



Test report No:
 NIE: 63185REM.031A1

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)

(*) Identification of item tested	Headunit with radio and Bluetooth
(*) Trademark	Panasonic
(*) Model and /or type reference tested	MIB3E_MQB_BTWIFI
Other identification of the product	Part number: 654.035.869.B HW Version: X01 SW Version: X464 FCC ID: WUQ-MIB3HBTWIFI IC: 216R-MIB3HBTWIFI
(*) Features	Bluetooth, WLAN, FM, AM, DAB, USB
Manufacturer	PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH Robert Bosch Str. 27-29 63225 Langen, GERMANY
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager
Date of issue	2020-12-02
Report template No	FDT08_22 (*) "Data provided by the client"

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Competences and guarantees

DEKRA Testing and Certification is a testing laboratory accredited by the National Accreditation Body (ENAC - Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification at the time of performance of the test.

DEKRA Testing and Certification is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or competent Authorities.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA Testing and Certification and the Accreditation Bodies.

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 $I = \pm 4,9$ dB for quasi-peak measurements, $I = \pm 4,6$ 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 18 GHz is $I = \pm 2,6$ dB for peaks and average measurements ($k = 2$)

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").

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

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

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
63185/003	Headunit with radio and bluetooth	MIB3E_MQB_BTWIFI	PM6-00115 04 20413F0230	2020-05-05

Auxiliary elements used with the sample S/01:

Control Nº	Description	Model	Serial Nº	Date of reception
51929B/117	USB Module	---	---	2018-12-10
51929B/450	Harness	---	---	2019-02-26

Test sample description

Ports..... :	Port name and description	Cable				
		Specified length [m]	Attached during test	Shielded		
	--		<input type="checkbox"/>	<input type="checkbox"/>		
Supplementary information to the ports..... :						
Rated power supply	Voltage and Frequency	Reference poles				
		L1	L2	L3	N	PE
	<input type="checkbox"/> AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> DC: 12Vdc						
Rated Power	--					
Clock frequencies	--					
Other parameters..... :	PN: 654.035.869.B FCC ID: WUQ-MIB3HBTWIFI IC: 216R-MIB3HBTWIFI					
Software version	X464					
Hardware version..... :	X01					
Dimensions in cm (W x H x D).... :	--					
Mounting position..... :	<input type="checkbox"/>	Table top equipment				
	<input type="checkbox"/>	Wall/Ceiling mounted equipment				
	<input type="checkbox"/>	Floor standing equipment				
	<input type="checkbox"/>	Hand-held equipment				
	<input checked="" type="checkbox"/>	Other: Automotive head unit				
Modules/parts	Module/parts of test item	Type	Manufacturer			
	--					
Accessories (not part of the test item)	Description	Type	Manufacturer			
	--					
Documents as provided by the applicant..... :	Description	File name	Issue date			
	--					

Copy of marking plate:



Identification of the client

PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Robert Bosch Str. 27-29
 63225 Langen, GERMANY

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-07-14
Date (finish)	2020-07-15

Document history

Report number	Date	Description
63185REM.031	2020-11-20	First release
63185REM.031A1	2020-12-02	The FM reception mode is considered in the definition of the operation modes under test.

Environmental conditions

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

Temperature	Min. = 15 °C Max. = 35 °C
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 °C Max. = 35 °C
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 °C Max. = 35 °C
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: Antonio Ruiz.

Testing verdicts

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

List of equipment used during the test

Control Number	Description	Model	Manufacturer	Next Calibration
2942	EMI TEST RECEIVER 20Hz-40GHz	ESU40	ROHDE AND SCHWARZ	2021-09-17
4523	EMI TEST RECEIVER 20Hz-26.5GHz	ESU26	ROHDE AND SCHWARZ	2022-05-27
4612	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2021-06-14
4656	HORN ANTENNA 18-40GHz	BBHA 9170	SCHWARZBECK	2021-07-19
4729	PRE-AMPLIFIER G>30dB 18-40GHz	BLMA 1840-1M	BONN ELEKTRONIK	2021-02-11
5641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2021-07-31
6064	SEMIANECHOIC ABSORBER LINED CHAMBER	SAC-3	Frankonia	---
6126	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2021-04-17
6132	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2021-04-20
6195	PRE-AMPLIFIER G>55dB 1-18GHz	AMF-7D-01001800-22-10P	NARDA	2021-05-19
6329	SHIELDED ROOM		FRANKONIA	---

Summary

Emission Test		
Requirement – Test case	Verdict	Remark
Radiated emission. Electromagnetic field measure (30 MHz – 1000 MHz)	P	---
Radiated emission. Electromagnetic field measure (1 GHz – 17 GHz)	P	---
Radiated emission. Electromagnetic field measure (17 GHz – 26 GHz)	P	---
Continuous conducted emission (150 KHz – 30 MHz)	N/A	(1)
<u>Supplymentary information and remarks:</u>		
1) The test is not applicable because the equipment is powered in DC.		

Appendix A: Test results

Appendix A Content

DESCRIPTION OF THE OPERATION MODES	12
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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. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc.
OM#02	EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. FM in reception mode. Display showing the radio station information. Power supply: 12Vdc.

After a preview, it is determined that the work case operation mode is OM#01. The complete results for this mode are included in this report.

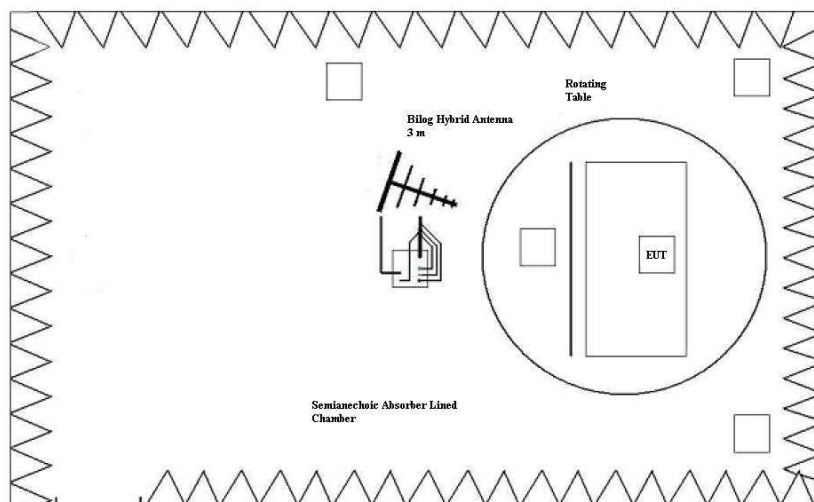
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (Updated 2019-04)

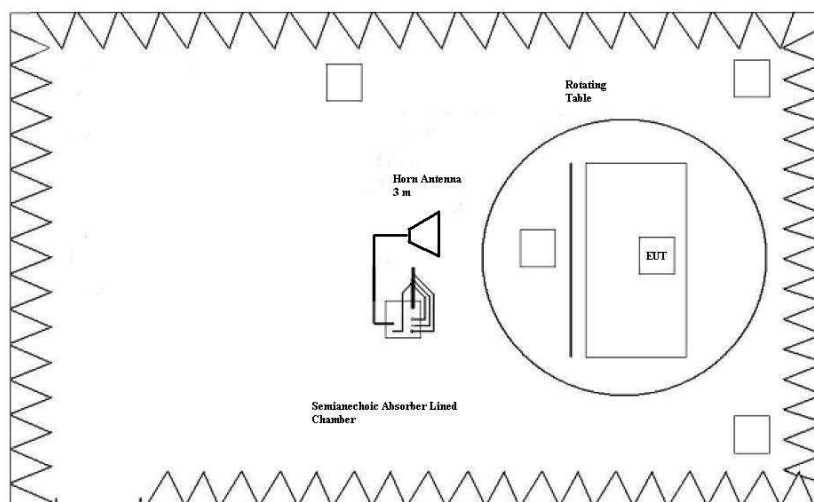
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.109 & ICES-003 (Updated April 2019) in the frequency range 30 MHz to 12,75 GHz for class B equipments.

Frequency range (MHz)	QP Limit for 3 m		PK Limit for 3 m
	($\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)
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.

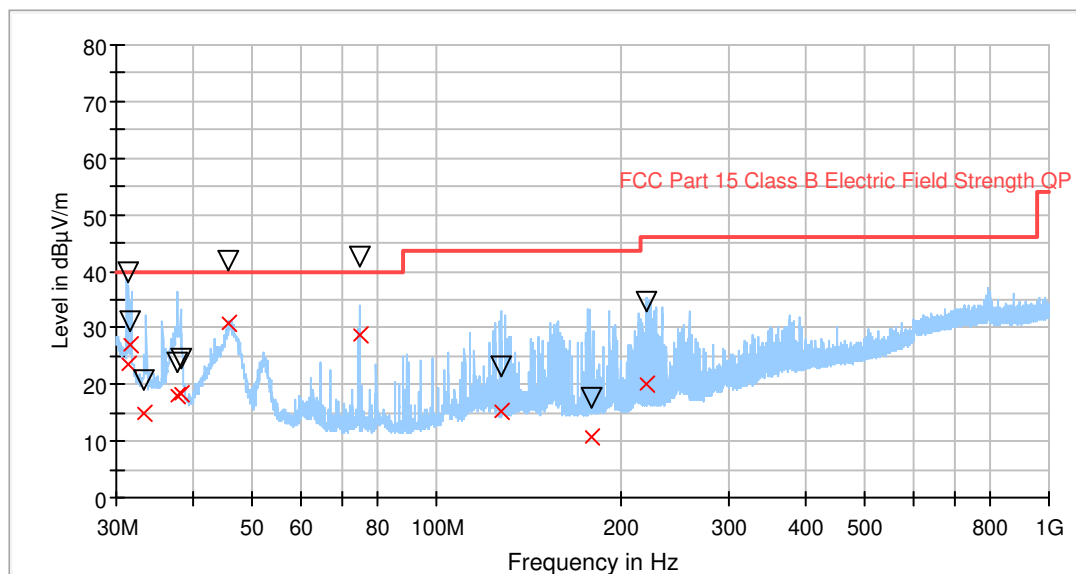
TESTED SAMPLE:	S/01
TESTED OPERATION MODES:	OM#01
TEST RESULTS:	CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR1_HP	Range: 1 GHz – 17 GHz. Horizontal Polarization.	P
CR0101HR1_VP	Range: 1 GHz – 17 GHz. Vertical Polarization.	P
CR0101HR2_HP	Range: 17 GHz – 26 GHz. Horizontal Polarization.	P
CR0101HR2_VP	Range: 17 GHz – 26 GHz. Vertical Polarization.	P

Radiated Emission. CR0101LR

Project: 63185REM.031
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc.

RE FCC Part 15 Class B



— Preview Result 1-PK+
x QuasiPeak
 — FCC Part 15 Class B Electric Field Strength QF
v Max Peak

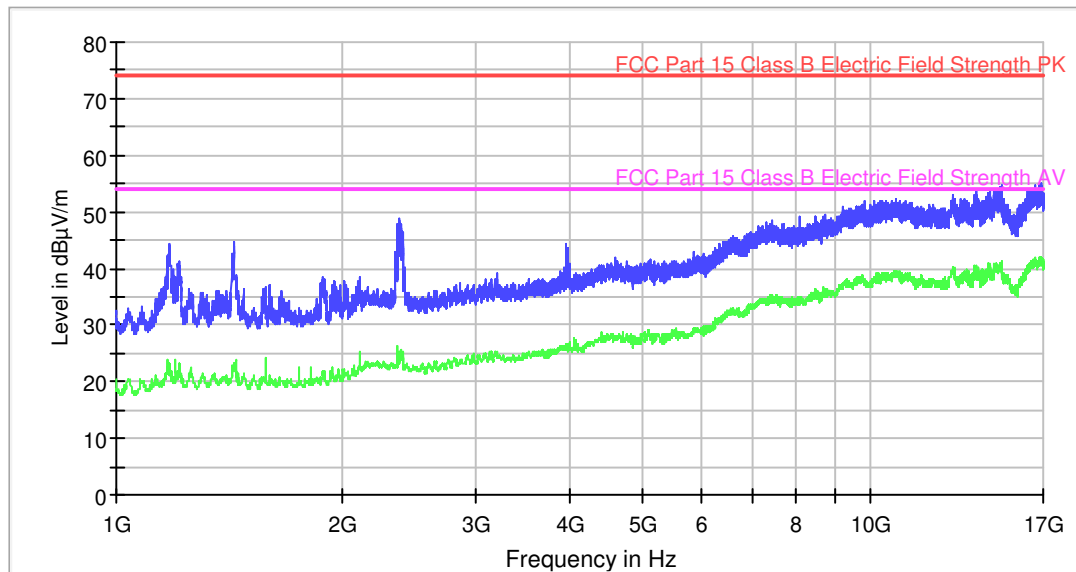
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
31.324000	23.66	39.98	40.00	16.34	150.0	V	127.0
31.568000	26.85	31.26	40.00	13.15	191.0	V	89.0
33.300000	14.81	20.95	40.00	25.19	329.0	V	172.0
37.762000	18.08	240.03	40.00	21.92	243.0	V	-73.0
38.172000	18.38	24.61	40.00	21.62	100.0	V	-161.0
45.812000	30.86	42.02	40.00	9.14	102.0	V	27.0
75.036000	28.74	42.53	40.00	11.26	107.0	V	-16.0
127.544000	15.24	23.05	43.52	28.28	150.0	V	-42.0
178.433000	10.79	17.56	43.52	32.73	136.0	V	55.0
220.506000	20.21	34.49	46.00	25.79	107.0	V	163.0

Radiated Emission. CR0101HR1_HP

Project: 63185REM.031
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc. Horizontal polarization

RE FCC Part 15 Class B



— AVG_CLRWR — PK+_CLRWR
— FCC Part 15 Class B Electric Field Strength PK — FCC Part 15 Class B Electric Field Strength AV

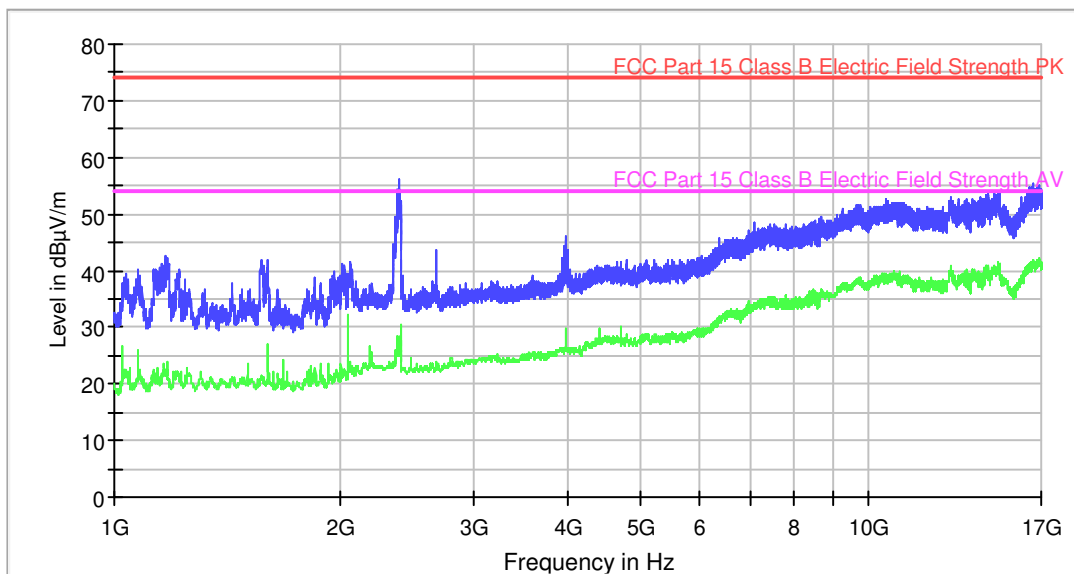
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBµV/m)	AVG_CLRWR (dBµV/m)
2373.600000	49.0	24.2
3959.600000	44.4	26.4
4602.400000	41.8	27.8
7285.200000	48.0	34.0
8730.000000	49.5	36.2
10160.800000	52.0	38.5
10825.600000	52.2	39.2
12919.200000	53.0	39.9
14972.000000	54.6	41.1
16892.000000	54.9	41.9

Radiated Emission. CR0101HR1_VP

Project: 63185REM.031
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc. Vertical polarization

RE FCC Part 15 Class B



— AVG_CLRWR — PK+_CLRWR
— FCC Part 15 Class B Electric Field Strength PK — FCC Part 15 Class B Electric Field Strength AV

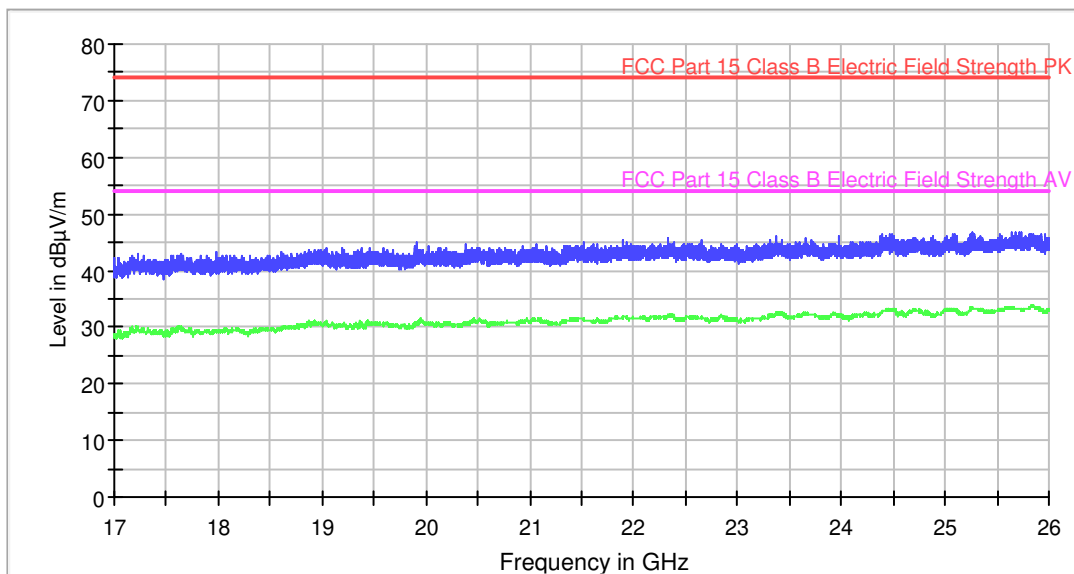
Subrange Maxima

Frequency (MHz)	PK+_CLRWR (dBμV/m)	AVG_CLRWR (dBμV/m)
2392.800000	56.0	25.0
3983.600000	45.9	29.7
4781.200000	42.0	28.4
7065.600000	48.5	33.9
8689.200000	49.5	36.6
10574.800000	52.6	39.4
10656.000000	52.2	39.0
12933.600000	53.1	40.1
14754.800000	54.0	40.8
16603.600000	55.4	41.9

Radiated Emission. CR0101HR2_HP

Project: 63185REM.031
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc. Horizontal polarization

RE FCC Part 15 Class B



— Average scan — Peak scan
 — FCC Part 15 Class B Electric Field Strength PK — FCC Part 15 Class B Electric Field Strength AV

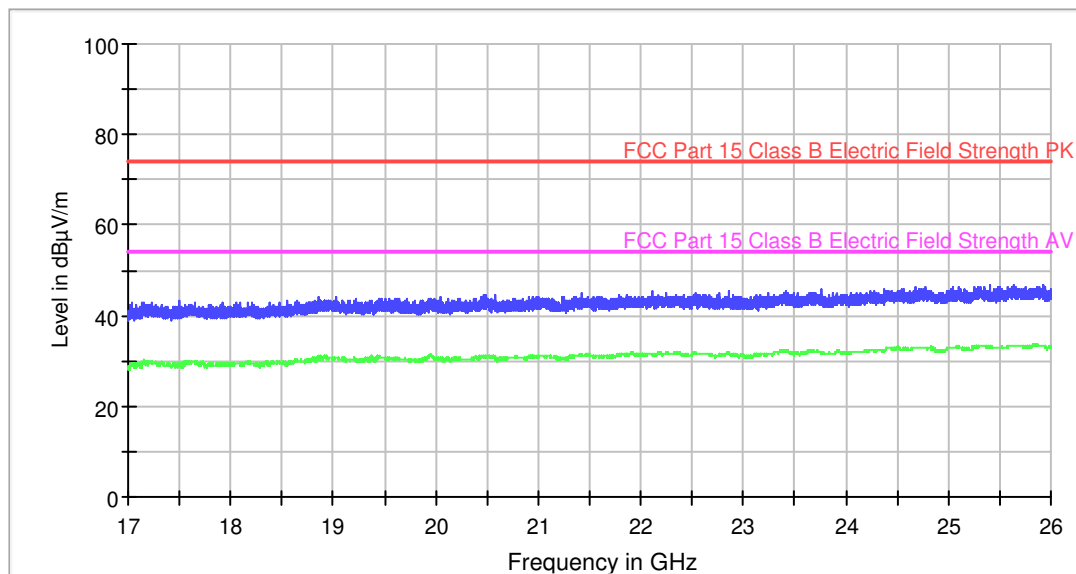
Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
17649.600000	43.1	29.5
18610.000000	43.3	29.6
19043.600000	44.1	30.9
19918.000000	44.9	30.7
21066.800000	44.6	31.1
22337.600000	45.8	31.9
22661.200000	45.3	31.6
23366.800000	46.0	32.3
24468.400000	46.5	32.9
25265.600000	46.9	33.3

Radiated Emission. CR0101HR2_VP

Project: 63185REM.031
 Company: PANASONIC AUTOMOTIVE SYSTEMS EUROPE GMBH
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Bluetooth, WiFi 2.4GHz and WiFi 5GHz OFF. USB transferring data (music input). Display showing the playlist. Power supply: 12Vdc. Vertical polarization

RE FCC Part 15 Class B



— Average scan — Peak scan
— FCC Part 15 Class B Electric Field Strength PK — FCC Part 15 Class B Electric Field Strength AV

Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
17494.800000	43.5	29.2
18645.600000	43.5	30.0
18866.000000	44.2	30.6
20457.600000	44.6	31.4
21425.200000	44.8	31.3
22104.800000	45.4	31.8
22854.800000	45.3	31.8
23751.200000	45.9	32.0
25100.000000	46.5	33.1
25923.200000	47.0	33.4