




EMI TEST REPORT


Test Report No.: 13385909S-G-R2

Applicant : Panasonic Corporation
Type of EUT : Car Navigation
Model Number of EUT : AT2103
FCC ID : ACJ932AT2103
Test regulation : FCC Part 15 Subpart B: 2020
Test result : Complied (Refer to Section 3.2)

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7. The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
8. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
9. This report is a revised version of 13385909S-G-R1. 13385909S-G-R1 is replaced with this report.

Date of test: July 28 to August 7, 2020

Representative test engineer: 
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Approved by: 
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Engineer
Consumer Technology Division



- The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan.
 There is no testing item of "Non-accreditation".

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REVISION HISTORY

Original Test Report No.: 13385909S-G

Revision	Test report No.	Date	Page revised	Contents				
- (Original)	13385909S-G	September 15, 2020	-	-				
1	13385909S-G-R1	October 1, 2020	P.6	Correction of "Radio Specification": from <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="text-align: center;">IEEE802.11ac (80 MHz band)</td> <td style="text-align: center;">IEEE802.11ac (80 MHz band)</td> </tr> <tr> <td style="text-align: center;">5210 MHz, 5755 MHz</td> <td style="text-align: center;">5210 MHz, 5775 MHz</td> </tr> </table> =>	IEEE802.11ac (80 MHz band)	IEEE802.11ac (80 MHz band)	5210 MHz, 5755 MHz	5210 MHz, 5775 MHz
			IEEE802.11ac (80 MHz band)	IEEE802.11ac (80 MHz band)				
5210 MHz, 5755 MHz	5210 MHz, 5775 MHz							
P.7	Correction of "Test Procedure": from ANSI C63.4: 2014 to ANSI C63.4:2014+A1:2017							
2	13385909S-G-R2	October 29, 2020	P.9	Adding comment: ** Pre-checks were performed with Main port and Sub port, the final measurement was conducted with the worst Main port.				
			P.19 to P.74	Update of Total page from "/ 74" to "/ 80"				

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Reference: Abbreviations (Including words undescribed in this report)

AAN	Asymmetric Artificial Network	ISED	Innovation, Science and Economic Development Canada
AC	Alternating Current	ISN	Impedance Stabilization Network
AM	Amplitude Modulation	ISO	International Organization for Standardization
AMN	Artificial Mains Network	JAB	Japan Accreditation Board
Amp, AMP	Amplifier	LAN	Local Area Network
ANSI	American National Standards Institute	LCL	Longitudinal Conversion Loss
Ant, ANT	Antenna	LIMS	Laboratory Information Management System
AP	Access Point	LISN	Line Impedance Stabilization Network
ASK	Amplitude Shift Keying	MRA	Mutual Recognition Arrangement
Atten., ATT	Attenuator	NIST	National Institute of Standards and Technology
AV	Average	NS	No signal detect.
BPSK	Binary Phase-Shift Keying	NSA	Normalized Site Attenuation
BR	Bluetooth Basic Rate	NVLAP	National Voluntary Laboratory Accreditation Program
BT	Bluetooth	OBW	Occupied Band Width
BT LE	Bluetooth Low Energy	OFDM	Orthogonal Frequency Division Multiplexing
BW	BandWidth	PK	Peak
C.F	Correction Factor	P _{LT}	long-term flicker severity
Cal Int	Calibration Interval	POHC(A)	Partial Odd Harmonic Current
CAV	CISPR AV	Pol., Pola.	Polarization
CCK	Complementary Code Keying	PR-ASK	Phase Reversal ASK
CDN	Coupling Decoupling Network	P _{ST}	short-term flicker severity
Ch., CH	Channel	QAM	Quadrature Amplitude Modulation
CISPR	Comite International Special des Perturbations Radioelectriques	QP	Quasi-Peak
Corr.	Correction	QPSK	Quadri-Phase Shift Keying
CPE	Customer premise equipment	r.m.s., RMS	Root Mean Square
CW	Continuous Wave	RBW	Resolution Band Width
DBPSK	Differential BPSK	RE	Radio Equipment
DC	Direct Current	REV	Reverse
DET	Detector	RF	Radio Frequency
Dmax	maximum absolute voltage change during an observation period	RFID	Radio Frequency Identifier
DQPSK	Differential QPSK	RSS	Radio Standards Specifications
DSSS	Direct Sequence Spread Spectrum	Rx	Receiving
EDR	Enhanced Data Rate	SINAD	Ratio of (Signal + Noise + Distortion) to (Noise + Distortion)
e.i.r.p., EIRP	Equivalent Isotropically Radiated Power	S/N	Signal to Noise ratio
EM clamp	Electromagnetic clamp	SA, S/A	Spectrum Analyzer
EMC	ElectroMagnetic Compatibility	SG	Signal Generator
EMI	ElectroMagnetic Interference	SVSWR	Site-Voltage Standing Wave Ratio
EMS	ElectroMagnetic Susceptibility	THC(A)	Total Harmonic Current
EN	European Norm	THD(%)	Total Harmonic Distortion
e.r.p., ERP	Effective Radiated Power	TR	Test Receiver
EU	European Union	Tx	Transmitting
EUT	Equipment Under Test	VBW	Video BandWidth
Fac.	Factor	Vert.	Vertical
FCC	Federal Communications Commission	WLAN	Wireless LAN
FHSS	Frequency Hopping Spread Spectrum	xDSL	Generic term for all types of DSL technology (DSL: Digital Subscriber Line)
FM	Frequency Modulation		
Freq.	Frequency		
FSK	Frequency Shift Keying		
Fund	Fundamental		
FWD	Forward		
GFSK	Gaussian Frequency-Shift Keying		
GNSS	Global Navigation Satellite System		
GPS	Global Positioning System		
Hori.	Horizontal		
ICES	Interference-Causing Equipment Standard		
I/O	Input/Output		
IEC	International Electrotechnical Commission		
IEEE	Institute of Electrical and Electronics Engineers		
IF	Intermediate Frequency		
ILAC	International Laboratory Accreditation Conference		

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CONTENTS

	PAGE
SECTION 1 : Customer information	5
SECTION 2 : Equipment under test (E.U.T.)	5
SECTION 3 : Test specification, procedures & results	7
SECTION 4 : Operation of E.U.T. during testing	9
SECTION 5 : Radiated emission	15
SECTION 6 : Antenna power conduction for receivers	18
APPENDIX 1: Data of EMI test	19
APPENDIX 2: Test instruments	73
APPENDIX 3: Photographs of test setup	75

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SECTION 1: Customer information

Company Name : Panasonic Corporation
Address : 4261 Ikonobe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa-ken,
224-8520, Japan
Telephone Number : +81-50-3689-7112
Contact Person : Takahisa Sakai

The information provided from the customer is as follows;

- Applicant, Type of Equipment, Model No. FCC ID on the cover and other relevant pages
 - Operating/Test Mode(s) (Mode(s)) on all the relevant pages
 - SECTION 1: Customer information
 - SECTION 2: Equipment under test (E.U.T.)
 - SECTION 4: Operation of E.U.T. during testing
- * The laboratory is exempted from liability of any test results affected from the above information in SECTION 2 and 4.

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : Car Navigation
Model No. : AT2103
Serial No. : Refer to SECTION 4.2
Rating : DC 13.2 V
Country of Mass-production : Japan, Mexico, Czech Republic
Condition of EUT : Production prototype
(Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT : No modification by the test lab.
Receipt Date of Sample : June 11, 2020
(Information from test lab.)

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2.2 Product description

Model: AT2103 (referred to as the EUT in this report) are a Car Navigation

There are 2 type for AT2103; Hi type(14 inch Display) and Lo type(9.8 inch Display). The same FM Receiving Part are installed in these models.

Radio Specification

	IEEE802.11b	IEEE802.11g	IEEE802.11n (20 MHz band)	IEEE802.11n (40 MHz band)
Frequency of operation	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz, 5180 MHz - 5240 MHz, 5745 MHz - 5825 MHz	5190 MHz, 5230 MHz, 5755 MHz, 5795 MHz
Channel spacing	5 MHz		2.4 GHz band: 5 MHz 5 GHz band: 20 MHz	40 MHz
Modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK)	
	IEEE802.11a	IEEE802.11ac (20 MHz band)	IEEE802.11ac (40 MHz band)	IEEE802.11ac (80 MHz band)
Frequency of operation	5180 MHz - 5240 MHz, 5745 MHz - 5825 MHz	5180 MHz - 5240 MHz, 5745 MHz - 5825 MHz	5190 MHz, 5230 MHz, 5755 MHz, 5795 MHz	5210 MHz, 5775 MHz
Channel spacing	20 MHz		40 MHz	80 MHz
Modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)		OFDM (256QAM, 16QAM, QPSK, BPSK)	
	Bluetooth (BR/EDR)	Bluetooth Low Energy		
Frequency of operation	2402 MHz - 2480 MHz	2402 MHz - 2480 MHz		
Channel spacing	1 MHz	2 MHz		
Modulation	FHSS, GFSK, $\pi/4$ DQPSK, 8DPSK	FHSS, GFSK		
Antenna type	Inverted F type antenna			
Antenna Gain	Hi type (14 inch Display)	RF0	2.4 GHz WLAN	0.07 dBi
			U-NII-1	2.14 dBi
			U-NII-3	1.00 dBi
		RF1	BT, BT LE	1.01 dBi
			U-NII-1	2.43 dBi
			U-NII-3	2.59 dBi
	Lo type (9.8 inch Display)	RF0	2.4 GHz WLAN	4.04 dBi
			U-NII-1	1.19 dBi
			U-NII-3	2.47 dBi
		RF1	BT, BT LE	2.08 dBi
		U-NII-1	1.00 dBi	
		U-NII-3	1.43 dBi	
Antenna Connector type	U.FL connector			
Operating Temperature	-30 deg. C to + 65 deg. C			

FM tuner specification

Frequency of operation: 87.75 MHz - 107.9 MHz

Intermediate frequency: ± 388 kHz

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SECTION 3: Test specification, procedures & results

3.1 Test specification

Test specification : FCC Part 15 Subpart B: 2020
FCC Part 15 final revised on May 26, 2020 and effective July 27, 2020
Title : FCC 47CFR Part 15 Radio Frequency Device
Subpart B Unintentional Radiators

All the revisions made after testing date do not affect the test specification applied to the EUT.

3.2 Procedures & Results

Item	Test Procedure	Limits	Deviation	Worst margin	Result
Conducted emission	ANSI C63.4:2014+A1:2017 IEEE 187:2003	FCC 15.107 (a)	N/A *1)	N/A	N/A
Radiated emission *2)	ANSI C63.4:2014+A1:2017 IEEE 187:2003	FCC 15.109 (a)	N/A	<u>Lo type (9.8 inch Display)</u> 10.2 dB Freq.: 3465.216 MHz Detector: AV Polarization: Horizontal Mode: FM Receiving (107.9 MHz) analog <u>Hi type (14 inch Display)</u> 10.8 dB Freq.: 3465.216 MHz Detector: AV Polarization: Horizontal Mode: FM Receiving (107.9 MHz) digital	Complied a)
Antenna power conduction for receivers	ANSI C63.4:2014+A1:2017 IEEE 187:2003	FCC 15.111 (a)	N/A	<u>Hi type (14 inch Display) *3)</u> 7.0 dB Freq.: 3525.520 MHz Detector: PEAK Mode: FM Receiving (87.75 MHz) analog Freq.: 3510.432 MHz Detector: PEAK Mode: FM Receiving (97.9 MHz) analog	Complied b)

Note: UL Japan's EMI Work Procedures No. 13-EM-W0420

*1) The test is not applicable since the EUT does not have AC Mains.

*2) Measurements have been performed up to 40 GHz since the highest frequency of internal source of the EUT is 5825 MHz.

*3) Since the FM tuner module is common, the tests were conducted at Hi type (14 inch Display) as a representative.

a) Refer to Appendix 1 (data of Radiated emission)

b) Refer to Appendix 1 (data of Antenna Terminal)

Symbols:

Complied The data of this test item has enough margin, more than the measurement uncertainty.

Complied# The data of this test item meets the limits unless the measurement uncertainty is taken into consideration.

3.3 Additions to standards

No addition, deviation or exclusion has been made from standards.

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3.4 Confirmation

UL Japan, Inc. hereby confirms that E.U.T., in the configuration tested, complies with the specifications FCC Part 15 Subpart B: 2020

3.5 Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor $k=2$.

Item	Frequency range	No.1 SAC ^{*1} /SR ^{*2} (±)	No.2 SAC/SR (±)	No.3 SAC/SR (±)
Radiated emission (Measurement distance: 3 m)	30 MHz-200 MHz	4.6 dB	4.6 dB	4.6 dB
	200 MHz-1 GHz	6.0 dB	6.0 dB	6.0 dB
	1 GHz-6 GHz	4.9 dB	4.9 dB	4.9 dB
	6 GHz-18 GHz	5.5 dB	5.5 dB	5.5 dB
Radiated emission (Measurement distance: 1 m)	1 GHz-18 GHz	5.8 dB	5.8 dB	5.8 dB
	18 GHz-40 GHz	5.7 dB	5.7 dB	5.7 dB
Antenna Terminal Voltage^{*3}	5 MHz-1000 MHz	2.8 dB		
	1 GHz-	2.4 dB		

*1: SAC=Semi-Anechoic Chamber

*2: SR= Shielded Room is applied besides radiated emission

*3: Value of Antenna Terminal Voltage measurement is also applies to the No.5 and No.6 Shielded Room.

3.6 Test location

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A2LA Certificate Number : 1266.03

FCC Test Firm Registration Number : 839876

ISED Lab Company Number : 2973D

	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measuremen t distance
No.1 Semi-anechoic chamber	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber	8.1 x 5.1 x 3.55	8.1 x 5.1	-
No.1 Shielded room	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.2 Shielded room	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.3 Shielded room	6.3 x 4.7 x 2.7	6.3 x 4.7	-
No.4 Shielded room	4.4 x 4.7 x 2.7	4.4 x 4.7	-
No.5 Shielded room	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.6 Shielded room	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.7 Shielded room	2.76 x 3.76 x 2.4	2.76 x 3.76	-
No.8 Shielded room	3.45 x 5.5 x 2.4	3.45 x 5.5	-
No.1 Measurement room	2.55 x 4.1 x 2.5	2.55 x 4.1	-

3.7 Test Setup, Data of EMI & Test instruments

Refer to Appendix 1 to 3.

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SECTION 4: Operation of E.U.T. during testing

4.1 Operating mode

The EUT exercise program used during testing was designed to exercise the various system components in a manner similar to typical use.

Test sequence is used : FM Receiving (87.75 MHz / 97.9 MHz / 107.9 MHz)
*Analog and Digital
* Pre-checks were performed with Main port and Sub port, the final measurement was conducted with the worst Main port.

Firmware : YEP1RM06451A Ver.1.00

Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

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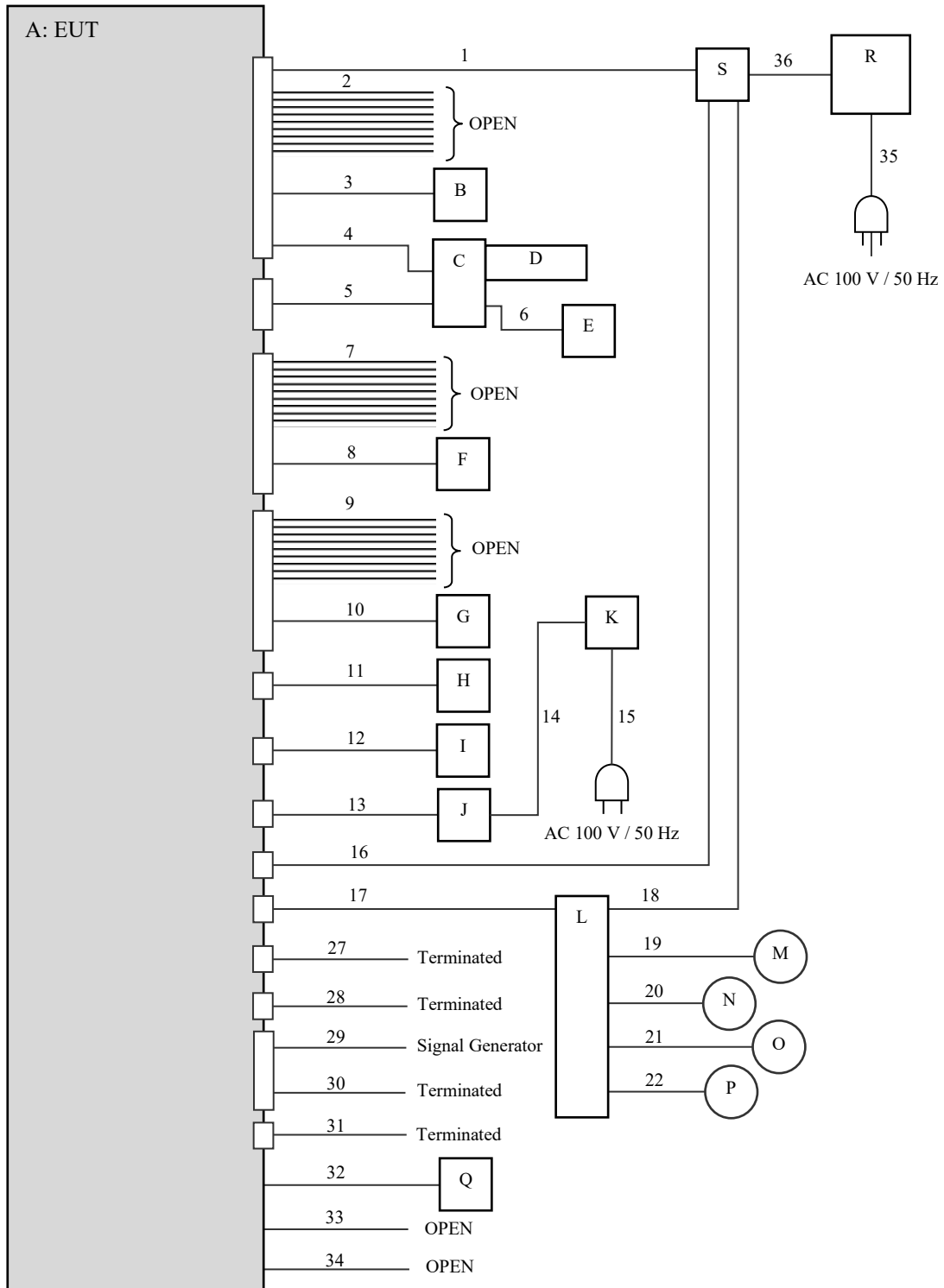
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4.2 Configuration and peripherals

< Hi type(14 inch Display) >

Radiated Emission test



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

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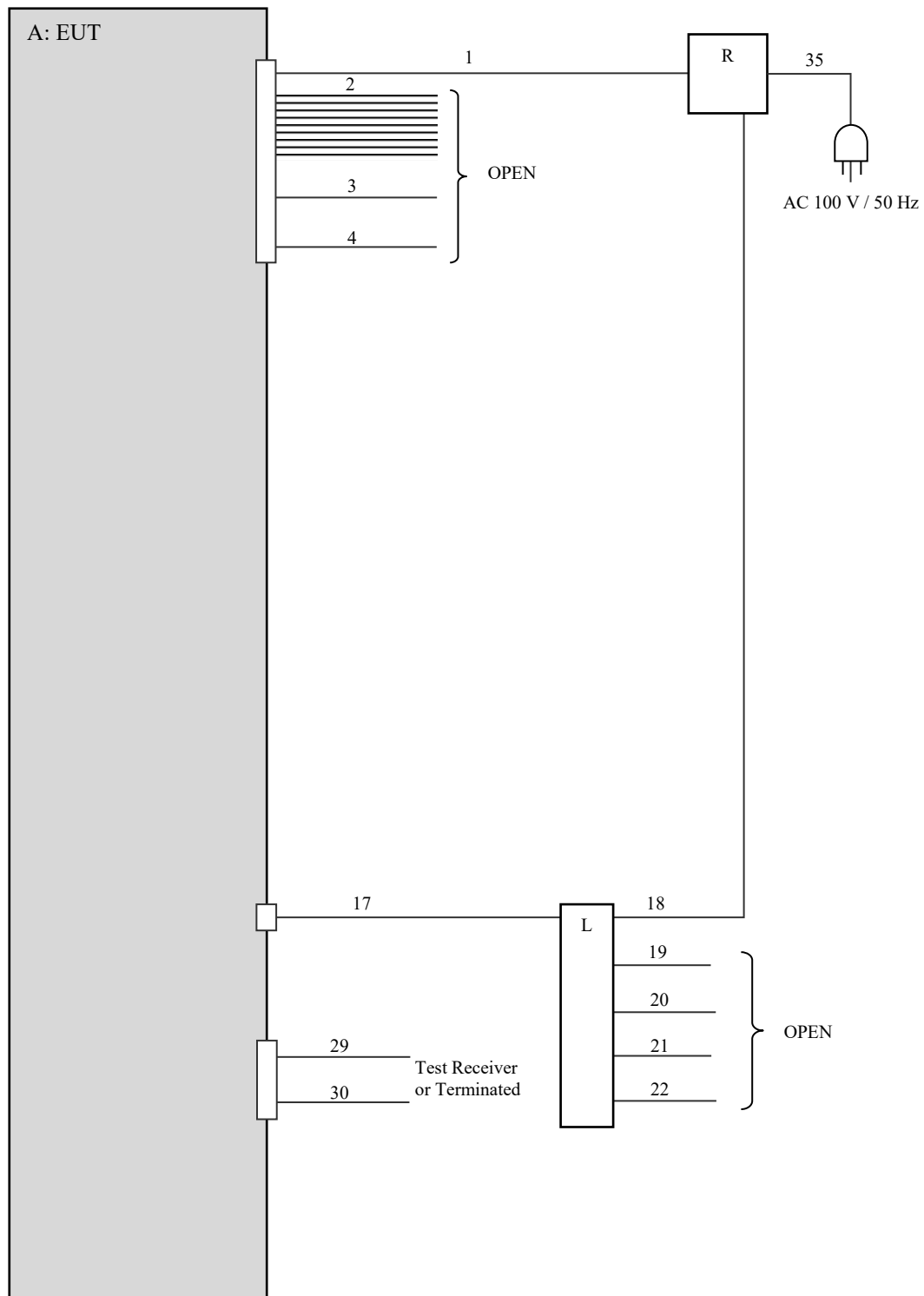
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Antenna Terminal test



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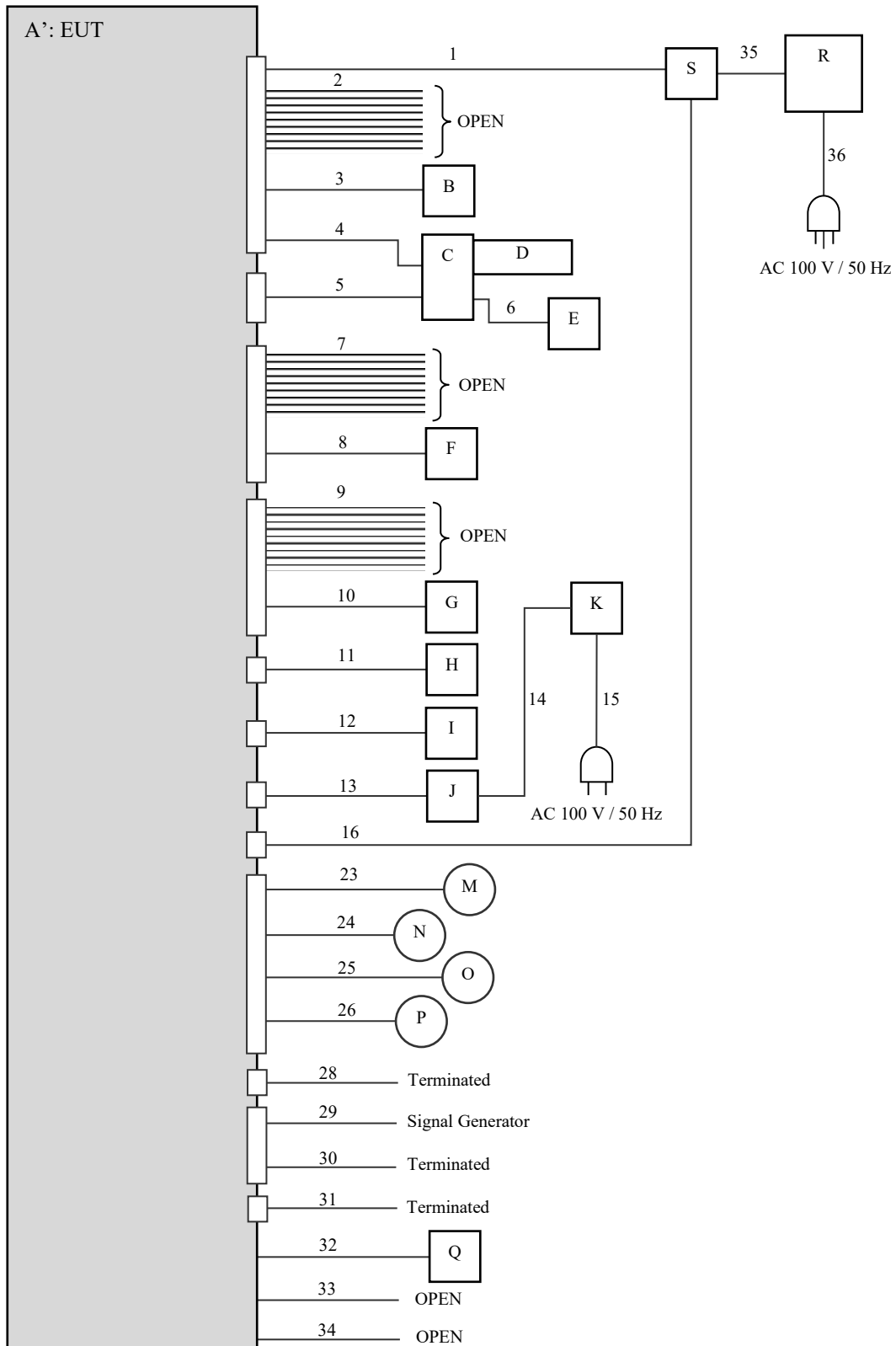
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< Lo type(9.8 inch Display) >



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

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Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Car Navigation	AT2103 Hi type (14 inch Display)	500087	Panasonic Corporation	EUT
A'	Car Navigation	AT2103 Lo type (9.8 inch Display)	500065	Panasonic Corporation	EUT
B	Steering Switch	-	1142	Panasonic Corporation	-
C	IF-Box	DEP32-10078	033	Panasonic Corporation	-
D	USB Memory	USM4GU	-	Sony Corporation	-
E	Bluetooth Speaker	SRS-X11	2154715	Sony Corporation	-
F	MIC	GP-SDA3510A	0DC062519	Panasonic Corporation	-
G	MIC	GP-SDA3510A	0DC062856	Panasonic Corporation	-
H	Rear Camera	GP-KDM301RC	92	Panasonic Corporation	-
I	GPS Antenna	ANN-MS	-	U-Blox	-
J	Front Camera Jig	GVIF2OUT A	1	Panasonic Corporation	-
K	AC Adapter	GF48-US1240	-	GO FORWARD ENTERPRISE CORP.	-
L	MOST AMP	CL-DL47X2AJ Rev.A	513267	Panasonic Corporation	-
M	Speaker	KFC-RS160	-	KENWOOD	-
N	Speaker	KFC-RS160	-	KENWOOD	-
O	Speaker	KFC-RS160	-	KENWOOD	-
P	Speaker	KFC-RS160	-	KENWOOD	-
Q	Jig board	RCarDBG JTAG2	WR12-3224	WESTEK	-
R	Power Supply (DC)	PAN35-10A	NA000955	KIKUSUI	-
S	Terminal Block	-	-	-	-

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List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC	2.5 + 0.2 *1) 1.0 + 1.5 *2)	Unshielded	Unshielded	-
2	Signal	2.5 *1) 1.0 *2)	Unshielded	Unshielded	-
3	Signal	2.5 + 0.1 *1) 1.0 *2)	Unshielded	Unshielded	-
4	IF Box Power	2.5 + 0.3	Unshielded	Unshielded	-
5	Signal	2.5	Shielded	Shielded	-
6	USB type C	0.9	Shielded	Shielded	-
7	Signal	2.5	Unshielded	Unshielded	-
8	MIC	2.5 + 0.5	Unshielded	Unshielded	-
9	Signal	2.5	Unshielded	Unshielded	-
10	MIC	2.5 + 0.5	Unshielded	Unshielded	-
11	Rear Camera	3.0 + 0.15	Unshielded	Unshielded	-
12	GPS	3.0 + 0.12	Shielded	Shielded	-
13	Front Camera	10.0	Shielded	Shielded	-
14	DC	1.6	Unshielded	Unshielded	-
15	AC	1.9	Unshielded	Unshielded	-
16	DC	3.0	Unshielded	Unshielded	-
17	MOST Amp	2.5	Unshielded	Unshielded	-
18	DC	1.0	Unshielded	Unshielded	-
19	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
20	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
21	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
22	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
23	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
24	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
25	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
26	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
27	A2B	3.0	Unshielded	Unshielded	-
28	DCM	3.0	Shielded	Shielded	-
29	FM	2.5	Shielded	Shielded	-
30	FM	2.5	Shielded	Shielded	-
31	Sirius XM	2.5	Shielded	Shielded	-
32	Signal	0.1	Unshielded	Unshielded	*3)
33	Signal	0.2	Unshielded	Unshielded	*3)
34	UART	0.3	Unshielded	Unshielded	*3)
35	AC	2.0	Unshielded	Unshielded	-
36	DC	2.4	Unshielded	Unshielded	-

*1) Used for Radiated Emission test

*2) Used for Antenna Terminal test

*3) This cable is for testing and is not included with products.

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SECTION 5: Radiated emission

5.1 Operating environment

Test room : Refer to data
Temperature : Refer to data
Humidity : Refer to data

5.2 Test configuration

EUT was placed on a platform of nominal size, 1.0 m by 2.0 m, raised 0.8 m above the conducting ground plane. The table is made of expanded polystyrol and expanded polypropylene and the table top is covered with polycarbonate. That has very low permittivity. The rear of EUT, including its peripherals was aligned and flushed with rear of tabletop. I/O cables that were connected to the peripherals were bundled in center. They were folded back and for the forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. Photographs of the set up are shown in Appendix 3.

5.3 Test conditions

Frequency range : 30 MHz - 40 GHz
EUT position : Table top

5.4 Test procedure

The Radiated Electric Field Strength intensity has been measured on an anechoic chamber with a ground plane and at a distance of 3 m. Measurements were performed with quasi-peak, peak and average detector. The measuring antenna height was varied between 1 and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. Test antenna was aimed at the EUT for receiving the maximum signal and always kept within the illumination area of the 3 dB beamwidth of the antenna.

The measurements were performed for both vertical and horizontal antenna polarization. The radiated emission measurements were made with the following detector function of the test receiver.

The noise levels were confirmed at each position of 0 deg. and 30 deg. of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

	<u>30 MHz -1000 MHz (Test receiver)</u>	<u>1 GHz – 40 GHz (Spectrum analyzer)</u>
Detector Type	: QP	: AV *1) PK
IF Band width	: 120 kHz	: RBW 1 MHz/ VBW 10 Hz RBW 1 MHz/ VBW 3 MHz

*1) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

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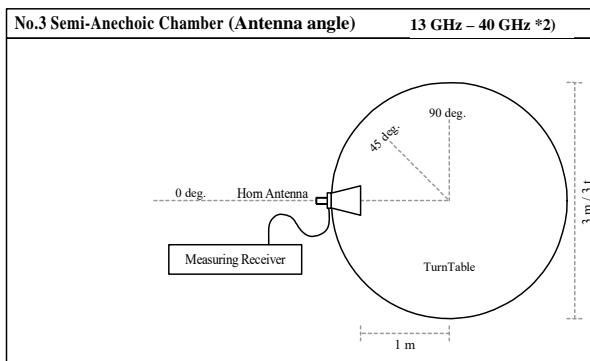
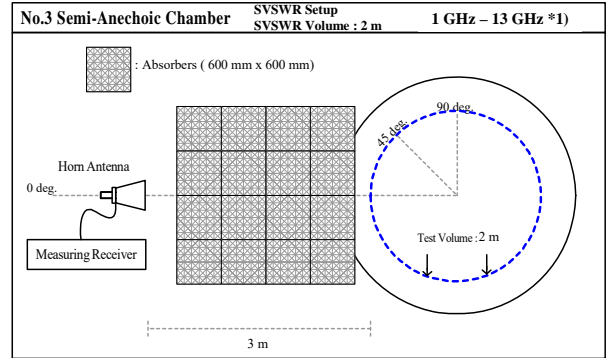
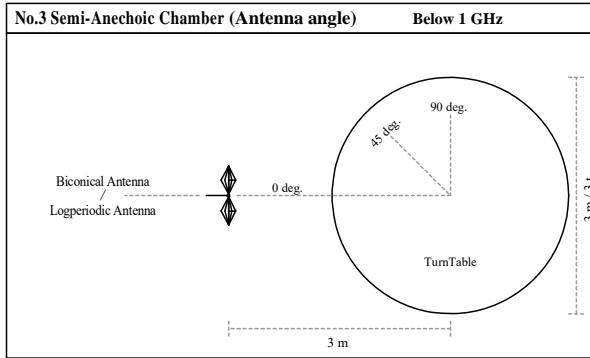
Shonan EMC Lab.

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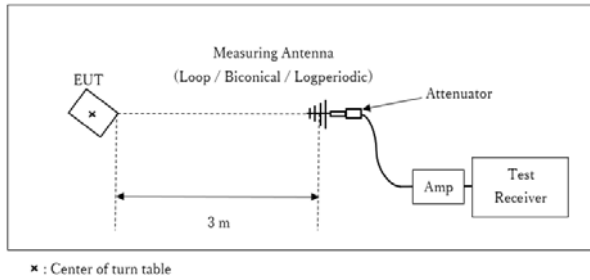
Figure 1. Antenna angle



- *1) Hi type : 1 GHz - 13 GHz, Lo type : 1 GHz - 10 GHz
- *2) Hi type : 13 GHz - 40 GHz, Lo type: 10 GHz - 40 GHz

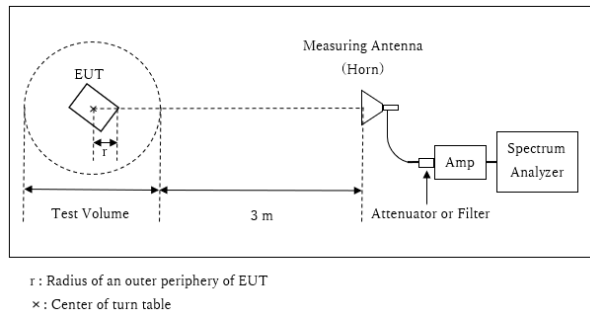
Figure 2: Test Setup

Below 1 GHz



Test Distance: 3 m

1 GHz - 13 GHz (1 GHz - 10 GHz) *1)



Hi type (14 inch Display)

Distance Factor: $20 \times \log(3.05 \text{ m} / 3.00 \text{ m}) = 0.15 \text{ dB}$
* Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.05 \text{ m}$

SVSWR Volume : 2.00 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.95 \text{ m}$

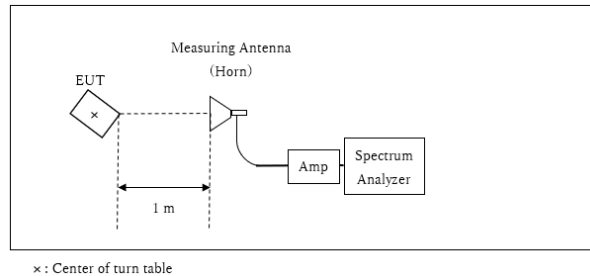
Lo type (9.8 inch Display)

Distance Factor: $20 \times \log(3.15 \text{ m} / 3.00 \text{ m}) = 0.43 \text{ dB}$
* Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.15 \text{ m}$

SVSWR Volume : 2.00 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.85 \text{ m}$

*1) Hi type : 1 GHz - 13 GHz, Lo type : 1 GHz - 10 GHz

13 GHz - 40 GHz (10 GHz - 40 GHz) *2)



Distance Factor: $20 \times \log(1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$
*Test Distance: 1 m

*2) Hi type : 13 GHz - 40 GHz, Lo type : 10 GHz - 40 GHz

5.5 Results

Summary of the test results : Pass

UL Japan, Inc.

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Facsimile: +81 463 50 6401

SECTION 6: Antenna power conduction for receivers

6.1 Operating environment

Test room : Refer to data
Temperature : Refer to data
Humidity : Refer to data

6.2 Test configuration

The EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. Photographs of the set up are shown in Appendix 1.

6.3 Test conditions

Frequency range : 30 MHz - 40 GHz
EUT position : Table top

6.4 Test procedure

The antenna power conduction for receivers was made with the following detector function of the test receiver.

	<u>30 MHz -1000 MHz (Test receiver)</u>	<u>1 GHz – 40 GHz</u>
Detector Type	: QP	Peak
IF Band width	: 120 kHz	RBW: 1 MHz/ VBW: 3 MHz

6.5 Results

Summary of the test results : Pass

UL Japan, Inc.

Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone: +81 463 50 6400

Facsimile: +81 463 50 6401

DATA OF RADIATED EMISSION TEST

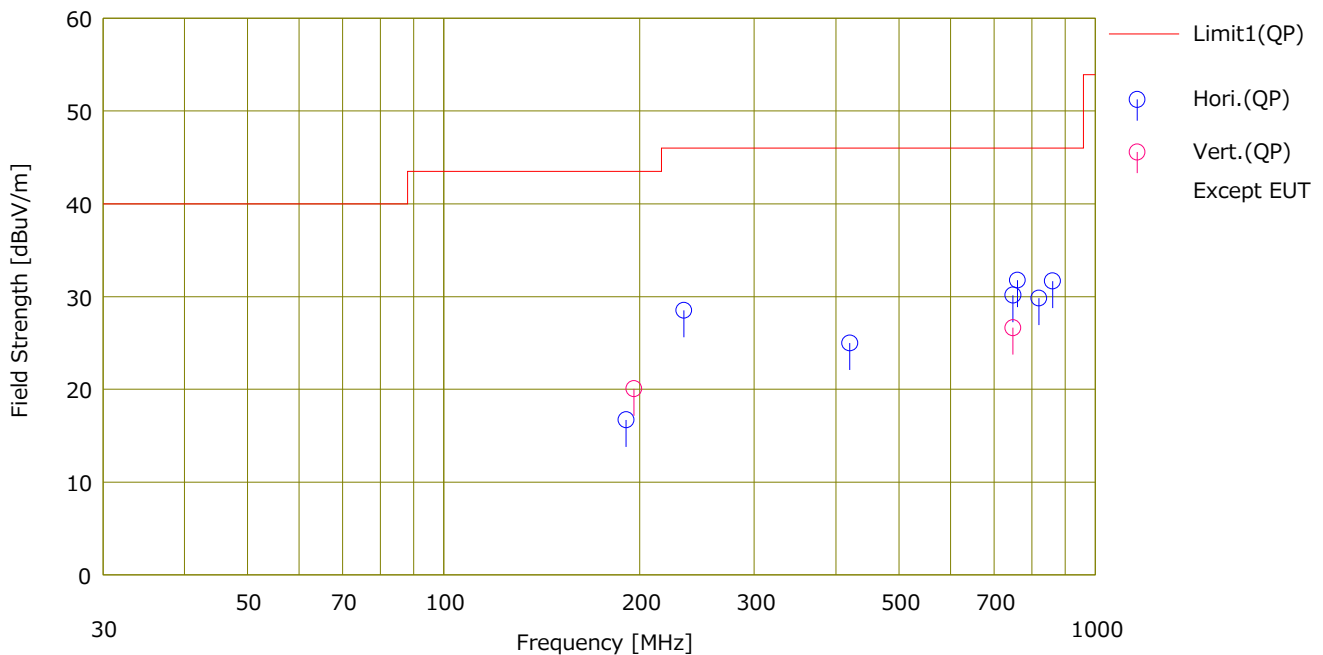
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 56 %RH
Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dBuV/m]	<QP> [dB]					
1	190.632	24.60	16.37	7.91	32.05	-0.12	16.71	43.50	26.7	Hori.	174	276	BC	
2	233.836	40.90	11.43	8.17	32.00	0.00	28.50	46.00	17.5	Hori.	208	224	LP	
3	420.287	31.80	16.04	9.09	31.94	0.00	24.99	46.00	21.0	Hori.	100	205	LP	
4	748.558	31.40	20.15	10.33	31.74	0.00	30.14	46.00	15.8	Hori.	105	195	LP	
5	760.348	32.80	20.30	10.38	31.72	0.00	31.76	46.00	14.2	Hori.	224	192	LP	
6	819.682	29.90	20.89	10.56	31.53	0.00	29.82	46.00	16.1	Hori.	100	222	LP	
7	860.404	30.40	21.83	10.70	31.26	0.00	31.67	46.00	14.3	Hori.	100	303	LP	
8	195.853	27.80	16.51	7.94	32.05	-0.14	20.06	43.50	23.4	Vert.	100	321	BC	
9	748.380	27.90	20.15	10.33	31.74	0.00	26.64	46.00	19.3	Vert.	105	195	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (87.75 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 56 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	87.362	25.70	7.67	7.16	32.15	0.39	8.77	40.00	31.2	Hori.	234	167	BC	
2	88.138	26.20	7.83	7.17	32.14	0.38	9.44	43.50	34.0	Hori.	223	275	BC	
3	174.724	29.50	15.73	7.81	32.06	0.00	20.98	43.50	22.5	Hori.	186	249	BC	
4	176.276	24.30	15.87	7.82	32.06	-0.01	15.92	43.50	27.5	Hori.	178	269	BC	
5	262.086	37.00	12.32	8.33	31.98	0.00	25.67	46.00	20.3	Hori.	136	297	LP	
6	786.258	26.10	20.60	10.45	31.68	0.00	25.47	46.00	20.5	Hori.	107	203	LP	
7	873.620	23.10	21.95	10.74	31.19	0.00	24.60	46.00	21.4	Hori.	100	193	LP	
8	87.362	35.20	7.67	7.16	32.15	0.39	18.27	40.00	21.7	Vert.	100	104	BC	
9	88.138	33.90	7.83	7.17	32.14	0.38	17.14	43.50	26.3	Vert.	100	101	BC	
10	174.724	22.90	15.73	7.81	32.06	0.00	14.38	43.50	29.1	Vert.	100	358	BC	
11	176.276	26.10	15.87	7.82	32.06	-0.01	17.72	43.50	25.7	Vert.	100	184	BC	
12	262.086	32.70	12.32	8.33	31.98	0.00	21.37	46.00	24.6	Vert.	184	322	LP	
13	786.258	23.30	20.60	10.45	31.68	0.00	22.67	46.00	23.3	Vert.	113	147	LP	
14	873.620	21.80	21.95	10.74	31.19	0.00	23.30	46.00	22.7	Vert.	100	310	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 56 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	97.512	27.80	9.65	7.26	32.14	0.13	12.70	43.50	30.8	Hori.	193	262	BC	
2	98.288	29.70	9.81	7.26	32.14	0.11	14.74	43.50	28.7	Hori.	283	268	BC	
3	195.024	24.30	16.50	7.94	32.05	-0.14	16.55	43.50	26.9	Hori.	238	136	BC	
4	196.576	26.50	16.50	7.95	32.05	-0.14	18.76	43.50	24.7	Hori.	170	164	BC	
5	390.048	26.90	15.43	8.95	31.93	0.00	19.35	46.00	26.6	Hori.	300	126	LP	
6	682.584	22.80	19.65	10.09	31.91	0.00	20.63	46.00	25.3	Hori.	288	64	LP	
7	877.608	22.70	21.99	10.75	31.17	0.00	24.27	46.00	21.7	Hori.	100	192	LP	
8	97.512	30.00	9.65	7.26	32.14	0.13	14.90	43.50	28.6	Vert.	113	48	BC	
9	98.288	30.20	9.81	7.26	32.14	0.11	15.24	43.50	28.2	Vert.	100	15	BC	
10	195.024	25.40	16.50	7.94	32.05	-0.14	17.65	43.50	25.8	Vert.	100	181	BC	
11	196.576	25.90	16.50	7.95	32.05	-0.14	18.16	43.50	25.3	Vert.	100	159	BC	
12	390.048	26.80	15.43	8.95	31.93	0.00	19.25	46.00	26.7	Vert.	294	3	LP	
13	682.584	22.10	19.65	10.09	31.91	0.00	19.93	46.00	26.0	Vert.	100	298	LP	
14	877.608	21.70	21.99	10.75	31.17	0.00	23.27	46.00	22.7	Vert.	100	285	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (107.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 56 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	107.512	38.00	11.43	7.34	32.13	-0.09	24.55	43.50	18.9	Hori.	281	269	BC	
2	108.288	37.30	11.54	7.34	32.13	-0.10	23.95	43.50	19.5	Hori.	294	266	BC	
3	215.024	24.80	11.22	8.06	32.03	0.00	12.05	43.50	31.4	Hori.	154	216	LP	
4	216.576	26.10	11.21	8.07	32.02	0.00	13.36	46.00	32.6	Hori.	164	259	LP	
5	324.864	31.60	14.32	8.66	31.95	0.00	22.63	46.00	23.3	Hori.	154	134	LP	
6	645.072	22.20	19.24	9.95	31.95	0.00	19.44	46.00	26.5	Hori.	183	242	LP	
7	860.096	29.20	21.83	10.70	31.26	0.00	30.47	46.00	15.5	Hori.	142	23	LP	
8	107.512	35.90	11.43	7.34	32.13	-0.09	22.45	43.50	21.0	Vert.	100	231	BC	
9	108.288	35.80	11.54	7.34	32.13	-0.10	22.45	43.50	21.0	Vert.	100	231	BC	
10	215.024	25.40	11.22	8.06	32.03	0.00	12.65	43.50	30.8	Vert.	100	169	LP	
11	216.576	29.50	11.21	8.07	32.02	0.00	16.76	46.00	29.2	Vert.	100	178	LP	
12	324.864	28.50	14.32	8.66	31.95	0.00	19.53	46.00	26.4	Vert.	100	153	LP	
13	645.072	22.40	19.24	9.95	31.95	0.00	19.64	46.00	26.3	Vert.	100	189	LP	
14	860.096	22.10	21.83	10.70	31.26	0.00	23.37	46.00	22.6	Vert.	100	184	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

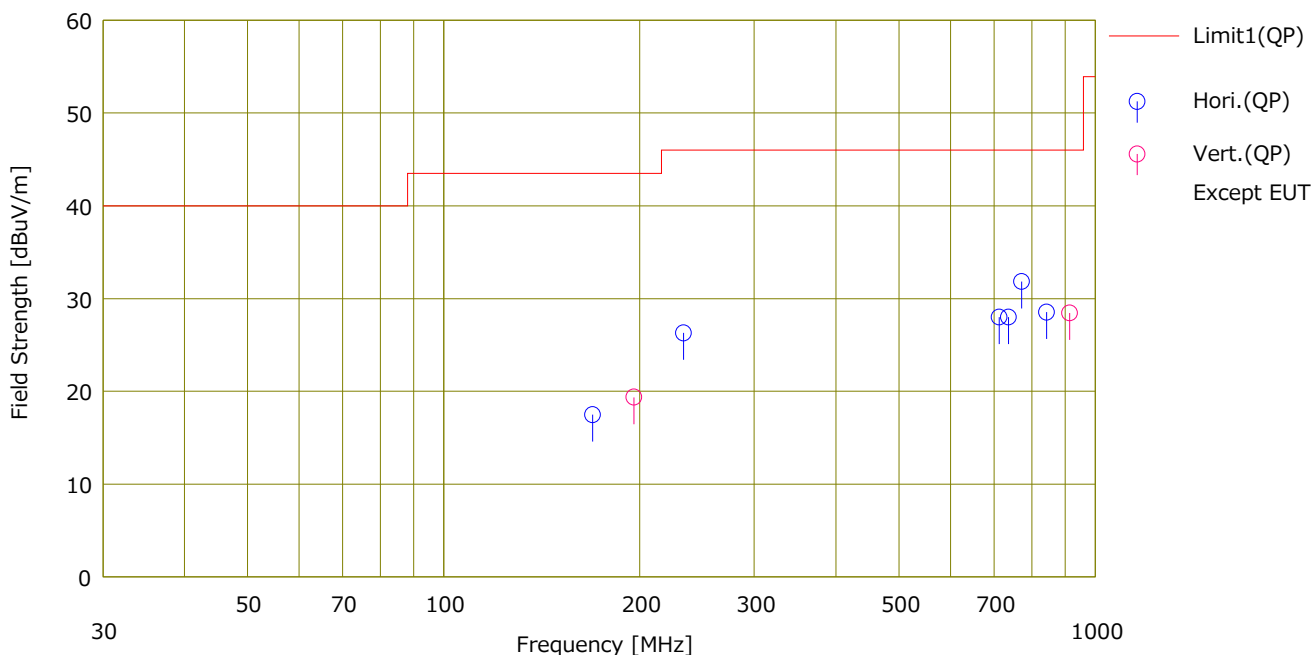
UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 56 %RH
Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]	<QP> [dB]					
1	169.301	26.20	15.51	7.77	32.07	0.07	17.48	43.50	26.0	Hori.	290	174	BC	
2	233.607	38.70	11.42	8.17	32.00	0.00	26.29	46.00	19.7	Hori.	193	283	LP	
3	712.700	29.70	19.94	10.21	31.85	0.00	28.00	46.00	18.0	Hori.	100	215	LP	
4	736.448	29.40	20.08	10.29	31.77	0.00	28.00	46.00	18.0	Hori.	100	193	LP	
5	771.451	32.70	20.42	10.41	31.70	0.00	31.83	46.00	14.1	Hori.	100	196	LP	
6	842.609	28.00	21.26	10.64	31.37	0.00	28.53	46.00	17.4	Hori.	100	194	LP	
7	195.852	27.10	16.51	7.94	32.05	-0.14	19.36	43.50	24.1	Vert.	100	333	BC	
8	913.977	26.40	22.13	10.86	30.94	0.00	28.45	46.00	17.5	Vert.	100	148	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (87.75 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 56 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	87.362	25.90	7.67	7.16	32.15	0.39	8.97	40.00	31.0	Hori.	363	156	BC	
2	88.138	26.60	7.83	7.17	32.14	0.38	9.84	43.50	33.6	Hori.	360	150	BC	
3	174.724	24.40	15.73	7.81	32.06	0.00	15.88	43.50	27.6	Hori.	190	298	BC	
4	176.276	28.20	15.87	7.82	32.06	-0.01	19.82	43.50	23.6	Hori.	174	305	BC	
5	264.414	34.00	12.46	8.34	31.98	0.00	22.82	46.00	23.1	Hori.	128	293	LP	
6	705.104	24.90	19.85	10.18	31.87	0.00	23.06	46.00	22.9	Hori.	100	216	LP	
7	873.620	22.80	21.95	10.74	31.19	0.00	24.30	46.00	21.7	Hori.	100	192	LP	
8	87.362	35.20	7.67	7.16	32.15	0.39	18.27	40.00	21.7	Vert.	100	99	BC	
9	88.138	35.20	7.83	7.17	32.14	0.38	18.44	43.50	25.0	Vert.	100	98	BC	
10	174.724	23.10	15.73	7.81	32.06	0.00	14.58	43.50	28.9	Vert.	100	200	BC	
11	176.276	26.60	15.87	7.82	32.06	-0.01	18.22	43.50	25.2	Vert.	100	197	BC	
12	264.414	30.80	12.46	8.34	31.98	0.00	19.62	46.00	26.3	Vert.	100	302	LP	
13	705.104	22.90	19.85	10.18	31.87	0.00	21.06	46.00	24.9	Vert.	100	96	LP	
14	873.620	21.80	21.95	10.74	31.19	0.00	23.30	46.00	22.7	Vert.	100	325	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 56 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	97.512	27.10	9.65	7.26	32.14	0.13	12.00	43.50	31.5	Hori.	200	271	BC	
2	98.288	28.90	9.81	7.26	32.14	0.11	13.94	43.50	29.5	Hori.	205	270	BC	
3	195.024	23.50	16.50	7.94	32.05	-0.14	15.75	43.50	27.7	Hori.	171	112	BC	
4	196.576	26.10	16.50	7.95	32.05	-0.14	18.36	43.50	25.1	Hori.	173	288	BC	
5	390.048	27.70	15.43	8.95	31.93	0.00	20.15	46.00	25.8	Hori.	100	152	LP	
6	688.016	29.10	19.67	10.11	31.90	0.00	26.98	46.00	19.0	Hori.	100	31	LP	
7	877.608	22.50	21.99	10.75	31.17	0.00	24.07	46.00	21.9	Hori.	100	189	LP	
8	97.512	29.90	9.65	7.26	32.14	0.13	14.80	43.50	28.7	Vert.	112	39	BC	
9	98.288	30.00	9.81	7.26	32.14	0.11	15.04	43.50	28.4	Vert.	129	46	BC	
10	195.024	24.50	16.50	7.94	32.05	-0.14	16.75	43.50	26.7	Vert.	100	324	BC	
11	196.576	25.80	16.50	7.95	32.05	-0.14	18.06	43.50	25.4	Vert.	100	177	BC	
12	390.048	25.30	15.43	8.95	31.93	0.00	17.75	46.00	28.2	Vert.	137	179	LP	
13	688.016	24.80	19.67	10.11	31.90	0.00	22.68	46.00	23.3	Vert.	100	19	LP	
14	877.608	21.70	21.99	10.75	31.17	0.00	23.27	46.00	22.7	Vert.	100	299	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/03

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (107.9 MHz)_digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Lo type (9.8 inch Display)	Power	: DC 13.2 V
Serial No.	: 500065	Temp./Humi.	: 23 deg.C / 56 %RH
Remarks	: Local, EUT Axis Hor: 0 deg, Ver: 0 deg		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shunsaku Yumi

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	107.512	38.10	11.43	7.34	32.13	-0.09	24.65	43.50	18.8	Hori.	292	264	BC	
2	108.288	37.40	11.54	7.34	32.13	-0.10	24.05	43.50	19.4	Hori.	290	265	BC	
3	215.024	24.30	11.22	8.06	32.03	0.00	11.55	43.50	31.9	Hori.	158	200	LP	
4	216.576	25.80	11.21	8.07	32.02	0.00	13.06	46.00	32.9	Hori.	158	257	LP	
5	324.864	29.40	14.32	8.66	31.95	0.00	20.43	46.00	25.5	Hori.	121	128	LP	
6	752.584	26.10	20.21	10.36	31.73	0.00	24.94	46.00	21.0	Hori.	114	203	LP	
7	860.096	30.00	21.83	10.70	31.26	0.00	31.27	46.00	14.7	Hori.	108	303	LP	
8	107.512	36.70	11.43	7.34	32.13	-0.09	23.25	43.50	20.2	Vert.	100	229	BC	
9	108.288	36.50	11.54	7.34	32.13	-0.10	23.15	43.50	20.3	Vert.	100	230	BC	
10	215.024	25.40	11.22	8.06	32.03	0.00	12.65	43.50	30.8	Vert.	100	169	LP	
11	216.576	29.50	11.21	8.07	32.02	0.00	16.76	46.00	29.2	Vert.	100	175	LP	
12	324.864	29.20	14.32	8.66	31.95	0.00	20.23	46.00	25.7	Vert.	190	359	LP	
13	752.584	24.10	20.21	10.36	31.73	0.00	22.94	46.00	23.0	Vert.	104	42	LP	
14	860.096	22.50	21.83	10.70	31.26	0.00	23.77	46.00	22.2	Vert.	100	333	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

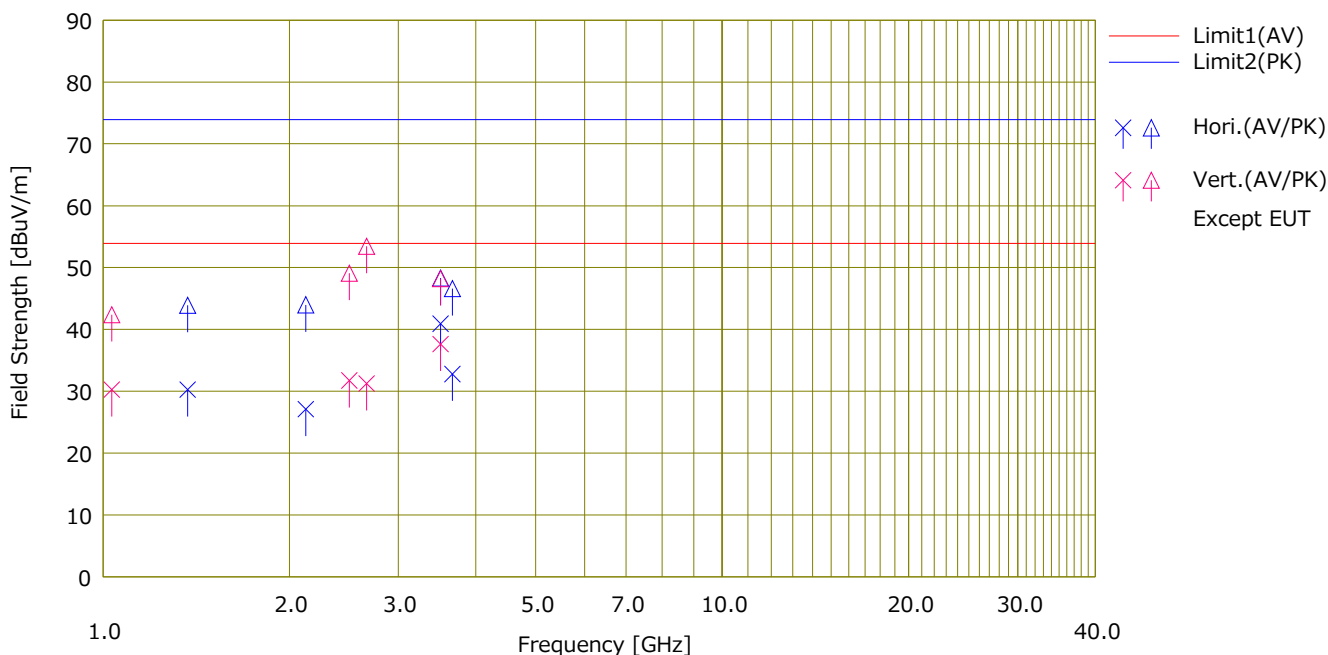
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 55 %RH
Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm, 13 GHz - 40 GHz D.Fac=(100/300)=-9.54 dB	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]					
1	1370.790	41.66	55.26	26.12	3.20	41.13	0.43	30.28	43.88	53.90	73.90	23.6	30.0	Hori.	141	171	31SH3	
2	2124.984	36.33	53.20	27.91	4.00	41.57	0.43	27.10	43.97	53.90	73.90	26.8	29.9	Hori.	115	183	31SH3	
3	3510.363	48.31	55.67	29.18	5.21	42.19	0.43	40.94	48.30	53.90	73.90	12.9	25.6	Hori.	115	217	31SH3	
4	3667.600	39.57	53.38	29.71	5.31	42.24	0.43	32.78	46.59	53.90	73.90	21.1	27.3	Hori.	100	195	31SH3	
5	1033.465	43.37	55.53	24.85	2.77	41.16	0.43	30.26	42.42	53.90	73.90	23.6	31.4	Vert.	100	295	31SH3	
6	2500.000	40.38	57.73	28.27	4.36	41.70	0.43	31.74	49.09	53.90	73.90	22.1	24.8	Vert.	132	176	31SH3	
7	2666.800	39.69	61.87	28.39	4.50	41.74	0.43	31.27	53.45	53.90	73.90	22.6	20.4	Vert.	116	215	31SH3	
8	3510.504	45.00	55.57	29.18	5.21	42.19	0.43	37.63	48.20	53.90	73.90	16.2	25.7	Vert.	134	226	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (87.75 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 55 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1850.898					35.57	50.75	25.91	3.74	41.41	0.43					
2	2115.312	35.73	50.93	27.81	4.00	41.57	0.43	26.40	41.60	53.90	73.90	27.5	32.3	Hori.	103	225	31SH3	
3	3172.968	35.93	50.81	29.29	4.93	41.95	0.43	28.63	43.51	53.90	73.90	25.2	30.3	Hori.	100	197	31SH3	
4	3437.382	36.26	51.37	28.84	5.15	42.14	0.43	28.54	43.65	53.90	73.90	25.3	30.2	Hori.	112	166	31SH3	
5	3525.520	45.86	56.83	29.26	5.21	42.20	0.43	38.56	49.53	53.90	73.90	15.3	24.3	Hori.	115	167	31SH3	
6	4406.900	36.68	51.83	30.72	5.85	42.78	0.43	30.90	46.05	53.90	73.90	23.0	27.8	Hori.	100	152	31SH3	
7	5200.142	36.83	51.62	31.94	6.43	43.17	0.43	32.46	47.25	53.90	73.90	21.4	26.6	Hori.	100	173	31SH3	
8	1850.898	35.75	52.06	25.91	3.74	41.41	0.43	24.42	40.73	53.90	73.90	29.4	33.1	Vert.	130	160	31SH3	
9	2115.312	35.36	50.52	27.81	4.00	41.57	0.43	26.03	41.19	53.90	73.90	27.8	32.7	Vert.	100	113	31SH3	
10	3172.968	35.98	51.26	29.29	4.93	41.95	0.43	28.68	43.96	53.90	73.90	25.2	29.9	Vert.	100	225	31SH3	
11	3437.382	36.25	51.78	28.84	5.15	42.14	0.43	28.53	44.06	53.90	73.90	25.3	29.8	Vert.	100	350	31SH3	
12	3525.520	45.73	54.68	29.26	5.21	42.20	0.43	38.43	47.38	53.90	73.90	15.4	26.5	Vert.	111	152	31SH3	
13	4406.900	36.65	52.13	30.72	5.85	42.78	0.43	30.87	46.35	53.90	73.90	23.0	27.5	Vert.	103	188	31SH3	
14	5200.142	37.13	52.58	31.94	6.43	43.17	0.43	32.76	48.21	53.90	73.90	21.1	25.6	Vert.	100	291	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz)_analog
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Lo type (9.8 inch Display)	Power	: DC 13.2 V
Serial No.	: 500065	Temp./Humi.	: 23 deg.C / 55 %RH
Remarks	: Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1950.240					35.47	50.30	26.35	3.84	41.49	0.43					
2	2340.288	35.63	50.22	28.50	4.21	41.65	0.43	27.12	41.71	53.90	73.90	26.7	32.1	Hori.	133	155	31SH3	
3	3120.384	36.05	51.13	29.31	4.89	41.92	0.43	28.76	43.84	53.90	73.90	25.1	30.0	Hori.	120	100	31SH3	
4	3510.432	45.38	53.86	29.18	5.21	42.19	0.43	38.01	46.49	53.90	73.90	15.8	27.4	Hori.	110	226	31SH3	
5	3802.968	36.01	51.65	29.99	5.41	42.27	0.43	29.57	45.21	53.90	73.90	24.3	28.6	Hori.	100	336	31SH3	
6	4875.600	36.55	52.03	31.63	6.20	42.93	0.43	31.88	47.36	53.90	73.90	22.0	26.5	Hori.	100	230	31SH3	
7	5753.208	36.83	52.33	32.78	6.80	43.43	0.43	33.41	48.91	53.90	73.90	20.4	24.9	Hori.	100	351	31SH3	
8	1950.240	35.73	51.06	26.35	3.84	41.49	0.43	24.86	40.19	53.90	73.90	29.0	33.7	Vert.	100	60	31SH3	
9	2340.288	35.53	51.00	28.50	4.21	41.65	0.43	27.02	42.49	53.90	73.90	26.8	31.4	Vert.	120	116	31SH3	
10	3120.384	36.00	51.43	29.31	4.89	41.92	0.43	28.71	44.14	53.90	73.90	25.1	29.7	Vert.	111	152	31SH3	
11	3510.432	44.87	53.72	29.18	5.21	42.19	0.43	37.50	46.35	53.90	73.90	16.4	27.5	Vert.	131	205	31SH3	
12	3802.968	35.87	51.63	29.99	5.41	42.27	0.43	29.43	45.19	53.90	73.90	24.4	28.7	Vert.	100	196	31SH3	
13	4875.600	36.46	51.71	31.63	6.20	42.93	0.43	31.79	47.04	53.90	73.90	22.1	26.8	Vert.	100	358	31SH3	
14	5753.208	36.66	52.23	32.78	6.80	43.43	0.43	33.24	48.81	53.90	73.90	20.6	25.0	Vert.	100	255	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (107.9 MHz)_analog
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Lo type (9.8 inch Display)	Power	: DC 13.2 V
Serial No.	: 500065	Temp./Humi.	: 23 deg.C / 55 %RH
Remarks	: Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1732.608					35.63	51.83	25.54	3.61	41.31	0.43					
2	2165.760	38.88	55.72	28.33	4.05	41.59	0.43	30.10	46.94	53.90	73.90	23.8	26.9	Hori.	100	167	31SH3	
3	3465.216	51.26	56.78	28.97	5.18	42.16	0.43	43.68	49.20	53.90	73.90	10.2	24.7	Hori.	123	164	31SH3	
4	3898.368	36.25	51.30	30.12	5.47	42.30	0.43	29.97	45.02	53.90	73.90	23.9	28.8	Hori.	116	188	31SH3	
5	4223.232	36.26	51.58	30.37	5.72	42.58	0.43	30.20	45.52	53.90	73.90	23.7	28.3	Hori.	105	167	31SH3	
6	5414.400	37.26	52.26	32.12	6.58	43.40	0.43	32.99	47.99	53.90	73.90	20.9	25.9	Hori.	100	200	31SH3	
7	5955.840	38.37	52.58	33.26	6.94	43.39	0.43	35.61	49.82	53.90	73.90	18.2	24.0	Hori.	100	182	31SH3	
8	1732.608	36.38	51.66	25.54	3.61	41.31	0.43	24.65	39.93	53.90	73.90	29.2	33.9	Vert.	122	180	31SH3	
9	2165.760	37.76	53.96	28.33	4.05	41.59	0.43	28.98	45.18	53.90	73.90	24.9	28.7	Vert.	100	185	31SH3	
10	3465.216	48.76	55.51	28.97	5.18	42.16	0.43	41.18	47.93	53.90	73.90	12.7	25.9	Vert.	100	203	31SH3	
11	3898.368	36.35	51.73	30.12	5.47	42.30	0.43	30.07	45.45	53.90	73.90	23.8	28.4	Vert.	130	182	31SH3	
12	4223.232	36.67	51.71	30.37	5.72	42.58	0.43	30.61	45.65	53.90	73.90	23.2	28.2	Vert.	100	163	31SH3	
13	5414.400	37.08	52.26	32.12	6.58	43.40	0.43	32.81	47.99	53.90	73.90	21.0	25.9	Vert.	100	170	31SH3	
14	5955.840	37.27	52.47	33.26	6.94	43.39	0.43	34.51	49.71	53.90	73.90	19.3	24.1	Vert.	100	182	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

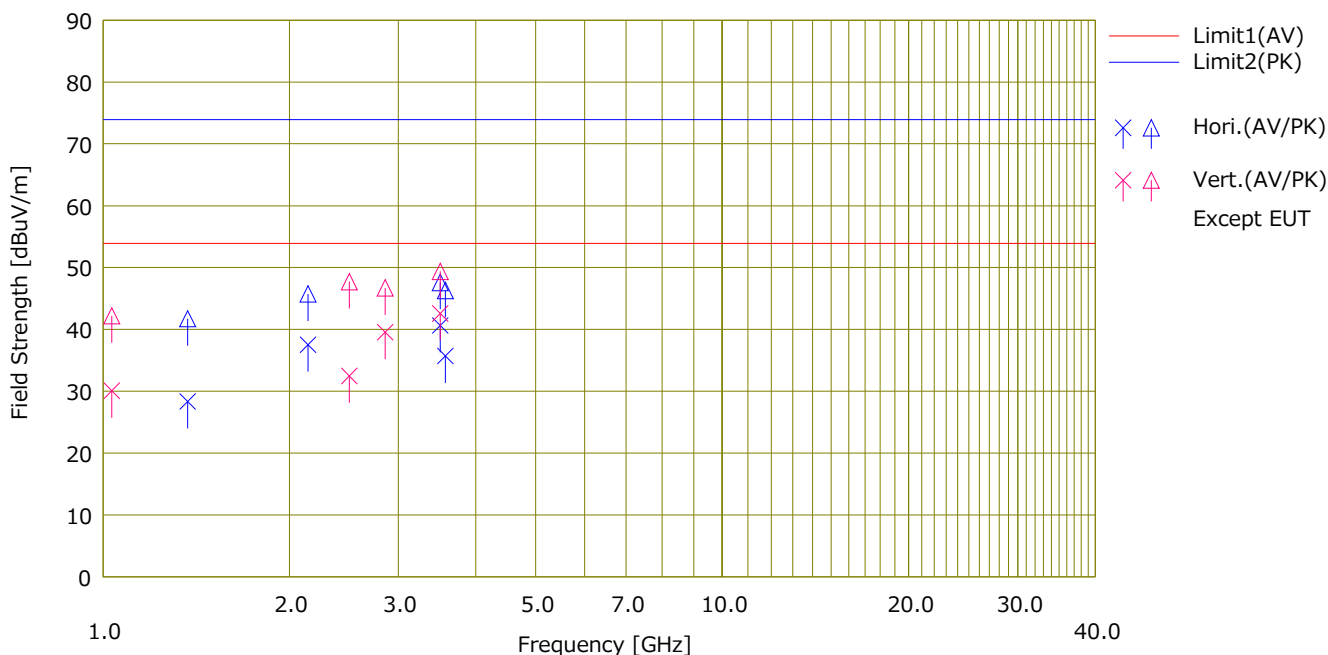
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 55 %RH
Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm, 13 GHz - 40 GHz D.Fac=(100/300)=-9.54 dB	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]					
1	1370.942	39.73	53.11	26.12	3.20	41.13	0.43	28.35	41.73	53.90	73.90	25.5	32.1	Hori.	100	213	31SH3	
2	2143.277	46.55	54.75	28.10	4.03	41.58	0.43	37.53	45.73	53.90	73.90	16.3	28.1	Hori.	183	1	31SH3	
3	3503.173	48.06	55.03	29.15	5.20	42.19	0.43	40.65	47.62	53.90	73.90	13.2	26.2	Hori.	211	172	31SH3	
4	3572.089	42.78	53.37	29.47	5.25	42.21	0.43	35.72	46.31	53.90	73.90	18.1	27.5	Hori.	192	60	31SH3	
5	1033.655	43.20	55.31	24.85	2.77	41.16	0.43	30.09	42.20	53.90	73.90	23.8	31.7	Vert.	178	189	31SH3	
6	2500.000	41.13	56.36	28.27	4.36	41.70	0.43	32.49	47.72	53.90	73.90	21.4	26.1	Vert.	161	185	31SH3	
7	2857.654	47.38	54.56	28.85	4.67	41.79	0.43	39.54	46.72	53.90	73.90	14.3	27.1	Vert.	167	351	31SH3	
8	3503.193	50.00	56.78	29.15	5.20	42.19	0.43	42.59	49.37	53.90	73.90	11.3	24.5	Vert.	137	158	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]

Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (87.75 MHz)_digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Lo type (9.8 inch Display)	Power	: DC 13.2 V
Serial No.	: 500065	Temp./Humi.	: 23 deg.C / 55 %RH
Remarks	: Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1850.898					35.50	50.72	25.91	3.74	41.41	0.43					
2	2115.312	35.61	50.88	27.81	4.00	41.57	0.43	26.28	41.55	53.90	73.90	27.6	32.3	Hori.	105	227	31SH3	
3	3172.968	35.86	50.83	29.29	4.93	41.95	0.43	28.56	43.53	53.90	73.90	25.3	30.3	Hori.	100	195	31SH3	
4	3437.382	36.12	51.22	28.84	5.15	42.14	0.43	28.40	43.50	53.90	73.90	25.5	30.4	Hori.	113	164	31SH3	
5	3525.520	40.83	55.16	29.26	5.21	42.20	0.43	33.53	47.86	53.90	73.90	20.3	26.0	Hori.	117	167	31SH3	
6	4406.900	36.68	51.78	30.72	5.85	42.78	0.43	30.90	46.00	53.90	73.90	23.0	27.9	Hori.	100	151	31SH3	
7	5200.142	36.78	51.53	31.94	6.43	43.17	0.43	32.41	47.16	53.90	73.90	21.4	26.7	Hori.	100	173	31SH3	
8	1850.898	35.72	52.00	25.91	3.74	41.41	0.43	24.39	40.67	53.90	73.90	29.5	33.2	Vert.	128	158	31SH3	
9	2115.312	35.22	50.30	27.81	4.00	41.57	0.43	25.89	40.97	53.90	73.90	28.0	32.9	Vert.	100	114	31SH3	
10	3172.968	35.87	51.12	29.29	4.93	41.95	0.43	28.57	43.82	53.90	73.90	25.3	30.0	Vert.	100	225	31SH3	
11	3437.382	36.17	51.65	28.84	5.15	42.14	0.43	28.45	43.93	53.90	73.90	25.4	29.9	Vert.	100	346	31SH3	
12	3525.520	40.00	53.67	29.26	5.21	42.20	0.43	32.70	46.37	53.90	73.90	21.2	27.5	Vert.	114	154	31SH3	
13	4406.900	36.63	52.11	30.72	5.85	42.78	0.43	30.85	46.33	53.90	73.90	23.0	27.5	Vert.	105	187	31SH3	
14	5200.142	37.00	52.23	31.94	6.43	43.17	0.43	32.63	47.86	53.90	73.90	21.2	26.0	Vert.	100	292	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz)_digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Lo type (9.8 inch Display)	Power	: DC 13.2 V
Serial No.	: 500065	Temp./Humi.	: 23 deg.C / 55 %RH
Remarks	: Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1950.240					35.46	50.27	26.35	3.84	41.49	0.43					
2	2340.288	35.60	50.20	28.50	4.21	41.65	0.43	27.09	41.69	53.90	73.90	26.8	32.2	Hori.	135	153	31SH3	
3	3120.384	36.03	51.10	29.31	4.89	41.92	0.43	28.74	43.81	53.90	73.90	25.1	30.0	Hori.	121	101	31SH3	
4	3510.432	36.00	51.06	29.18	5.21	42.19	0.43	28.63	43.69	53.90	73.90	25.2	30.2	Hori.	112	226	31SH3	
5	3802.968	36.00	51.64	29.99	5.41	42.27	0.43	29.56	45.20	53.90	73.90	24.3	28.7	Hori.	100	340	31SH3	
6	4875.600	36.53	51.97	31.63	6.20	42.93	0.43	31.86	47.30	53.90	73.90	22.0	26.6	Hori.	100	229	31SH3	
7	5753.208	36.81	52.30	32.78	6.80	43.43	0.43	33.39	48.88	53.90	73.90	20.5	25.0	Hori.	100	353	31SH3	
8	1950.240	35.55	51.03	26.35	3.84	41.49	0.43	24.68	40.16	53.90	73.90	29.2	33.7	Vert.	100	58	31SH3	
9	2340.288	35.51	50.78	28.50	4.21	41.65	0.43	27.00	42.27	53.90	73.90	26.9	31.6	Vert.	117	114	31SH3	
10	3120.384	36.00	51.43	29.31	4.89	41.92	0.43	28.71	44.14	53.90	73.90	25.1	29.7	Vert.	113	149	31SH3	
11	3510.432	36.13	51.40	29.18	5.21	42.19	0.43	28.76	44.03	53.90	73.90	25.1	29.8	Vert.	133	202	31SH3	
12	3802.968	35.88	51.58	29.99	5.41	42.27	0.43	29.44	45.14	53.90	73.90	24.4	28.7	Vert.	100	192	31SH3	
13	4875.600	36.37	51.73	31.63	6.20	42.93	0.43	31.70	47.06	53.90	73.90	22.2	26.8	Vert.	100	357	31SH3	
14	5753.208	36.62	52.21	32.78	6.80	43.43	0.43	33.20	48.79	53.90	73.90	20.7	25.1	Vert.	100	252	31SH3	

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/08/04

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (107.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Lo type (9.8 inch Display)	Power : DC 13.2 V
Serial No. : 500065	Temp./Humi. : 23 deg.C / 55 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=315 cm	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yohsuke Matsuzawa

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1732.608					35.60	51.76	25.54	3.61	41.31	0.43					
2	2165.760	38.83	55.83	28.33	4.05	41.59	0.43	30.05	47.05	53.90	73.90	23.8	26.8	Hori.	100	166	31SH3	
3	3465.216	51.16	56.82	28.97	5.18	42.16	0.43	43.58	49.24	53.90	73.90	10.3	24.6	Hori.	122	165	31SH3	
4	3898.368	36.23	51.26	30.12	5.47	42.30	0.43	29.95	44.98	53.90	73.90	23.9	28.9	Hori.	115	188	31SH3	
5	4223.232	36.53	51.38	30.37	5.72	42.58	0.43	30.47	45.32	53.90	73.90	23.4	28.5	Hori.	105	168	31SH3	
6	5414.400	37.03	52.05	32.12	6.58	43.40	0.43	32.76	47.78	53.90	73.90	21.1	26.1	Hori.	100	195	31SH3	
7	5955.840	37.17	52.47	33.26	6.94	43.39	0.43	34.41	49.71	53.90	73.90	19.4	24.1	Hori.	100	178	31SH3	
8	1732.608	36.21	51.63	25.54	3.61	41.31	0.43	24.48	39.90	53.90	73.90	29.4	34.0	Vert.	120	179	31SH3	
9	2165.760	37.66	53.86	28.33	4.05	41.59	0.43	28.88	45.08	53.90	73.90	25.0	28.8	Vert.	100	182	31SH3	
10	3465.216	48.78	55.33	28.97	5.18	42.16	0.43	41.20	47.75	53.90	73.90	12.7	26.1	Vert.	100	200	31SH3	
11	3898.368	36.13	51.66	30.12	5.47	42.30	0.43	29.85	45.38	53.90	73.90	24.0	28.5	Vert.	131	179	31SH3	
12	4223.232	36.57	51.73	30.37	5.72	42.58	0.43	30.51	45.67	53.90	73.90	23.3	28.2	Vert.	100	155	31SH3	
13	5414.400	37.00	52.00	32.12	6.58	43.40	0.43	32.73	47.73	53.90	73.90	21.1	26.1	Vert.	100	171	31SH3	
14	5955.840	37.18	52.36	33.26	6.94	43.39	0.43	34.42	49.60	53.90	73.90	19.4	24.3	Vert.	100	180	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

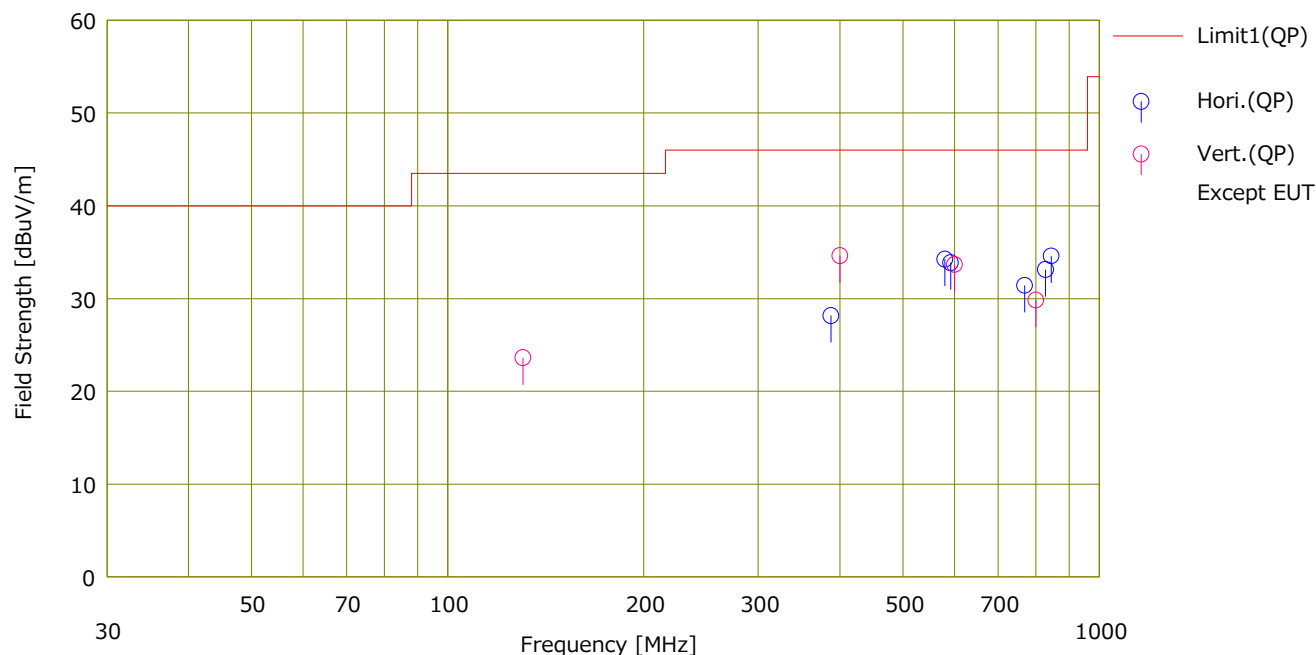
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/28

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz)_analog
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 23 deg.C / 59 %RH
 Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]	<QP> [dB]					
1	387.499	35.80	15.35	8.94	31.93	0.00	28.16	46.00	17.8	Hori.	100	92	LP	
2	580.195	37.70	18.76	9.73	31.96	0.00	34.23	46.00	11.7	Hori.	156	198	LP	
3	592.056	36.90	19.14	9.77	31.95	0.00	33.86	46.00	12.1	Hori.	160	194	LP	
4	768.627	32.30	20.43	10.40	31.71	0.00	31.42	46.00	14.5	Hori.	212	223	LP	
5	827.595	33.00	21.00	10.59	31.47	0.00	33.12	46.00	12.8	Hori.	100	222	LP	
6	844.780	34.00	21.30	10.65	31.35	0.00	34.60	46.00	11.4	Hori.	194	176	LP	
7	130.567	34.40	13.92	7.51	32.10	-0.12	23.61	43.50	19.8	Vert.	100	215	BC	
8	400.000	41.80	15.74	9.00	31.93	0.00	34.61	46.00	11.3	Vert.	100	183	LP	
9	600.012	36.50	19.30	9.80	31.94	0.00	33.66	46.00	12.3	Vert.	100	165	LP	
10	800.005	30.20	20.79	10.49	31.66	0.00	29.82	46.00	16.1	Vert.	100	174	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/28

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (87.75 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 23 deg.C / 59 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	87.362	35.30	7.67	7.16	32.15	0.39	18.37	40.00	21.6	Hori.	215	88	BC	
2	88.138	38.10	7.83	7.17	32.14	0.38	21.34	43.50	22.1	Hori.	230	81	BC	
3	174.724	23.00	15.73	7.81	32.06	0.00	14.48	43.50	29.0	Hori.	181	88	BC	
4	176.276	23.10	15.87	7.82	32.06	-0.01	14.72	43.50	28.7	Hori.	187	119	BC	
5	262.086	36.20	12.32	8.33	31.98	0.00	24.87	46.00	21.1	Hori.	148	117	LP	
6	264.414	31.00	12.46	8.34	31.98	0.00	19.82	46.00	26.1	Hori.	145	131	LP	
7	786.258	32.20	20.60	10.45	31.68	0.00	31.57	46.00	14.4	Hori.	100	225	LP	
8	793.242	30.10	20.71	10.47	31.67	0.00	29.61	46.00	16.3	Hori.	100	221	LP	
9	873.620	26.40	21.95	10.74	31.19	0.00	27.90	46.00	18.1	Hori.	188	257	LP	
10	881.380	24.40	21.99	10.76	31.15	0.00	26.00	46.00	20.0	Hori.	184	233	LP	
11	87.362	36.10	7.67	7.16	32.15	0.39	19.17	40.00	20.8	Vert.	100	163	BC	
12	88.138	38.50	7.83	7.17	32.14	0.38	21.74	43.50	21.7	Vert.	100	145	BC	
13	174.724	23.10	15.73	7.81	32.06	0.00	14.58	43.50	28.9	Vert.	100	189	BC	
14	176.276	22.90	15.87	7.82	32.06	-0.01	14.52	43.50	28.9	Vert.	100	185	BC	
15	262.086	28.30	12.32	8.33	31.98	0.00	16.97	46.00	29.0	Vert.	103	167	LP	
16	264.414	25.80	12.46	8.34	31.98	0.00	14.62	46.00	31.3	Vert.	100	174	LP	
17	786.258	27.50	20.60	10.45	31.68	0.00	26.87	46.00	19.1	Vert.	149	194	LP	
18	793.242	25.70	20.71	10.47	31.67	0.00	25.21	46.00	20.7	Vert.	146	192	LP	
19	873.620	22.20	21.95	10.74	31.19	0.00	23.70	46.00	22.3	Vert.	100	196	LP	
20	881.380	22.40	21.99	10.76	31.15	0.00	24.00	46.00	22.0	Vert.	131	197	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/28

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 23 deg.C / 59 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	97.512	33.20	9.65	7.26	32.14	0.13	18.10	43.50	25.4	Hori.	297	110	BC	
2	98.288	35.60	9.81	7.26	32.14	0.11	20.64	43.50	22.8	Hori.	302	118	BC	
3	195.024	25.40	16.50	7.94	32.05	-0.14	17.65	43.50	25.8	Hori.	183	88	BC	
4	196.576	23.70	16.50	7.95	32.05	-0.14	15.96	43.50	27.5	Hori.	153	127	BC	
5	585.072	31.00	18.93	9.75	31.96	0.00	27.72	46.00	18.2	Hori.	158	186	LP	
6	589.728	26.80	19.09	9.76	31.95	0.00	23.70	46.00	22.3	Hori.	100	338	LP	
7	780.096	32.50	20.48	10.43	31.69	0.00	31.72	46.00	14.2	Hori.	100	181	LP	
8	786.304	29.90	20.60	10.45	31.68	0.00	29.27	46.00	16.7	Hori.	100	221	LP	
9	877.608	23.70	21.99	10.75	31.17	0.00	25.27	46.00	20.7	Hori.	100	263	LP	
10	884.592	22.50	22.00	10.77	31.13	0.00	24.14	46.00	21.8	Hori.	100	198	LP	
11	97.512	38.30	9.65	7.26	32.14	0.13	23.20	43.50	20.3	Vert.	100	93	BC	
12	98.288	39.00	9.81	7.26	32.14	0.11	24.04	43.50	19.4	Vert.	100	113	BC	
13	195.024	23.80	16.50	7.94	32.05	-0.14	16.05	43.50	27.4	Vert.	100	184	BC	
14	196.576	24.50	16.50	7.95	32.05	-0.14	16.76	43.50	26.7	Vert.	100	139	BC	
15	585.072	23.20	18.93	9.75	31.96	0.00	19.92	46.00	26.0	Vert.	183	202	LP	
16	589.728	24.90	19.09	9.76	31.95	0.00	21.80	46.00	24.2	Vert.	100	201	LP	
17	780.096	27.00	20.48	10.43	31.69	0.00	26.22	46.00	19.7	Vert.	100	302	LP	
18	786.304	25.30	20.60	10.45	31.68	0.00	24.67	46.00	21.3	Vert.	167	201	LP	
19	877.608	22.00	21.99	10.75	31.17	0.00	23.57	46.00	22.4	Vert.	100	5	LP	
20	884.592	21.60	22.00	10.77	31.13	0.00	23.24	46.00	22.7	Vert.	100	62	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (107.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 23 deg.C / 59 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	107.512	39.80	11.43	7.34	32.13	-0.09	26.35	43.50	17.1	Hori.	302	218	BC	
2	108.288	40.40	11.54	7.34	32.13	-0.10	27.05	43.50	16.4	Hori.	303	263	BC	
3	215.024	31.00	11.22	8.06	32.03	0.00	18.25	43.50	25.2	Hori.	165	146	LP	
4	216.576	27.50	11.21	8.07	32.02	0.00	14.76	46.00	31.2	Hori.	140	72	LP	
5	322.536	25.50	14.24	8.65	31.95	0.00	16.44	46.00	29.5	Hori.	187	144	LP	
6	324.864	25.80	14.32	8.66	31.95	0.00	16.83	46.00	29.1	Hori.	100	265	LP	
7	430.048	32.60	16.09	9.14	31.94	0.00	25.89	46.00	20.1	Hori.	100	164	LP	
8	433.152	26.90	16.13	9.15	31.94	0.00	20.24	46.00	25.7	Hori.	100	166	LP	
9	752.584	27.00	20.21	10.36	31.73	0.00	25.84	46.00	20.1	Hori.	116	208	LP	
10	758.016	29.20	20.28	10.37	31.72	0.00	28.13	46.00	17.8	Hori.	108	211	LP	
11	860.096	27.20	21.83	10.70	31.26	0.00	28.47	46.00	17.5	Hori.	100	256	LP	
12	866.304	26.00	21.94	10.72	31.23	0.00	27.43	46.00	18.5	Hori.	100	212	LP	
13	967.608	30.90	22.16	11.04	30.46	0.00	33.64	53.90	20.2	Hori.	206	52	LP	
14	974.592	21.40	22.20	11.07	30.38	0.00	24.29	53.90	29.6	Hori.	100	75	LP	
15	107.512	42.20	11.43	7.34	32.13	-0.09	28.75	43.50	14.7	Vert.	100	111	BC	
16	108.288	43.10	11.54	7.34	32.13	-0.10	29.75	43.50	13.7	Vert.	100	129	BC	
17	215.024	34.80	11.22	8.06	32.03	0.00	22.05	43.50	21.4	Vert.	100	117	LP	
18	216.576	28.40	11.21	8.07	32.02	0.00	15.66	46.00	30.3	Vert.	100	354	LP	
19	322.536	23.20	14.24	8.65	31.95	0.00	14.14	46.00	31.8	Vert.	100	356	LP	
20	324.864	26.00	14.32	8.66	31.95	0.00	17.03	46.00	28.9	Vert.	110	112	LP	
21	430.048	31.30	16.09	9.14	31.94	0.00	24.59	46.00	21.4	Vert.	185	6	LP	
22	433.152	25.60	16.13	9.15	31.94	0.00	18.94	46.00	27.0	Vert.	148	4	LP	
23	752.584	23.40	20.21	10.36	31.73	0.00	22.24	46.00	23.7	Vert.	198	78	LP	
24	758.016	24.40	20.28	10.37	31.72	0.00	23.33	46.00	22.6	Vert.	137	68	LP	
25	860.096	23.50	21.83	10.70	31.26	0.00	24.77	46.00	21.2	Vert.	100	315	LP	
26	866.304	23.30	21.94	10.72	31.23	0.00	24.73	46.00	21.2	Vert.	100	191	LP	
27	967.608	29.10	22.16	11.04	30.46	0.00	31.84	53.90	22.0	Vert.	156	342	LP	
28	974.592	21.70	22.20	11.07	30.38	0.00	24.59	53.90	29.3	Vert.	100	187	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

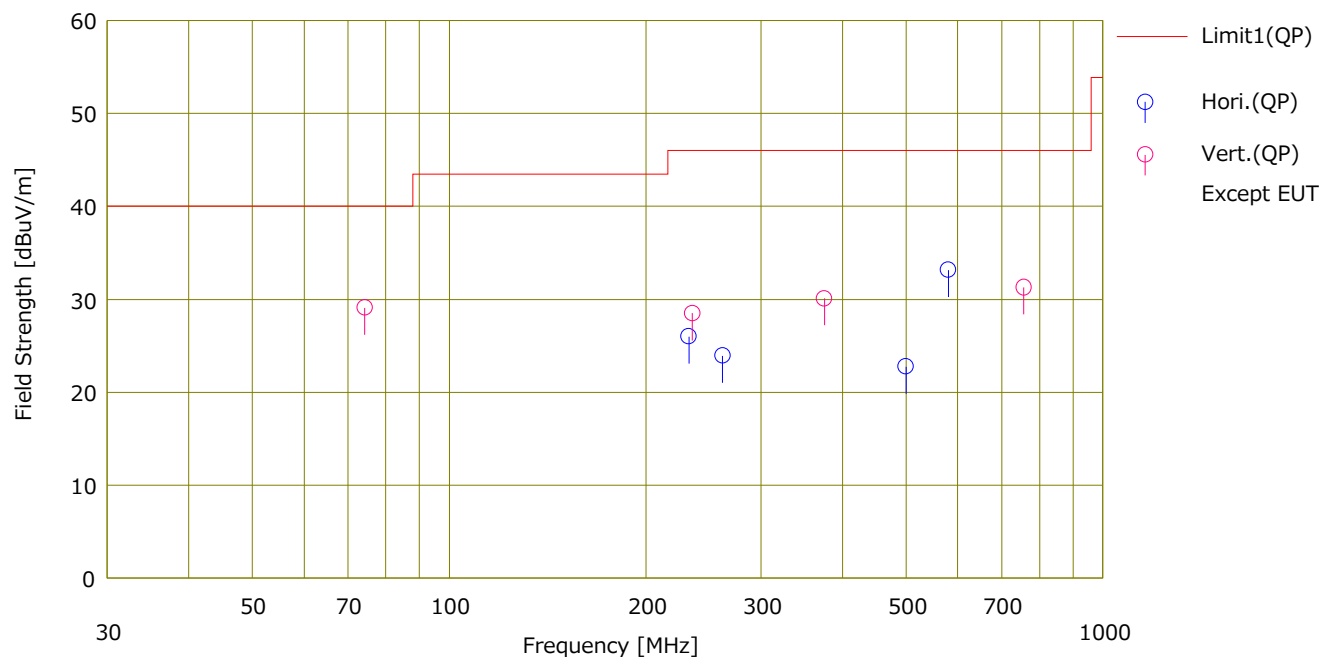
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 68 %RH
Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	232.602	38.46	11.40	8.16	32.01	0.00	26.01	46.00	19.9	Hori.	187	141	LP	
2	261.973	35.27	12.31	8.32	31.98	0.00	23.92	46.00	22.0	Hori.	125	197	LP	
3	500.015	27.50	17.77	9.41	31.92	0.00	22.76	46.00	23.2	Hori.	195	160	LP	
4	580.174	36.63	18.76	9.73	31.96	0.00	33.16	46.00	12.8	Hori.	166	203	LP	
5	74.339	47.76	6.36	7.04	32.15	0.09	29.10	40.00	10.9	Vert.	100	112	BC	
6	235.653	40.83	11.48	8.18	32.00	0.00	28.49	46.00	17.5	Vert.	100	23	LP	
7	375.067	38.01	15.11	8.89	31.93	0.00	30.08	46.00	15.9	Vert.	100	102	LP	
8	756.969	32.35	20.27	10.37	31.72	0.00	31.27	46.00	14.7	Vert.	100	178	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (87.75 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 68 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	87.362	35.61	7.67	7.16	32.15	0.39	18.68	40.00	21.3	Hori.	217	90	BC	
2	88.138	38.31	7.83	7.17	32.14	0.38	21.55	43.50	21.9	Hori.	225	93	BC	
3	174.724	22.98	15.73	7.81	32.06	0.00	14.46	43.50	29.0	Hori.	184	81	BC	
4	176.276	22.57	15.87	7.82	32.06	-0.01	14.19	43.50	29.3	Hori.	178	101	BC	
5	262.086	35.40	12.32	8.33	31.98	0.00	24.07	46.00	21.9	Hori.	123	125	LP	
6	264.414	31.18	12.46	8.34	31.98	0.00	20.00	46.00	26.0	Hori.	165	212	LP	
7	786.258	32.71	20.60	10.45	31.68	0.00	32.08	46.00	13.9	Hori.	114	211	LP	
8	793.242	29.34	20.71	10.47	31.67	0.00	28.85	46.00	17.1	Hori.	206	205	LP	
9	873.620	26.36	21.95	10.74	31.19	0.00	27.86	46.00	18.1	Hori.	183	232	LP	
10	881.380	23.98	21.99	10.76	31.15	0.00	25.58	46.00	20.4	Hori.	175	225	LP	
11	87.362	35.06	7.67	7.16	32.15	0.39	18.13	40.00	21.8	Vert.	100	254	BC	
12	88.138	38.86	7.83	7.17	32.14	0.38	22.10	43.50	21.4	Vert.	100	116	BC	
13	174.724	22.89	15.73	7.81	32.06	0.00	14.37	43.50	29.1	Vert.	100	214	BC	
14	176.276	22.93	15.87	7.82	32.06	-0.01	14.55	43.50	28.9	Vert.	100	216	BC	
15	262.086	28.82	12.32	8.33	31.98	0.00	17.49	46.00	28.5	Vert.	100	33	LP	
16	264.414	24.97	12.46	8.34	31.98	0.00	13.79	46.00	32.2	Vert.	100	171	LP	
17	786.258	27.86	20.60	10.45	31.68	0.00	27.23	46.00	18.7	Vert.	100	327	LP	
18	793.242	25.37	20.71	10.47	31.67	0.00	24.88	46.00	21.1	Vert.	100	313	LP	
19	873.620	22.59	21.95	10.74	31.19	0.00	24.09	46.00	21.9	Vert.	100	45	LP	
20	881.380	22.13	21.99	10.76	31.15	0.00	23.73	46.00	22.2	Vert.	100	43	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 68 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	97.512	31.57	9.65	7.26	32.14	0.13	16.47	43.50	27.0	Hori.	309	124	BC	
2	98.288	33.16	9.81	7.26	32.14	0.11	18.20	43.50	25.3	Hori.	317	122	BC	
3	195.024	23.81	16.50	7.94	32.05	-0.14	16.06	43.50	27.4	Hori.	172	80	BC	
4	196.576	24.03	16.50	7.95	32.05	-0.14	16.29	43.50	27.2	Hori.	169	151	BC	
5	585.072	30.16	18.93	9.75	31.96	0.00	26.88	46.00	19.1	Hori.	159	194	LP	
6	589.728	31.82	19.09	9.76	31.95	0.00	28.72	46.00	17.2	Hori.	155	193	LP	
7	780.096	32.46	20.48	10.43	31.69	0.00	31.68	46.00	14.3	Hori.	117	216	LP	
8	786.304	32.22	20.60	10.45	31.68	0.00	31.59	46.00	14.4	Hori.	116	203	LP	
9	877.608	24.38	21.99	10.75	31.17	0.00	25.95	46.00	20.0	Hori.	100	225	LP	
10	884.592	21.87	22.00	10.77	31.13	0.00	23.51	46.00	22.4	Hori.	110	242	LP	
11	97.512	37.27	9.65	7.26	32.14	0.13	22.17	43.50	21.3	Vert.	103	106	BC	
12	98.288	37.25	9.81	7.26	32.14	0.11	22.29	43.50	21.2	Vert.	107	125	BC	
13	195.024	23.38	16.50	7.94	32.05	-0.14	15.63	43.50	27.8	Vert.	100	0	BC	
14	196.576	23.84	16.50	7.95	32.05	-0.14	16.10	43.50	27.4	Vert.	100	167	BC	
15	585.072	23.82	18.93	9.75	31.96	0.00	20.54	46.00	25.4	Vert.	100	161	LP	
16	589.728	29.71	19.09	9.76	31.95	0.00	26.61	46.00	19.3	Vert.	102	196	LP	
17	780.096	29.68	20.48	10.43	31.69	0.00	28.90	46.00	17.1	Vert.	193	184	LP	
18	786.304	28.48	20.60	10.45	31.68	0.00	27.85	46.00	18.1	Vert.	179	186	LP	
19	877.608	21.77	21.99	10.75	31.17	0.00	23.34	46.00	22.6	Vert.	100	53	LP	
20	884.592	21.75	22.00	10.77	31.13	0.00	23.39	46.00	22.6	Vert.	100	55	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (107.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 68 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada

<< QP DATA >>

No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]					<QP> [dBuV/m]	<QP> [dB]						
1	107.512	38.89	11.43	7.34	32.13	-0.09	25.44	43.50	18.0	Hori.	291	265	BC	
2	108.288	41.29	11.54	7.34	32.13	-0.10	27.94	43.50	15.5	Hori.	293	267	BC	
3	215.024	31.65	11.22	8.06	32.03	0.00	18.90	43.50	24.6	Hori.	153	75	LP	
4	216.576	27.57	11.21	8.07	32.02	0.00	14.83	46.00	31.1	Hori.	161	60	LP	
5	322.536	23.68	14.24	8.65	31.95	0.00	14.62	46.00	31.3	Hori.	102	145	LP	
6	324.864	24.42	14.32	8.66	31.95	0.00	15.45	46.00	30.5	Hori.	100	106	LP	
7	430.048	30.41	16.09	9.14	31.94	0.00	23.70	46.00	22.3	Hori.	100	200	LP	
8	433.152	23.86	16.13	9.15	31.94	0.00	17.20	46.00	28.8	Hori.	100	162	LP	
9	752.584	27.09	20.21	10.36	31.73	0.00	25.93	46.00	20.0	Hori.	139	173	LP	
10	758.016	27.84	20.28	10.37	31.72	0.00	26.77	46.00	19.2	Hori.	100	5	LP	
11	860.096	27.97	21.83	10.70	31.26	0.00	29.24	46.00	16.7	Hori.	188	228	LP	
12	866.304	26.96	21.94	10.72	31.23	0.00	28.39	46.00	17.6	Hori.	100	225	LP	
13	967.608	29.11	22.16	11.04	30.46	0.00	31.85	53.90	22.0	Hori.	113	140	LP	
14	974.592	21.95	22.20	11.07	30.38	0.00	24.84	53.90	29.0	Hori.	150	236	LP	
15	107.512	40.74	11.43	7.34	32.13	-0.09	27.29	43.50	16.2	Vert.	100	123	BC	
16	108.288	41.57	11.54	7.34	32.13	-0.10	28.22	43.50	15.2	Vert.	100	127	BC	
17	215.024	35.34	11.22	8.06	32.03	0.00	22.59	43.50	20.9	Vert.	100	152	LP	
18	216.576	28.07	11.21	8.07	32.02	0.00	15.33	46.00	30.6	Vert.	100	173	LP	
19	322.536	23.36	14.24	8.65	31.95	0.00	14.30	46.00	31.7	Vert.	105	115	LP	
20	324.864	26.06	14.32	8.66	31.95	0.00	17.09	46.00	28.9	Vert.	115	116	LP	
21	430.048	25.02	16.09	9.14	31.94	0.00	18.31	46.00	27.6	Vert.	155	149	LP	
22	433.152	23.75	16.13	9.15	31.94	0.00	17.09	46.00	28.9	Vert.	176	10	LP	
23	752.584	26.70	20.21	10.36	31.73	0.00	25.54	46.00	20.4	Vert.	100	175	LP	
24	758.016	30.28	20.28	10.37	31.72	0.00	29.21	46.00	16.7	Vert.	100	178	LP	
25	860.096	22.68	21.83	10.70	31.26	0.00	23.95	46.00	22.0	Vert.	100	39	LP	
26	866.304	23.89	21.94	10.72	31.23	0.00	25.32	46.00	20.6	Vert.	100	50	LP	
27	967.608	28.12	22.16	11.04	30.46	0.00	30.86	53.90	23.0	Vert.	100	3	LP	
28	974.592	21.36	22.20	11.07	30.38	0.00	24.25	53.90	29.6	Vert.	100	27	LP	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+S.Fac(ΔAF)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

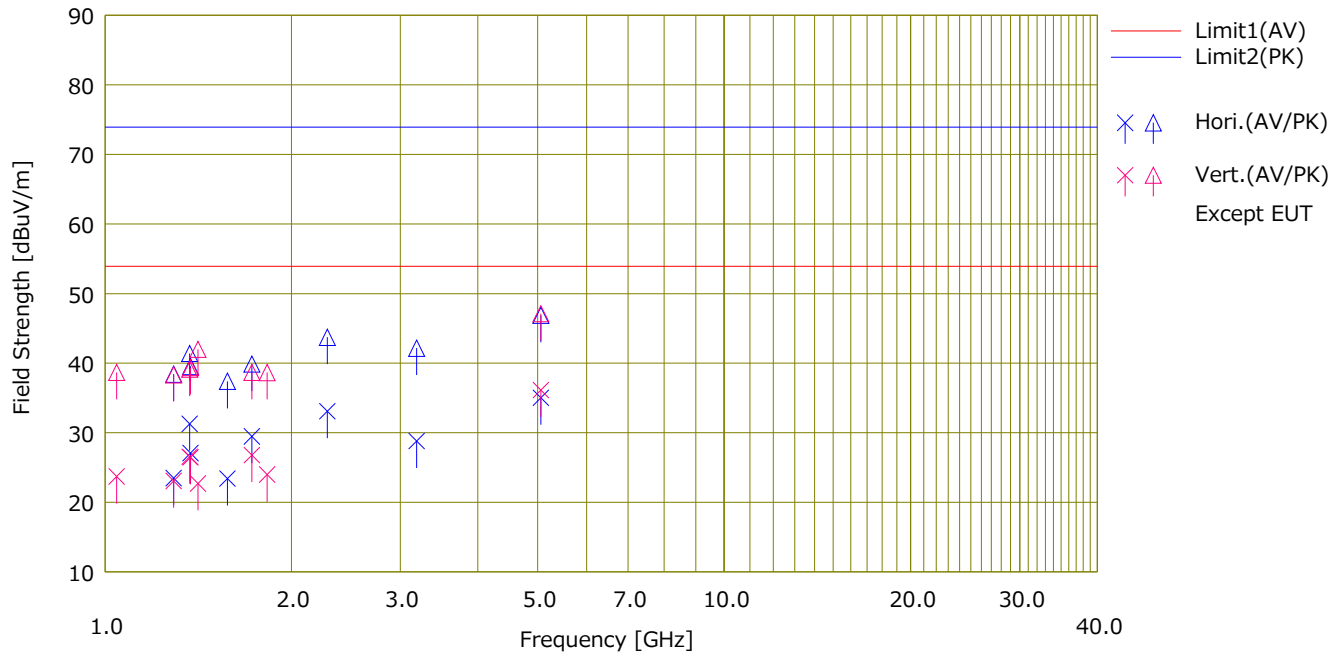
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 55 %RH
Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm, 13 GHz - 40 GHz D.Fac=(100/300)=-9.54 dB	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]					
1	1290.228	35.29	50.23	26.08	3.10	41.14	0.15	23.48	38.42	53.90	73.90	30.4	35.4	Hori.	100	47	31SH3	
2	1370.959	42.93	53.05	26.12	3.20	41.13	0.15	31.27	41.39	53.90	73.90	22.6	32.5	Hori.	112	34	31SH3	
3	1374.946	38.75	51.18	26.10	3.21	41.13	0.15	27.08	39.51	53.90	73.90	26.8	34.3	Hori.	108	34	31SH3	
4	1575.953	35.49	49.47	25.50	3.45	41.18	0.15	23.41	37.39	53.90	73.90	30.4	36.5	Hori.	100	305	31SH3	
5	1728.010	41.48	51.87	25.54	3.61	41.31	0.15	29.47	39.86	53.90	73.90	24.4	34.0	Hori.	100	202	31SH3	
6	2284.948	41.77	52.40	28.64	4.16	41.63	0.15	33.09	43.72	53.90	73.90	20.8	30.1	Hori.	114	156	31SH3	
7	3187.057	36.39	49.75	29.27	4.94	41.96	0.15	28.79	42.15	53.90	73.90	25.1	31.7	Hori.	100	247	31SH3	
8	5057.760	39.43	51.27	32.13	6.33	43.01	0.15	35.03	46.87	53.90	73.90	18.8	27.0	Hori.	100	169	31SH3	
9	1044.513	37.02	51.98	24.89	2.80	41.16	0.15	23.70	38.66	53.90	73.90	30.2	35.2	Vert.	100	159	31SH3	
10	1290.228	34.87	50.12	26.08	3.10	41.14	0.15	23.06	38.31	53.90	73.90	30.8	35.5	Vert.	100	165	31SH3	
11	1370.959	38.21	50.76	26.12	3.20	41.13	0.15	26.55	39.10	53.90	73.90	27.3	34.8	Vert.	100	149	31SH3	
12	1374.946	38.13	51.03	26.10	3.21	41.13	0.15	26.46	39.36	53.90	73.90	27.4	34.5	Vert.	131	197	31SH3	
13	1413.159	34.45	53.71	25.98	3.26	41.13	0.15	22.71	41.97	53.90	73.90	31.1	31.9	Vert.	107	162	31SH3	
14	1728.010	38.79	50.67	25.54	3.61	41.31	0.15	26.78	38.66	53.90	73.90	27.1	35.2	Vert.	135	162	31SH3	
15	1827.998	35.67	50.34	25.84	3.71	41.39	0.15	23.98	38.65	53.90	73.90	29.9	35.2	Vert.	100	289	31SH3	
16	5057.760	40.52	51.48	32.13	6.33	43.01	0.15	36.12	47.08	53.90	73.90	17.7	26.8	Vert.	100	142	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (87.75 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 55 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1850.898					33.80	48.64	25.91	3.74	41.41	0.15					
2	2115.312	34.31	48.50	27.81	4.00	41.57	0.15	24.70	38.89	53.90	73.90	29.2	35.0	Hori.	100	220	31SH3	
3	2556.002	34.25	49.29	28.25	4.41	41.71	0.15	25.35	40.39	53.90	73.90	28.5	33.5	Hori.	133	209	31SH3	
4	3172.968	33.93	48.72	29.29	4.93	41.95	0.15	26.35	41.14	53.90	73.90	27.5	32.7	Hori.	100	0	31SH3	
5	3525.520	46.30	53.24	29.26	5.21	42.20	0.15	38.72	45.66	53.90	73.90	15.1	28.2	Hori.	100	0	31SH3	
6	4406.900	34.72	49.39	30.72	5.85	42.78	0.15	28.66	43.33	53.90	73.90	25.2	30.5	Hori.	100	0	31SH3	
7	5200.142	35.15	49.26	31.94	6.43	43.17	0.15	30.50	44.61	53.90	73.90	23.4	29.2	Hori.	100	0	31SH3	
8	1850.898	34.12	49.57	25.91	3.74	41.41	0.15	22.51	37.96	53.90	73.90	31.3	35.9	Vert.	152	346	31SH3	
9	2115.312	33.94	48.37	27.81	4.00	41.57	0.15	24.33	38.76	53.90	73.90	29.5	35.1	Vert.	100	231	31SH3	
10	2556.002	34.28	48.76	28.25	4.41	41.71	0.15	25.38	39.86	53.90	73.90	28.5	34.0	Vert.	100	168	31SH3	
11	3172.968	34.17	48.84	29.29	4.93	41.95	0.15	26.59	41.26	53.90	73.90	27.3	32.6	Vert.	100	242	31SH3	
12	3525.520	48.02	53.87	29.26	5.21	42.20	0.15	40.44	46.29	53.90	73.90	13.4	27.6	Vert.	102	134	31SH3	
13	4406.900	34.71	49.19	30.72	5.85	42.78	0.15	28.65	43.13	53.90	73.90	25.2	30.7	Vert.	100	0	31SH3	
14	5200.142	35.22	49.87	31.94	6.43	43.17	0.15	30.57	45.22	53.90	73.90	23.3	28.6	Vert.	100	0	31SH3	

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 55 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1950.240					40.94	51.65	26.35	3.84	41.49	0.15					
2	2340.288	33.89	48.46	28.50	4.21	41.65	0.15	25.10	39.67	53.90	73.90	28.8	34.2	Hori.	100	0	31SH3	
3	3120.384	34.17	48.35	29.31	4.89	41.92	0.15	26.60	40.78	53.90	73.90	27.3	33.1	Hori.	100	0	31SH3	
4	3510.432	46.30	53.26	29.18	5.21	42.19	0.15	38.65	45.61	53.90	73.90	15.2	28.2	Hori.	100	196	31SH3	
5	3802.968	34.06	48.65	29.99	5.41	42.27	0.15	27.34	41.93	53.90	73.90	26.5	31.9	Hori.	100	0	31SH3	
6	4875.600	34.63	49.08	31.63	6.20	42.93	0.15	29.68	44.13	53.90	73.90	24.2	29.7	Hori.	100	0	31SH3	
7	5753.208	34.84	50.11	32.78	6.80	43.43	0.15	31.14	46.41	53.90	73.90	22.7	27.4	Hori.	100	0	31SH3	
8	1950.240	40.96	51.33	26.35	3.84	41.49	0.15	29.81	40.18	53.90	73.90	24.0	33.7	Vert.	129	208	31SH3	
9	2340.288	33.84	48.74	28.50	4.21	41.65	0.15	25.05	39.95	53.90	73.90	28.8	33.9	Vert.	100	0	31SH3	
10	3120.384	34.16	49.06	29.31	4.89	41.92	0.15	26.59	41.49	53.90	73.90	27.3	32.4	Vert.	100	0	31SH3	
11	3510.432	48.04	53.77	29.18	5.21	42.19	0.15	40.39	46.12	53.90	73.90	13.5	27.7	Vert.	109	132	31SH3	
12	3802.968	34.04	49.19	29.99	5.41	42.27	0.15	27.32	42.47	53.90	73.90	26.5	31.4	Vert.	100	0	31SH3	
13	4875.600	34.64	49.23	31.63	6.20	42.93	0.15	29.69	44.28	53.90	73.90	24.2	29.6	Vert.	100	0	31SH3	
14	5753.208	34.84	50.43	32.78	6.80	43.43	0.15	31.14	46.73	53.90	73.90	22.7	27.1	Vert.	100	0	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/29

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (107.9 MHz)_analog
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 55 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1732.608					34.20	48.44	25.54	3.61	41.31	0.15					
2	2165.760	34.38	48.70	28.33	4.05	41.59	0.15	25.32	39.64	53.90	73.90	28.5	34.2	Hori.	100	216	31SH3	
3	3465.216	49.62	54.82	28.97	5.18	42.16	0.15	41.76	46.96	53.90	73.90	12.1	26.9	Hori.	100	230	31SH3	
4	3898.368	34.25	48.76	30.12	5.47	42.30	0.15	27.69	42.20	53.90	73.90	26.2	31.7	Hori.	100	0	31SH3	
5	4223.232	34.64	49.33	30.37	5.72	42.58	0.15	28.30	42.99	53.90	73.90	25.6	30.9	Hori.	100	0	31SH3	
6	5414.400	35.10	50.24	32.12	6.58	43.40	0.15	30.55	45.69	53.90	73.90	23.3	28.2	Hori.	100	0	31SH3	
7	5955.840	35.19	50.37	33.26	6.94	43.39	0.15	32.15	47.33	53.90	73.90	21.7	26.5	Hori.	100	0	31SH3	
8	1732.608	34.35	48.55	25.54	3.61	41.31	0.15	22.34	36.54	53.90	73.90	31.5	37.3	Vert.	139	163	31SH3	
9	2165.760	34.00	48.21	28.33	4.05	41.59	0.15	24.94	39.15	53.90	73.90	28.9	34.7	Vert.	100	217	31SH3	
10	3465.216	49.01	54.64	28.97	5.18	42.16	0.15	41.15	46.78	53.90	73.90	12.7	27.1	Vert.	100	132	31SH3	
11	3898.368	34.19	48.97	30.12	5.47	42.30	0.15	27.63	42.41	53.90	73.90	26.2	31.4	Vert.	100	0	31SH3	
12	4223.232	34.64	49.52	30.37	5.72	42.58	0.15	28.30	43.18	53.90	73.90	25.6	30.7	Vert.	100	0	31SH3	
13	5414.400	35.10	50.32	32.12	6.58	43.40	0.15	30.55	45.77	53.90	73.90	23.3	28.1	Vert.	100	0	31SH3	
14	5955.840	35.19	50.41	33.26	6.94	43.39	0.15	32.15	47.37	53.90	73.90	21.7	26.5	Vert.	100	0	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

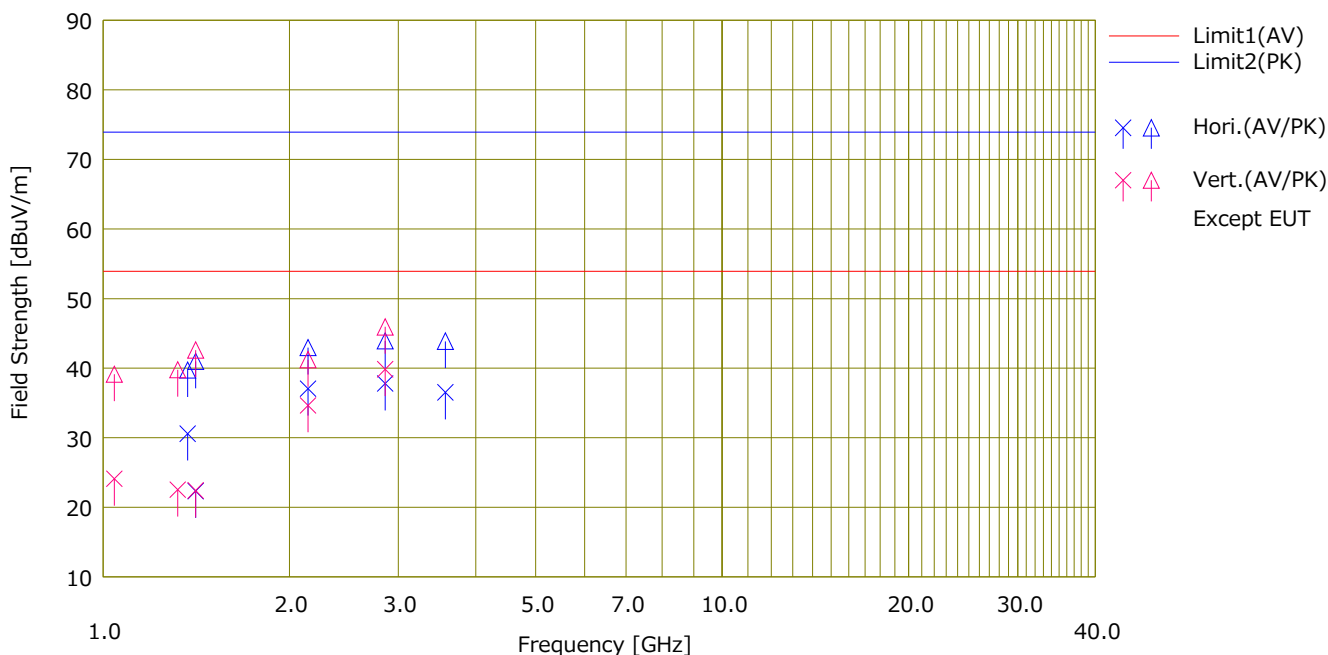
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/30

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (97.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 23 deg.C / 65 %RH
Remarks : Other, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm, 13 GHz - 40 GHz D.Fac=(100/300)=-9.54 dB	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Shiro Kobayashi



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>							
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dB]	[dB]							
1	1370.803	42.23	51.38	26.12	3.20	41.13	0.15	30.57	39.72	53.90	73.90	23.3	34.1	Hori.	327	5	31SH3	
2	1411.726	34.07	52.70	25.98	3.26	41.13	0.15	22.33	40.96	53.90	73.90	31.5	32.9	Hori.	181	143	31SH3	
3	2143.230	46.36	52.23	28.10	4.03	41.58	0.15	37.06	42.93	53.90	73.90	16.8	30.9	Hori.	197	353	31SH3	
4	2857.596	45.89	52.02	28.85	4.67	41.79	0.15	37.77	43.90	53.90	73.90	16.1	30.0	Hori.	173	325	31SH3	
5	3571.751	43.86	51.22	29.47	5.25	42.21	0.15	36.52	43.88	53.90	73.90	17.3	30.0	Hori.	179	298	31SH3	
6	1042.750	37.44	52.44	24.88	2.80	41.16	0.15	24.11	39.11	53.90	73.90	29.7	34.7	Vert.	193	193	31SH3	
7	1320.856	34.20	51.42	26.19	3.13	41.13	0.15	22.54	39.76	53.90	73.90	31.3	34.1	Vert.	202	187	31SH3	
8	1411.529	34.15	54.33	25.98	3.26	41.13	0.15	22.41	42.59	53.90	73.90	31.4	31.3	Vert.	213	189	31SH3	
9	2143.230	43.93	50.52	28.10	4.03	41.58	0.15	34.63	41.22	53.90	73.90	19.2	32.6	Vert.	174	10	31SH3	
10	2857.596	47.97	54.04	28.85	4.67	41.79	0.15	39.85	45.92	53.90	73.90	14.0	27.9	Vert.	184	6	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/30

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (87.75 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 55 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1850.898					33.61	48.18	25.91	3.74	41.41	0.15					
2	2115.312	34.38	48.73	27.81	4.00	41.57	0.15	24.77	39.12	53.90	73.90	29.1	34.7	Hori.	115	220	31SH3	
3	3172.968	34.11	48.82	29.29	4.93	41.95	0.15	26.53	41.24	53.90	73.90	27.3	32.6	Hori.	100	178	31SH3	
4	3437.382	34.15	48.75	28.84	5.15	42.14	0.15	26.15	40.75	53.90	73.90	27.7	33.1	Hori.	100	0	31SH3	
5	3525.520	48.20	54.05	29.26	5.21	42.20	0.15	40.62	46.47	53.90	73.90	13.2	27.4	Hori.	108	155	31SH3	
6	4406.900	34.78	49.40	30.72	5.85	42.78	0.15	28.72	43.34	53.90	73.90	25.1	30.5	Hori.	100	0	31SH3	
7	5200.142	35.22	49.53	31.94	6.43	43.17	0.15	30.57	44.88	53.90	73.90	23.3	29.0	Hori.	100	0	31SH3	
8	1850.898	33.52	48.31	25.91	3.74	41.41	0.15	21.91	36.70	53.90	73.90	31.9	37.2	Vert.	100	160	31SH3	
9	2115.312	33.87	48.21	27.81	4.00	41.57	0.15	24.26	38.60	53.90	73.90	29.6	35.3	Vert.	100	229	31SH3	
10	3172.968	34.23	49.12	29.29	4.93	41.95	0.15	26.65	41.54	53.90	73.90	27.2	32.3	Vert.	100	237	31SH3	
11	3437.382	34.14	48.87	28.84	5.15	42.14	0.15	26.14	40.87	53.90	73.90	27.7	33.0	Vert.	100	0	31SH3	
12	3525.520	48.80	53.96	29.26	5.21	42.20	0.15	41.22	46.38	53.90	73.90	12.6	27.5	Vert.	111	249	31SH3	
13	4406.900	34.77	49.61	30.72	5.85	42.78	0.15	28.71	43.55	53.90	73.90	25.1	30.3	Vert.	100	0	31SH3	
14	5200.142	35.24	49.45	31.94	6.43	43.17	0.15	30.59	44.80	53.90	73.90	23.3	29.1	Vert.	100	0	31SH3	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/30

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz)_digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 25 deg.C / 55 %RH
Remarks	: Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1950.240					35.96	49.14	26.35	3.84	41.49	0.15					
2	2340.288	33.76	48.34	28.50	4.21	41.65	0.15	24.97	39.55	53.90	73.90	28.9	34.3	Hori.	100	246	31SH3	
3	3120.384	34.22	48.64	29.31	4.89	41.92	0.15	26.65	41.07	53.90	73.90	27.2	32.8	Hori.	100	178	31SH3	
4	3510.432	48.13	54.05	29.18	5.21	42.19	0.15	40.48	46.40	53.90	73.90	13.4	27.5	Hori.	114	155	31SH3	
5	3802.968	34.11	48.94	29.99	5.41	42.27	0.15	27.39	42.22	53.90	73.90	26.5	31.6	Hori.	100	0	31SH3	
6	4875.600	34.67	49.38	31.63	6.20	42.93	0.15	29.72	44.43	53.90	73.90	24.1	29.4	Hori.	100	0	31SH3	
7	5753.208	35.00	49.49	32.78	6.80	43.43	0.15	31.30	45.79	53.90	73.90	22.6	28.1	Hori.	100	0	31SH3	
8	1950.240	34.85	48.63	26.35	3.84	41.49	0.15	23.70	37.48	53.90	73.90	30.2	36.4	Vert.	124	144	31SH3	
9	2340.288	33.85	48.36	28.50	4.21	41.65	0.15	25.06	39.57	53.90	73.90	28.8	34.3	Vert.	212	205	31SH3	
10	3120.384	34.27	48.65	29.31	4.89	41.92	0.15	26.70	41.08	53.90	73.90	27.2	32.8	Vert.	118	240	31SH3	
11	3510.432	47.64	53.53	29.18	5.21	42.19	0.15	39.99	45.88	53.90	73.90	13.9	28.0	Vert.	100	132	31SH3	
12	3802.968	34.10	48.79	29.99	5.41	42.27	0.15	27.38	42.07	53.90	73.90	26.5	31.8	Vert.	100	0	31SH3	
13	4875.600	34.66	49.52	31.63	6.20	42.93	0.15	29.71	44.57	53.90	73.90	24.1	29.3	Vert.	100	0	31SH3	
14	5753.208	35.00	49.58	32.78	6.80	43.43	0.15	31.30	45.88	53.90	73.90	22.6	28.0	Vert.	100	0	31SH3	

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
 Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber

Date : 2020/07/30

Company : Panasonic Corporation Automotive Company	Mode : FM Receiving (107.9 MHz)_digital
Kind of EUT : Car Navigation	Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display)	Power : DC 13.2 V
Serial No. : 500087	Temp./Humi. : 25 deg.C / 55 %RH
Remarks : Local, EUT Axis Hor: 0 deg, Ver: 0 deg, Test Distance=305 cm	

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kazuya Noda

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]					
		1	1732.608					33.99	48.15	25.54	3.61	41.31	0.15					
2	2165.760	34.45	48.40	28.33	4.05	41.59	0.15	25.39	39.34	53.90	73.90	28.5	34.5	Hori.	121	225	31SH3	
3	3465.216	50.91	55.03	28.97	5.18	42.16	0.15	43.05	47.17	53.90	73.90	10.8	26.7	Hori.	109	159	31SH3	
4	3898.368	34.16	48.78	30.12	5.47	42.30	0.15	27.60	42.22	53.90	73.90	26.3	31.6	Hori.	100	0	31SH3	
5	4223.232	34.57	49.56	30.37	5.72	42.58	0.15	28.23	43.22	53.90	73.90	25.6	30.6	Hori.	100	0	31SH3	
6	5414.400	35.20	50.16	32.12	6.58	43.40	0.15	30.65	45.61	53.90	73.90	23.2	28.2	Hori.	100	0	31SH3	
7	5955.840	35.42	50.25	33.26	6.94	43.39	0.15	32.38	47.21	53.90	73.90	21.5	26.6	Hori.	100	0	31SH3	
8	1732.608	34.16	48.73	25.54	3.61	41.31	0.15	22.15	36.72	53.90	73.90	31.7	37.1	Vert.	132	162	31SH3	
9	2165.760	33.98	48.43	28.33	4.05	41.59	0.15	24.92	39.37	53.90	73.90	28.9	34.5	Vert.	100	217	31SH3	
10	3465.216	49.31	54.43	28.97	5.18	42.16	0.15	41.45	46.57	53.90	73.90	12.4	27.3	Vert.	104	131	31SH3	
11	3898.368	34.16	48.91	30.12	5.47	42.30	0.15	27.60	42.35	53.90	73.90	26.3	31.5	Vert.	100	0	31SH3	
12	4223.232	34.58	49.15	30.37	5.72	42.58	0.15	28.24	42.81	53.90	73.90	25.6	31.0	Vert.	100	0	31SH3	
13	5414.400	35.20	49.21	32.12	6.58	43.40	0.15	30.65	44.66	53.90	73.90	23.2	29.2	Vert.	100	0	31SH3	
14	5955.840	35.43	50.43	33.26	6.94	43.39	0.15	32.39	47.39	53.90	73.90	21.5	26.5	Vert.	100	0	31SH3	

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]

Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

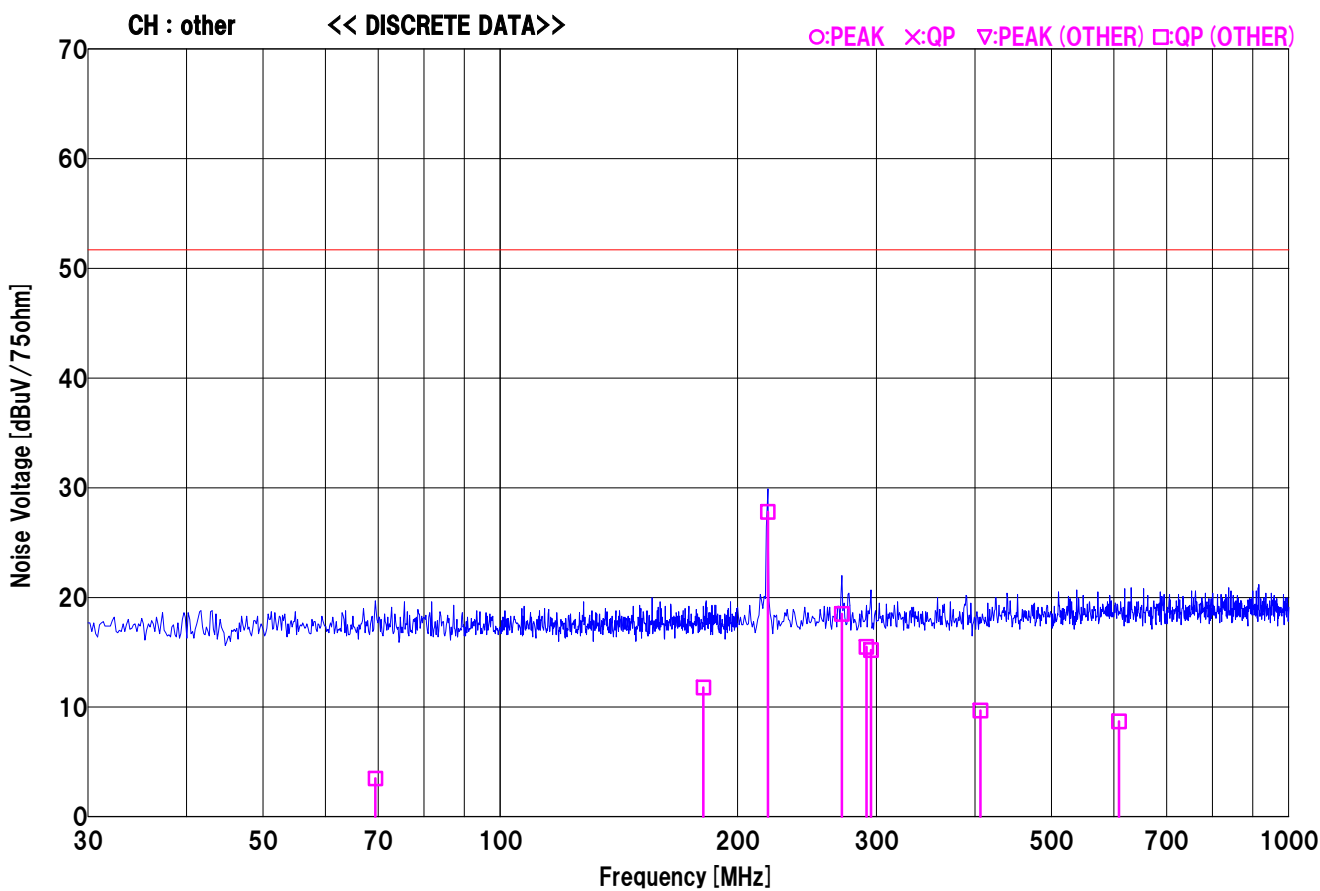
DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz)_analog
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 23 deg.C / 57 %RH
Remarks	: Main port, Other		

Engineer : Shunsaku Yumi

LIMIT : — FCC Part15 SubpartB_Antenna terminal



Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz)_analog
Kind of EUT : Car Navigation Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
Serial No. : 500087 Temp./Humi. : 23 deg.C / 57 %RH

Remarks : Main port, Other

Engineer : Shunsaku Yumi

LIMIT : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
other	*69.440	----	16.6	-13.1	----	3.5	51.7	48.2
	*180.958	----	24.6	-12.8	----	11.8	51.7	39.9
	*218.400	----	40.6	-12.8	----	27.8	51.7	23.9
	*271.200	----	31.2	-12.7	----	18.5	51.7	33.2
	*291.200	----	28.1	-12.6	----	15.5	51.7	36.2
	*295.200	----	27.8	-12.6	----	15.2	51.7	36.5
	*406.398	----	22.2	-12.5	----	9.7	51.7	42.0
	*608.795	----	20.6	-11.9	----	8.7	51.7	43.0

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (87.75 MHz)_analog
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 23 deg.C / 57 %RH

Remarks : Main port, Local

Engineer : Shunsaku Yumi

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
 LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq [MHz]	Reading		Factor [dB]	Result		Limit [dBuV/75]	Margin [dB]
		PEAK	QP		PEAK	QP		
		[dBuV]			[dBuV/75]			
87.75 MHz	88.138	----	19.3	-13.1	----	6.2	51.7	45.5
	176.276	----	16.8	-12.8	----	4.0	51.7	47.7
	264.414	----	24.4	-12.7	----	11.7	51.7	40.0
	352.552	----	31.8	-12.5	----	19.3	51.7	32.4
	440.690	----	17.9	-12.3	----	5.6	51.7	46.1
	528.828	----	15.9	-12.2	----	3.7	51.7	48.0
	616.966	----	16.1	-11.9	----	4.2	51.7	47.5
	705.104	----	16.2	-11.8	----	4.4	51.7	47.3
	793.242	----	15.8	-11.8	----	4.0	51.7	47.7
	881.380	----	16.3	-11.8	----	4.5	51.7	47.2
	969.518	----	15.9	-11.9	----	4.0	51.7	47.7
	87.362	----	16.2	-13.1	----	3.1	51.7	48.6
	174.724	----	16.2	-12.8	----	3.4	51.7	48.3
	262.086	----	17.0	-12.8	----	4.2	51.7	47.5
	349.448	----	16.1	-12.6	----	3.5	51.7	48.2
	436.810	----	16.1	-12.3	----	3.8	51.7	47.9
	524.172	----	15.8	-12.2	----	3.6	51.7	48.1
	611.534	----	15.8	-11.9	----	3.9	51.7	47.8
	698.896	----	16.0	-11.8	----	4.2	51.7	47.5
	786.258	----	15.8	-11.8	----	4.0	51.7	47.7
873.620	----	16.0	-11.8	----	4.2	51.7	47.5	
960.982	----	15.9	-11.9	----	4.0	51.7	47.7	

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Kind of EUT : Car Navigation Model No. : AT2103 Hi type (14 inch Display) Serial No. : 500087	Mode : FM Receiving (97.9 MHz)_analog Order No. : 13385909S Power : DC 13.2 V Temp./Humi. : 23 deg.C / 57 %RH
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Remarks : Main port, Local

Engineer : Shunsaku Yumi

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
 LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq [MHz]	Reading		Factor [dB]	Result		Limit [dBuV/75]	Margin [dB]
		PEAK	QP		PEAK	QP		
		[dBuV]			[dBuV/75]			
97.9 MHz	98.288	----	16.6	-13.1	----	3.5	51.7	48.2
	196.576	----	18.1	-12.8	----	5.3	51.7	46.4
	294.864	----	24.8	-12.6	----	12.2	51.7	39.5
	393.152	----	16.3	-12.5	----	3.8	51.7	47.9
	491.440	----	16.3	-12.2	----	4.1	51.7	47.6
	589.728	----	16.1	-12.0	----	4.1	51.7	47.6
	688.016	----	16.0	-11.8	----	4.2	51.7	47.5
	786.304	----	16.2	-11.8	----	4.4	51.7	47.3
	884.592	----	16.3	-11.8	----	4.5	51.7	47.2
	982.880	----	16.3	-12.0	----	4.3	51.7	47.4
	97.512	----	19.3	-13.1	----	6.2	51.7	45.5
	195.024	----	17.0	-12.8	----	4.2	51.7	47.5
	292.536	----	30.2	-12.6	----	17.6	51.7	34.1
	390.048	----	27.5	-12.5	----	15.0	51.7	36.7
	487.560	----	17.6	-12.3	----	5.3	51.7	46.4
	585.072	----	16.1	-12.0	----	4.1	51.7	47.6
	682.584	----	16.0	-11.8	----	4.2	51.7	47.5
	780.096	----	16.2	-11.8	----	4.4	51.7	47.3
	877.608	----	16.3	-11.8	----	4.5	51.7	47.2
	975.120	----	16.2	-11.9	----	4.3	51.7	47.4

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (107.9 MHz)_analog
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 23 deg.C / 57 %RH

Remarks : Main port, Local

Engineer : Shunsaku Yumi

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
 LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq [MHz]	Reading		Factor [dB]	Result		Limit [dBuV/75]	Margin [dB]
		PEAK	QP		PEAK	QP		
		[dBuV]			[dBuV/75]			
107.9 MHz	108.288	----	19.7	-13.0	----	6.7	51.7	45.0
	216.576	----	25.6	-12.8	----	12.8	51.7	38.9
	324.864	----	22.4	-12.6	----	9.8	51.7	41.9
	433.152	----	21.6	-12.3	----	9.3	51.7	42.4
	541.440	----	16.5	-12.2	----	4.3	51.7	47.4
	649.728	----	16.3	-11.9	----	4.4	51.7	47.3
	758.016	----	16.2	-11.8	----	4.4	51.7	47.3
	866.304	----	16.2	-11.8	----	4.4	51.7	47.3
	974.592	----	16.2	-11.9	----	4.3	51.7	47.4
	107.512	----	16.5	-13.0	----	3.5	51.7	48.2
	215.024	----	26.5	-12.8	----	13.7	51.7	38.0
	322.536	----	16.9	-12.6	----	4.3	51.7	47.4
	430.048	----	17.2	-12.4	----	4.8	51.7	46.9
	537.560	----	16.3	-12.2	----	4.1	51.7	47.6
	645.072	----	16.1	-11.9	----	4.2	51.7	47.5
	752.584	----	16.1	-11.8	----	4.3	51.7	47.4
	860.096	----	16.1	-11.8	----	4.3	51.7	47.4
967.608	----	16.2	-11.9	----	4.3	51.7	47.4	

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

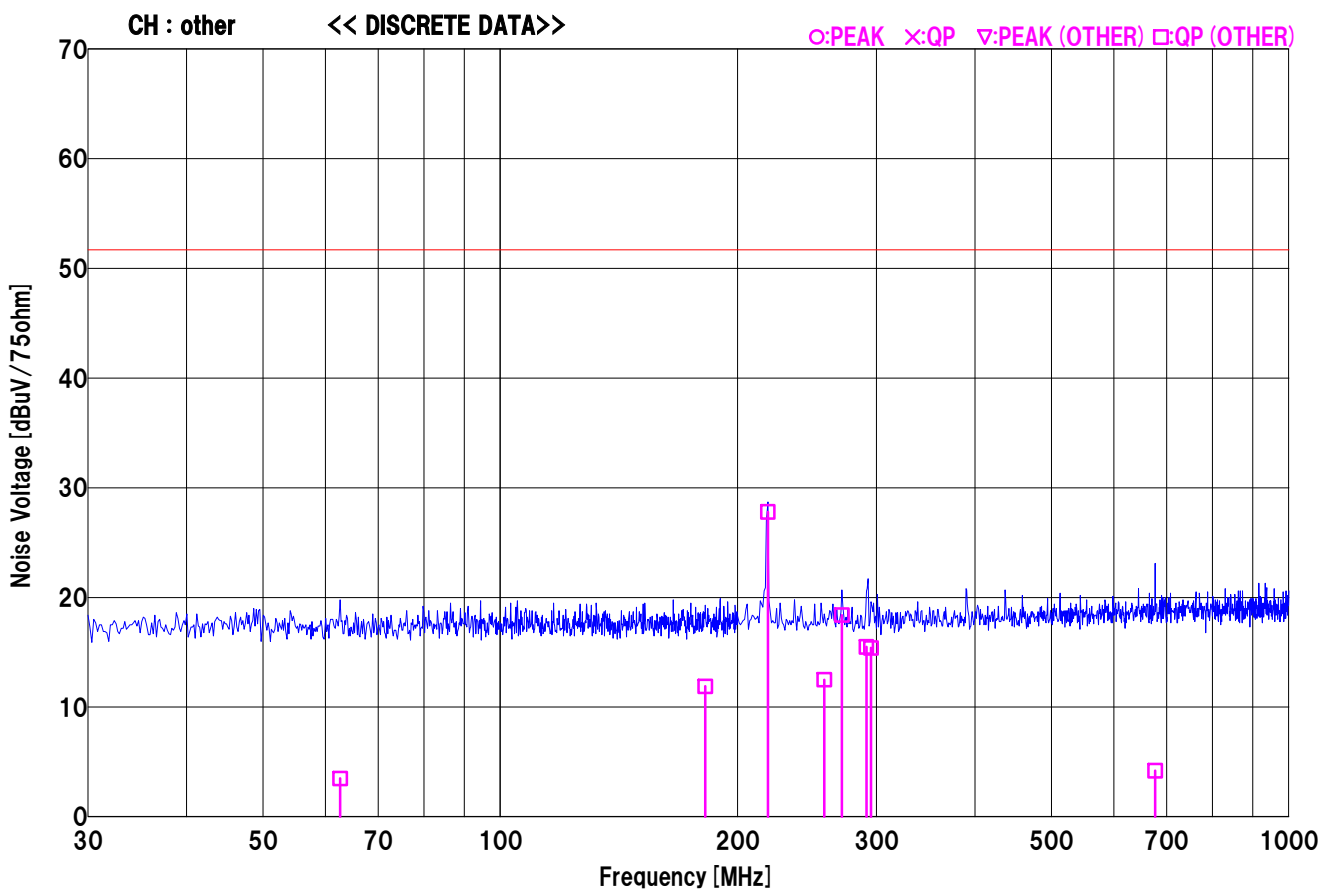
DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz)_digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 23 deg.C / 57 %RH
Remarks	: Main port, Other		

Engineer : Shunsaku Yumi

LIMIT : — FCC Part15 SubpartB_Antenna terminal



Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz) _digital
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 23 deg.C / 57 %RH

Remarks : Main port, Other

Engineer : Shunsaku Yumi

LIMIT : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
other	*62.640	----	16.6	-13.1	----	3.5	51.7	48.2
	*181.978	----	24.7	-12.8	----	11.9	51.7	39.8
	*218.400	----	40.6	-12.8	----	27.8	51.7	23.9
	*257.600	----	25.3	-12.8	----	12.5	51.7	39.2
	*271.200	----	31.1	-12.7	----	18.4	51.7	33.3
	*291.200	----	28.1	-12.6	----	15.5	51.7	36.2
	*295.200	----	28.0	-12.6	----	15.4	51.7	36.3
	*676.794	----	16.0	-11.8	----	4.2	51.7	47.5

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (87.75 MHz)_digital
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 23 deg.C / 57 %RH

Remarks : Main port, Local

Engineer : Shunsaku Yumi

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
 LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq [MHz]	Reading		Factor [dB]	Result		Limit [dBuV/75]	Margin [dB]
		PEAK	QP		PEAK	QP		
		[dBuV]			[dBuV/75]			
87.75 MHz	88.138	----	19.8	-13.1	----	6.7	51.7	45.0
	176.276	----	17.1	-12.8	----	4.3	51.7	47.4
	264.414	----	24.7	-12.7	----	12.0	51.7	39.7
	352.552	----	31.9	-12.5	----	19.4	51.7	32.3
	440.690	----	16.8	-12.3	----	4.5	51.7	47.2
	528.828	----	16.2	-12.2	----	4.0	51.7	47.7
	616.966	----	16.2	-11.9	----	4.3	51.7	47.4
	705.104	----	16.5	-11.8	----	4.7	51.7	47.0
	793.242	----	16.3	-11.8	----	4.5	51.7	47.2
	881.380	----	16.3	-11.8	----	4.5	51.7	47.2
	969.518	----	16.2	-11.9	----	4.3	51.7	47.4
	87.362	----	16.6	-13.1	----	3.5	51.7	48.2
	174.724	----	16.6	-12.8	----	3.8	51.7	47.9
	262.086	----	17.3	-12.8	----	4.5	51.7	47.2
	349.448	----	16.3	-12.6	----	3.7	51.7	48.0
	436.810	----	16.4	-12.3	----	4.1	51.7	47.6
	524.172	----	16.0	-12.2	----	3.8	51.7	47.9
	611.534	----	16.1	-11.9	----	4.2	51.7	47.5
	698.896	----	16.2	-11.8	----	4.4	51.7	47.3
	786.258	----	16.2	-11.8	----	4.4	51.7	47.3
873.620	----	16.1	-11.8	----	4.3	51.7	47.4	
960.982	----	16.1	-11.9	----	4.2	51.7	47.5	

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz) _digital
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 23 deg.C / 57 %RH

Remarks : Main port, Local

Engineer : Shunsaku Yumi

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
 LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq [MHz]	Reading		Factor [dB]	Result		Limit [dBuV/75]	Margin [dB]
		PEAK	QP		PEAK	QP		
		[dBuV]			[dBuV/75]			
97.9 MHz	98.288	----	16.6	-13.1	----	3.5	51.7	48.2
	196.576	----	18.1	-12.8	----	5.3	51.7	46.4
	294.864	----	24.9	-12.6	----	12.3	51.7	39.4
	393.152	----	16.3	-12.5	----	3.8	51.7	47.9
	491.440	----	16.3	-12.2	----	4.1	51.7	47.6
	589.728	----	16.1	-12.0	----	4.1	51.7	47.6
	688.016	----	16.1	-11.8	----	4.3	51.7	47.4
	786.304	----	16.2	-11.8	----	4.4	51.7	47.3
	884.592	----	16.3	-11.8	----	4.5	51.7	47.2
	982.880	----	16.3	-12.0	----	4.3	51.7	47.4
	97.512	----	19.3	-13.1	----	6.2	51.7	45.5
	195.024	----	19.6	-12.8	----	6.8	51.7	44.9
	292.536	----	30.2	-12.6	----	17.6	51.7	34.1
	390.048	----	27.6	-12.5	----	15.1	51.7	36.6
	487.560	----	17.5	-12.3	----	5.2	51.7	46.5
	585.072	----	16.1	-12.0	----	4.1	51.7	47.6
	682.584	----	16.0	-11.8	----	4.2	51.7	47.5
	780.096	----	16.2	-11.8	----	4.4	51.7	47.3
877.608	----	16.3	-11.8	----	4.5	51.7	47.2	
975.120	----	16.3	-11.9	----	4.4	51.7	47.3	

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/05

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (107.9 MHz)_digital
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 23 deg.C / 57 %RH

Remarks : Main port, Local

Engineer : Shunsaku Yumi

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
 LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq [MHz]	Reading		Factor [dB]	Result		Limit [dBuV/75]	Margin [dB]
		PEAK	QP		PEAK	QP		
		[dBuV]			[dBuV/75]			
107.9 MHz	108.288	----	19.6	-13.0	----	6.6	51.7	45.1
	216.576	----	25.5	-12.8	----	12.7	51.7	39.0
	324.864	----	22.3	-12.6	----	9.7	51.7	42.0
	433.152	----	21.5	-12.3	----	9.2	51.7	42.5
	541.440	----	16.4	-12.2	----	4.2	51.7	47.5
	649.728	----	16.3	-11.9	----	4.4	51.7	47.3
	758.016	----	16.0	-11.8	----	4.2	51.7	47.5
	866.304	----	16.2	-11.8	----	4.4	51.7	47.3
	974.592	----	16.1	-11.9	----	4.2	51.7	47.5
	107.512	----	16.5	-13.0	----	3.5	51.7	48.2
	215.024	----	26.4	-12.8	----	13.6	51.7	38.1
	322.536	----	16.8	-12.6	----	4.2	51.7	47.5
	430.048	----	17.1	-12.4	----	4.7	51.7	47.0
	537.560	----	16.2	-12.2	----	4.0	51.7	47.7
	645.072	----	16.0	-11.9	----	4.1	51.7	47.6
	752.584	----	16.0	-11.8	----	4.2	51.7	47.5
	860.096	----	16.1	-11.8	----	4.3	51.7	47.4
967.608	----	16.1	-11.9	----	4.2	51.7	47.5	

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

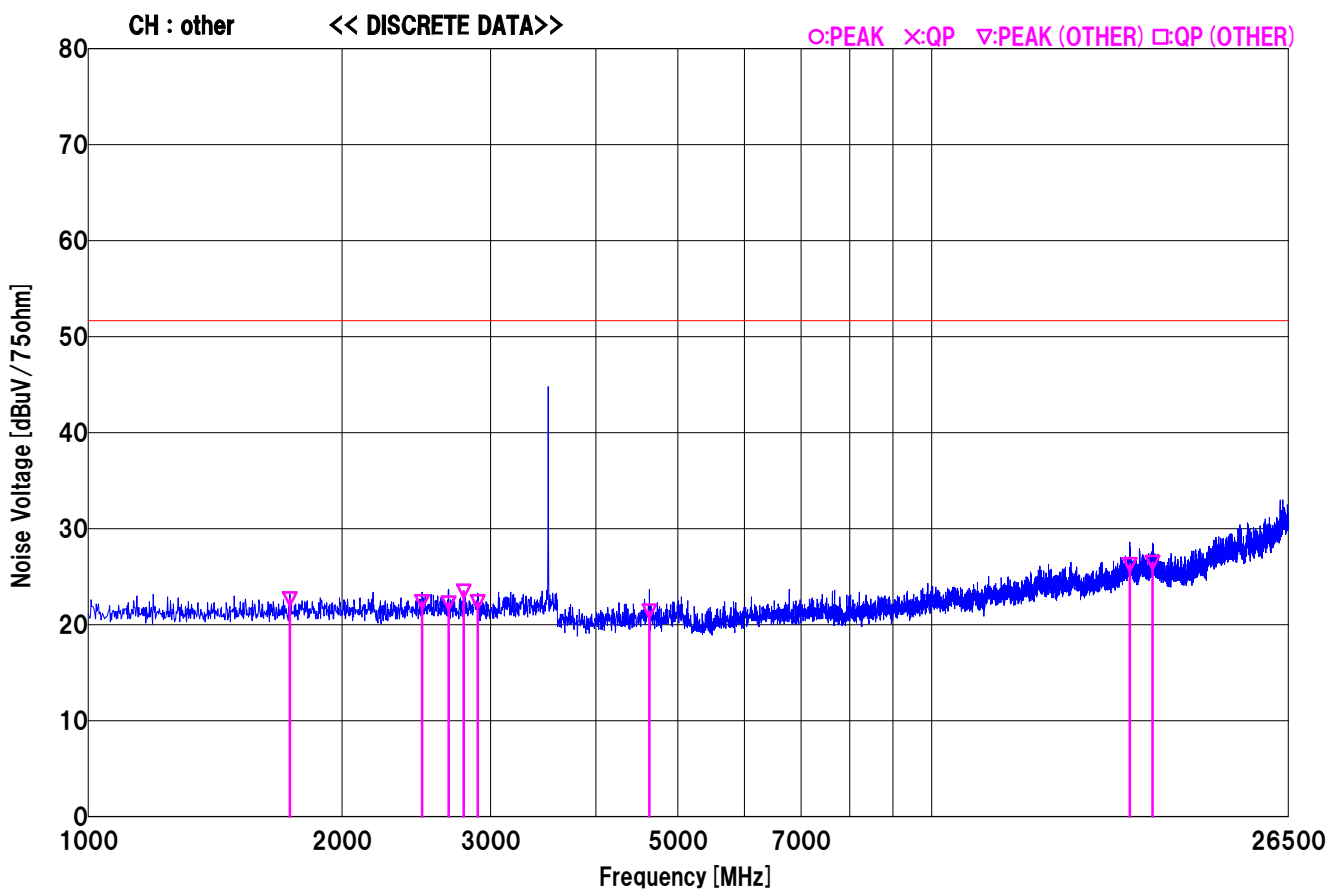
DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz)_analog
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 24 deg.C / 54 %RH
Remarks	: Main port, Other		

Engineer : Kouki Yamada

LIMIT : — FCC Part15 SubpartB_Antenna terminal



Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] +1.76 (50 ohm to 75 ohm) [dB]

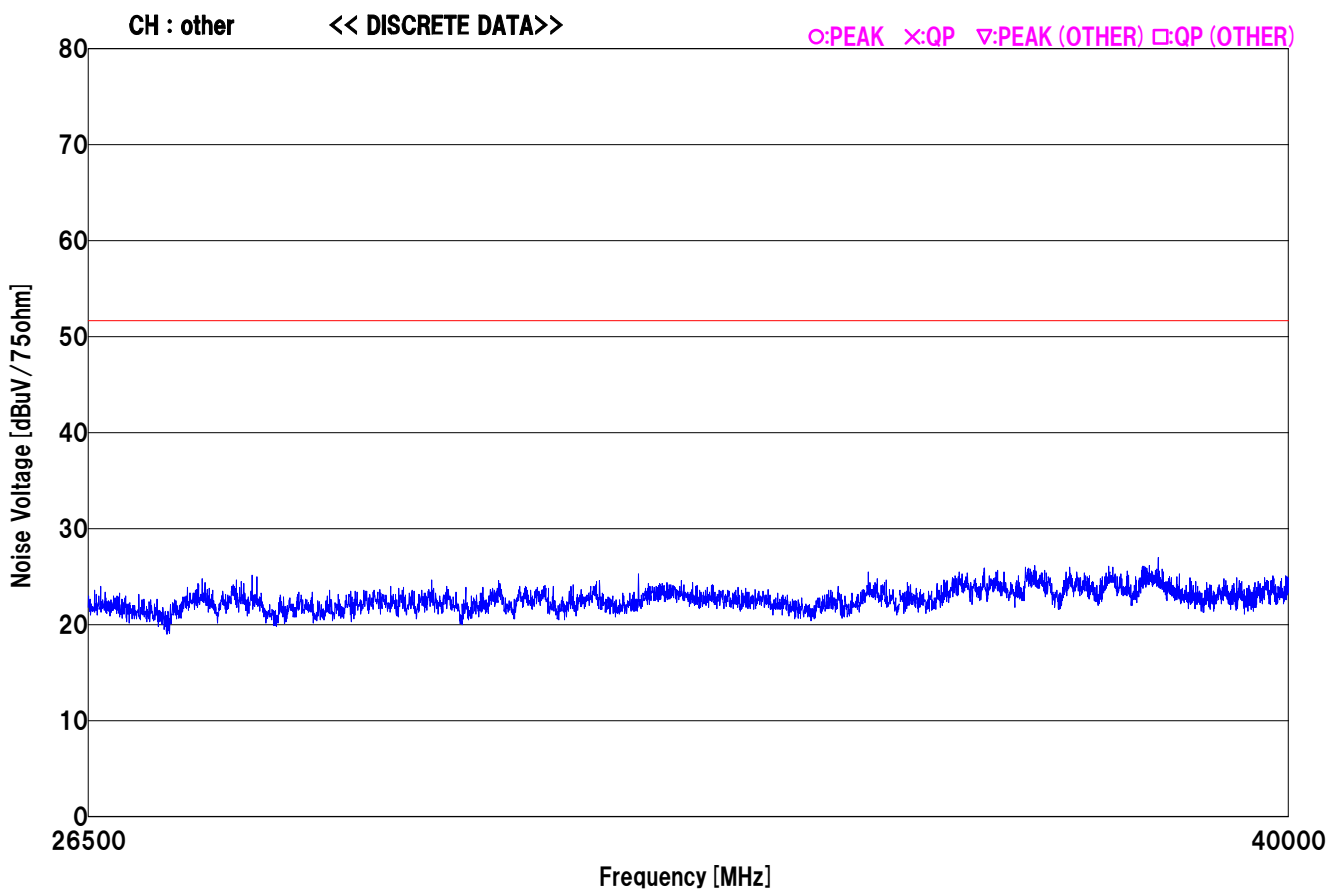
DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz)_analog
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 24 deg.C / 54 %RH
Remarks	: Main port, Other		

Engineer : Kouki Yamada

LIMIT : — FCC Part15 SubpartB_Antenna terminal



Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] +1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz)_analog
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 24 deg.C / 54 %RH

Remarks : Main port, Other

Engineer : Kouki Yamada

LIMIT : FCC Part15 SubpartB Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
other	*1734.000	47.1	----	-24.4	22.7	----	51.7	29.0
	*2488.000	46.4	----	-24.0	22.4	----	51.7	29.3
	*2676.000	46.3	----	-24.1	22.2	----	51.7	29.5
	*2788.000	47.6	----	-24.1	23.5	----	51.7	28.2
	*2896.000	46.5	----	-24.1	22.4	----	51.7	29.3
	*4629.000	44.4	----	-23.0	21.4	----	51.7	30.3
	*17184.000	44.8	----	-18.5	26.3	----	51.7	25.4
	*18285.000	44.5	----	-18.0	26.5	----	51.7	25.2

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (87.75 MHz)_analog
Kind of EUT : Car Navigation Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
Serial No. : 500087 Temp./Humi. : 24 deg.C / 54 %RH

Remarks : Main port, Local

Engineer : Kouki Yamada

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
87.75 MHz	1410.208	48.4	----	-24.9	23.5	----	51.7	28.2
	1762.760	46.8	----	-24.3	22.5	----	51.7	29.2
	1850.898	46.5	----	-24.3	22.2	----	51.7	29.5
	2467.864	47.2	----	-24.0	23.2	----	51.7	28.5
	3172.968	46.0	----	-23.9	22.1	----	51.7	29.6
	3525.520	68.3	----	-23.6	44.7	----	51.7	7.0
	7051.040	44.1	----	-22.6	21.5	----	51.7	30.2

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz)_analog
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 24 deg.C / 54 %RH

Remarks : Main port, Local

Engineer : Kouki Yamada

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
 LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
97.9 MHz	1560.192	47.1	----	-24.7	22.4	----	51.7	29.3
	1755.216	47.1	----	-24.3	22.8	----	51.7	28.9
	1950.240	47.9	----	-24.2	23.7	----	51.7	28.0
	3120.384	47.1	----	-23.9	23.2	----	51.7	28.5
	3510.432	68.3	----	-23.6	44.7	----	51.7	7.0
	3607.944	45.4	----	-23.6	21.8	----	51.7	29.9
	7020.864	44.8	----	-22.6	22.2	----	51.7	29.5

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (107.9 MHz)_analog
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 24 deg.C / 54 %RH

Remarks : Main port, Local

Engineer : Kouki Yamada

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
107.9 MHz	1299.456	47.8	----	-25.2	22.6	----	51.7	29.1
	1732.608	47.4	----	-24.4	23.0	----	51.7	28.7
	1840.896	46.2	----	-24.3	21.9	----	51.7	29.8
	3032.064	46.9	----	-24.1	22.8	----	51.7	28.9
	3465.216	67.4	----	-23.6	43.8	----	51.7	7.9
	3790.080	44.4	----	-23.4	21.0	----	51.7	30.7
	6930.432	45.2	----	-22.6	22.6	----	51.7	29.1

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

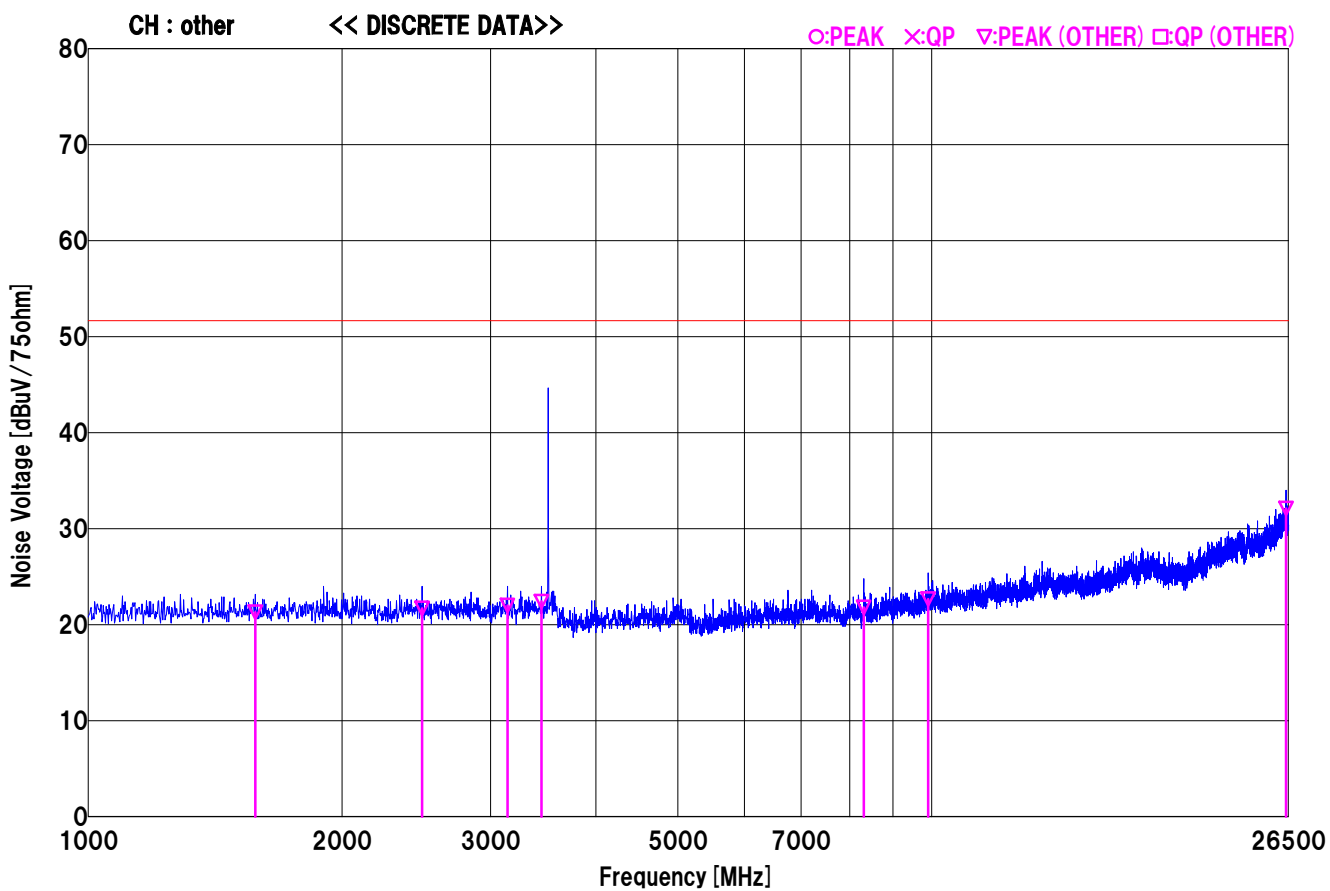
DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz) _digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 24 deg.C / 54 %RH
Remarks	: Main port, Other		

Engineer : Kouki Yamada

LIMIT : — FCC Part15 SubpartB_Antenna terminal



Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] +1.76 (50 ohm to 75 ohm) [dB]

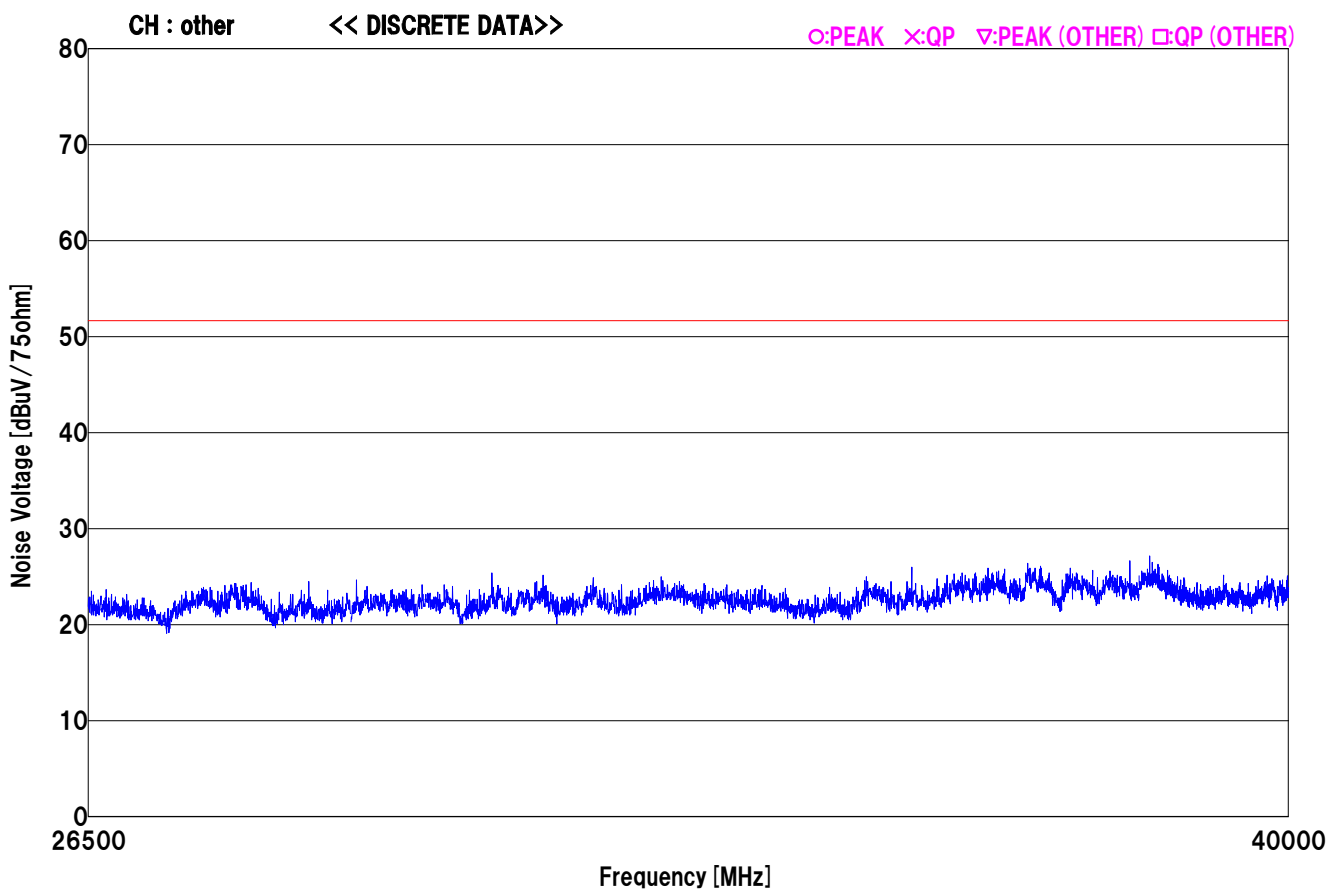
DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (97.9 MHz) _digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 24 deg.C / 54 %RH
Remarks	: Main port, Other		

Engineer : Kouki Yamada

LIMIT : — FCC Part15 SubpartB_Antenna terminal



Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] +1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz)_digital
 Kind of EUT : Car Navigation Order No. : 13385909S
 Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
 Serial No. : 500087 Temp./Humi. : 24 deg.C / 54 %RH

Remarks : Main port, Other

Engineer : Kouki Yamada

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
other	*1578.000	46.0	----	-24.7	21.3	----	51.7	30.4
	*2488.000	45.7	----	-24.0	21.7	----	51.7	30.0
	*3141.000	45.9	----	-23.9	22.0	----	51.7	29.7
	*3447.000	46.0	----	-23.6	22.4	----	51.7	29.3
	*8307.000	44.3	----	-22.5	21.8	----	51.7	29.9
	*9909.000	44.7	----	-22.0	22.7	----	51.7	29.0
	*26315.000	46.6	----	-14.5	32.1	----	51.7	19.6

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company	: Panasonic Corporation Automotive Company	Mode	: FM Receiving (87.75 MHz)_digital
Kind of EUT	: Car Navigation	Order No.	: 13385909S
Model No.	: AT2103 Hi type (14 inch Display)	Power	: DC 13.2 V
Serial No.	: 500087	Temp./Humi.	: 24 deg.C / 54 %RH

Remarks : Main port, Local

Engineer : Kouki Yamada

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
87.75 MHz	1410.208	47.1	----	-24.9	22.2	----	51.7	29.5
	1762.760	46.7	----	-24.3	22.4	----	51.7	29.3
	1850.898	46.5	----	-24.3	22.2	----	51.7	29.5
	2467.864	46.2	----	-24.0	22.2	----	51.7	29.5
	3172.968	47.2	----	-23.9	23.3	----	51.7	28.4
	3525.520	68.1	----	-23.6	44.5	----	51.7	7.2
	7051.040	44.3	----	-22.6	21.7	----	51.7	30.0

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (97.9 MHz) _digital
Kind of EUT : Car Navigation Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
Serial No. : 500087 Temp./Humi. : 24 deg.C / 54 %RH

Remarks : Main port, Local

Engineer : Kouki Yamada

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
97.9 MHz	1560.192	47.4	----	-24.7	22.7	----	51.7	29.0
	1755.216	46.5	----	-24.3	22.2	----	51.7	29.5
	1950.240	47.1	----	-24.2	22.9	----	51.7	28.8
	3120.384	47.2	----	-23.9	23.3	----	51.7	28.4
	3510.432	68.2	----	-23.6	44.6	----	51.7	7.1
	3607.944	46.0	----	-23.6	22.4	----	51.7	29.3
	7020.864	45.6	----	-22.6	23.0	----	51.7	28.7

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2020/08/07

Company : Panasonic Corporation Automotive Company Mode : FM Receiving (107.9 MHz)_digital
Kind of EUT : Car Navigation Order No. : 13385909S
Model No. : AT2103 Hi type (14 inch Display) Power : DC 13.2 V
Serial No. : 500087 Temp./Humi. : 24 deg.C / 54 %RH

Remarks : Main port, Local

Engineer : Kouki Yamada

LIMIT (Fundamental) : FCC Part15 SubpartB_Antenna terminal
LIMIT (Harmonics) : FCC Part15 SubpartB_Antenna terminal

CH	Freq	Reading		Factor	Result		Limit	Margin
		PEAK	QP		PEAK	QP		
	[MHz]	[dBuV]		[dB]	[dBuV/75]		[dBuV/75]	[dB]
107.9 MHz	1299.456	48.0	----	-25.2	22.8	----	51.7	28.9
	1732.608	47.0	----	-24.4	22.6	----	51.7	29.1
	1840.896	46.6	----	-24.3	22.3	----	51.7	29.4
	3032.064	45.9	----	-24.1	21.8	----	51.7	29.9
	3465.216	67.3	----	-23.6	43.7	----	51.7	8.0
	3790.080	44.7	----	-23.4	21.3	----	51.7	30.4
	6930.432	44.9	----	-22.6	22.3	----	51.7	29.4

Calculation:Result [dBuV] =Reading [dBuV] +Fac (Cable+Matching Pad-Amp) [dB] + 1.76 (50 ohm to 75 ohm) [dB]

APPENDIX 2

Test Instruments

EMI test equipment

Test Name	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
AT	COTS-SEMI-2	144866	EMI Software for AV Equipment	TSJ (Techno Science Japan)	TEPTO-DV(AT,TV)	2	-	-
AT	KAF-02	144878	Pre Amplifier	Hewlett Packard	8449B	3008A01268	2020/04/02	12
AT	SAF-07	145006	Pre Amplifier	TSJ (Techno Science Japan)	MLA-8k03-D01-35	81212	2020/06/24	12
AT	SAT10-09	145132	Attenuator	Weinschel Corp.	54A-10	W5692	2019/11/05	12
AT	SCC-AT1/AT2/KM P-09	180424	Coaxial cable, Matching pad	TAMAGAWA	5D2W/ZT-130	-/1454514E	2020/06/24	12
AT	SCC-G12	145040	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	2020/03/02	12
AT	SCC-G63	196946	Coaxial Cable	HUBER+SUNER	SUCOFLEX 102	803411/2	2020/03/10	12
AT	SOS-22	191839	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/12	12
AT	STR-01	145790	Test Receiver	Rohde & Schwarz	ESU40	100093	2020/04/24	12
AT	STR-02	145791	Test Receiver	Rohde & Schwarz	ESCI	100575	2019/09/25	12
AT	STS-02	145793	Digital Hitster	Hioki	3805-50	80997819	2020/04/09	12
AT,RE	SAF-10	145129	Pre Amplifier	Toyo Corporation	HAP26-40W	10	2020/03/03	12
RE	COTS-SEMI-5	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
RE	KJM-02	146432	Measure	TAJIMA	GL19-55	-	-	-
RE	KMP-09	146513	Matching Pad	TAMAGAWA	ZT-130	1454514E	2020/06/24	12
RE	SAEC-03(NSA)	145565	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	2020/04/12	12
RE	SAEC-03(SVSWR)	145566	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	2020/05/11	12
RE	SAF-03	145126	Pre Amplifier	SONOMA	310N	290213	2020/02/19	12
RE	SAF-06	145005	Pre Amplifier	Toyo Corporation	TPA0118-36	1440491	2020/02/20	12
RE	SAF-08	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2020/03/03	12
RE	SAT6-13	167094	Attenuator	JFW	50HF-006N	-	2020/02/21	12
RE	SBA-03	145023	Biconical Antenna	Schwarzbeck Mess - Elektronik	BBA9106	91032666	2020/05/17	12
RE	SCC-C1/C2/C3/C4/C5/C10/SRSE-03	145171	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	2020/04/12	12
RE	SCC-G15	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2020/03/04	12
RE	SCC-G40	166491	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	1612S005	2020/01/08	12
RE	SCC-G43	156380	Coaxial Cable	HUBER+SUNER	SUCOFLEX_104_E	SN MY 13406/4E	2020/06/04	12
RE	SCC-G57	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2020/05/12	12
RE	SCC-G58	183047	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	800287/4A	2020/06/04	12
RE	SCC-G70	200010	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	575618/4	2020/07/07	12
RE	SHA-03	145501	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA9120D	9120D-739	2020/06/15	12
RE	SHA-04	145512	Horn Antenna	ETS LINDGREN	3160-09	00094868	2020/06/15	12
RE	SHA-06	145514	Horn Antenna	ETS LINDGREN	3160-10	00092383	2020/07/16	12
RE	SHA-10	194685	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA 9120 C	711	2020/02/17	12
RE	SLA-07	145529	Logperiodic Antenna	Schwarzbeck Mess - Elektronik	VUSLP9111B	196	2020/05/17	12

EMI test equipment

Test Name	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
RE	SOS-23	191840	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/12	12
RE	SSG-13	158037	Signal Generator	Rohde & Schwarz	SMBV100A	262877	2019/08/20	12
RE	STR-08	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2019/11/22	12
RE	STS-03	146210	Digital Hitester	Hioki	3805-50	80997823	2019/10/01	12

*Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates , those test equipment have been controlled by means of an unbroken chains of calibrations.

All equipment is calibrated with valid calibrations . Each measurement data is traceable to the national or international standards

Test Item:

RE: Radiated emission,

AT: Antenna terminal disturbance voltage