DEKRA Testing and Certification, S.A.U.
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2 · 29590 Campanillas · Málaga · España
C.I.F. A29 507 456

DEKRA

ENAC ENSAYOS Nº 51/LE147

Test report No:
NIE: 56848REM.004

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-17 Edition) & ICES-003 Issue 6 (Updated 04-2017)

Identification of item tested	Automotive infotainment system
Trademark	Mercedes-Benz
Model and /or type reference	NTG6N HIGH
Other identification of the product	S/N: HBM249JB002144 HW Version: D4 SW Version: E412.007 FCC ID: T8GNTG6NH IC: 6434A-NTG6NH
Features	FM, AM, DAB, TV, USB, HDD, Bluetooth, WLAN, GPS.
Manufacturer	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH BECKER-GOERING-STR. 16; 76307. KARLSBAD GERMANY
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-17 Edition) & ICES-003 (Updated 04-2017)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC LAB Manager  RAFAEL LÓPEZ MARTÍN 2019.05.02 08:24:48 +02'00'
Date of issue	2019-05-02
Report template No	FDT08_21

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Uncertainty

Uncertainty (factor k=2) was calculated according to the DEKRA Testing and Certification internal document PODT000.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is I = ± 4,9 dB for quasi-peak measurements, I = ± 4,6 dB for peak measurements (k = 2)

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 26 GHz is I = ± 2,6 dB for peaks and average measurements (k = 2)

Data provided by the client

The sample consist of an automotive head unit to be installed in cars with the following features: FM, AM, DAB, TV, USB, HDD, Bluetooth, WLAN, GPS.

Usage of samples

Samples under test have been selected by: The client.

Sample S/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
56848G/059	Automotive infotainment System	NTG6N HIGH	HBM249JB002144	2019-01-11

Auxiliary elements used with the sample S/01:

Control Nº	Description	Model	Serial Nº	Date of reception
56848G/031	Display	Daimler NTG6	1704KS15A00564	2019-01-11
56848G/032	HMI-CAN box	---	H0034717	2019-01-11
56848G/033	HU-CAN box	---	H0034687	2019-01-11
56848G/034	Cable harness 1	---	---	2019-01-11

Test sample description

Ports..... :	Port name and description			Cable			
				Specified length [m]	Attached during test	Shielded	
	N/A				☐	☐	
	N/A				☐	☐	
	N/A				☐	☐	
Supplymentary information to the ports..... :	*N/A*						
Rated power supply ..... :	Voltage and Frequency			Reference poles			
				L1	L2	L3	N	PE
	☐	AC:		☐	☐	☐	☐	☐
	☐	AC:		☐	☐	☐	☐	☐
	☒	DC: 12Vdc.						
	☐	DC:						
Rated Power ..... :	Not provided data						
Clock frequencies ..... :	Not provided data						
Other parameters..... :	FCC ID: T8GNTG6NH IC: 6434A-NTG6NH						
Software version ..... :	E412.007						
Hardware version..... :	D4						
Dimensions in cm (W x H x D).... :	Not provided data						
Mounting position..... :	☐	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☒	Other: Vehicular environment equipment					
Modules/parts ..... :	Module/parts of test item		Type		Manufacturer		
	Not Applicable						
Accessories (not part of the test item)..... :	Description		Type		Manufacturer		
	Not Applicable						

Documents as provided by the applicant.....:	Description	File name	Issue date
	Not Applicable		

Identification of the client

HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
BECKER-GOERING-STR. 16; 76307. KARLSBAD GERMANY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2019-02-04
Date (finish)	2019-02-06

Document history

Report number	Date	Description
56848REM.004	2019-05-02	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 ºC Max. = 35 ºC
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The test have been performed by the technical personnel: Victoria Olmedo, Alberto Parada & Lorena Oviedo.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

Summary

Emission Test		
Requirement – Test case	**Verdict**	**Remark**
Radiated emission. Electromagnetic field measure (30 KHz – 1000 MHz)	P	---
Radiated emission. Electromagnetic field measure (1 GHz – 18 GHz)	P	---
Radiated emission. Electromagnetic field measure (18 GHz – 26 GHz)	P	---
Continuous conducted emission (150 KHz – 30 MHz)	N/A	---
Supplymentary information and remarks:		

List of equipment used during the test

CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
4526	EMI TEST Receiver	ROHDE & SCHWARZ	ESU26	2018-02-21	2020-02-21
4578	Bilog Antenna	ETS LINDGREN	3142E	2017-04-03	2020-04-03
4612	Horn Antenna	SCHWARZBECK	BBHA 9120 D	2016-12-19	2019-12-19
3783	Preamplifier	BONN ELEKTRONIK	BLMA 0118-3A	2018-03-28	2019-03-28
4656	Horn Antenna	SCHWARZBECK	BBHA 9170	2017-03-24	2020-03-24
4570	Thermohigrometer	HW GROUP	HWg-STE	2018-04-03	2019-04-03
4567	Thermohigrometer	HW GROUP	HWg-STE	2018-04-04	2019-04-04
4522	EMC measurement software	ROHDE & SCHWARZ	EMC32 V9.01	---	---
6121	Preamplifier	BONN ELEKTRONIK	BLNA 0160-01N	2018-03-20	2019-03-20
4729	Preamplifier	BONN ELEKTRONIK	BLMA 1840-1M	2018-02-23	2020-02-23
1650	Artificial network	SCHWARZBECK	NNLK8121	2017-09-20	2019-09-20

Appendix A: Test results

APPENDIX A CONTENT

DESCRIPTION OF THE OPERATION MODES

The operation modes described in this paragraph constitute a functionality of the sample under test for itself.

The operation modes used by the samples to which the present report refers, are shown in the following table:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. Stand Alone Basis. Operational mode = BB1-MAC1 (2G4)+BB0-MAC0 (5G). Power supply: 12 Vdc.
OM#02	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB1-MAC1 (5G). Power supply: 12 Vdc.
OM#03	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB0-MAC0 (5G). Power supply: 12 Vdc.
OM#04	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (5G)+BT-BB(2G4). Power supply: 12 Vdc.

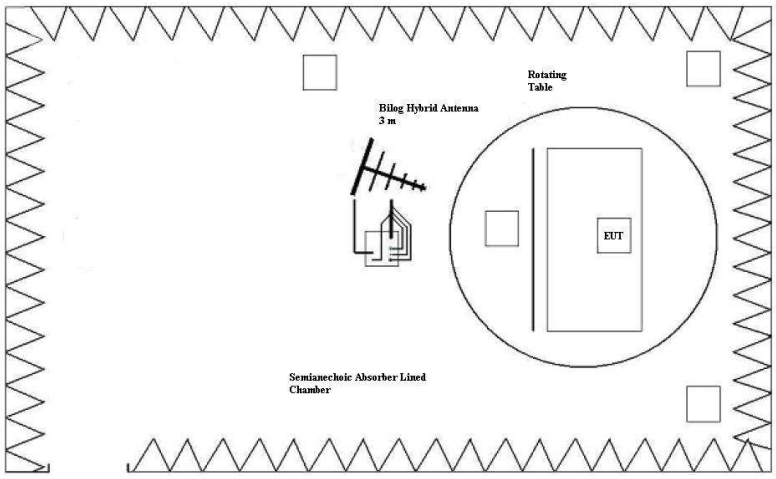
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 Issue 6 (Updated 04-2017)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 Issue 6 (Updated 04-2017)

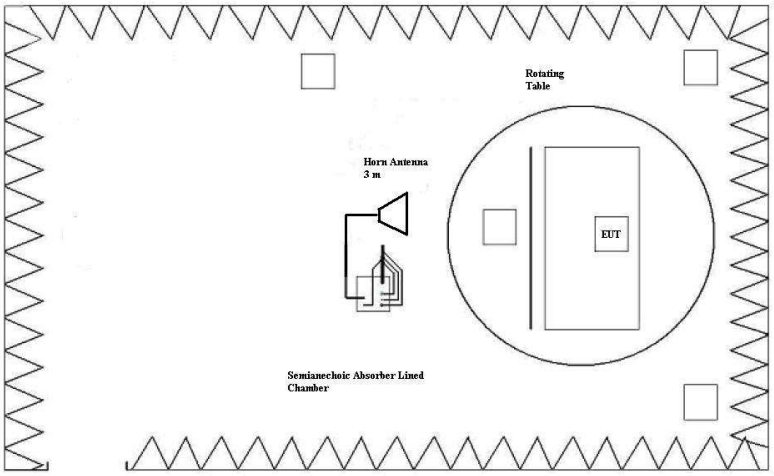
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-17 Edition), Secs. 15.109 & ICES-003 Issue 6 (Updated 04-2017) in the frequency range 30 MHz to 26 GHz for class B equipments.

Frequency range (MHz)	QP Limit for 3 m		PK Limit for 3 m
	(μV/m)	(dBμV/m)	(dBμV/m)
30 to 88	100	40	---
88 to 216	150	43.5	---
216 to 960	200	46	---
Above 960	500	54	74



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

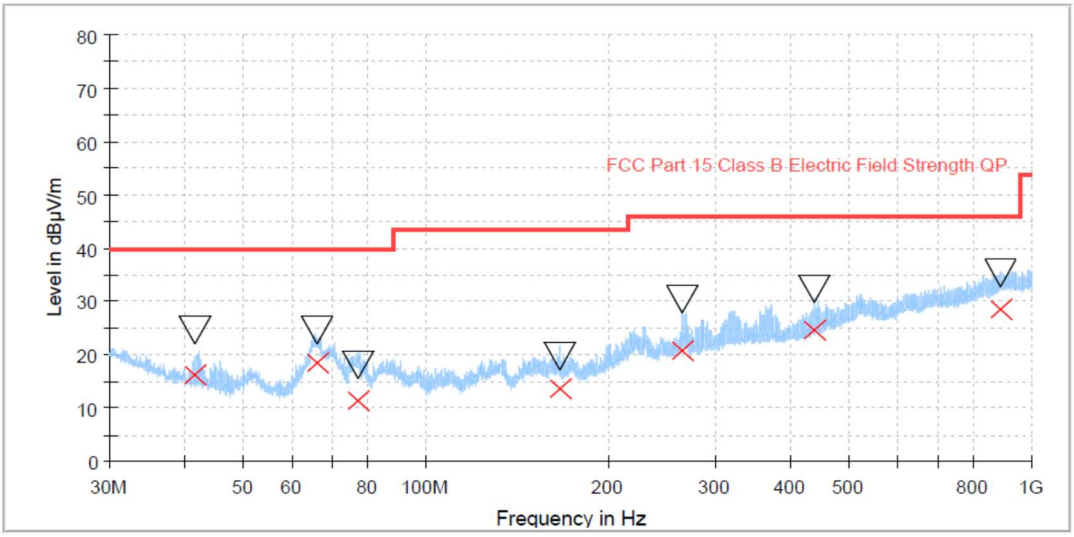
TESTED SAMPLE:	S/01
TESTED OPERATION MODES:	OM#01; OM#02; OM#03 & OM#04
TEST RESULTS:	CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR1_H	Range: 1 GHz - 18 GHz. Horizontal polarization.	P
CR0101HR1_V	Range: 1 GHz - 18 GHz. Vertical polarization.	P
CR0101HR2_H	Range: 18 GHz - 26 GHz. Horizontal polarization.	P
CR0101HR2_V	Range: 18 GHz - 26 GHz. Vertical polarization.	P
CR0102LR	Range: 30 MHz - 1000 MHz.	P
CR0102HR1_H	Range: 1 GHz - 18 GHz. Horizontal polarization.	P
CR0102HR1_V	Range: 1 GHz - 18 GHz. Vertical polarization.	P
CR0102HR2_H	Range: 18 GHz - 26 GHz. Horizontal polarization.	P
CR0102HR2_V	Range: 18 GHz - 26 GHz. Vertical polarization.	P
CR0103LR	Range: 30 MHz - 1000 MHz.	P
CR0103HR1_H	Range: 1 GHz - 18 GHz. Horizontal polarization.	P
CR0103HR1_V	Range: 1 GHz - 18 GHz. Vertical polarization.	P
CR0103HR2_H	Range: 18 GHz - 26 GHz. Horizontal polarization.	P
CR0103HR2_V	Range: 18 GHz - 26 GHz. Vertical polarization.	P
CR0104LR	Range: 30 MHz - 1000 MHz.	P
CR0104HR1_H	Range: 1 GHz - 18 GHz. Horizontal polarization.	P
CR0104HR1_V	Range: 1 GHz - 18 GHz. Vertical polarization.	P
CR0104HR2_H	Range: 18 GHz - 26 GHz. Horizontal polarization.	P
CR0104HR2_V	Range: 18 GHz - 26 GHz. Vertical polarization.	P

Radiated Emission. CR0101LR

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand Alone Basis. Operational mode = BB1-MAC1 (2G4)+BB0-MAC0 (5G). Power supply: 12 Vdc

Full Spectrum



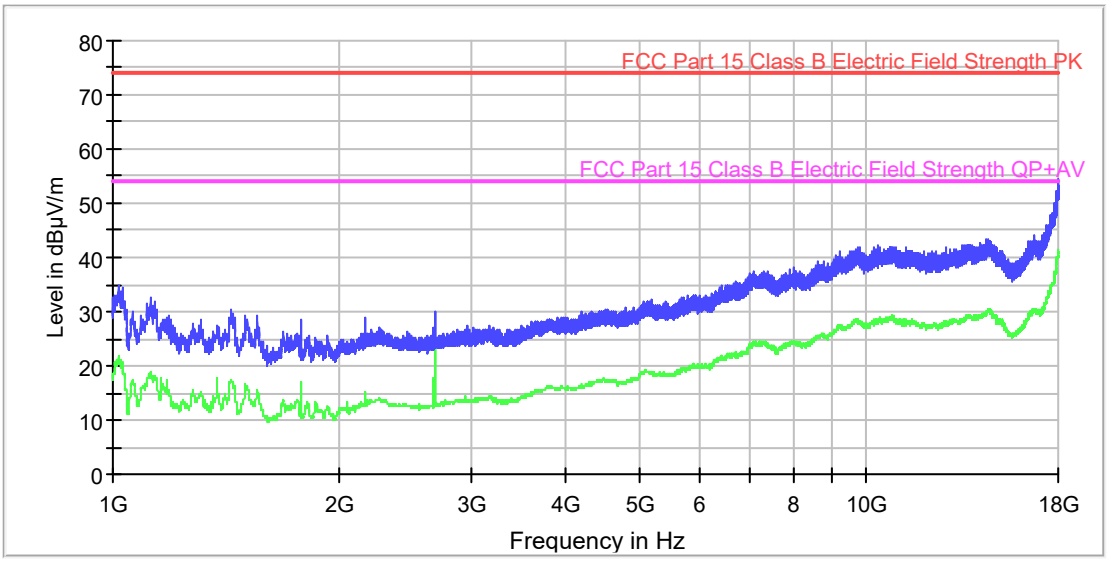
Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
41.610000	24.61	16.20	100.0	V	0.0
65.921000	24.64	18.56	180.0	V	-133.0
77.250000	18.29	11.49	116.0	V	117.0
166.260000	19.80	13.70	111.0	V	-153.0
265.549000	30.60	20.58	100.0	H	74.0
437.918000	32.46	24.55	140.0	V	-38.0
889.893000	35.23	28.55	297.0	V	60.0

Radiated Emission. CR0101HR1_H

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand Alone Basis. Operational mode = BB1-MAC1 (2G4)+BB0-MAC0 (5G). Power supply: 12 Vdc. Horizontal Polarization

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

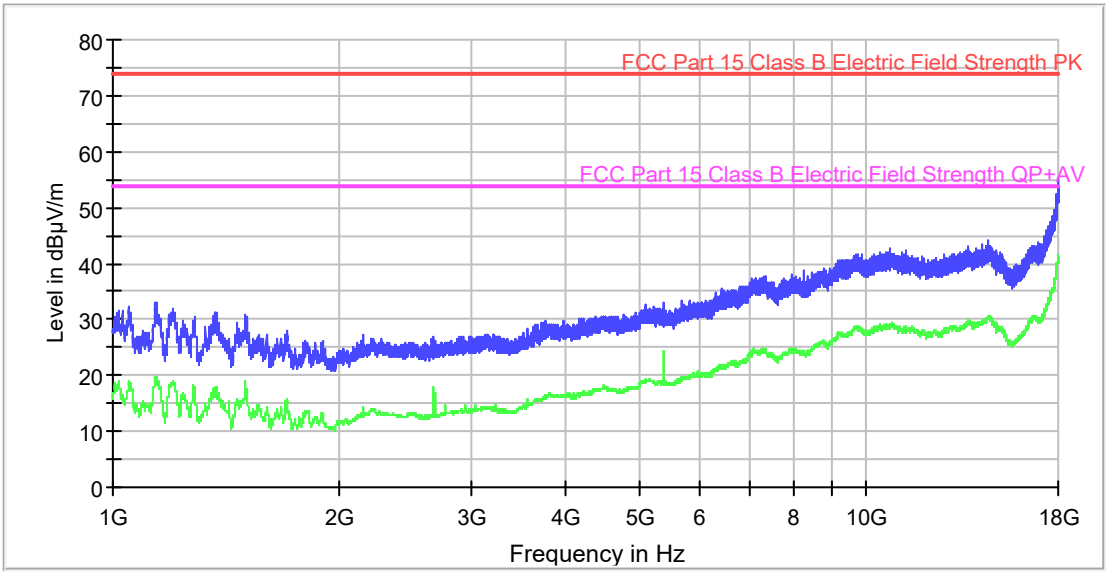
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1017.600000	34.9	21.9
4178.800000	30.0	16.5
5897.600000	33.0	20.3
7402.400000	37.4	23.9
9208.800000	41.1	27.2
10376.800000	42.2	28.4
11268.800000	41.9	28.4
14513.600000	43.4	30.1
14660.000000	43.1	29.8
17990.800000	54.4	40.9

Radiated Emission. CR0101HR1_V

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand Alone Basis. Operational mode = BB1-MAC1 (2G4)+BB0-MAC0 (5G). Power supply: 12 Vdc Vertical polarization

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

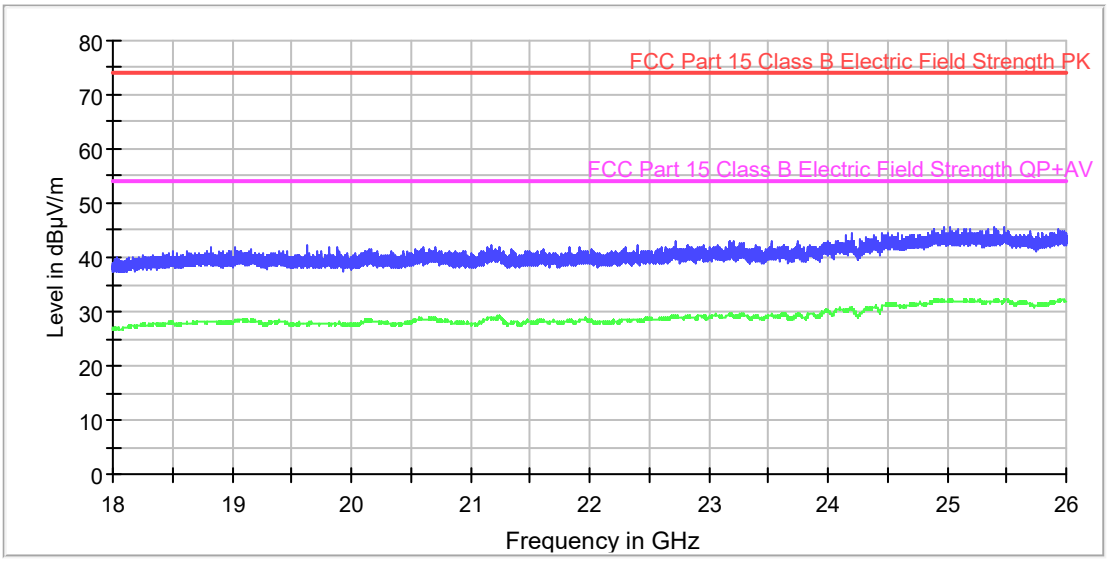
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1145.200000	32.9	18.8
4374.400000	30.6	17.3
5702.800000	33.5	19.5
7359.600000	37.7	24.5
9488.000000	40.7	27.4
10783.200000	42.8	29.0
11274.800000	42.4	28.5
14550.800000	44.0	30.4
14618.800000	43.0	30.3
17998.000000	55.1	41.4

Radiated Emission. CR0101HR2_H

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand Alone Basis. Operational mode = BB1-MAC1 (2G4)+BB0-MAC0 (5G). Power supply: 12 Vdc. Horizontal polarization

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

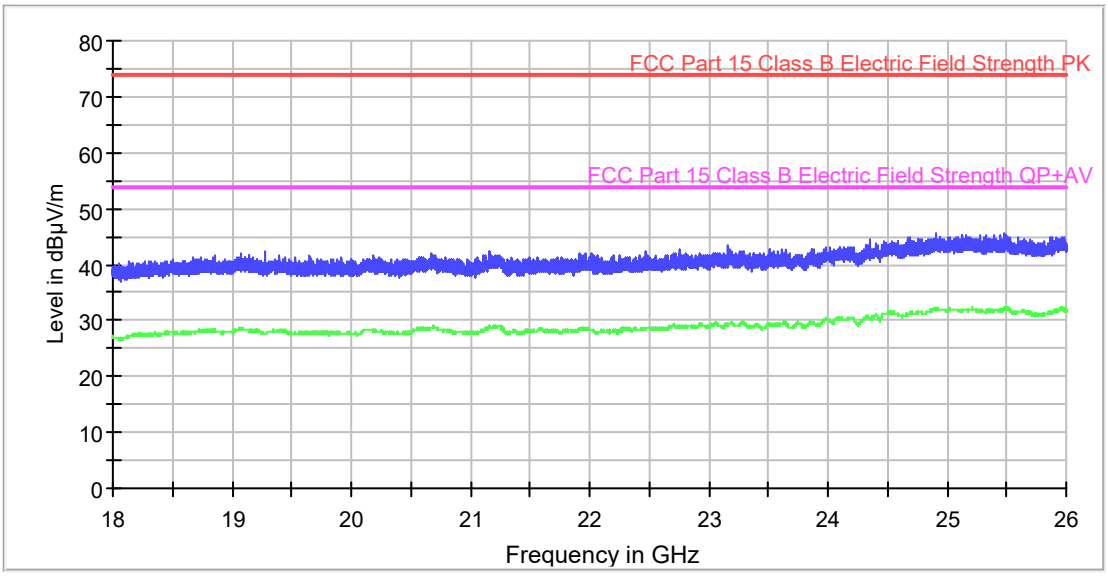
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18624.800000	41.2	27.9
19022.800000	42.0	28.2
19622.800000	42.3	27.9
21177.600000	42.3	28.7
21240.400000	42.0	29.0
22728.400000	42.8	29.1
23214.800000	43.0	29.1
24198.800000	44.4	30.5
24974.400000	45.5	32.0
25397.600000	45.7	31.9

Radiated Emission. CR0101HR2_V

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand Alone Basis. Operational mode = BB1-MAC1 (2G4)+BB0-MAC0 (5G). Power supply: 12 Vdc Vertical polarization

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

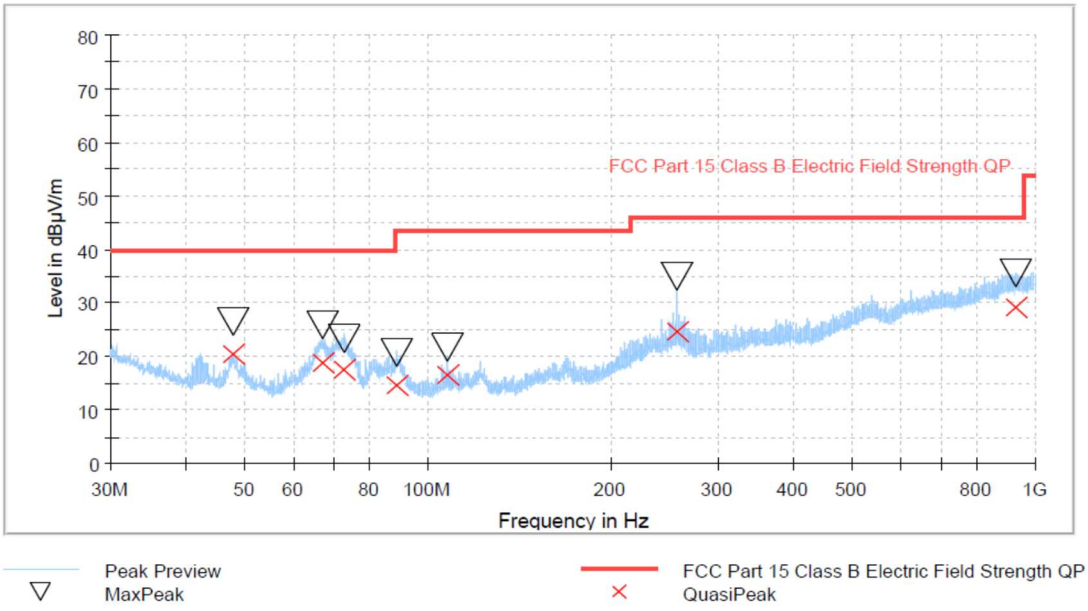
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18742.400000	41.3	28.0
19277.600000	42.3	27.6
19655.200000	41.8	27.8
21163.600000	42.4	28.8
21959.600000	42.1	28.7
22757.600000	42.6	29.0
23163.600000	43.3	29.2
24350.800000	44.3	30.5
24905.600000	45.5	32.0
25483.600000	45.5	32.0

Radiated Emission. CR0102LR

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#02
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB1-MAC1 (5G). Power supply: 12 Vdc.

Full Spectrum



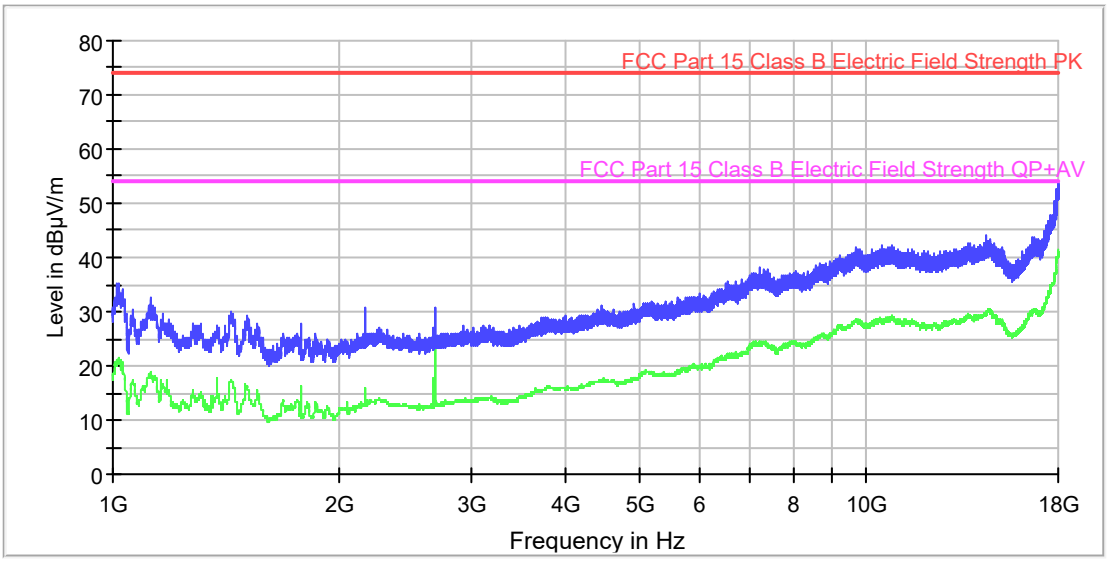
Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
47.745000	26.66	20.31	130.0	V	40.0
67.288000	25.98	18.93	138.0	V	-163.0
72.589000	23.44	17.37	180.0	V	-93.0
88.621000	20.84	14.53	111.0	V	79.0
107.782000	21.56	16.45	121.0	V	24.0
256.236000	35.07	24.56	100.0	V	107.0
925.667000	35.60	29.11	267.0	H	-58.0

Radiated Emission. CR0102HR1_H

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#02
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB1-MAC1 (5G). Horizontal polarization

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

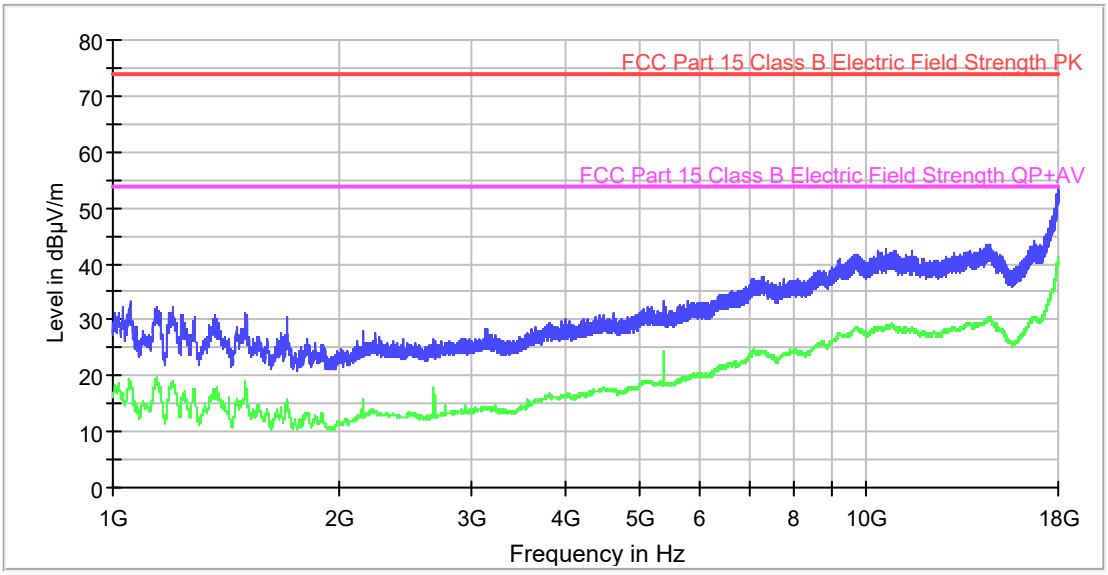
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1014.400000	35.2	21.2
4394.800000	30.2	17.1
6032.800000	33.1	20.0
7220.800000	38.1	24.1
9458.800000	40.5	27.2
10830.800000	42.2	29.0
11523.600000	41.6	28.3
14454.800000	44.0	30.0
14609.200000	42.7	30.2
17994.800000	54.2	41.1

Radiated Emission. CR0102HR1_V

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#02
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB1-MAC1 (5G). Vertical polarization

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

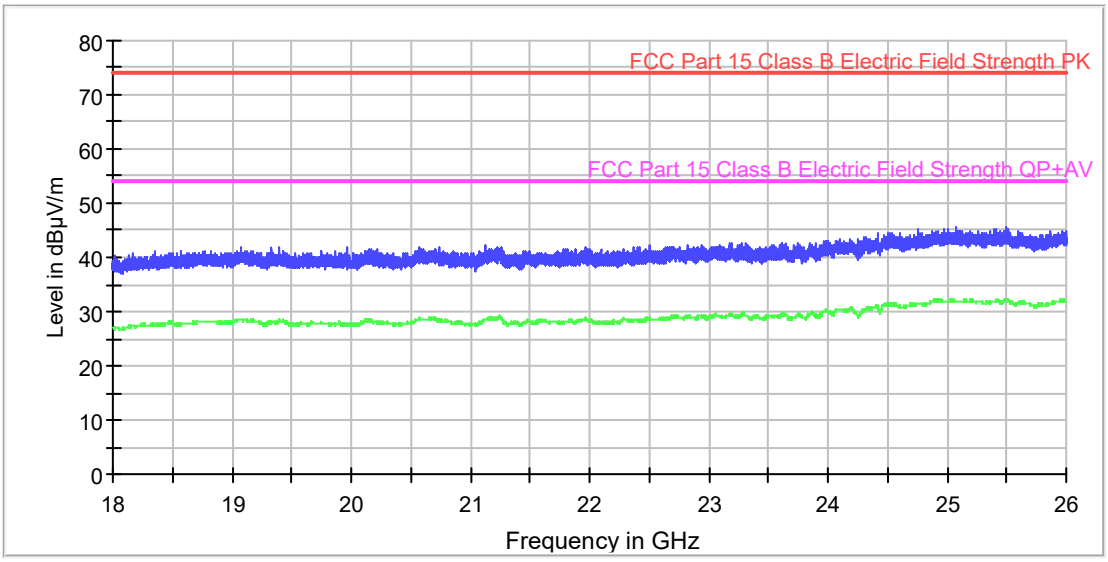
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1053.600000	33.3	19.0
4377.600000	30.4	17.2
5798.400000	33.5	19.5
7296.800000	37.6	24.1
9233.200000	40.9	27.5
10640.400000	42.5	28.8
11538.400000	42.2	28.3
14470.800000	43.4	30.1
14607.600000	42.8	30.2
18000.000000	53.5	41.4

Radiated Emission. CR0102HR2_H

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#02
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB1-MAC1 (5G). Horizontal polarization

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

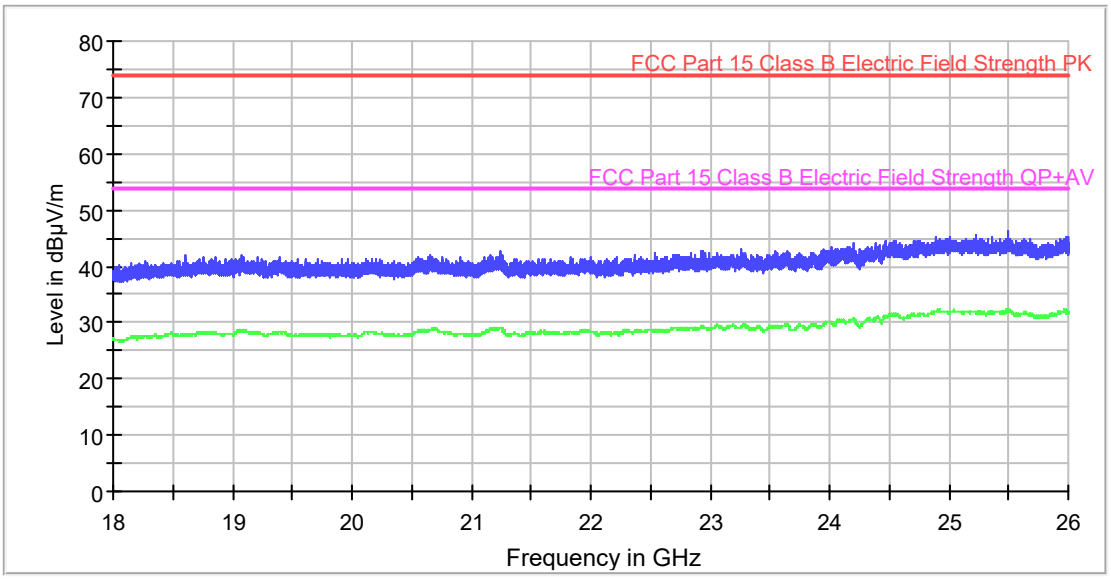
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18566.400000	41.2	27.7
19336.000000	41.8	28.1
19973.200000	41.9	27.8
21126.800000	42.3	28.5
21234.800000	41.9	29.0
22508.000000	42.0	28.7
23279.200000	42.7	29.6
24306.000000	43.8	30.4
25080.800000	45.6	31.9
25490.000000	45.4	32.2

Radiated Emission. CR0102HR2_V

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#02
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB1-MAC1 (5G). Vertical polarization

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

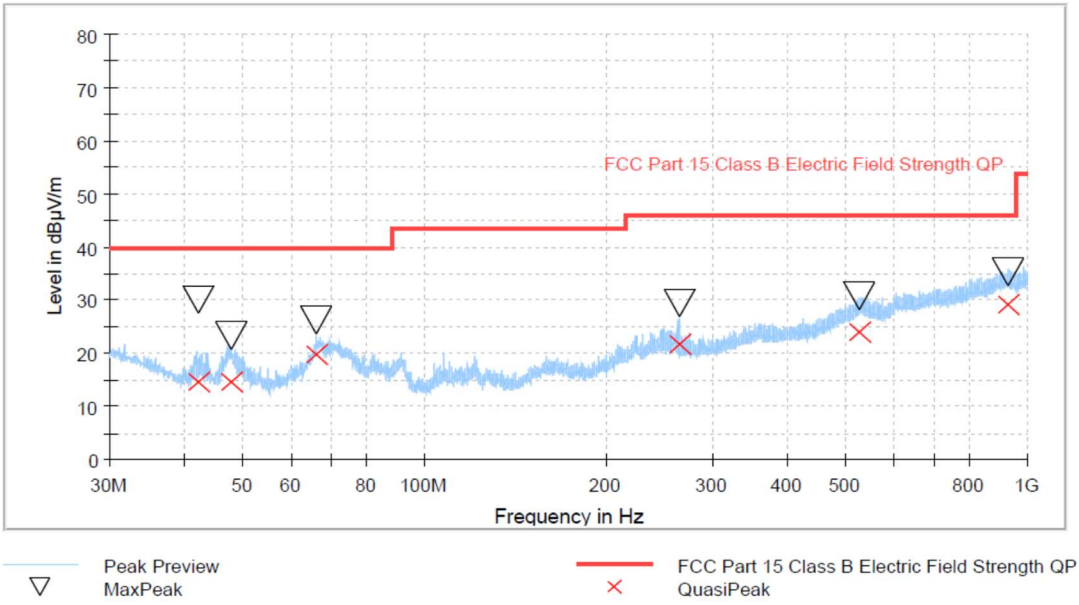
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18602.400000	41.8	27.7
19082.800000	41.8	28.6
20227.200000	41.3	28.0
21159.600000	41.9	28.8
21243.200000	42.6	29.0
22538.000000	42.4	28.6
23254.400000	43.0	29.1
24390.400000	44.1	30.7
24893.600000	45.3	32.0
25496.800000	46.2	32.1

Radiated Emission. CR0103LR

Project:	56848GREM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#03
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB0-MAC0 (5G) Power supply: 12 Vdc

Full Spectrum



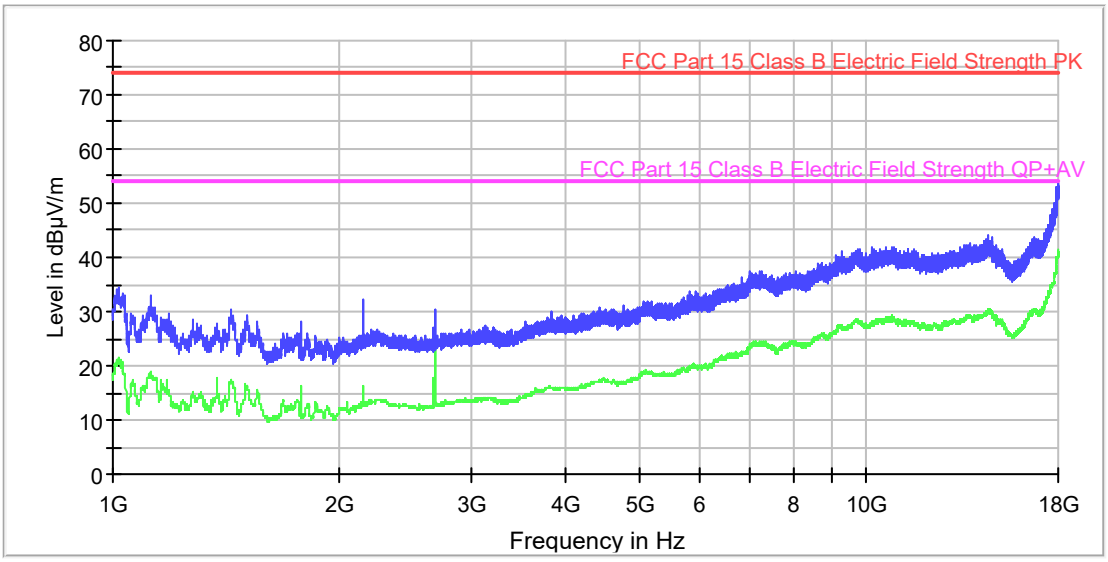
Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
42.271000	30.28	14.42	134.0	V	100.0
47.728000	23.41	14.68	100.0	V	38.0
66.113000	26.14	19.68	121.0	V	102.0
263.995000	29.56	21.73	100.0	V	-2.0
526.340000	30.67	24.12	130.0	V	-18.0
929.389000	35.41	28.99	339.0	V	81.0

Radiated Emission. CR0103HR1_H

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#03
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB0-MAC0 (5G) Power supply: 12 Vdc. Horizontal polarization

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

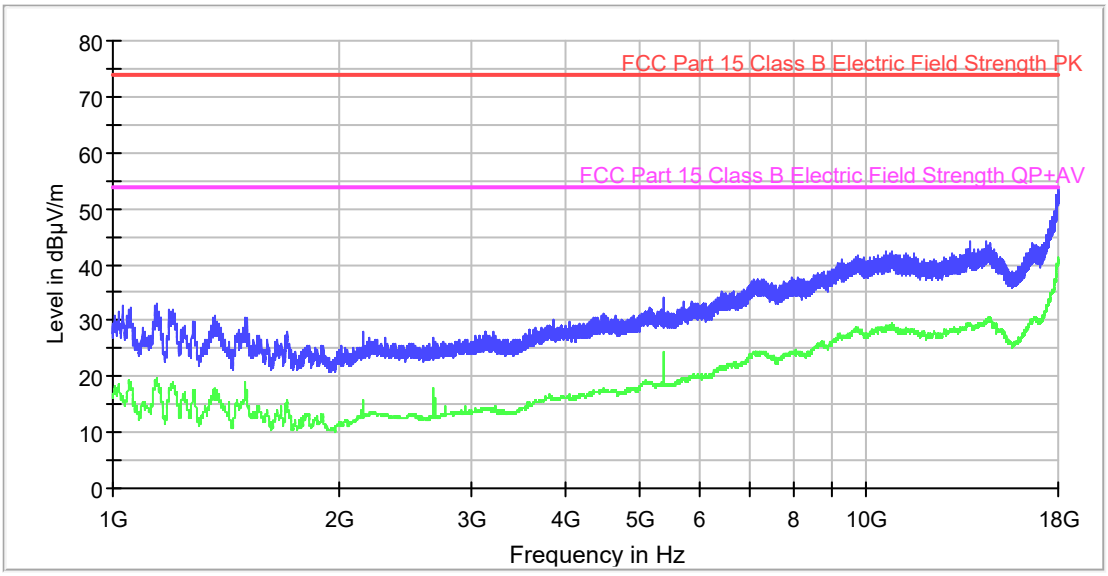
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1017.200000	34.6	21.0
3819.200000	30.0	15.9
5954.400000	33.6	19.8
7276.400000	37.4	24.3
9277.600000	40.9	27.1
10882.000000	42.0	28.5
11567.600000	41.5	28.1
14513.600000	44.2	30.1
14670.400000	43.6	29.7
17988.400000	53.7	41.0

Radiated Emission. CR0103HR1_V

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#03
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB0-MAC0 (5G) Power supply: 12 Vdc. Vertical polarization

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

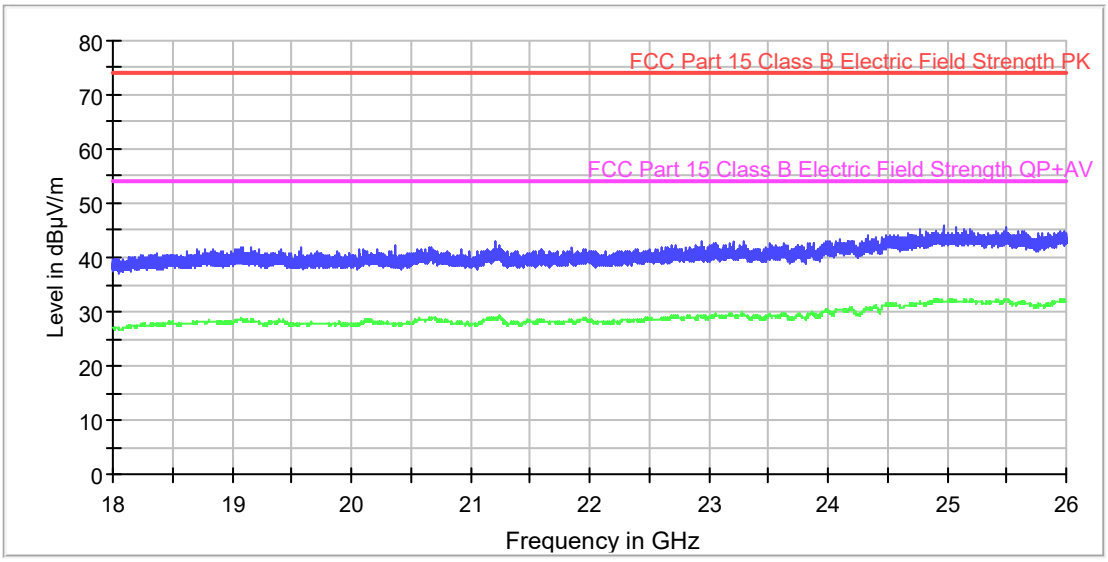
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1142.800000	33.0	19.6
4364.000000	30.4	17.2
5374.800000	34.2	24.4
7174.800000	37.4	24.0
9267.600000	40.9	27.3
10808.000000	42.4	28.7
11564.400000	41.9	28.1
13709.200000	44.0	29.5
14633.600000	43.1	30.2
17996.800000	53.9	41.2

Radiated Emission. CR0103HR2_H

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#03
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB0-MAC0 (5G) Power supply: 12 Vdc. Horizontal polarization

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

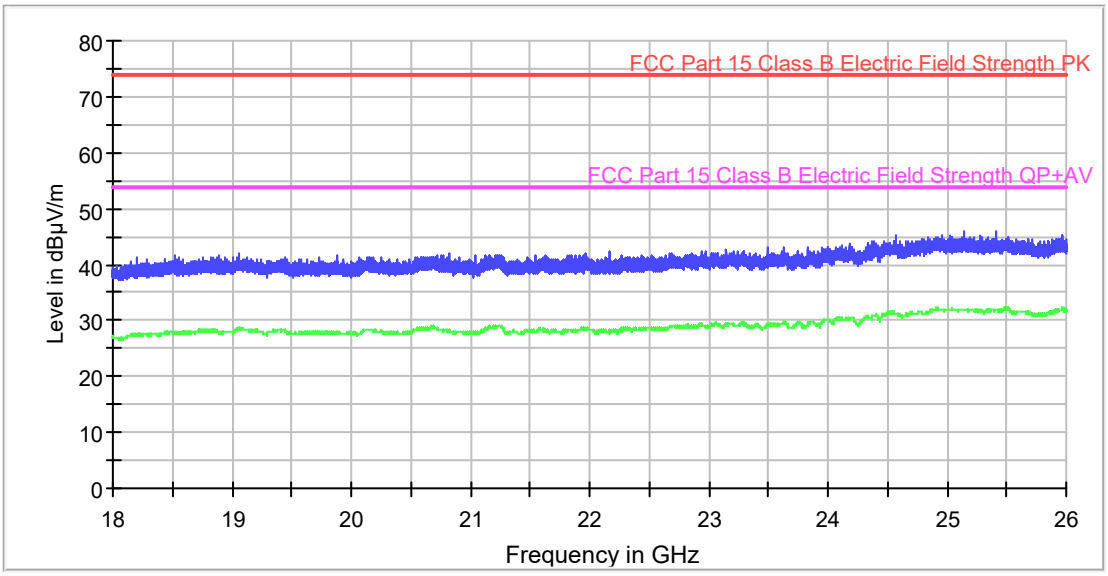
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18766.800000	41.5	28.2
19578.800000	41.8	27.7
20376.000000	42.4	27.8
20673.600000	41.7	28.8
21210.400000	42.9	28.8
22714.800000	42.4	29.1
23202.000000	43.1	29.3
24336.800000	43.9	30.6
24966.400000	45.9	31.9
25496.400000	45.6	32.2

Radiated Emission. CR0103HR2_V

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#03
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (2G4)+BB0-MAC0 (5G) Power supply: 12 Vdc. Vertical polarization

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

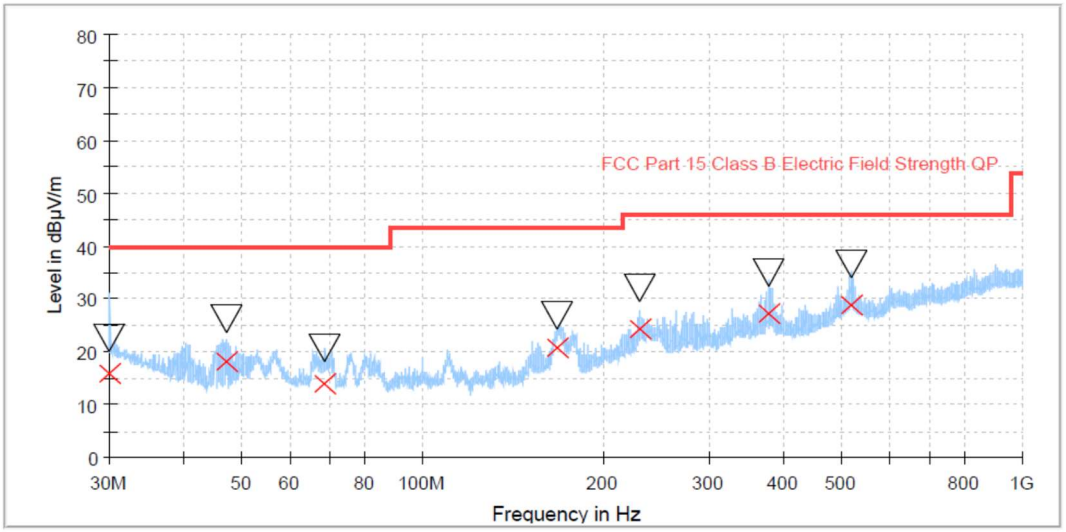
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18525.600000	41.5	27.8
19066.400000	42.0	28.6
19880.000000	41.5	27.9
20823.600000	42.1	28.1
21965.600000	42.1	28.6
22174.800000	42.3	27.9
23500.000000	43.0	29.3
24382.000000	44.2	30.8
25142.400000	45.9	32.0
25414.800000	45.8	31.9

Radiated Emission. CR0104LR

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#04
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (5G)+BT-BB(2G4). Power supply: 12 Vdc.

Full Spectrum



Peak Preview
Max Peak
FCC Part 15 Class B Electric Field Strength QP
QuasiPeak

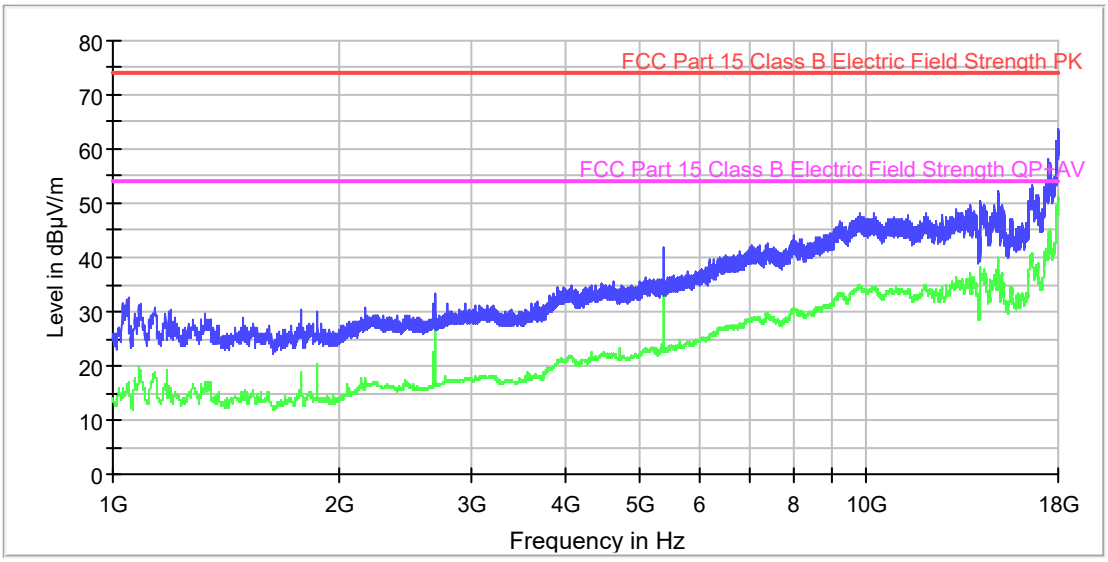
Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
30.026680	22.62	16.03	40.00	17.38	179.0	V	174.0
46.975000	26.14	18.13	40.00	13.86	100.0	V	-127.0
68.792000	20.63	13.88	40.00	19.37	157.0	V	127.0
166.934000	26.91	20.83	43.50	16.59	102.0	V	75.0
229.815000	31.95	24.41	46.00	14.05	100.0	V	-34.0
377.874000	34.85	27.15	46.00	11.15	120.0	V	74.0
518.611000	36.51	28.97	46.00	9.49	192.0	V	-24.0

Radiated Emission. CR0104HR1_H

Project:	568486REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#04
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (5G)+BT-BB(2G4). Power supply: 12 Vdc. Horizontal polarization.

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

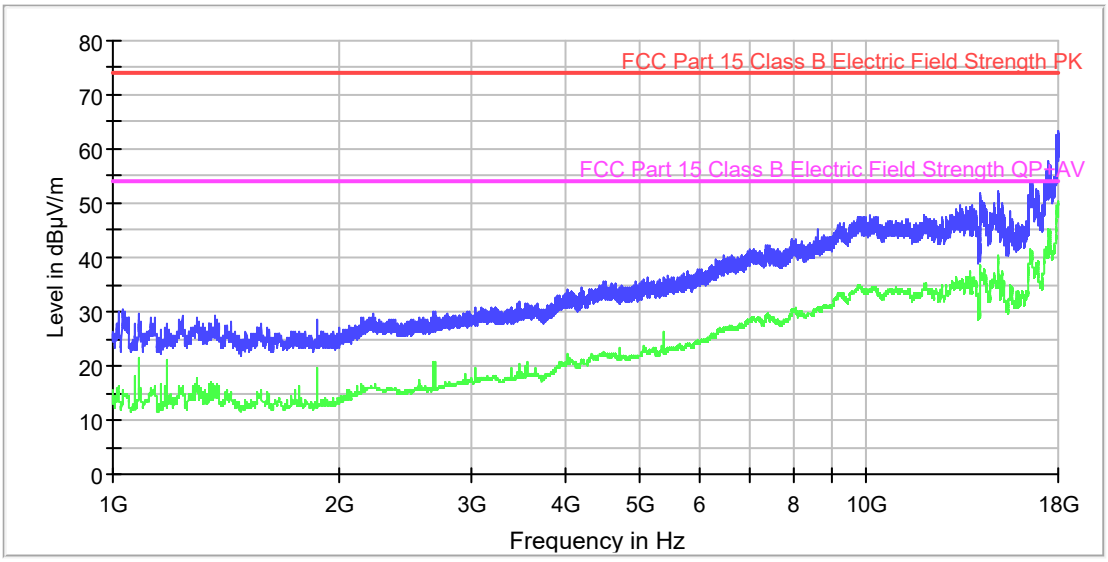
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
2687.200000	33.3	27.8
4385.200000	34.8	21.3
5374.800000	41.7	36.0
7410.400000	42.4	29.7
9234.000000	46.6	33.3
10245.200000	48.2	34.2
11988.000000	48.1	35.0
14186.800000	50.3	37.5
14992.000000	52.4	39.7
17958.000000	63.6	50.9

Radiated Emission. CR0104HR1_V

Project:	568486REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#04
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (5G)+BT-BB(2G4). Power supply: 12 Vdc. Vertical polarization.

ER EMI FCC 15 Class B (1-18GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

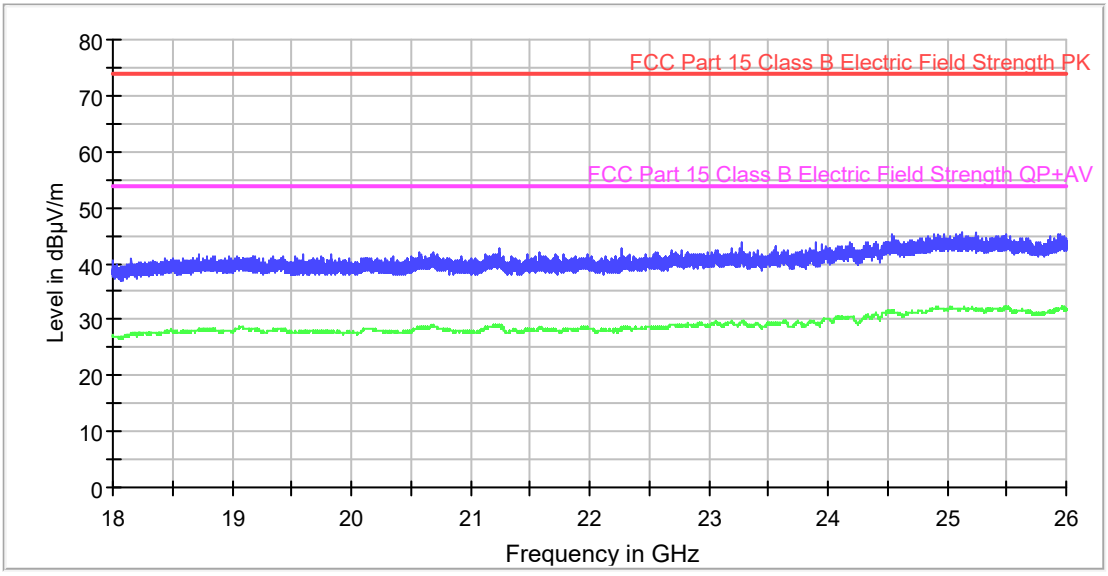
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
1032.000000	30.4	15.4
4192.400000	34.4	21.1
6046.400000	37.8	24.5
7430.000000	42.3	29.2
9228.000000	46.3	33.3
10124.000000	47.9	34.0
11977.200000	47.8	35.0
14200.800000	51.7	38.2
14991.200000	52.3	40.0
17957.200000	63.4	50.4

Radiated Emission. CR0104HR2_H

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#04
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (5G)+BT-BB(2G4). Power supply: 12 Vdc. Horizontal polarization.

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

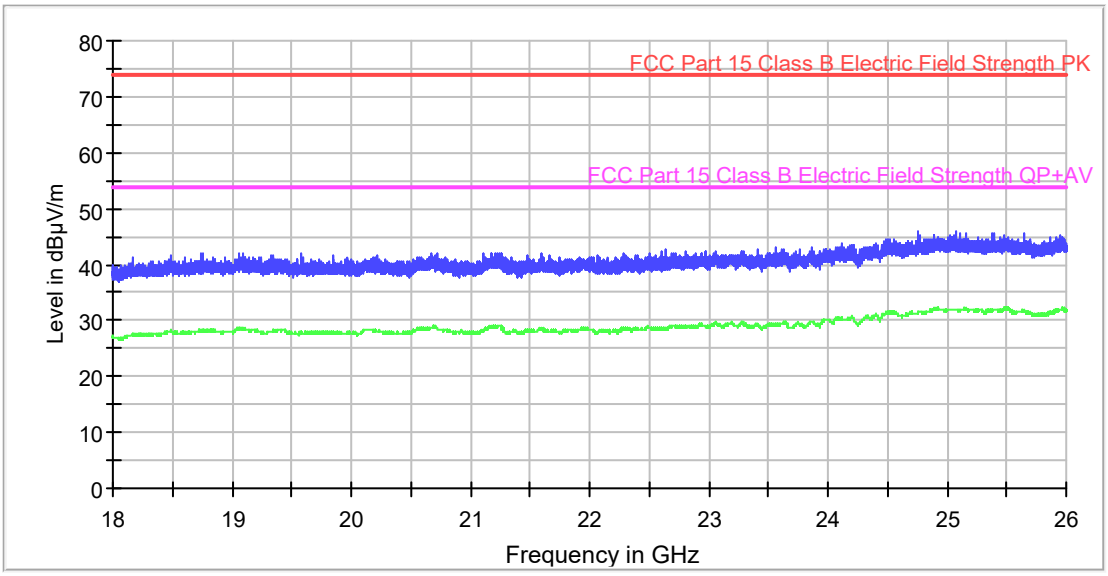
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18725.600000	41.5	28.0
19592.800000	41.5	27.7
19830.800000	41.6	27.7
20683.200000	42.0	28.8
21245.600000	42.7	28.9
22268.400000	42.7	28.5
23283.600000	43.8	29.7
24320.800000	43.9	30.5
25128.800000	45.4	31.9
25235.600000	45.4	31.8

Radiated Emission. CR0104HR2_V

Project:	56848REM.004
Company:	HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH
Sample:	S/01
Operation mode:	OM#04
Description:	EUT ON. Stand Alone Basis. Operational mode = BB0-MAC0 (5G)+BT-BB(2G4). Power supply: 12 Vdc. Vertical polarization.

ER EMI FCC 15 Class B (18-26GHz)



Average Scan
Peak Scan
FCC Part 15 Class B Electric Field Strength PK
FCC Part 15 Class B Electric Field Strength QP+AV

Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
18732.400000	42.0	28.0
19579.600000	42.1	27.7
19844.400000	41.8	27.8
21178.000000	42.1	28.8
21243.200000	42.0	29.1
22643.200000	42.5	28.8
23559.600000	43.0	29.2
24122.400000	43.6	30.4
24758.400000	45.9	31.5
25370.400000	45.6	31.8