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LAB N° 0168

Independent Testing Laboratory
Accredited by ACCREDIA according to UNI CEI EN ISO/IEC 17025 cert. nr. 0168

TEST REPORT nr. R17199401

Federal Communication Commission (FCC)

Test item

Description .....: BLUETOOTH MODULE FOR DIAGNOSIS
Trademark .....: TEXA
Model/Type .....: E-TRUK
FCC ID .....: T8RET17

Test Specification

Standard.....: FCC Rules & Regulations, Title 47:2016
Part 15 paragraph(s): 203, 204, 205, 207, 209 and 247

Client's name .....: TEXA S.p.A.
Address .....: Via 1° Maggio, 9 – 31050 Monastier di Treviso (TV) – ITALY

Manufacturer's name : Same as client
Address .....: --

Report

Tested by .....: G. Gandini – *Technician*
Approved by .....: R. Beghetto – *Laboratory Manager*
Date of issue .....: 24.05.18
Contents.....: 102 pages

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1. Summary

Standard:

FCC Rules & Regulations, Title 47:2016
Part 15 paragraph(s): 203, 204, 205, 207, 209 and 247

Test specifications	*Environmental Phenomena*	*Tests sequence*	*Result*
Part 15.203	Antenna requirements	1	Complies
Part 15.207	Conducted emissions	2	Complies
Part 15.209	Radiated emissions	3	Complies
Part 15.247	20 dB Bandwidth	4	Complies
Part 15.247	Channel Separation	5	Complies
Part 15.247	Number of Hopping Channel	6	Complies
Part 15.247	Time of occupancy	7	Complies
Part 15.247	Band edge	8	Complies
Part 15.209 and 15.247	Peak Output Power	9	Complies
Part 15.209	Spurious emission	10	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 certification

2. Description of Equipment under test (EUT)

Power supply	:	8-32 Vdc
		Tests performed on 12 Vdc power supply
Serial Number	:	--
Type of equipment	:	☑ Transmitter Unit
		☑ Receiver Unit
Type of station	:	☑ Fixed station
		❑ Portable station
		❑ Mobile station
Frequency band	:	2400 – 2483,5 MHz
Nominal frequencies	:	F_L: 2402 MHz F_M: 2441 MHz F_H: 2480 MHz

2.1 Test Site

Company	:	CMC Centro Misure Compatibilità S.r.l.
Address	:	Via della Fisica, 20
		36016 Thiene (VI) – ITALY
Test site facility's FCC registration number	:	182474

3. Testing and sampling

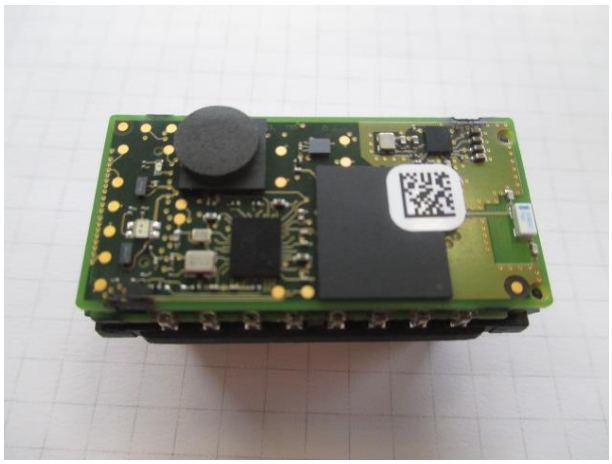
Date of receipt of test item	:	03.10.17
Testing start date	:	03.10.17
Testing end date	:	21.05.18
Samples tested nr.	:	1
Sampling procedure.	:	Equipment used for testing was picked up by the manufacturer, at the end of the production process with random criterion
Internal identification	:	adhesive label with the product number P171138

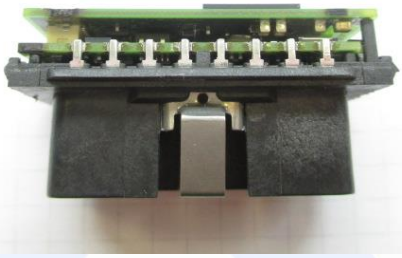
4. Operative conditions

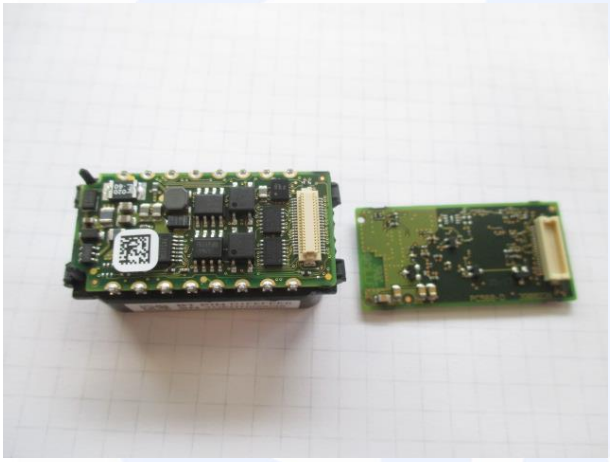
EUT exercising	:	EUT in continuous transmission at maximum power

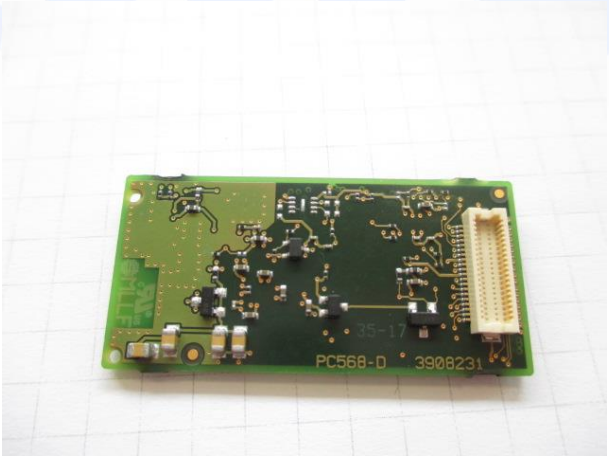
5. Photograph(s) of EUT

5.1 Photograph(s) of EUT









6. Equipment list

Calibration information only for Radiated emissions test reported on cl. 11.3 of this Test Report. Tests have been performed on October 2017

Id. number	*Manufacturer*	*Model*	*Description*	*Serial number*	*Last calibration*	*Due date calibration*
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 '17	January '18
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '16	November '17
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '16	November '17
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '16	November '17
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '16	November '17
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '16	November '17
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 '16	November '17

Calibration information for all other tests that have been performed after February 2018

Id. number	*Manufacturer*	*Model*	*Description*	*Serial number*	*Last calibration*	*Due date calibration*
CMC S010	Rohde & Schwarz	ESH3-Z2	Impulses Limiting Device	- - -	January '18	January '19
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 '18	January '19
CMC S200	Schwarzbeck	NSLK 8128	V-LISN	8128-273	January '18	January '19
CMC S227	Rohde & Schwarz	ESR7	EMI Test Receiver 7GHz	101121	January '18	January '19
CMC S260	CMC	Wfr_N	Shielded Cable	Wfr_ant10-1	November '17	November '18
CMC S261	CMC	Wfr_N	Shielded Cable	Wfr_ant20-1	November '17	November '18
CMC S262	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix32-1	November '17	November '18
CMC S263	CMC	Wfr_N_fix	Shielded Cable	Wfr_fix31-1	November '17	November '18
CMC S264	CMC	Wfr_N	Shielded Cable	Wfr_ext03-1	November '17	November '18
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 '17	November '18

7. Measurement uncertainty

Test	Test Setup	Expanded uncertainty	Note
Conducted emission CISPR 16 LISN 50uH 0,009-0,0150MHz	PE001_01	3,4 dB	1
Conducted emission CISPR 16 LISN 50uH 0,150-30,0MHz	PE001_01	2,8 dB	1
Conducted emission CISPR 16 Voltage Probe 0,15-30MHz	PE001_02	2,6 dB	1
Conducted emission CISPR 16 Current Probe 0,15-30MHz	PE001_03	2,2 dB	1
Conducted emission CISPR 16 ISN 0,15-30MHz	PE001_04	4,5 dB	1
Clic CISPR 16 LISN 50uH 0,150-30,0MHz	PE001_05	3,1 dB	1
Disturbance Power 30-300 MHz	PE002_01	3,4 dB	1
Radiated Emission LAS 0,15-30MHz	PE003_01	1,5 dB	1
Radiated Emission CISPR 16 Loop Ant. 0,15-30MHz	PE004_01	3,8 dB	1
Radiated Emission CISPR 16 Bicon. Ant. 30-300MHz	PE004_02	3,3 dB	1
Radiated Emission CISPR 16 LogP. Ant. 300-1000MHz	PE004_03	3,1 dB	1
Radiated Emission CISPR 16 Horn Ant. 1-18GHz	PE004_04	3,6 dB	1
Human Exposure to electromagnetic fields	PE005_01	15,0 %	1
Harmonic current emissions test	PE006_01	10 mA + 1,6 %	1
Voltage fluctuation and flicker test	PE007_01	4,2 %	1
Radiated Immunity 80MHz-6GHz	PE102_XX	2,1 dB 0,82 V/m a 3V/m	1
Conducted Immunity 0,15-230MHz	PE105_XX	1,2 dB 0,44 V a 3V	1
AC Magnetic field	PE106_01	1,55 % 0,15 A/m a 10A/m	1
Pulse Magnetic field	PE107_01	6,24 % 18,7 A/m a 300A/m	1
Dumped Magnetic field	PE108_01	6,24 % 1,87 A/m a 30A/m	1
Common mode conducted immunity	PE112_01	2,20 % 0,22 V a 10V	1

Test	Test Setup	Expanded uncertainty	Note
Power/Spurious 9kHz-30MHz	PR001_01	3,8 dB	1
Power/Spurious ERP 30-1000MHz d=10m	PR001_02+03	4,3 dB	1
Misura della potenza EiRP 1-18GHz d=3m	PR001_04	4,3 dB	1
Misura della potenza EiRP 18-40GHz d=3m	PR001_05	5,5 dB	1
Frequency error	PR002_01+02	< 1x10-7	1
Timing zero span (1001pts.)	PR002_01+02	0,2 % SWT	1
Modulation bandwidth	PR002_01+02	< 1x10-7	1
Conducted RF power and spurious emission	PR002_01+02	1,2 dB	1
Adjacent channel power	PR002_01+02	1,2 dB	1
Blocking	PR002_01+02	1,2 dB	1

Test	Test Setup	Expanded uncertainty	Note
Electrostatic discharge immunity test	PE101_0X		2
Electrical fast transients / burst immunity test	PE103_0X		2
Surge immunity test	PE104_0X		2
Short interruption immunity test	PE109_01		2
Rev_18_01 date 30/01/2018			

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 15:2016	--
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. 3.0 (Quality Manual)	Measure Procedure
Internal procedure INC_M rev. 9.0 (Quality Manual)	Measurement uncertainty calculation

9. Deviation from test specification

None

10. Test case verdicts

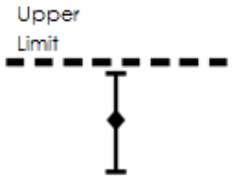
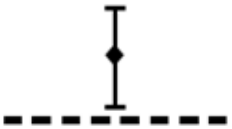
Test case does not apply to the test object	:	N.A.
Test item does meet the requirement	:	Complies
Test item does not meet the requirement	:	Does not comply
Test not performed	:	N.E.

11. Results

In this clause tests results are reported.

Measurement uncertainty is in accordance with document CMC INC_M rev. 9.0.

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*
Integral antenna	Not Present	-1,3 dBi	--	Complies

Result: The requirements are met

11.2 Conducted emissions

Test set-up and execution

- FCC Rules and Regulation; Titles 47 Part 15.207
- Internal procedure PM001
- See clause 4 of this test report

Test configuration and test method

Test site:
Shielded chamber

Auxiliary equipment:
See clause 4 of this test report

EUT exercising

See clause 4 of this test report

Test equipment used

CMC S010, CMC S200, CMC S206
Measurement uncertainty: See clause 7 of this test report

Test specification

Port: Main port
Frequency range: 150 kHz – 30 MHz

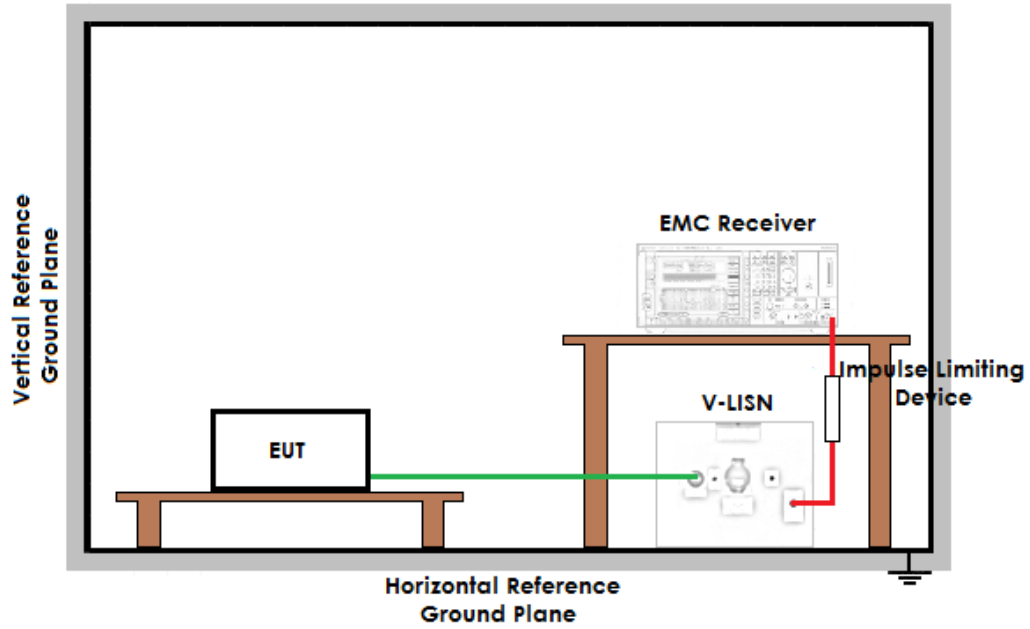
Environmental conditions

Temperature (°C)	*Atmospheric pressure (kPa)*	*Relative humidity (%)*
21	98	46

Acceptance limits

Frequency range (MHz)	*dB(µV) Quasi-peak*	*dB(µV) Average*
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

Setup

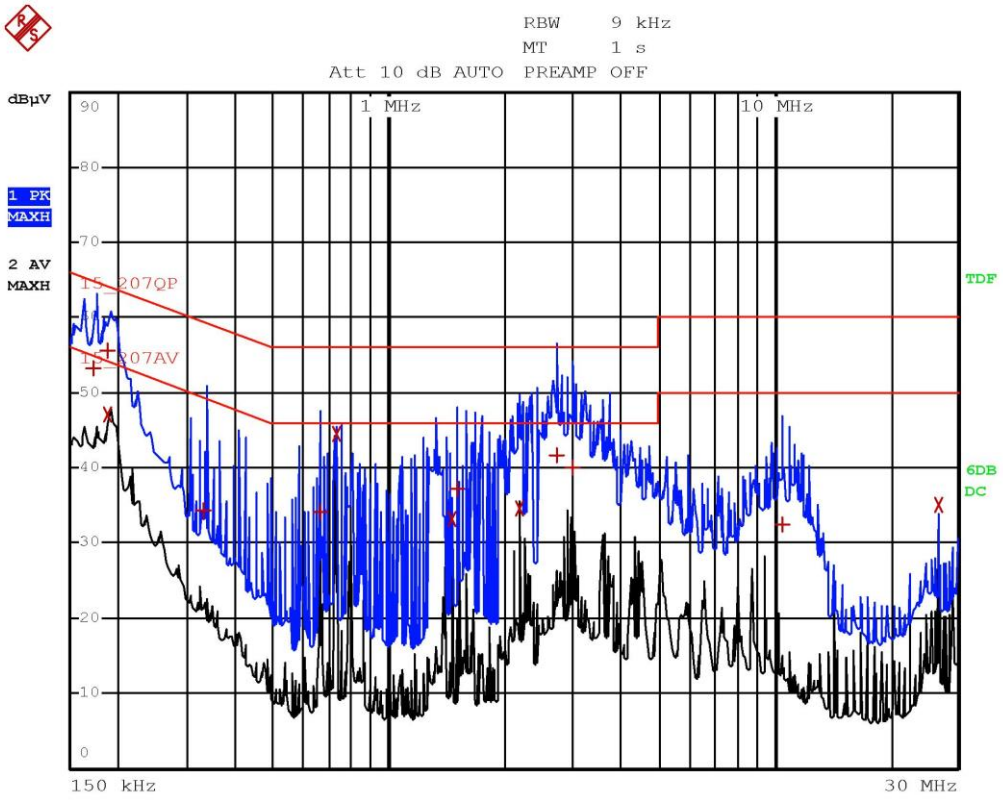


Result

Line	*Graphs*	*Remarks*	*Result*
-12 Vdc	G17199450	--	Complies
+12 Vdc	G17199451	--	Complies
Remarks: --			

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

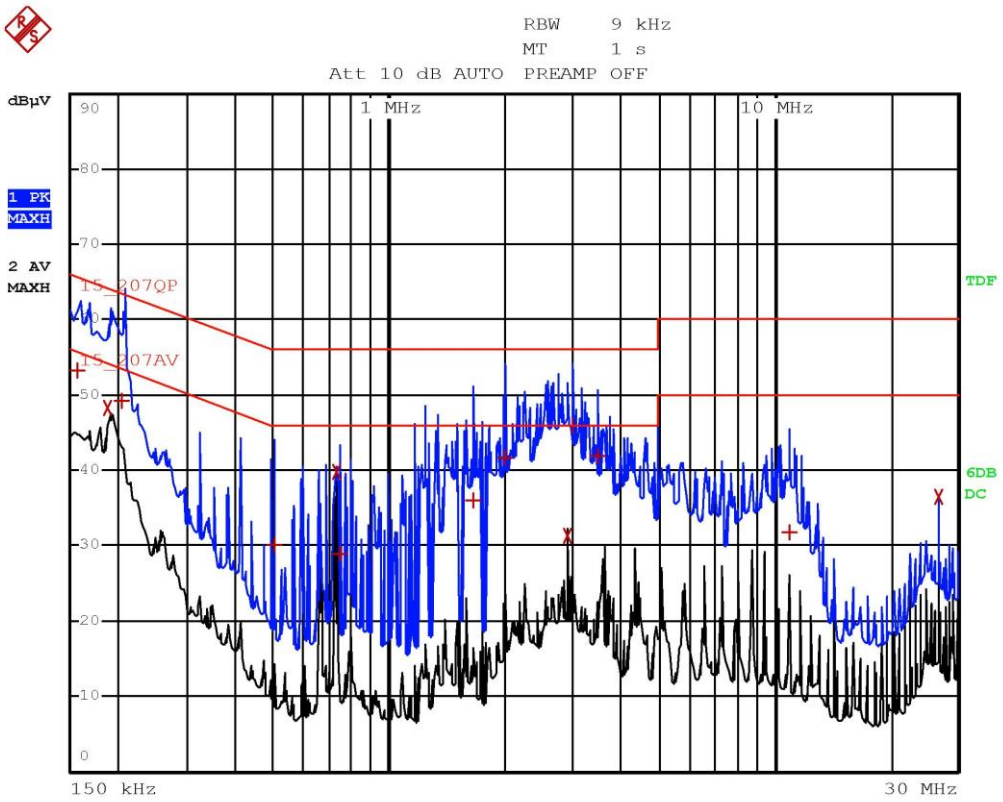
Graphs



Gandini 17199450-Line (-)-Tx Rx BT

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15_207QP		
Trace2:	15_207AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	174 kHz	53.25	-11.50
2 Average	190 kHz	47.19	-6.83
1 Quasi Peak	190 kHz	55.52	-8.51
1 Quasi Peak	334 kHz	34.37	-24.97
1 Quasi Peak	666 kHz	34.11	-21.88
2 Average	730 kHz	44.43	-1.56
2 Average	1.458 MHz	33.23	-12.76
1 Quasi Peak	1.502 MHz	37.30	-18.69
2 Average	2.186 MHz	34.62	-11.37
1 Quasi Peak	2.746 MHz	41.79	-14.20
1 Quasi Peak	3.006 MHz	39.92	-16.07
1 Quasi Peak	10.502 MHz	32.52	-27.48
2 Average	26.622 MHz	35.17	-14.82

Gandini 17199450-Line (-)-Tx Rx BT



Gandini 17199451-Line (+)-Tx Rx BT

EDIT PEAK LIST (Final Measurement Results)			
Trace1:	15_207QP		
Trace2:	15_207AV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1 Quasi Peak	158 kHz	53.32	-12.23
2 Average	190 kHz	48.22	-5.81
1 Quasi Peak	206 kHz	49.30	-14.06
1 Quasi Peak	502 kHz	30.20	-25.79
2 Average	730 kHz	39.69	-6.31
1 Quasi Peak	750 kHz	28.96	-27.03
1 Quasi Peak	1.666 MHz	36.07	-19.92
1 Quasi Peak	2.002 MHz	41.68	-14.31
2 Average	2.918 MHz	31.36	-14.64
1 Quasi Peak	3.002 MHz	45.94	-10.05
1 Quasi Peak	3.502 MHz	41.90	-14.09
1 Quasi Peak	10.998 MHz	31.80	-28.19
2 Average	26.622 MHz	36.46	-13.53

Gandini 17199451-Line (+)-Tx Rx BT

Result: The requirements are met

11.3 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)
10 m for frequencies ≤ 30 MHz
3 m for frequencies > 30 MHz

Environmental conditions

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

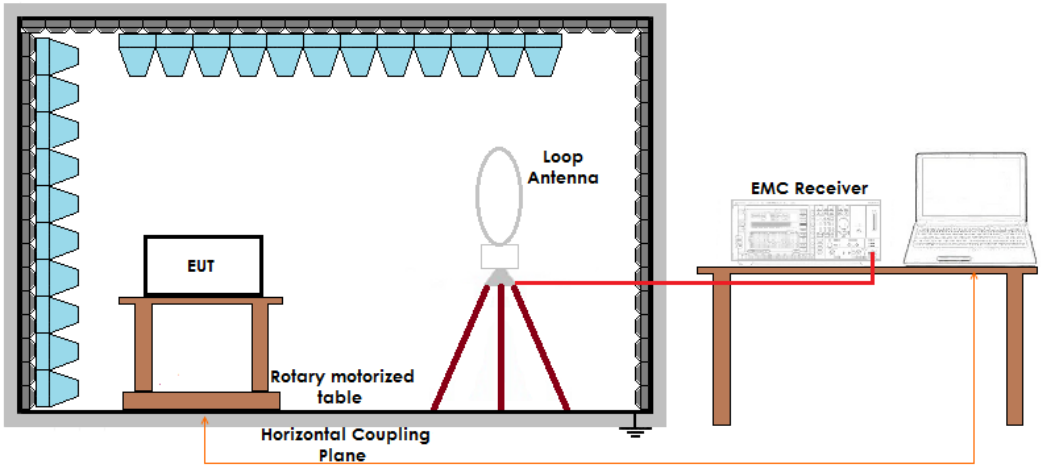
Acceptance limits

Frequency range (MHz)	*Test distance (m)*	*Limits [dB(µV/m)]*	
0,009 to 0,490	300	48,5 to 13,8	
0,490 to 1,705	30	33,8 to 22,9	
1,705 to 30	30	29,5	
30 to 88	3	40	
88 to 216	3	43,5	
216 to 960	3	46,0	
Above 960	3	53,9	
	Test distance (m)	*Linear average detector [dB(µV/m)]*	*Peak detector [dB(µV/m)]*
Above 1000	3	53,9	73,9

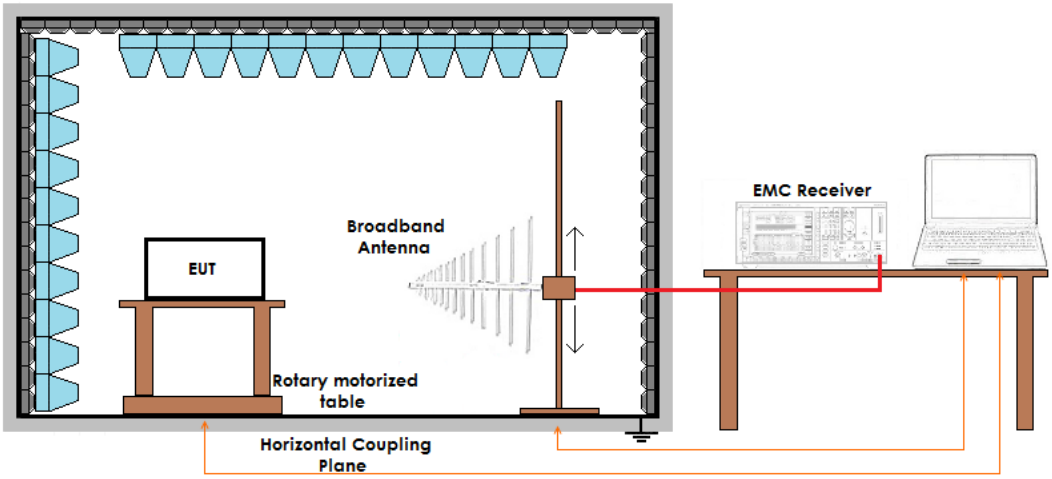
Remarks: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. The results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

Setup

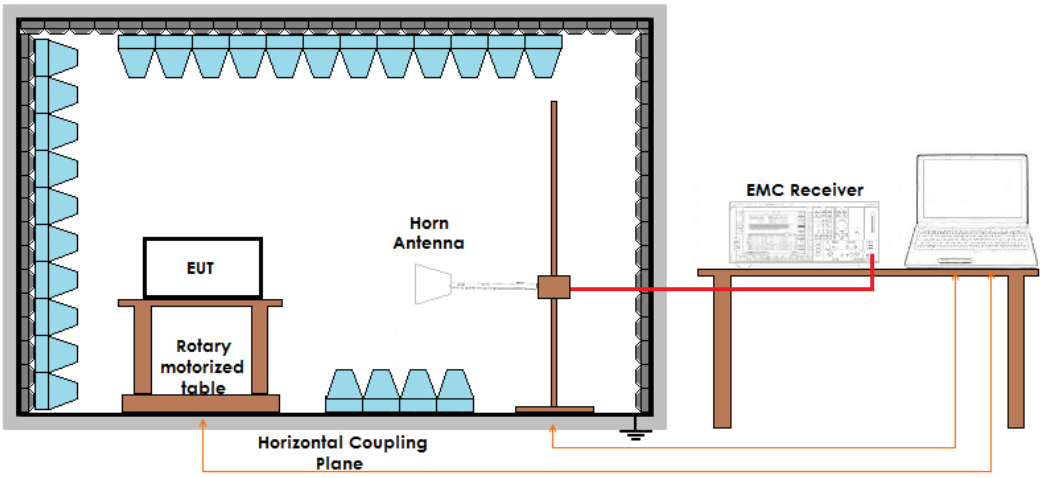
Frequency ≤ 30 MHz



Frequency ≤ 1 GHz



Frequency > 1 GHz



Result

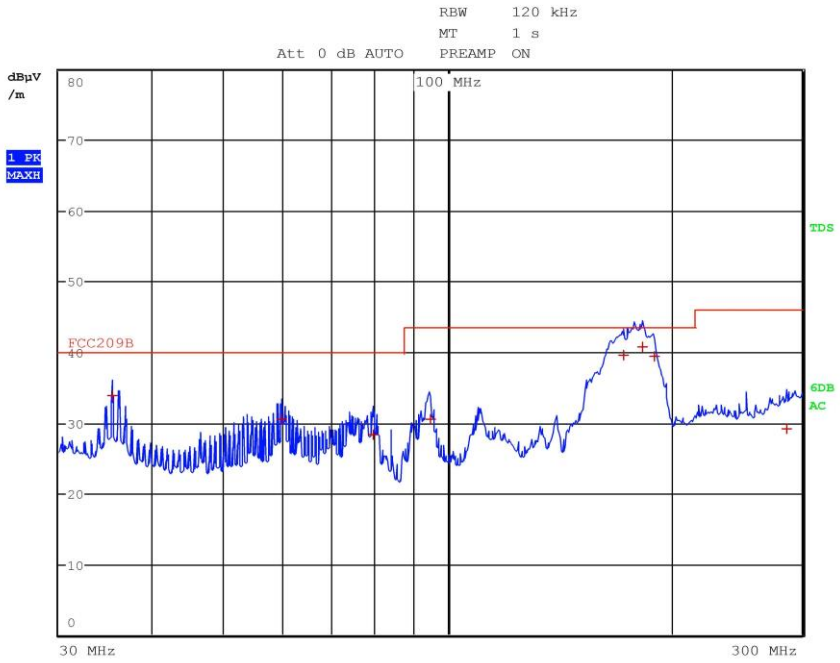
Polarization	*Frequency Range (MHz)*	*Graphs*	*Remarks*	*Result*
V	30 – 300	G17199401	Worst case	Complies
H	30 – 300	G17199402	Worst case	Complies
H	300 – 1000	G17199403	Worst case	Complies
V	300 – 1000	G17199404	Worst case	Complies
Loop	0,009 – 30	G17199405	Worst case	Complies
V	1000 – 2483,5	G17199406	Lowest channel	Complies
H	1000 – 2483,5	G17199407	Lowest channel	Complies
H	1000 – 2483,5	G17199408	Medium channel	Complies
V	1000 – 2483,5	G17199409	Medium channel	Complies
V	1000 – 2483,5	G17199410	Highest channel	Complies
H	1000 – 2483,5	G17199411	Highest channel	Complies
H	2483,5 – 18000	G17199412	Highest channel	Complies
V	2483,5 – 18000	G17199413	Highest channel	Complies
V	2483,5 – 18000	G17199414	Medium channel	Complies
H	2483,5 – 18000	G17199415	Medium channel	Complies
H	2483,5 – 18000	G17199416	Lowest channel	Complies
V	2483,5 – 18000	G17199417	Lowest channel	Complies
H	18000 – 26000	G17199418	Lowest channel	Complies
V	18000 – 26000	G17199419	Lowest channel	Complies
V	18000 – 26000	G17199420	Medium channel	Complies
H	18000 – 26000	G17199421	Medium channel	Complies
H	18000 – 26000	G17199422	Highest channel	Complies
V	18000 – 26000	G17199423	Highest channel	Complies

Remarks: Measurements at frequencies lower than 1000 MHz have been performed with an EUT – antenna distance of 10 m. Measured values have been corrected with FCC 3A10 factor.
Peaks above the limits are caused by the nominal transmitting frequencies. Final measurements have been performed only for values with margin lower than 20 dB from limit

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

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Diagnosi BT
Operator Gandini 17199401
Test Spec
Vert



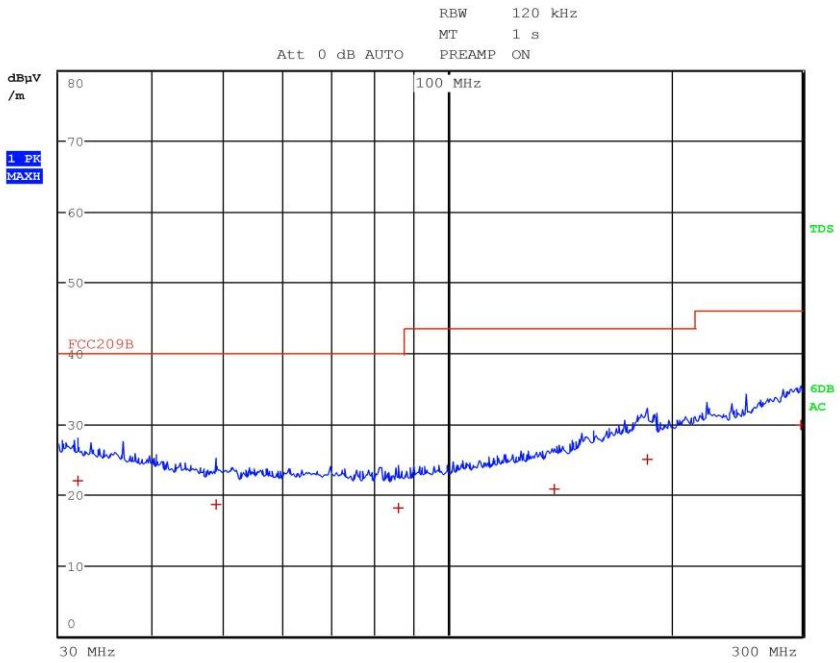
Final Measurement

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

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	35.360000000 MHz	33.93	Quasi Peak	-6.07
1	59.680000000 MHz	30.50	Quasi Peak	-9.50
1	79.520000000 MHz	28.39	Quasi Peak	-11.61
1	95.000000000 MHz	30.56	Quasi Peak	-12.96
1	172.280000000 MHz	39.63	Quasi Peak	-3.89
1	183.240000000 MHz	40.75	Quasi Peak	-2.77
1	189.920000000 MHz	39.37	Quasi Peak	-4.15
1	286.280000000 MHz	29.09	Quasi Peak	-16.93

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Diagnosi BT
Operator	Gandini 17199402
Test Spec	

Horiz



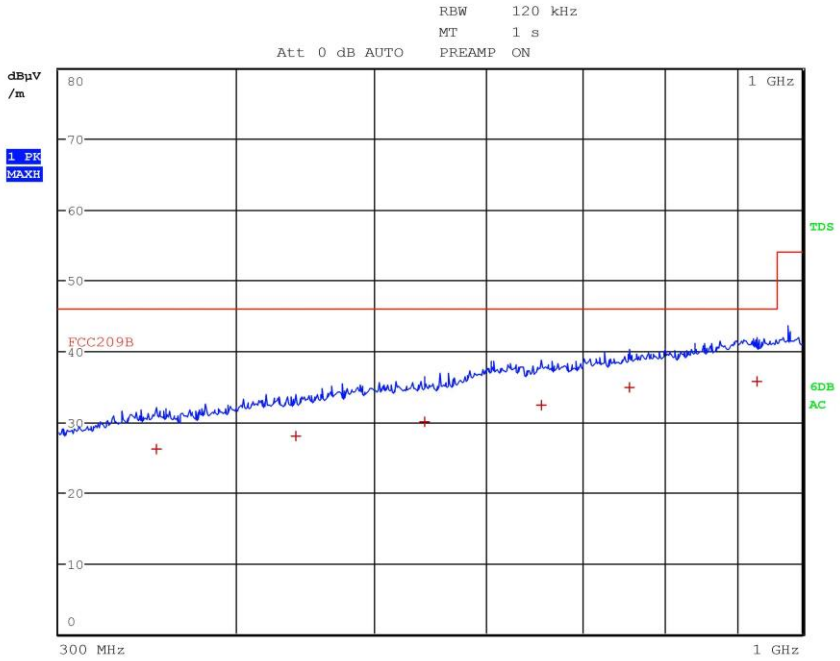
Final Measurement

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

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	31.760000000 MHz	21.89	Quasi Peak	-18.11
1	48.720000000 MHz	18.50	Quasi Peak	-21.50
1	85.920000000 MHz	18.04	Quasi Peak	-21.96
1	139.040000000 MHz	20.80	Quasi Peak	-22.72
1	185.600000000 MHz	24.89	Quasi Peak	-18.63
1	299.040000000 MHz	29.79	Quasi Peak	-16.23

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Diagnosi BT
Operator	Gandini 17199403
Test Spec	

Horiz



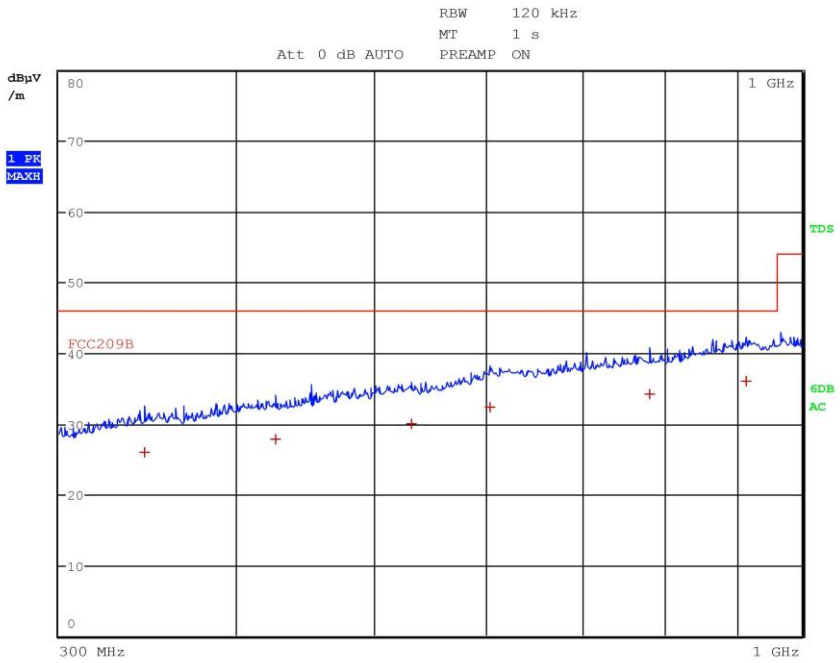
Final Measurement

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

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	351.480000000 MHz	26.14	Quasi Peak	-19.88
1	440.600000000 MHz	27.94	Quasi Peak	-18.08
1	542.760000000 MHz	29.93	Quasi Peak	-16.09
1	655.920000000 MHz	32.37	Quasi Peak	-13.65
1	755.960000000 MHz	34.80	Quasi Peak	-11.22
1	929.200000000 MHz	35.78	Quasi Peak	-10.24

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Diagnosi BT
Operator	Gandini 17199404
Test Spec	

Vert

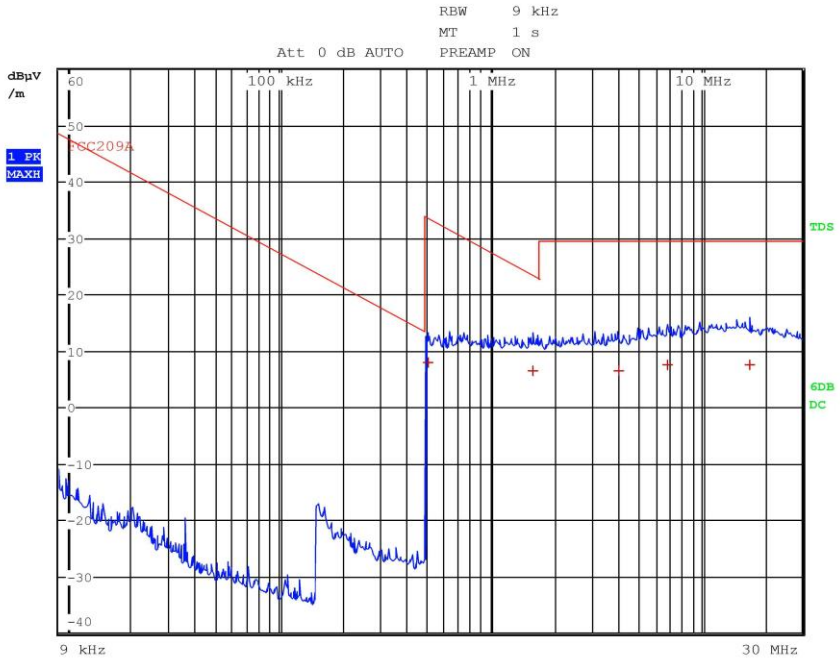


Final Measurement

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

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	344.560000000 MHz	25.97	Quasi Peak	-20.05
1	425.920000000 MHz	27.76	Quasi Peak	-18.26
1	531.400000000 MHz	30.00	Quasi Peak	-16.02
1	603.080000000 MHz	32.39	Quasi Peak	-13.63
1	781.520000000 MHz	34.15	Quasi Peak	-11.87
1	913.240000000 MHz	36.10	Quasi Peak	-9.92

Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Diagnosi BT
Operator Gandini 17199405
Test Spec
Loop



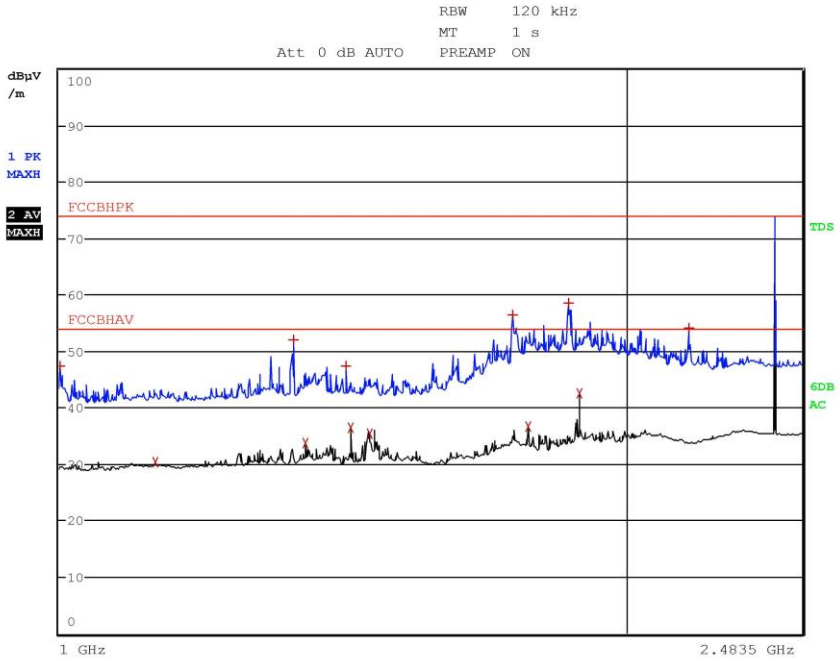
Final Measurement

Meas Time: 1 s
Margin: 20 dB
Subranges: 5

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	502.000000000 kHz	7.99	Quasi Peak	-25.60
1	1.594000000 MHz	6.60	Quasi Peak	-16.96
1	4.058000000 MHz	6.55	Quasi Peak	-22.99
1	6.902000000 MHz	7.59	Quasi Peak	-21.95
1	16.958000000 MHz	7.56	Quasi Peak	-21.98

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmin
Operator	Gandini 17199406
Test Spec	

Vert



Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmin
Operator Gandini 17199406
Test Spec
Vert

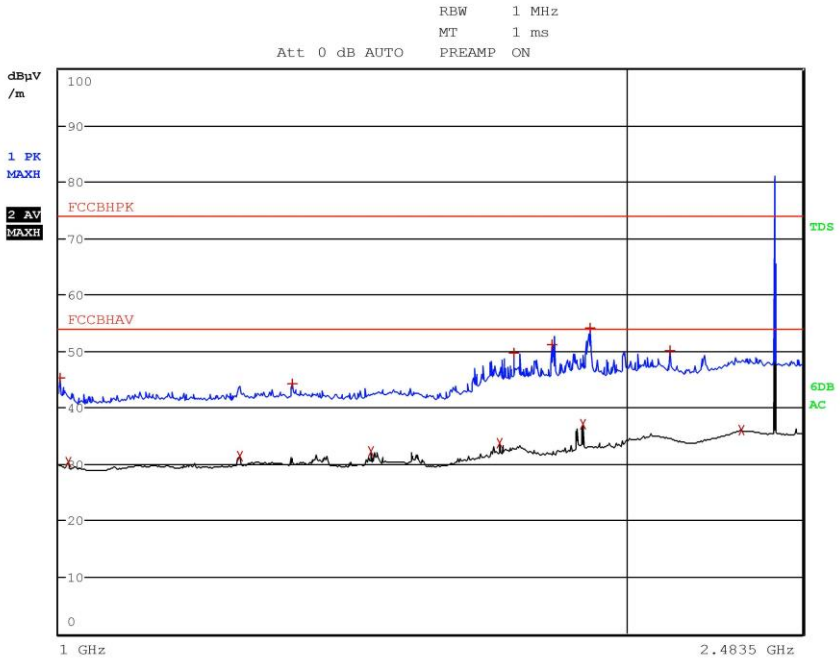
Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 12

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	1.001200000 GHz	47.32	Max Peak	-26.66
2	1.124800000 GHz	30.45	Average	-23.53
1	1.332000000 GHz	51.97	Max Peak	-22.01
2	1.352400000 GHz	33.75	Average	-20.23
1	1.419600000 GHz	47.28	Max Peak	-26.70
2	1.428000000 GHz	36.53	Average	-17.45
2	1.462000000 GHz	35.44	Average	-18.54
1	1.742400000 GHz	56.46	Max Peak	-17.52
2	1.776000000 GHz	36.76	Average	-17.22
1	1.867200000 GHz	58.55	Max Peak	-15.43
2	1.890400000 GHz	42.48	Average	-11.50
1	2.161600000 GHz	54.01	Max Peak	-19.97

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmin
Operator	Gandini 17199407
Test Spec	

Horiz



Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmin
Operator Gandini 17199407
Test Spec
Horiz

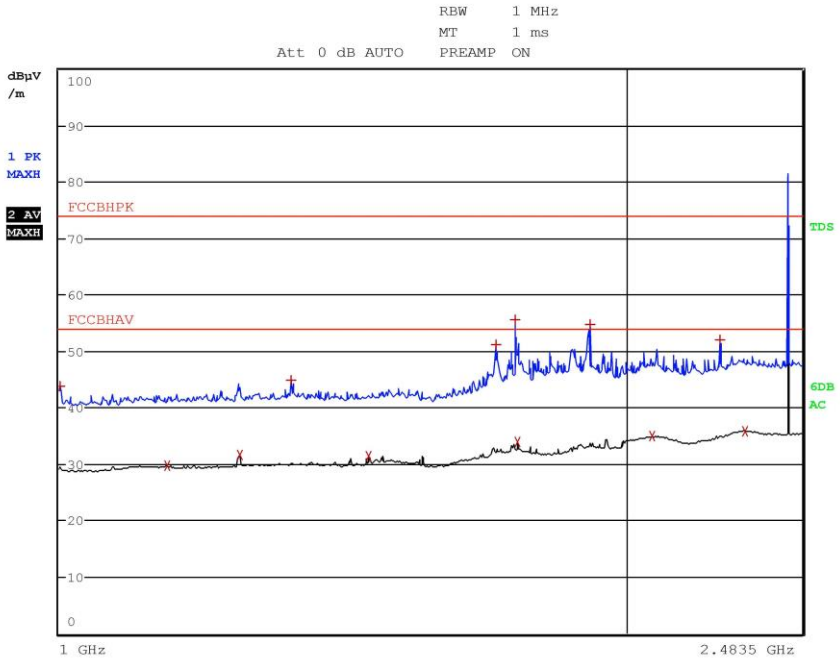
Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 12

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	1.000800000 GHz	45.31	Max Peak	-28.67
2	1.010800000 GHz	30.28	Average	-23.70
2	1.248000000 GHz	31.39	Average	-22.59
1	1.329600000 GHz	44.20	Max Peak	-29.78
2	1.464800000 GHz	32.30	Average	-21.68
2	1.715600000 GHz	33.79	Average	-20.19
1	1.744000000 GHz	49.59	Max Peak	-24.39
1	1.829200000 GHz	51.19	Max Peak	-22.79
2	1.897600000 GHz	36.98	Average	-17.00
1	1.916000000 GHz	54.02	Max Peak	-19.96
1	2.112800000 GHz	50.08	Max Peak	-23.90
2	2.306000000 GHz	35.97	Average	-18.01

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmid
Operator	Gandini 17199408
Test Spec	

Horiz



Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmid
Operator Gandini 17199408
Test Spec
Horiz

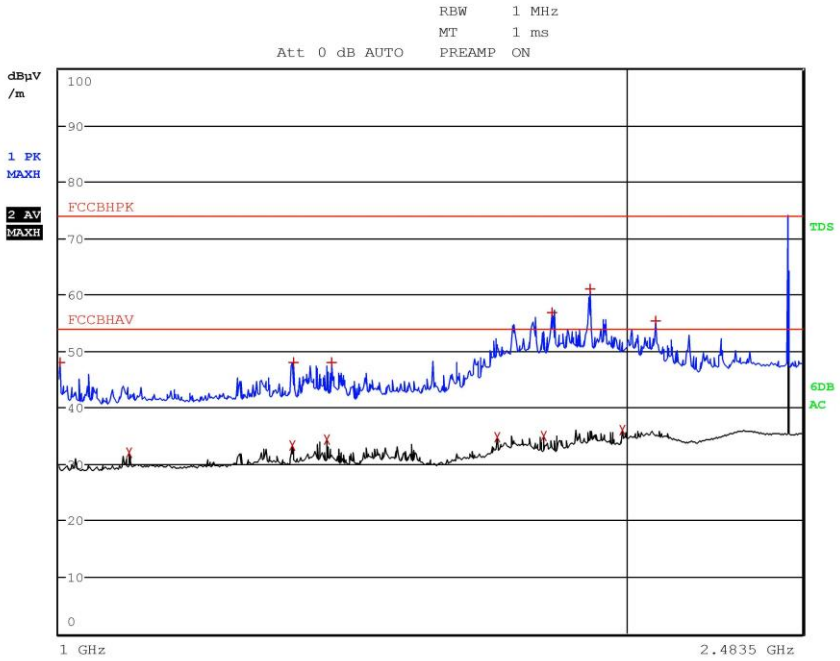
Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 12

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	1.001600000 GHz	43.86	Max Peak	-30.12
2	1.142000000 GHz	29.71	Average	-24.27
2	1.248000000 GHz	31.58	Average	-22.40
1	1.328000000 GHz	44.76	Max Peak	-29.22
2	1.460400000 GHz	31.35	Average	-22.63
1	1.706400000 GHz	51.08	Max Peak	-22.90
1	1.746800000 GHz	55.50	Max Peak	-18.48
2	1.751200000 GHz	33.94	Average	-20.04
1	1.914400000 GHz	54.77	Max Peak	-19.21
2	2.067600000 GHz	34.99	Average	-18.99
1	2.246800000 GHz	52.06	Max Peak	-21.92
2	2.313600000 GHz	35.87	Average	-18.11

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmid
Operator	Gandini 17199409
Test Spec	

Vert



Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmid
Operator Gandini 17199409
Test Spec
Vert

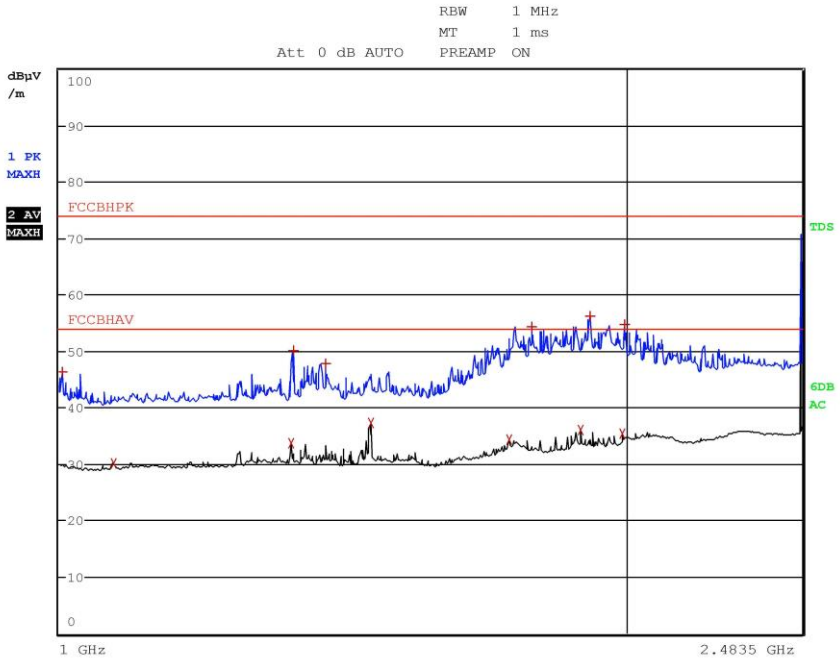
Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 12

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	1.001600000 GHz	48.04	Max Peak	-25.94
2	1.090000000 GHz	32.01	Average	-21.97
2	1.330400000 GHz	33.31	Average	-20.67
1	1.331600000 GHz	48.04	Max Peak	-25.94
2	1.388800000 GHz	34.40	Average	-19.58
1	1.396000000 GHz	47.97	Max Peak	-26.01
2	1.708800000 GHz	34.71	Average	-19.27
2	1.808400000 GHz	34.94	Average	-19.04
1	1.829200000 GHz	56.92	Max Peak	-17.06
1	1.915200000 GHz	60.99	Max Peak	-12.99
2	1.992800000 GHz	36.09	Average	-17.89
1	2.074400000 GHz	55.31	Max Peak	-18.67

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmax
Operator	Gandini 17199410
Test Spec	

Vert



Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmax
Operator Gandini 17199410
Test Spec
Vert

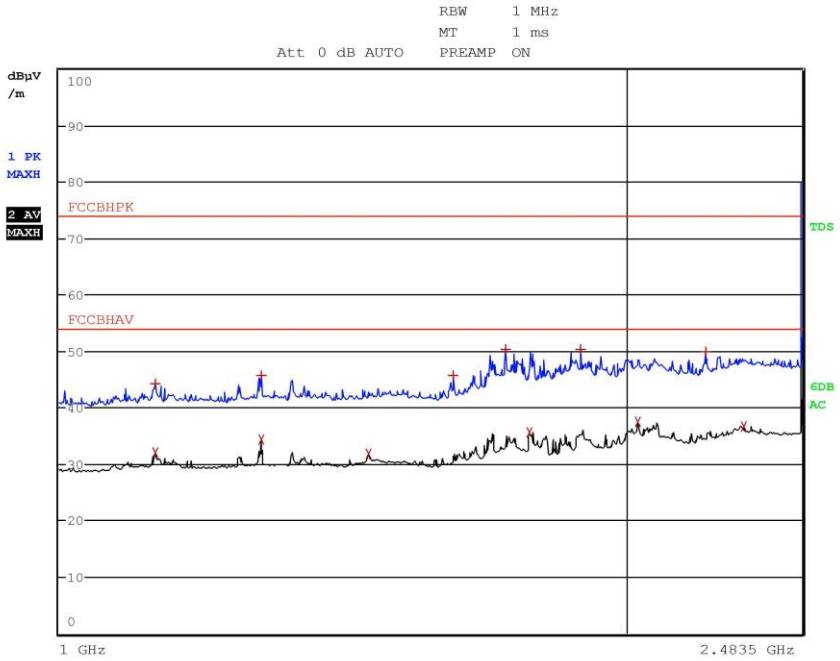
Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 12

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	1.004400000 GHz	46.22	Max Peak	-27.76
2	1.068400000 GHz	30.22	Average	-23.76
2	1.328000000 GHz	33.70	Average	-20.28
1	1.332800000 GHz	50.04	Max Peak	-23.94
1	1.384800000 GHz	47.75	Max Peak	-26.23
2	1.465200000 GHz	37.19	Average	-16.79
2	1.735600000 GHz	34.28	Average	-19.70
1	1.782400000 GHz	54.35	Max Peak	-19.63
2	1.893600000 GHz	35.98	Average	-18.00
1	1.915200000 GHz	56.19	Max Peak	-17.79
2	1.991600000 GHz	35.40	Average	-18.58
1	1.998400000 GHz	54.80	Max Peak	-19.18

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmax
Operator	Gandini 17199411
Test Spec	

Horiz



Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmax
Operator Gandini 17199411
Test Spec
Horiz

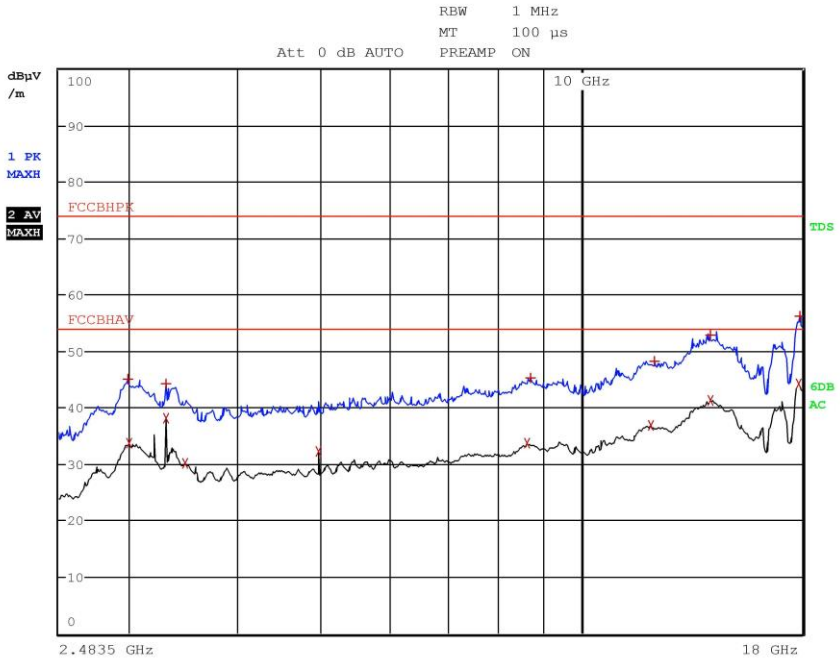
Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 12

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	1.124800000 GHz	44.31	Max Peak	-29.67
2	1.124800000 GHz	31.97	Average	-22.01
1	1.280000000 GHz	45.65	Max Peak	-28.33
2	1.280000000 GHz	34.29	Average	-19.69
2	1.459600000 GHz	31.73	Average	-22.25
1	1.620000000 GHz	45.60	Max Peak	-28.38
1	1.727200000 GHz	50.31	Max Peak	-23.67
2	1.778400000 GHz	35.66	Average	-18.32
1	1.894000000 GHz	50.21	Max Peak	-23.77
2	2.031200000 GHz	37.60	Average	-16.38
1	2.206400000 GHz	49.92	Max Peak	-24.06
2	2.312000000 GHz	36.68	Average	-17.30

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmax
Operator	Gandini 17199412
Test Spec	

Horiz



Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmax
Operator Gandini 17199412
Test Spec
Horiz

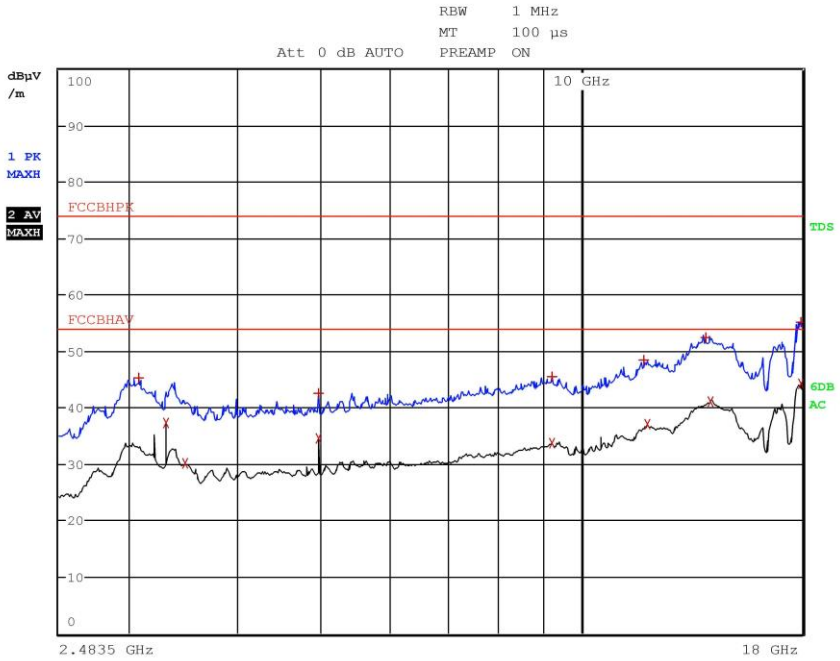
Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 14

Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	2.982300000 GHz	45.11	Max Peak	-28.87
2	2.995900000 GHz	33.77	Average	-20.21
2	3.306700000 GHz	38.17	Average	-15.81
1	3.306700000 GHz	44.23	Max Peak	-29.75
2	3.481900000 GHz	30.08	Average	-23.90
2	4.959900000 GHz	32.21	Average	-21.77
2	8.641100000 GHz	33.66	Average	-20.32
1	8.737500000 GHz	45.27	Max Peak	-28.71
2	12.017500000 GHz	36.91	Average	-17.07
1	12.150700000 GHz	48.22	Max Peak	-25.76
1	14.074700000 GHz	52.81	Max Peak	-21.17
2	14.105100000 GHz	41.34	Average	-12.64
2	17.836300000 GHz	44.22	Average	-9.76
1	17.907100000 GHz	56.11	Max Peak	-17.87

Meas Type	Emission
Equipment under Test	
Manufacturer	
OP Condition	Tx - Fmax
Operator	Gandini 17199413
Test Spec	

Vert

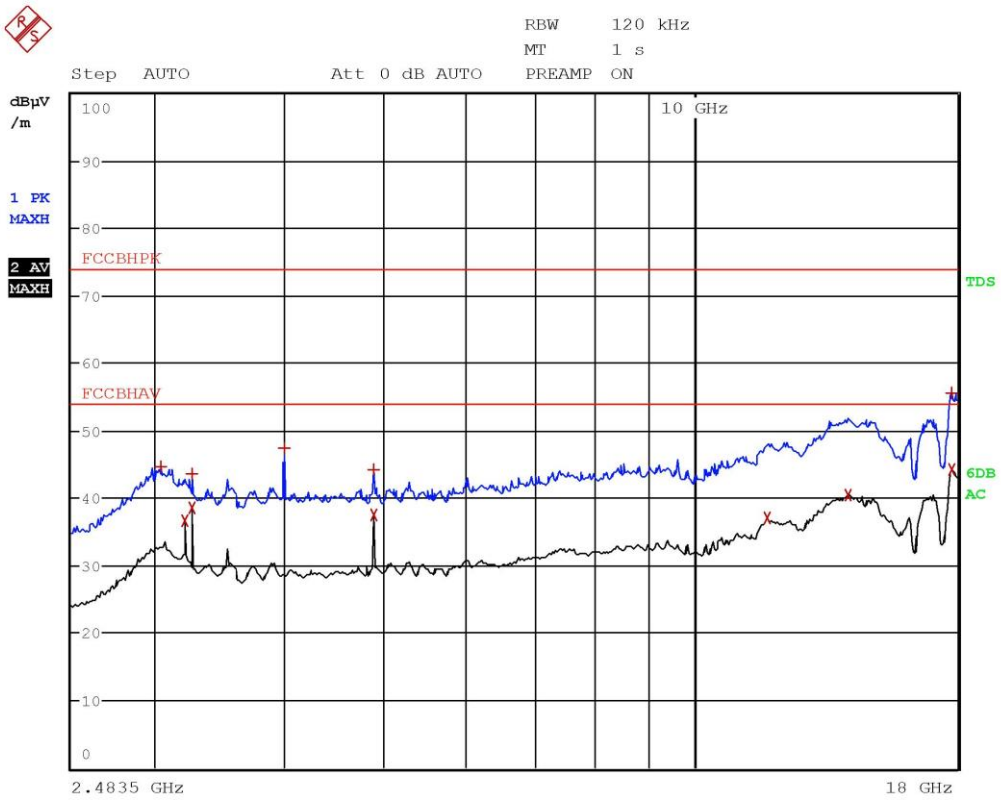


Meas Type Emission
Equipment under Test
Manufacturer
OP Condition Tx - Fmax
Operator Gandini 17199413
Test Spec
Vert

Final Measurement

Meas Time: 1 s
Margin: 30 dB
Subranges: 13

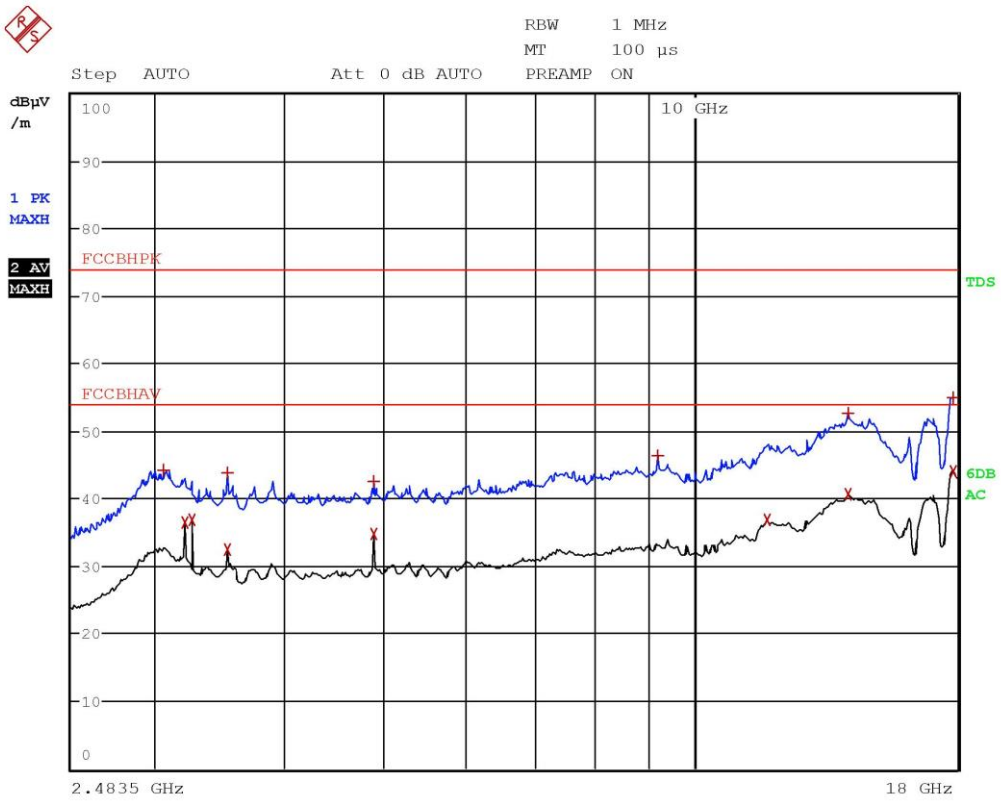
Trace	Frequency	Level (dBµV/m)	Detector	Delta Limit/dB
1	3.074700000 GHz	45.28	Max Peak	-28.70
2	3.306700000 GHz	37.30	Average	-16.68
2	3.481500000 GHz	30.18	Average	-23.80
1	4.959500000 GHz	42.57	Max Peak	-31.41
2	4.959900000 GHz	34.60	Average	-19.38
1	9.229500000 GHz	45.56	Max Peak	-28.42
2	9.229900000 GHz	33.73	Average	-20.25
1	11.819500000 GHz	48.44	Max Peak	-25.54
2	11.925500000 GHz	37.12	Average	-16.86
1	13.928300000 GHz	52.32	Max Peak	-21.66
2	14.104300000 GHz	41.09	Average	-12.89
2	17.949900000 GHz	44.15	Average	-9.83
1	17.954700000 GHz	55.24	Max Peak	-18.74



Gandini 17199414-Vert-Tx Fmid

EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	3.0291 GHz	44.61	-29.36
2 Average	3.2055 GHz	36.70	-17.27
2 Average	3.2547 GHz	38.53	-15.44
1 Max Peak	3.2547 GHz	43.66	-30.31
1 Max Peak	3.9919 GHz	47.28	-26.69
1 Max Peak	4.8819 GHz	44.20	-29.77
2 Average	4.8819 GHz	37.40	-16.57
2 Average	11.7743 GHz	36.97	-17.00
2 Average	14.0771 GHz	40.52	-13.45
1 Max Peak	17.7639 GHz	55.57	-18.40
2 Average	17.7695 GHz	44.18	-9.79

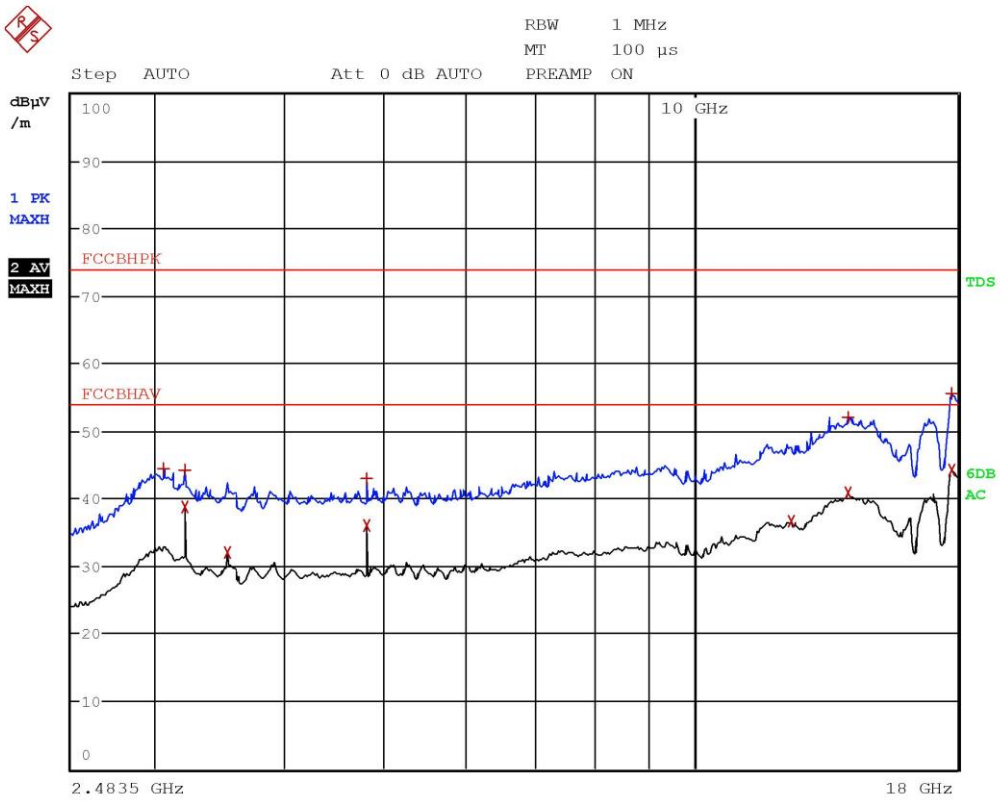
Gandini 17199414-Vert-Tx Fmid



Gandini 17199415-Horiz-Tx Fmid

EDIT PEAK LIST (Prescan Results)			
Trace1:	FCCBHPK		
Trace2:	FCCBHAV		
Trace3:	---		
TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	3.0547 GHz	44.19	-29.78
2 Average	3.2055 GHz	36.50	-17.47
2 Average	3.2547 GHz	36.96	-17.01
1 Max Peak	3.5259 GHz	43.70	-30.27
2 Average	3.5259 GHz	32.51	-21.46
1 Max Peak	4.8823 GHz	42.53	-31.44
2 Average	4.8823 GHz	34.83	-19.14
1 Max Peak	9.2019 GHz	46.25	-27.72
2 Average	11.7695 GHz	36.80	-17.17
1 Max Peak	14.1015 GHz	52.63	-21.34
2 Average	14.1047 GHz	40.65	-13.32
1 Max Peak	17.8379 GHz	55.03	-18.94
2 Average	17.8395 GHz	44.09	-9.88

Gandini 17199415-Horiz-Tx Fmid



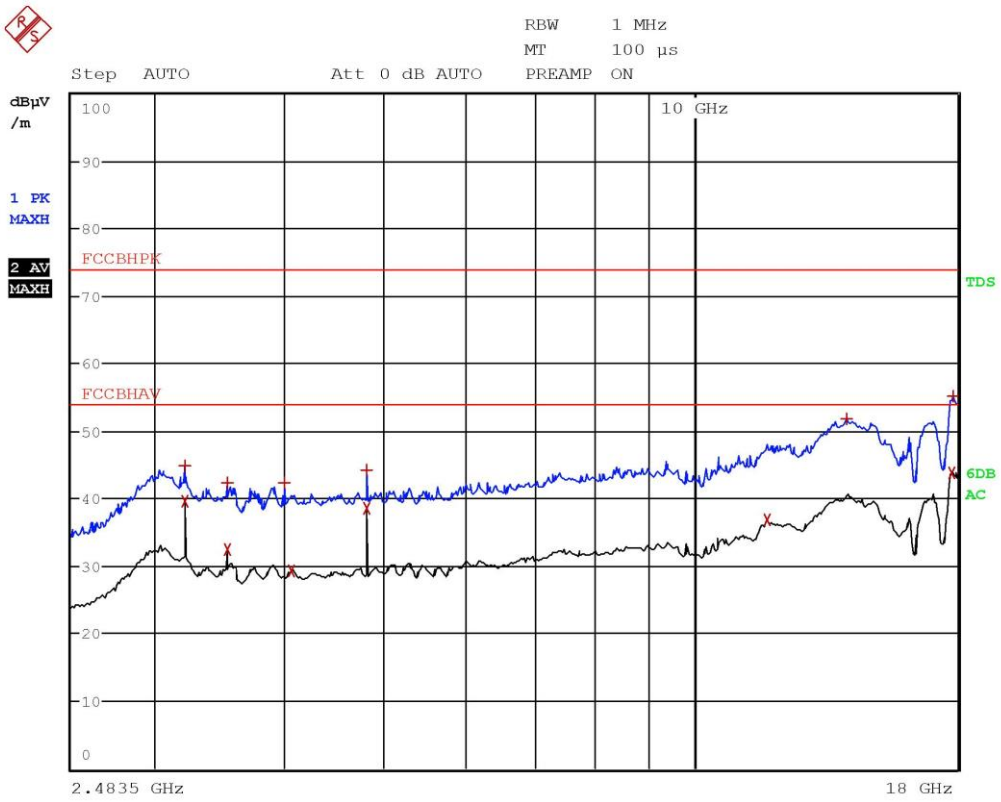
Gandini 17199416-Horiz-Tx Fmin

EDIT PEAK LIST (Prescan Results)

Trace1:	FCCBHPK
Trace2:	FCCBHAV
Trace3:	---

TRACE	FREQUENCY	LEVEL dBµV/m	DELTA LIMIT dB
1 Max Peak	3.0559 GHz	44.34	-29.63
1 Max Peak	3.2023 GHz	44.23	-29.74
2 Average	3.2027 GHz	38.71	-15.26
2 Average	3.5259 GHz	32.06	-21.91
2 Average	4.8039 GHz	35.93	-18.04
1 Max Peak	4.8043 GHz	42.98	-30.99
2 Average	12.4051 GHz	36.68	-17.29
2 Average	14.1023 GHz	40.77	-13.20
1 Max Peak	14.1051 GHz	52.07	-21.90
2 Average	17.7675 GHz	44.29	-9.68
1 Max Peak	17.7999 GHz	55.59	-18.38

Gandini 17199416-Horiz-Tx Fmin



Gandini 17199417-Vert-Tx Fmin