



11.4 Peak Output Power

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.209 and Part 15.249
- 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 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	100	45

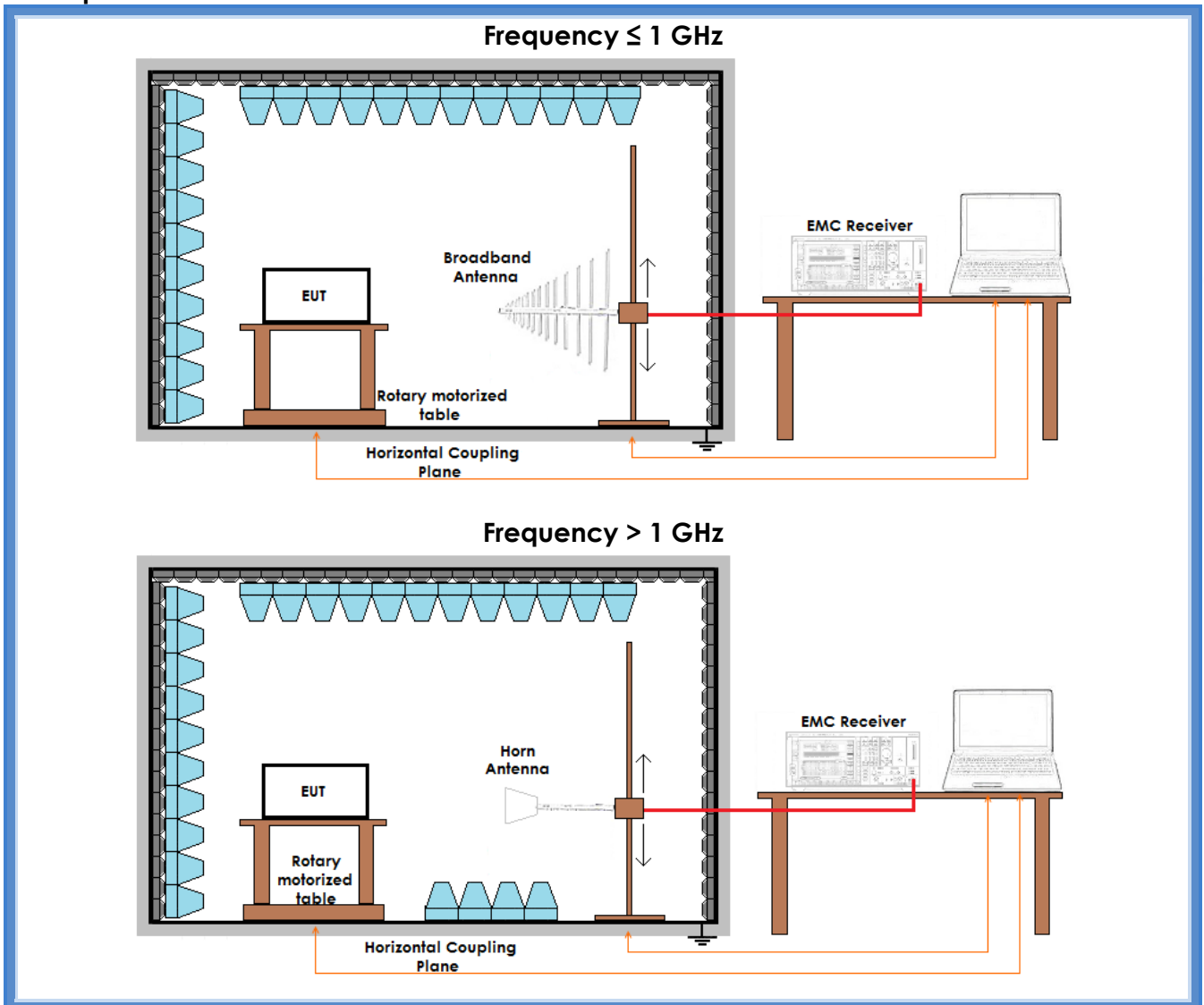
Acceptance limits

Frequency range (MHz)	RF Power Output dB(μV/m)
902 – 928	94

Frequency range (MHz)	RF Power Output dB(μV/m)
2400 – 2483,5	94



Setup



Result

Frequency (MHz)	Polarization	Graphs	Measured QP level (dB μ V/m)	Peak Output Power (mW)	Remarks
915,048397	Horizontal	G14206522	82,49	0,053	--
915,045192	Vertical	G14206518	92,61	0,547	--
920,998397	Horizontal	G14206512	83,04	0,060	--
921,001600	Vertical	G14206510	93,82	0,723	--
927,753205	Horizontal	G14206513	82,00	0,048	--
927,745192	Vertical	G14206514	93,74	0,710	--

Remarks: External antenna



Frequency (MHz)	Polarization	Graphs	Measured QP level (dB μ V/m)	Peak Output Power (mW)	Remarks
915,053205	Horizontal	G14206533	86,28	0,127	--
915,046795	Vertical	G14206534	90,75	0,357	--
921,004800	Horizontal	G14206525	88,54	0,214	--
921,004800	Vertical	G14206526	91,03	0,380	--
927,746794	Horizontal	G14206532	88,45	0,210	--
927,753205	Vertical	G14206528	93,73	0,708	--

Remarks: Internal antenna

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 (0 dBi)

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

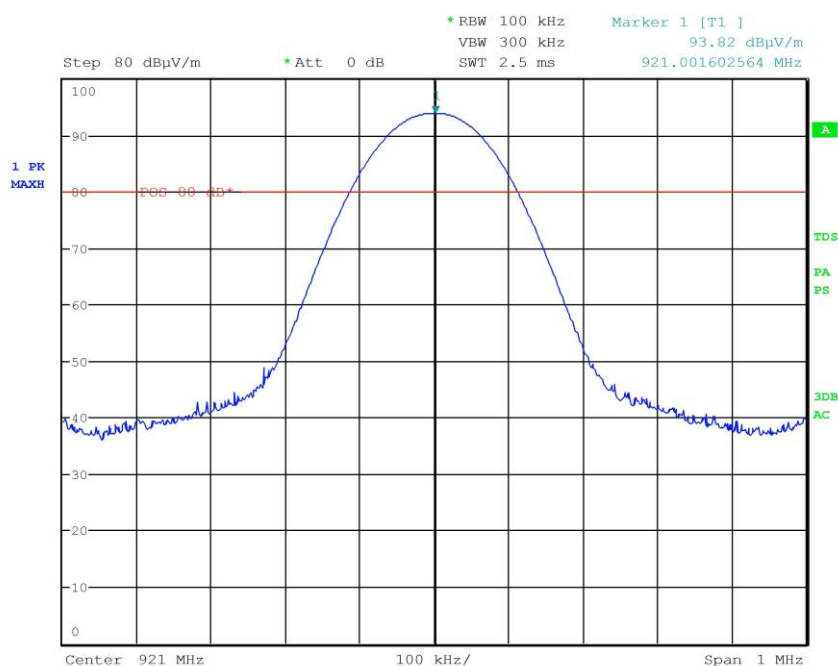
P = the power in watts



Graphs

G14206510

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmed - Ant. Ext. 5m
Operator Gandini 14206510
Test Spec
Vert

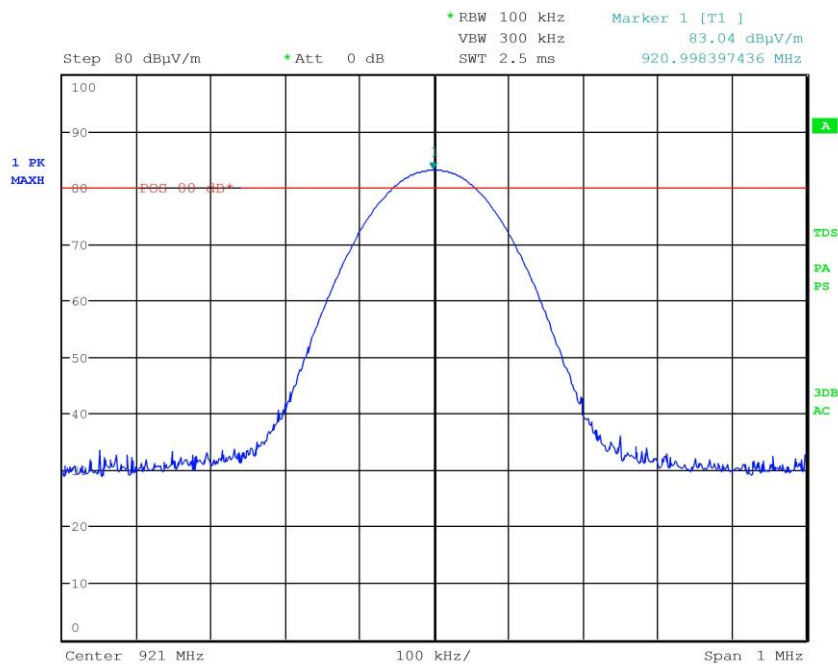


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G14206512

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmed - Ant. Ext. 5m
Operator Gandini 14206512
Test Spec
Horiz

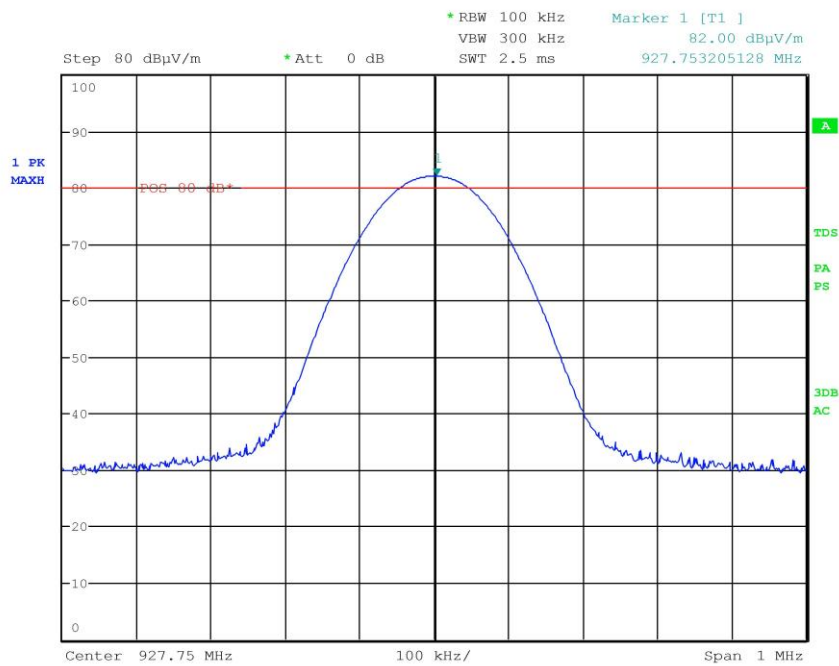


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G14206513

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Ext. 5m
Operator Gandini 14206513
Test Spec
Horiz

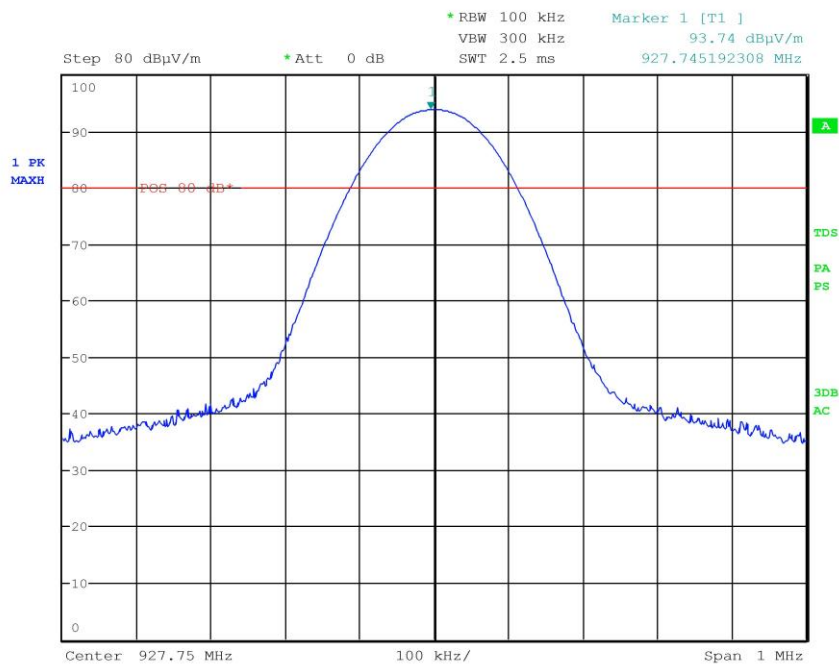


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G14206514

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Ext. 5m
Operator Gandini 14206514
Test Spec
Vert

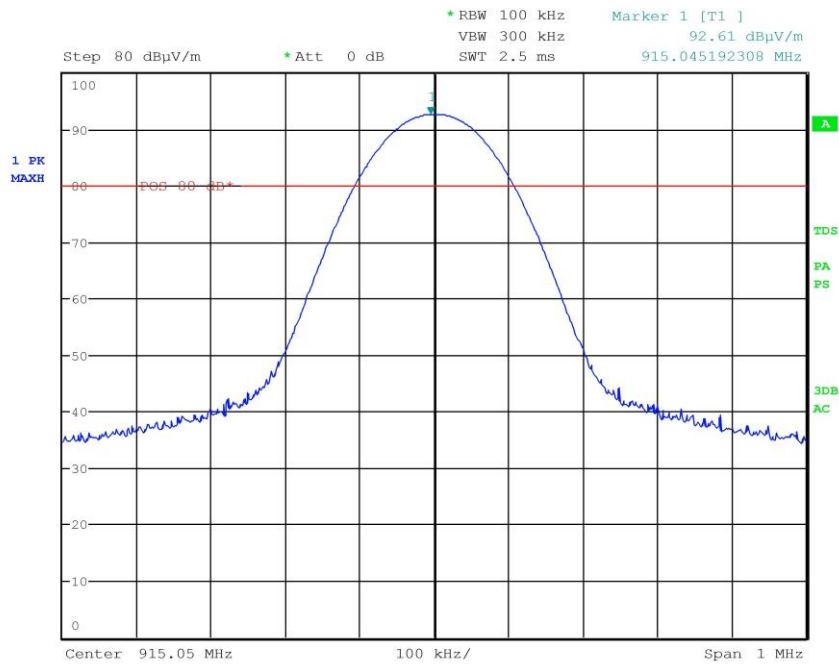


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G14206518

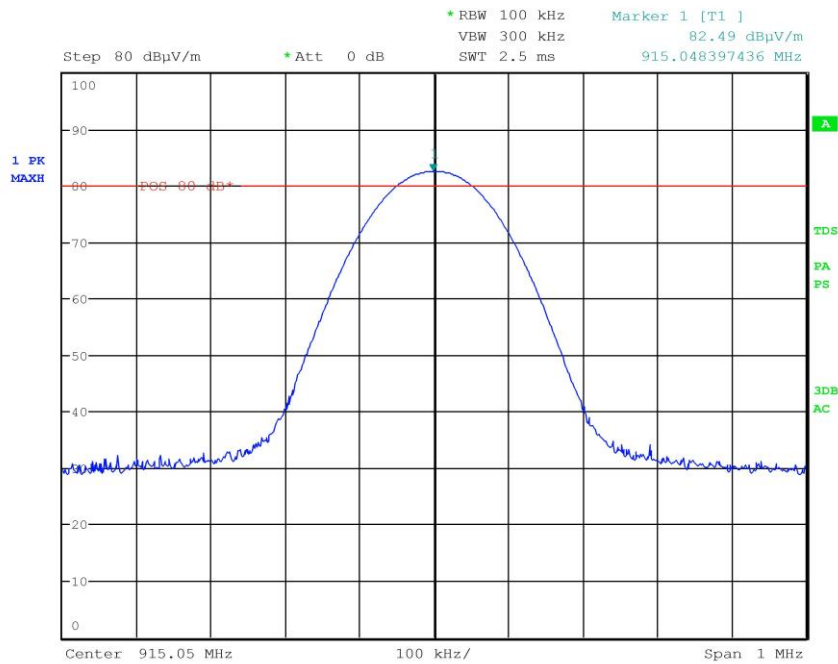
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Ext. 5m
Operator Gandini 14206518
Test Spec
Vert





G14206522

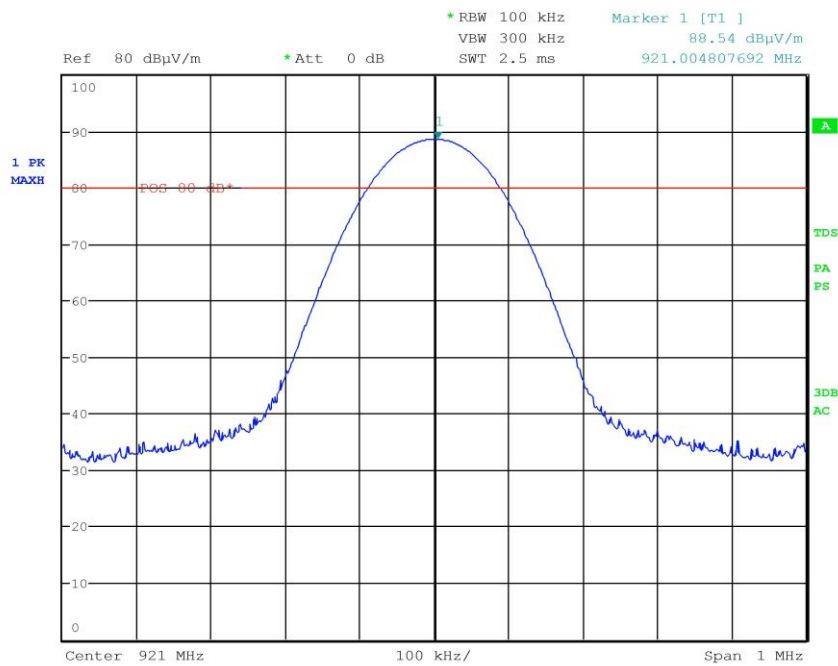
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Ext. 5m
Operator Gandini 142065222
Test Spec
Horiz





G14206525

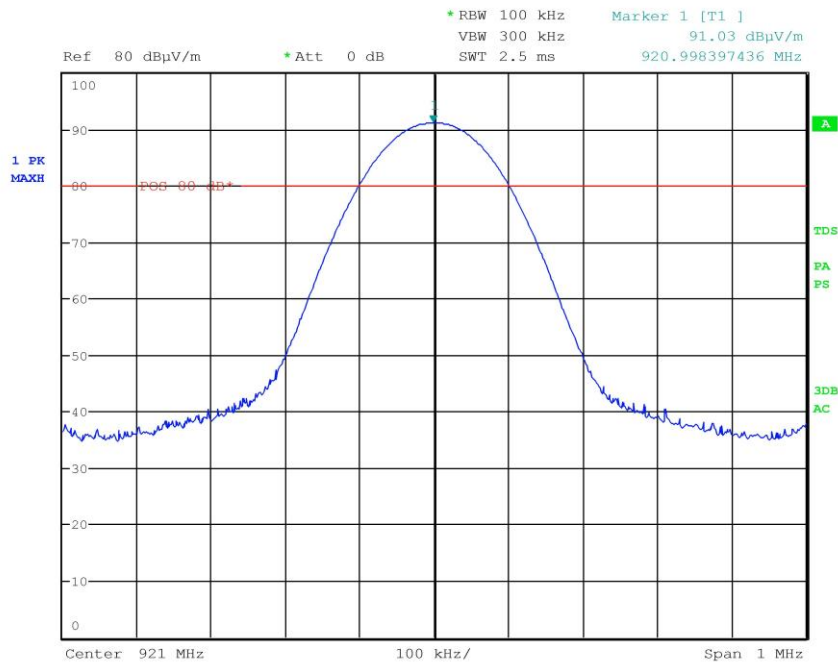
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmed - Ant. Int.
Operator Gandini 14206525
Test Spec
Horiz





G14206526

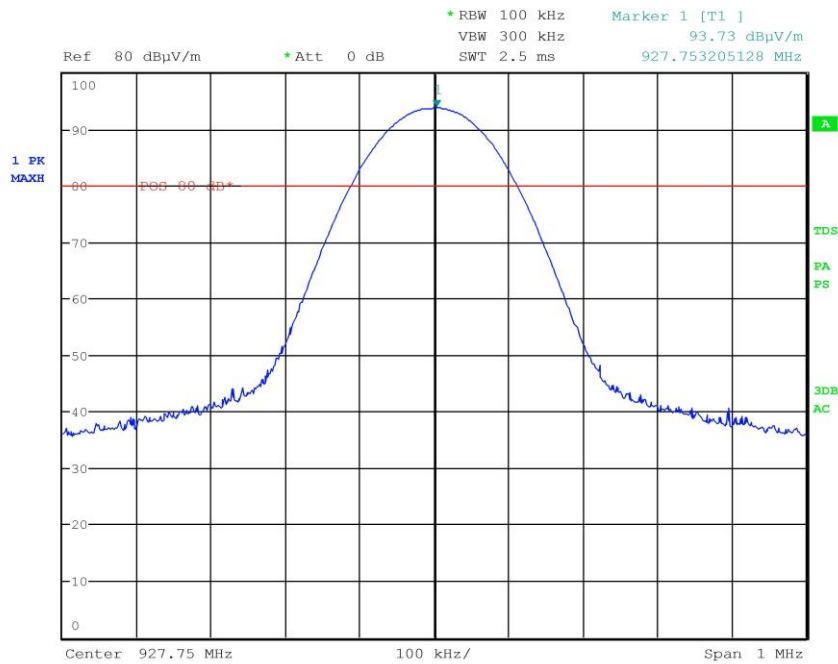
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmed - Ant. Int.
Operator Gandini 14206526
Test Spec
Vert





G14206528

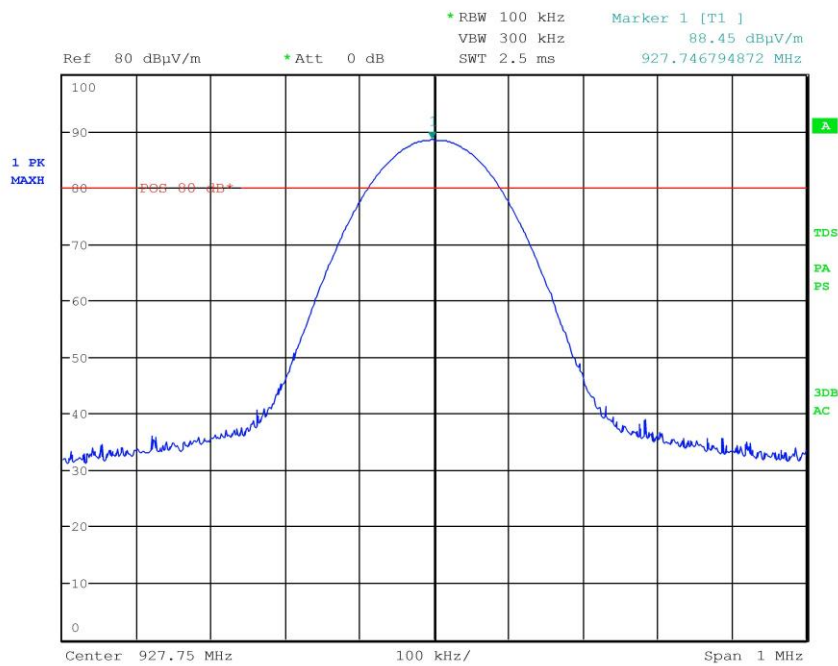
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Int.
Operator Gandini 14206528
Test Spec
Vert





G14206532

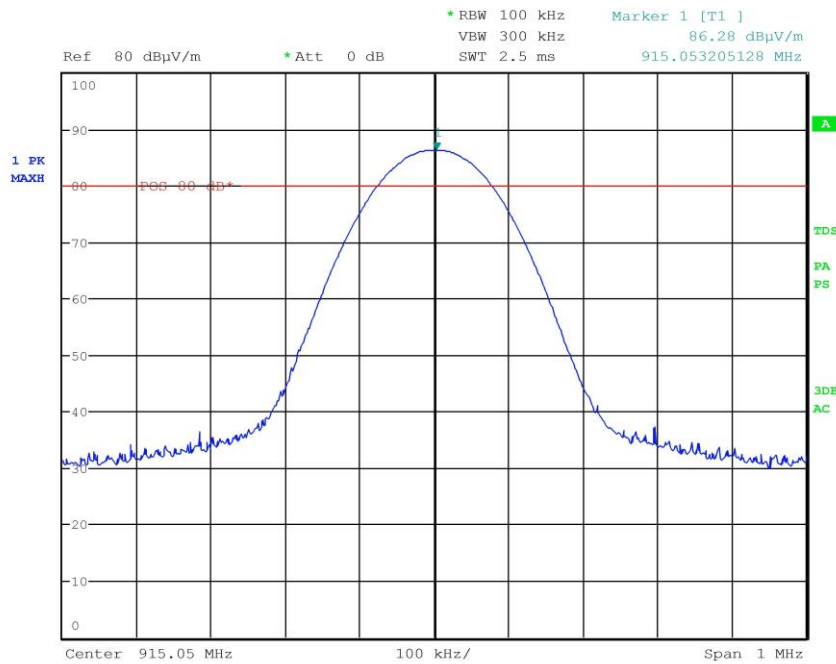
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Int.
Operator Gandini 14206532
Test Spec
Horiz





G14206533

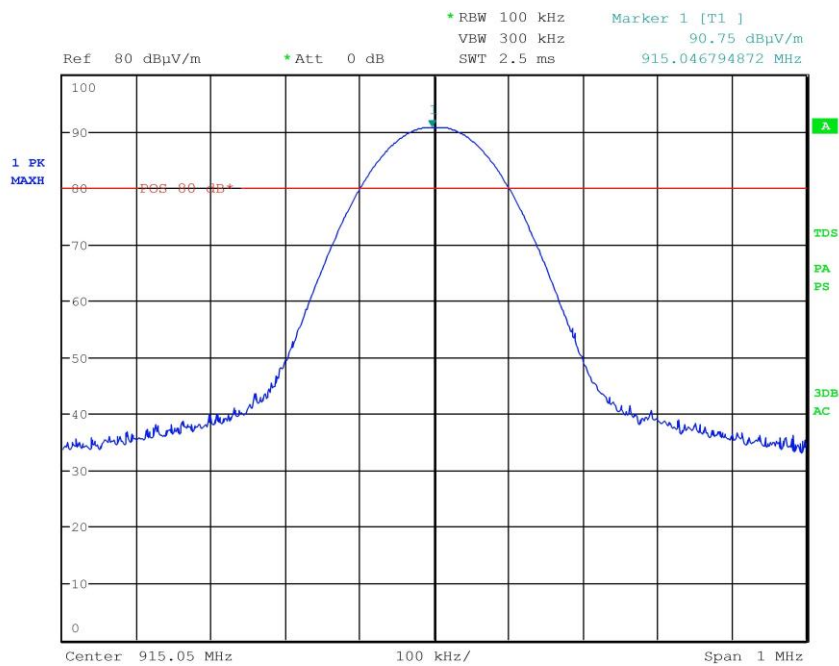
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Int.
Operator Gandini 14206533
Test Spec
Horiz





G14206534

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Int.
Operator Gandini 14206534
Test Spec
Vert



Result: The requirements are met



11.5 Band edge

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.249 (d)
- 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 S108, CMC S136, CMC S164
Measurement uncertainty: See clause 7 of this test report

Test specification

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation

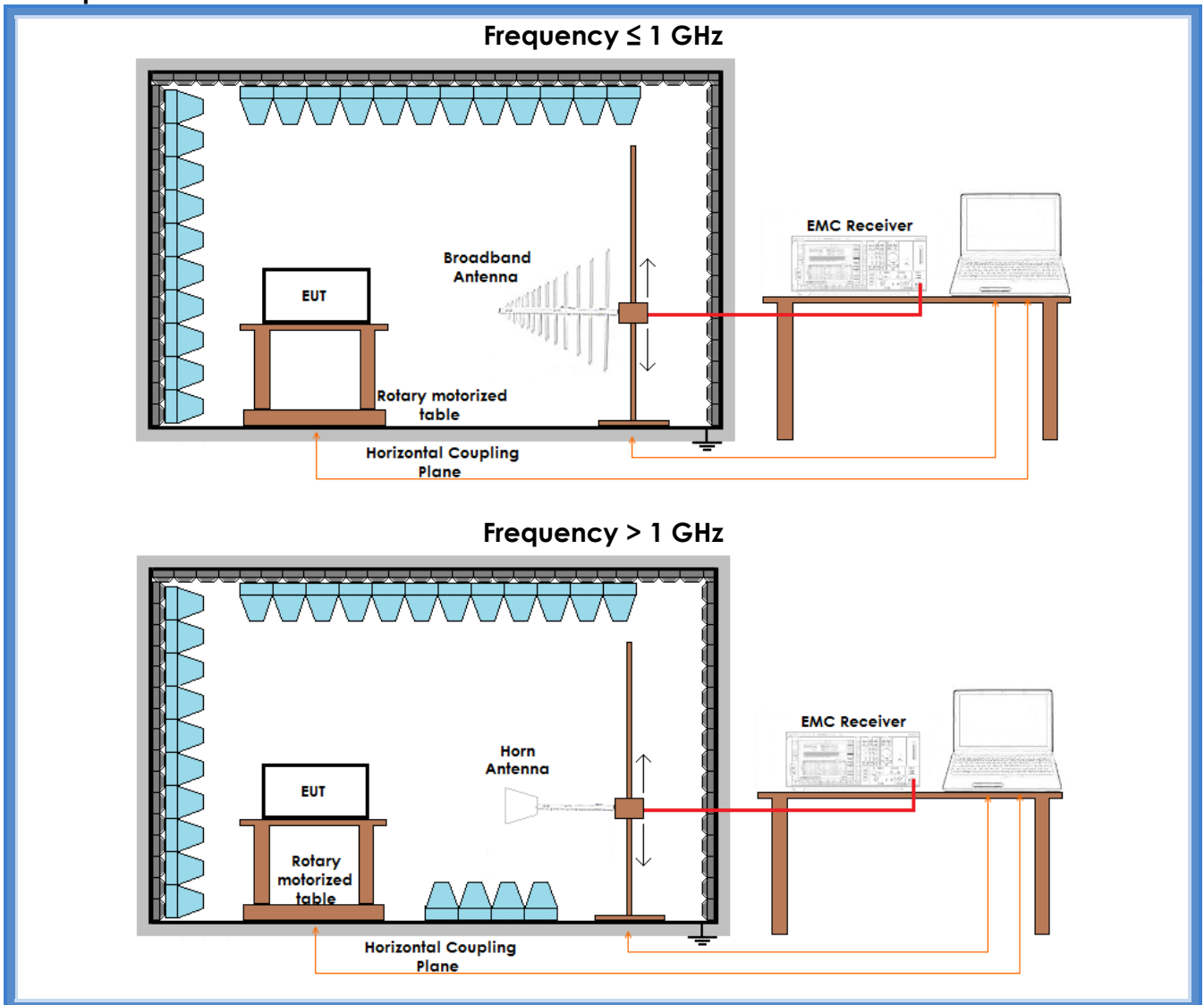
Environmental conditions

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

Acceptance limits: operation within the band 902 – 928 MHz



Setup



Result

Frequency (MHz)	Graph(s)	Results	
915,05	G14206519	F _L : 914,822435 MHz	Complies
	G14206520		
927,75	G14206515	F _H : 927,985576 MHz	Complies
	G14206516		

Remarks: External antenna



Frequency (MHz)	Graph(s)	Results	
915,05	G14206535	F _L : 914,828846 MHz	Complies
	G14206536		
927,75	G14206529	F _H : 927,982371 MHz	Complies
	G14206530		

Remarks: Internal antenna

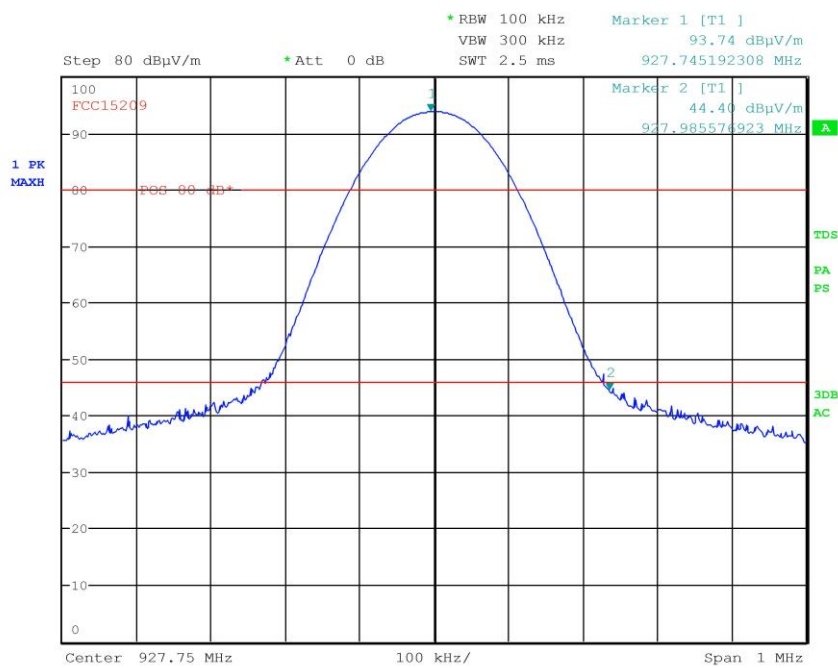




Graphs

G14206515

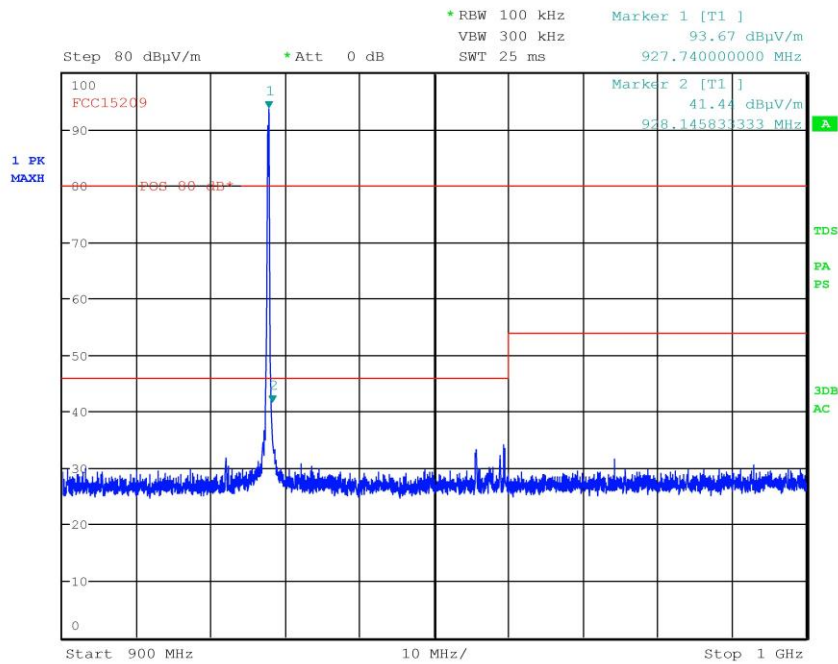
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Ext. 5m
Operator Gandini 14206515
Test Spec
Vert





G14206516

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Ext. 5m
Operator Gandini 14206516
Test Spec
Vert

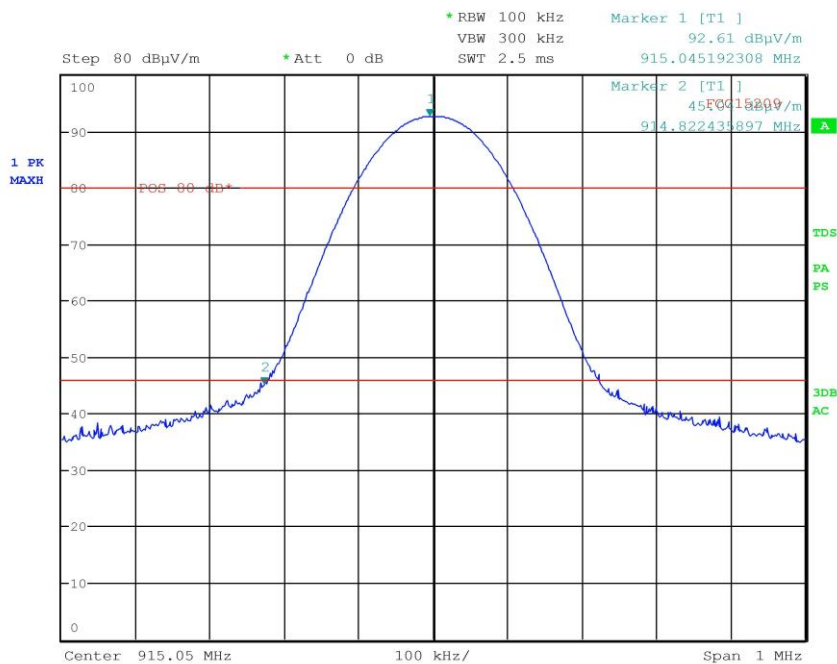


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G14206519

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Ext. 5m
Operator Gandini 14206519
Test Spec
Vert

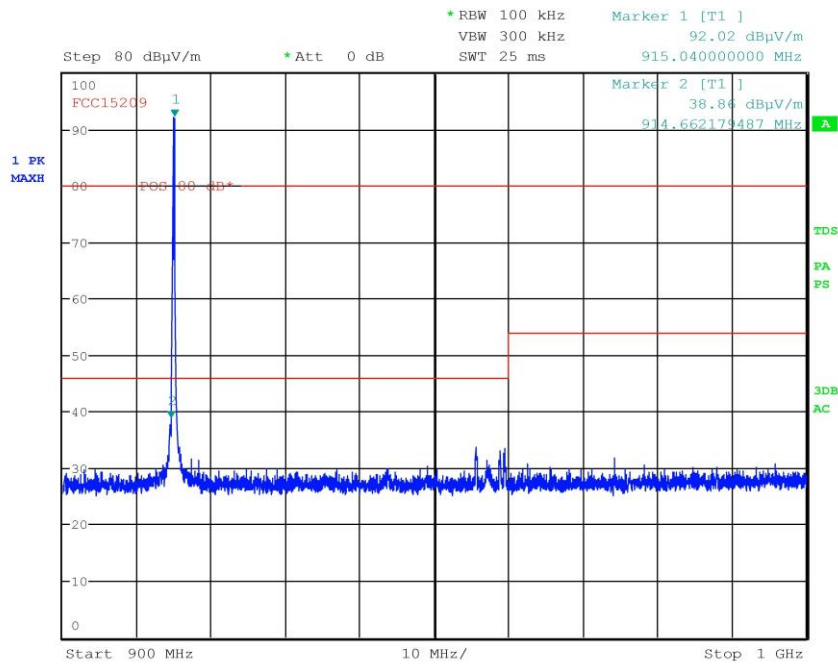


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G14206520

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Ext. 5m
Operator Gandini 14206520
Test Spec
Vert

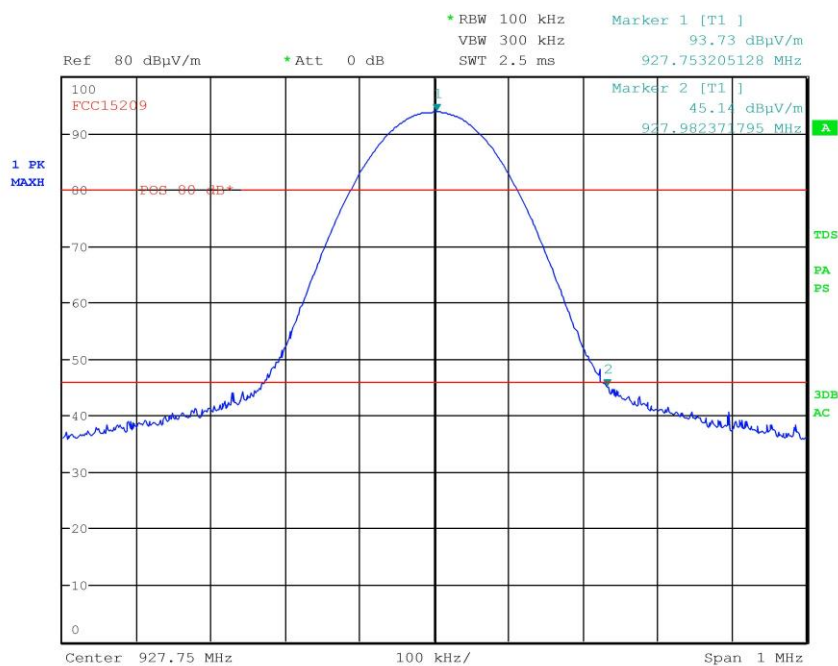


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G14206529

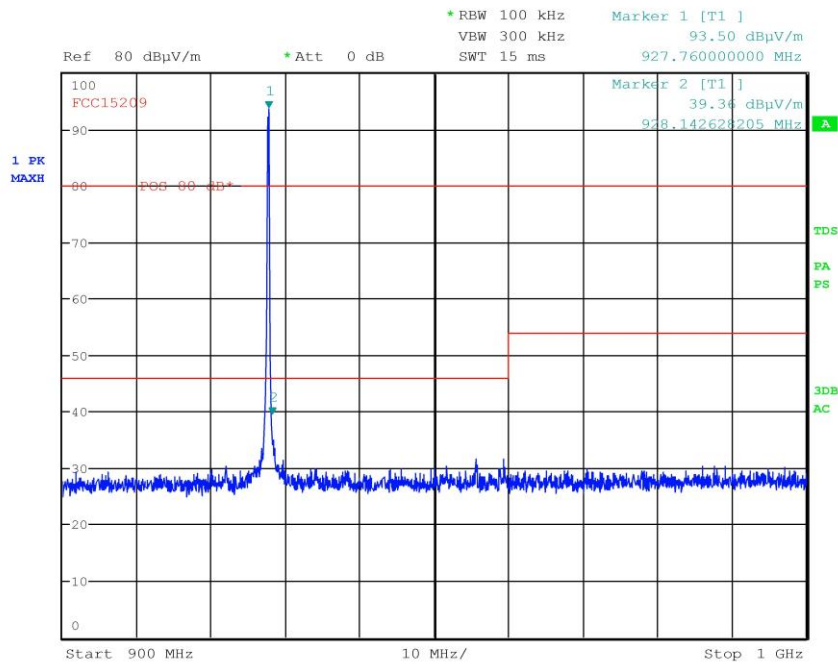
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Int.
Operator Gandini 14206529
Test Spec
Vert





G14206530

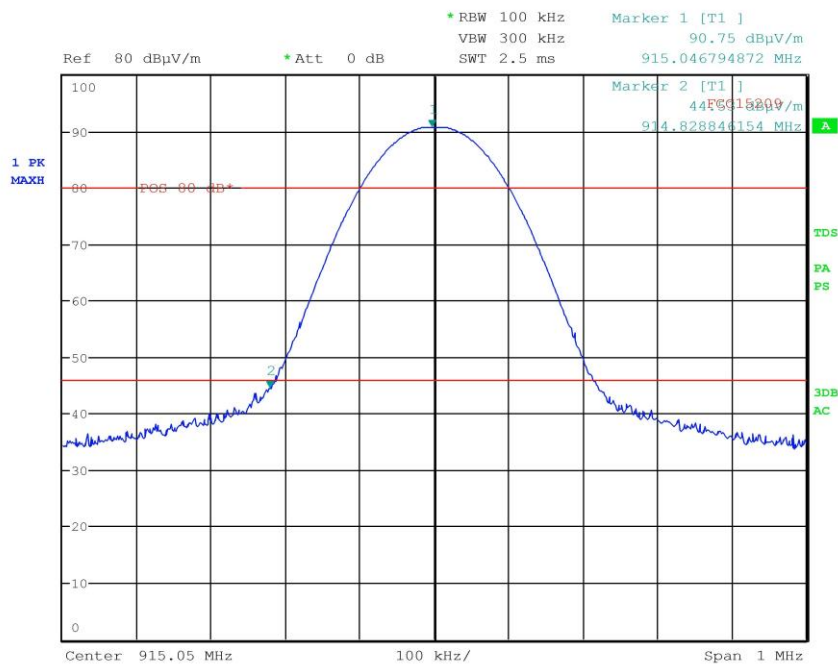
Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmax - Ant. Int.
Operator Gandini 14206530
Test Spec
Vert





G14206535

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Int.
Operator Gandini 14206535
Test Spec
Vert

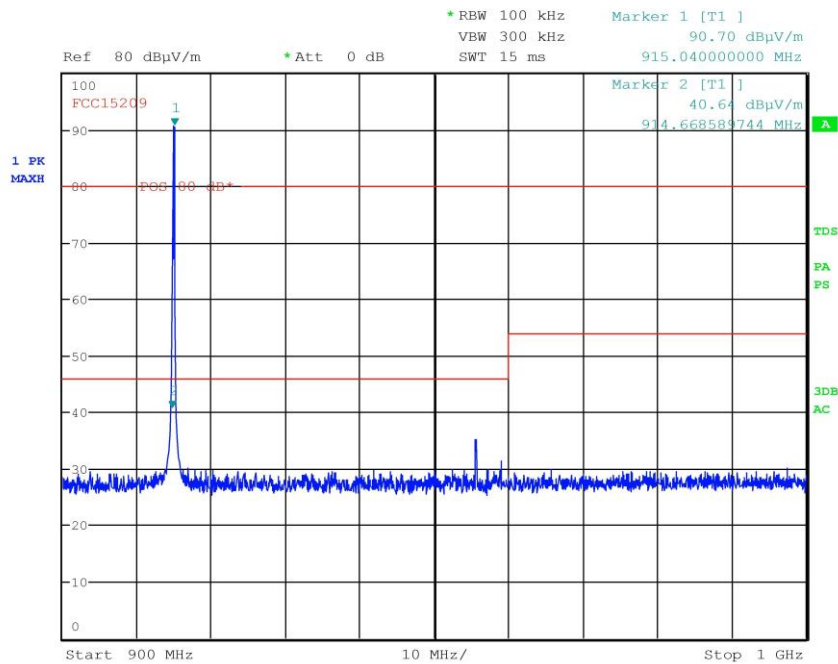


CMC Centro Misure Compatibilità S.r.l.



G14206536

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx-Rx - Fmin - Ant. Int.
Operator Gandini 14206536
Test Spec
Vert



Result: The requirements are met



11.6 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 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 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

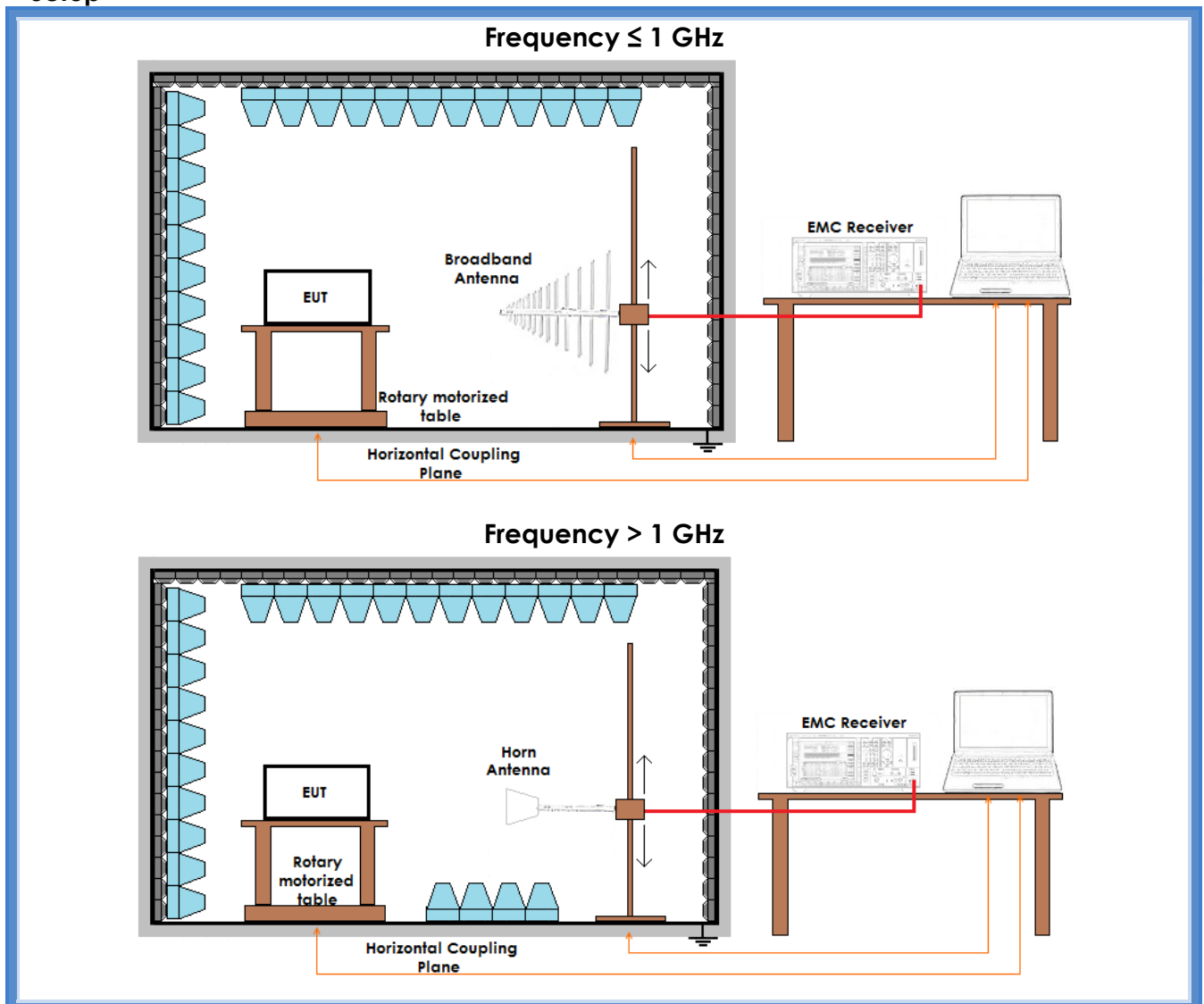
Temperature (°C)	Atmospheric pressure (kPa)	Relative humidity (%)
22	100	45

Acceptance limits

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



Setup





Result – AV detector

Harmonic	Limits (dB μ V/m)	Level (dB μ V/m)			Results
		915,05 MHz	921,00 MHz	927,75 MHz	
II	54	42,6	43,2	43,1	Complies
III	54	45,6	46,2	46,7	Complies
IV	54	47,0	48,0	48,6	Complies
V	54	47,6	47,0	46,4	Complies
VI	54	39,5	More than 20dB below limit	More than 20dB below limit	Complies
VII	54	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies
VIII	54	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies
IX	54	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies
X	54	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies

Remarks: External antenna. 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
		915,05 MHz	921,00 MHz	927,75 MHz	
II	74	44,6	45,1	45,0	Complies
III	74	47,4	47,9	48,2	Complies
IV	74	50,5	51,6	51,4	Complies
V	74	51,3	50,7	50,4	Complies
VI	74	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies
VII	74	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies
VIII	74	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies
IX	74	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies
X	74	More than 20dB below limit	More than 20dB below limit	More than 20dB below limit	Complies

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

Result: The requirements are met