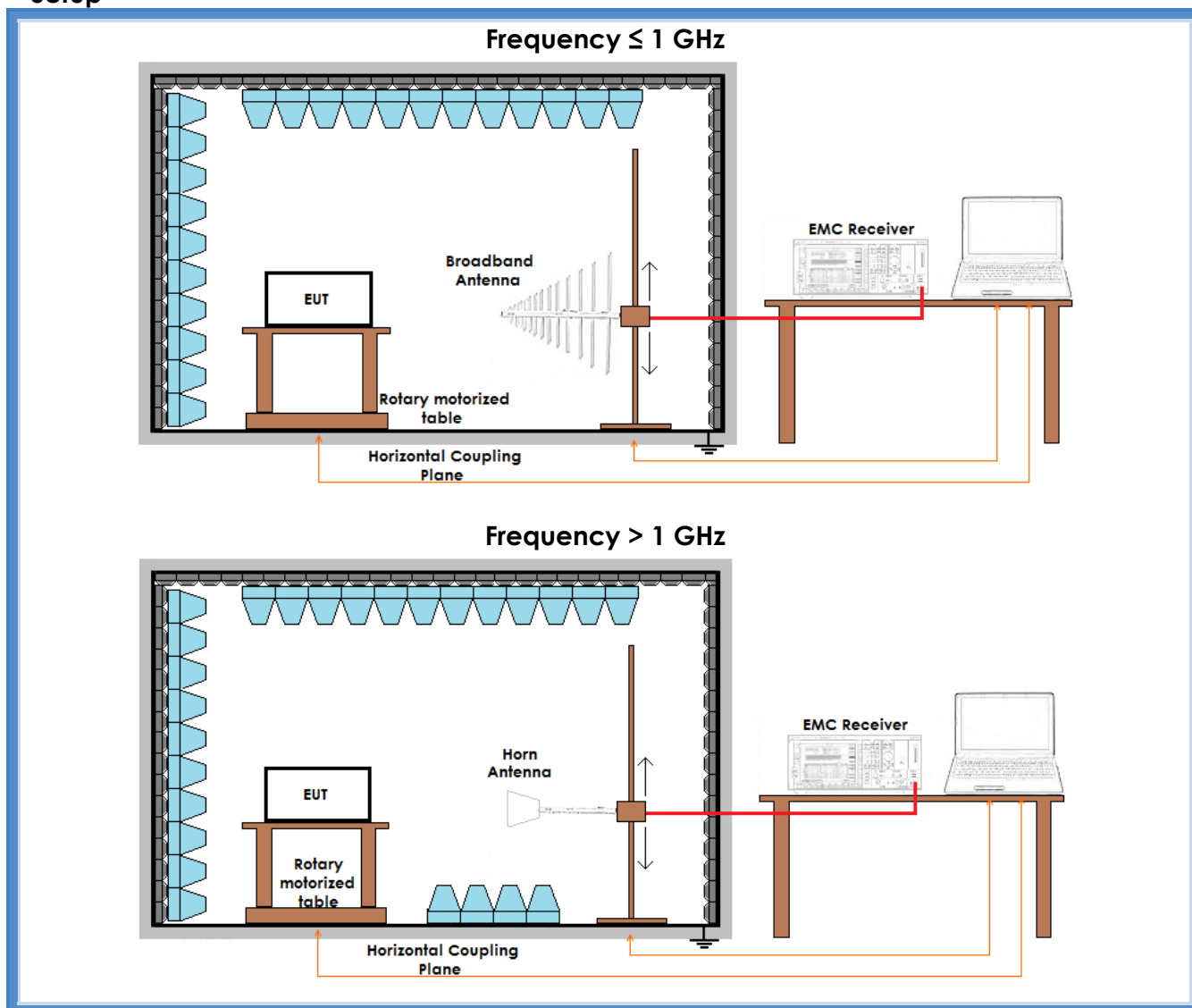
Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
21	99	59

Acceptance limits

Frequency (MHz)	AV limits [dB(μV/m)]	Peak limits [dB(μV/m)]
> 1000	54	74



Setup



Graph:

G14116960



Result – AV detector

Harmonic	Limits (dB μ V/m)	Level (dB μ V/m)			Results
		906 MHz	916 MHz	924 MHz	
II	54	43,7	46,9	49,4	Complies
III	54	52,9	52,9	52,3	Complies
IV	54	42,7	42,3	43,5	Complies
V	54	51,1	49,6	49,4	Complies
VI	54	43,0	41,9	42,6	Complies
VII	54	52,1	50,8	49,9	Complies
VIII	54	43,2	42,6	42,5	Complies
IX	54	47,5	46,9	48,1	Complies
X	54	45,3	44,0	43,6	Complies

Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest values

Result – Peak detector

Harmonic	Limits (dB μ V/m)	Level (dB μ V/m)			Results
		906 MHz	916 MHz	924 MHz	
II	74	47,7	49,9	51,1	Complies
III	74	56,2	55,3	54,5	Complies
IV	74	51,4	50,9	52,1	Complies
V	74	61,6	61,2	60,6	Complies
VI	74	53,6	51,9	52,3	Complies
VII	74	59,8	58,8	58,5	Complies
VIII	74	54,9	53,1	53,0	Complies
IX	74	57,6	56,4	57,8	Complies
X	74	56,2	54,4	54,8	Complies

Remarks: EUT was tested in 3 orthogonal planes. The results in this table show the highest values

Result: The requirements are met



11.11 Maximum permissible exposure

Test set-up and execution

- FCC Rules and Regulation;
Titles 47 Part 1.1310
- Internal procedure PM001
- See clause 4 of this test report

Test configuration

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 S108, CMC S136, CMC S164
Measurement uncertainty: See clause 7 of this
test report

Test specification

Port: Antenna

Acceptance limits	$906/1500 \text{ mW/cm}^2 = 0,60 \text{ mW/cm}^2 \text{ max at 20cm of distance}$
-------------------	---

Result

Power Density Limit (mW/cm ²)	Output Power (mW)	Antenna Gain (G)	Power Density at 20 cm (mW/cm ²)	Remarks
0,60	15,67	1,74 (2,4 dBi)	0,005	Measured
Remarks: Power Density = $(P \times G) / (4\pi R^2)$				

Result: The requirements are met