EMI TEST REPORT

Test Report No.: 13251731S-R1

Applicant	:	**Panasonic Corporation**
Type of EUT	:	**Car radio tuner**
Model Number of EUT	:	**CQ-TH1AN0MX**
FCC ID	:	**ACJ932CQTH1AN0MX**
Test regulation	:	**FCC Part 15 Subpart B: 2019**
Test result	:	**Complied (Refer to Section 3.2)**

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
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6. This test report covers EMC technical requirements.
   It does not cover administrative issues such as Manual or non-EMC test related Requirements. (if applicable)
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 13251731S. 13251731S is replaced with this report.

Date of test: March 31 and April 1, 2020

Representative test engineer:
Makoto Hosaka
Engineer
Consumer Technology Division

Approved by:
Shinichi Takano
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".

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

REVISION HISTORY

Original Test Report No.: 13251731S

Revision	Test report No.	Date	Page revised	Contents
- (Original)	13251731S	April 9, 2020	-	-
1	13251731S-R1	April 15, 2020	- (full revision)	Modification of similar model on Section 2 from: CQ-TH1AN0TT to: CQ-TH1AN0MT
				Modification of Clock frequencies on Section 2 from: Clock frequencies: 300 MHz to: Clock frequencies maximum: 300 MHz
				Modification of "No.1 Antenna" shield in List of cables on Section 4 shield in the List of cables from: Unshielded to: Shielded
				Addition of “Figure 2: Test Setup” on Section 5

Reference: Abbreviations (Including words undescribed in this report)

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

CONTENTS

SECTION 1: Customer information

Company Name	:	Panasonic Corporation
Address	:	4261 Ikonobe-cho, Tsuzuki-ku, Yokohama-city, Kanagawa-ken, 224-8520, Japan
Telephone Number	:	+81-50-3689-6676
Facsimile Number	:	+81-45-931-0806
Contact Person	:	Takanori Matsumoto

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 radio tuner
Model No.	:	CQ-TH1AN0MX
Serial No.	:	1911116
Rating	:	DC 6 V, DC 9 V
Country of Mass-production	:	Mexico (Japan)
Condition of EUT	:	Engineering 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 (Information from test lab.)	:	March 19, 2020

2.2 Product description

Model: CQ-TH1AN0MX (referred to as the EUT in this report) is a Car radio tuner.

Similar model:

Version	Model No.	Product Function				Radio Band	Mounting Bracket	Assembly Plant	Remark
		AM/FM	HD-Radio	DAB	FM-VICS				
Ver.1	CQ-TH1AN0MX	X	-	-	-	US	A	Mexico	
	CQ-TH1AN0CX	X	-	-	-	US	A	Mexico	Delivery destination difference
	CQ-TH1BN0FX	X	-	-	-	US	A	Mexico	Spare parts
	CQ-TH1AN0MT	X	-	-	-	US	A	Thailand	
	CQ-TH2BN1CX	X	-	-	-	US	B	Mexico	
	CQ-TH2CN1MX	X	-	-	-	US	B	Mexico	Delivery destination difference
	CQ-THVBN1JX	X	-	-	-	US	C	Mexico	Spare parts

Clock frequencies maximum: 300 MHz

FM tuner specification
Frequency of operation: 87.75 MHz, 87.9 MHz to 107.9 MHz
Intermediate frequency: ±44.1 kHz

SECTION 3: Test specification, procedures & results

3.1 Test specification

Test specification: FCC Part 15 Subpart B: 2019
FCC Part 15 final revised on July 19, 2019 and effective August 19, 2019 except 15.258
Title : FCC 47CFR Part 15 Radio Frequency Device
Subpart B Unintentional Radiators

3.2 Procedures & Results

Item	Test Procedure	Limits	Deviation	Worst margin	Result
Conducted emission	ANSI C63.4: 2014 IEEE 187:2003	FCC 15.107 (a)	N/A *1)	N/A	N/A
Radiated emission	ANSI C63.4: 2014 IEEE 187:2003	FCC 15.109 (a)	N/A	11.0 dB Freq.: 400.002 MHz Detector: QP Polarization: Vertical Mode: FM Receiving (97.9 MHz) analog	Complied a)
Antenna power conduction for receivers	ANSI C63.4: 2014 IEEE 187:2003	FCC 15.111 (a)	N/A	11.2 dB Freq.: 665.346 MHz Detector: QP Mode: FM Receiving (97.9 MHz) analog	Complied b)
Note: UL Japan's EMI Work Procedures No. 13-EM-W0420 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.					

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

3.3 Additions to standards

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

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: 2019

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	4.7 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
Antenna Terminal Voltage*3	5 MHz-1000 MHz	2.8 dB		
	1000 MHz-	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

UL Japan, Inc. Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN
Telephone number : +81 463 50 6400
Facsimile number : +81 463 50 6401
JAB Accreditation No. : RTL02610
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 measurement 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.

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

4.1 Operating mode

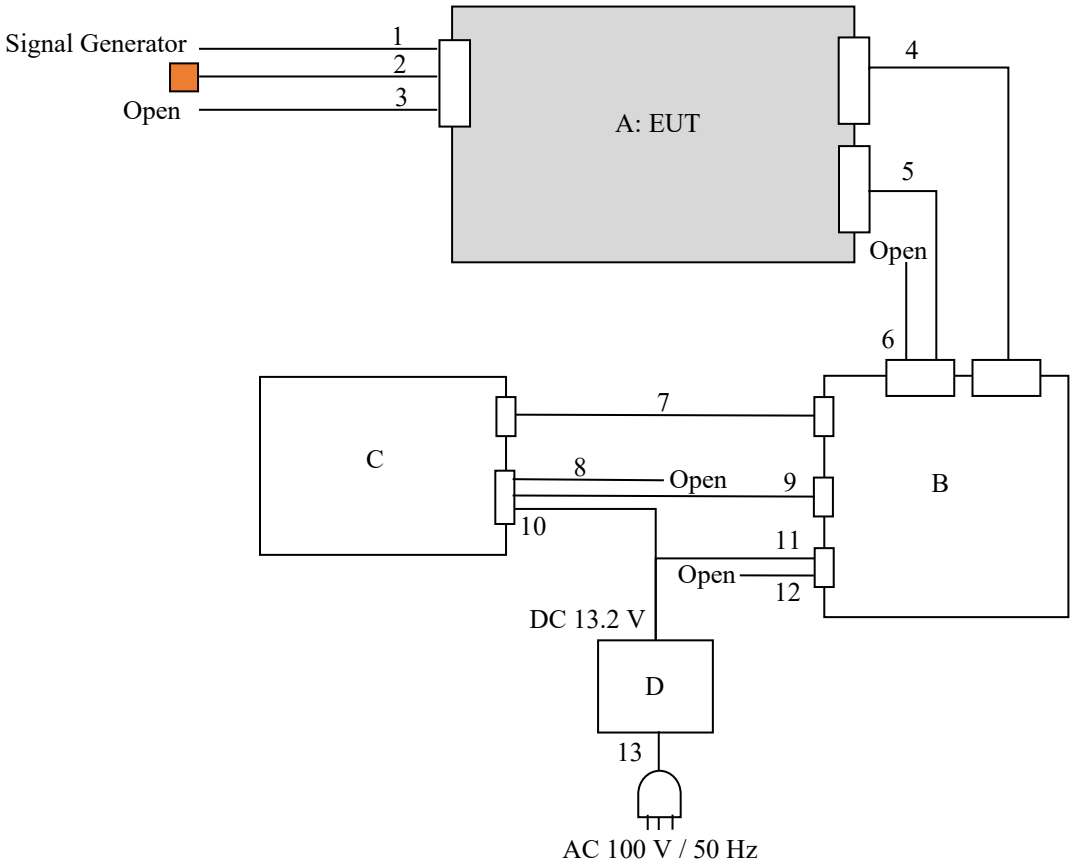
The EUT exercise program used during testing was designed to exercise the various system components in a manner similar to typical use.

Test sequence is used : FM Reception (87.75 MHz, 97.9 MHz, 107.9 MHz), Analog/Digital
Software (Firmware) : ABh1801080000000

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

4.2 Configuration and peripherals

: Termination



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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Car radio Tuner	CQ-TH1AN0MX	1911116	Panasonic Corporation	EUT
B	Display Audio Unit	CL-MH1AX0JT	30	Panasonic Corporation	-
C	Display Unit	RD6D8AC	KEZ22000152	ALPINE	-
D	Power Supply	PAN60-10A	NL002383	Kikusui	-

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	Antenna	0.15 + 1.0	Shielded	Shielded	-
2	Antenna	0.15 + 1.0	Shielded	Shielded	-
3	Signal	0.15 + 1.0	Shielded	Shielded	-
4	Signal	1.0	Shielded	Shielded	-
5	Signal	1.0	Unshielded	Unshielded	-
6	Signal	1.0	Shielded	Shielded	-
7	Signal	1.0	Shielded	Shielded	-
8	Signal	1.0	Shielded	Shielded	-
9	Signal	0.5	Unshielded	Unshielded	-
10	DC Power	1.0 + 0.15	Unshielded	Unshielded	-
11	DC Power	1.0 + 0.15	Unshielded	Unshielded	-
12	General-purpose	1.0	Unshielded	Unshielded	-
13	AC Power	3.0	Unshielded	Unshielded	-

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

For below 1 GHz, EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. For above 1 GHz, EUT was placed on a platform of nominal size, 1.0 m by 1.5 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 1.

5.3 Test conditions

Frequency range : 30 MHz - 2 GHz
Test distance : 3 m
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 X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

	30 MHz -1000 MHz (Test receiver)	1 GHz – 2 GHz (Spectrum analyzer) *2)	
Detector Type :	QP	AV *1)	PK
IF Band width :	120 kHz	RBW 1 MHz/ VBW 10 Hz	RBW 1 MHz/ VBW 3 MHz

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

Figure 1. Antenna angle

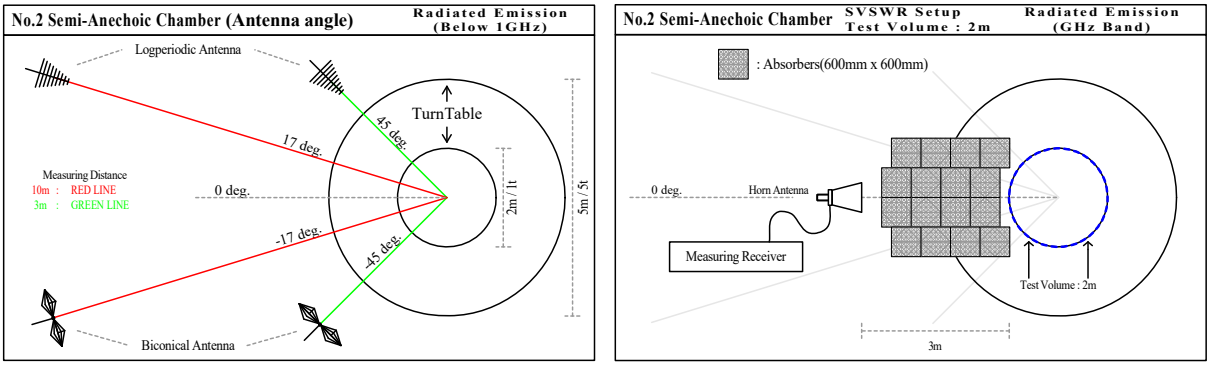
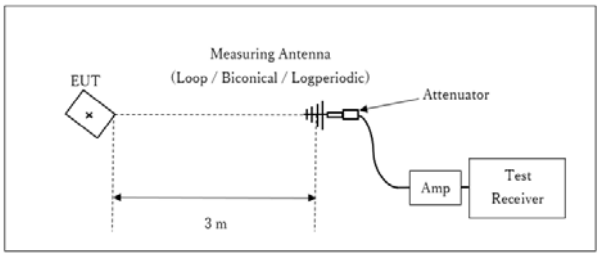


Figure 2: Test Setup

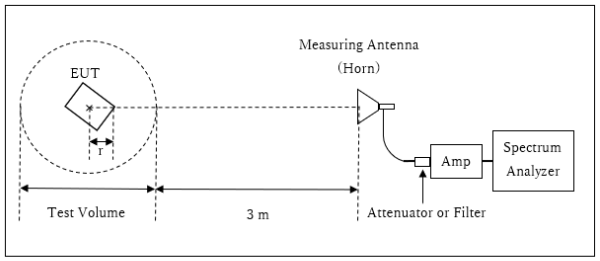
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 2 GHz



r : Radius of an outer periphery of EUT
× : Center of turn table

Distance Factor: 20 x log (3.62 m / 3.00 m) = 1.64 dB
* Test Distance: (3 + Test Volume /2) - r = 3.62 m

Test Volume : 2.00 m
(Test Volume has been calibrated based on CISPR 16-1-4.)
r = 0.38 m

5.5 Results

Summary of the test results : Pass

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 - 2 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.

		30 MHz -1000 MHz (Test receiver)	1 GHz – 2 GHz
Detector Type	:	QP	Peak
IF Band width	:	120 kHz	RBW: 1 MHz/ VBW: 3 MHz

6.5 Results

Summary of the test results : Pass

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/04/01

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Local, EUT:X-axis

Mode : FM Receiving (87.75 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 24 deg.C / 45 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka

<< QP DATA >>

No.	Freq.	Reading <QP>	Ant.Fac	Loss	Gain	S.Fac	Result <QP>	Limit <QP>	Margin <QP>	Pola.	Height	Angle	Ant. Type	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]		
1	87.706	23.30	7.63	7.84	31.87	0.39	7.29	40.00	32.7	Hori.	211	269	BC	
2	175.412	22.50	15.97	8.91	31.78	0.00	15.60	43.50	27.9	Hori.	150	178	BC	
3	263.118	30.20	12.12	6.43	31.69	0.00	17.06	46.00	28.9	Hori.	130	145	LP	
4	351.176	22.80	14.81	7.26	31.63	0.00	13.24	46.00	32.7	Hori.	100	4	LP	
5	87.706	24.60	7.63	7.84	31.87	0.39	8.59	40.00	31.4	Vert.	100	135	BC	
6	175.412	22.60	15.97	8.91	31.78	0.00	15.70	43.50	27.8	Vert.	100	182	BC	
7	263.118	26.90	12.12	6.43	31.69	0.00	13.76	46.00	32.2	Vert.	100	200	LP	
8	351.176	22.70	14.81	7.26	31.63	0.00	13.14	46.00	32.8	Vert.	100	330	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

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/04/01

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Local, EUT:X-axis

Mode : FM Receiving (97.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 24 deg.C / 45 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka

<< QP DATA >>

No.	Freq.	Reading <QP>	Ant.Fac	Loss	Gain	S.Fac	Result <QP>	Limit <QP>	Margin <QP>	Pola.	Height	Angle	Ant. Type	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]		
1	97.856	23.10	9.61	7.98	31.86	0.12	8.95	43.50	34.5	Hori.	202	1	BC	
2	195.712	22.40	16.66	9.14	31.76	-0.14	16.30	43.50	27.2	Hori.	143	210	BC	
3	293.568	25.30	13.43	6.72	31.67	0.00	13.78	46.00	32.2	Hori.	100	97	LP	
4	783.553	22.60	20.16	9.32	31.40	0.00	20.68	46.00	25.3	Hori.	100	250	LP	
5	97.856	24.40	9.61	7.98	31.86	0.12	10.25	43.50	33.2	Vert.	100	2	BC	
6	195.712	22.70	16.66	9.14	31.76	-0.14	16.60	43.50	26.9	Vert.	100	352	BC	
7	293.568	22.90	13.43	6.72	31.67	0.00	11.38	46.00	34.6	Vert.	100	182	LP	
8	783.553	22.80	20.16	9.32	31.40	0.00	20.88	46.00	25.1	Vert.	100	223	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

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/04/01

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Local, EUT:X-axis

Mode : FM Receiving (107.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 24 deg.C / 45 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka

<< QP DATA >>

No.	Freq.	Reading <QP>	Ant.Fac	Loss	Gain	S.Fac	Result <QP>	Limit <QP>	Margin <QP>	Pola.	Height	Angle	Ant. Type	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]		
1	107.856	22.70	11.40	8.11	31.85	-0.10	10.26	43.50	33.2	Hori.	215	17	BC	
2	215.712	22.80	10.94	5.94	31.74	0.00	7.94	43.50	35.5	Hori.	150	118	LP	
3	323.568	23.10	13.96	7.00	31.65	0.00	12.41	46.00	33.5	Hori.	113	301	LP	
4	862.847	23.00	21.39	9.67	31.02	0.00	23.04	46.00	22.9	Hori.	100	228	LP	
5	107.856	24.80	11.40	8.11	31.85	-0.10	12.36	43.50	31.1	Vert.	100	40	BC	
6	215.712	23.50	10.94	5.94	31.74	0.00	8.64	43.50	34.8	Vert.	100	2	LP	
7	323.568	22.80	13.96	7.00	31.65	0.00	12.11	46.00	33.8	Vert.	100	355	LP	
8	862.847	22.80	21.39	9.67	31.02	0.00	22.84	46.00	23.1	Vert.	100	124	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

DATA OF RADIATED EMISSION TEST

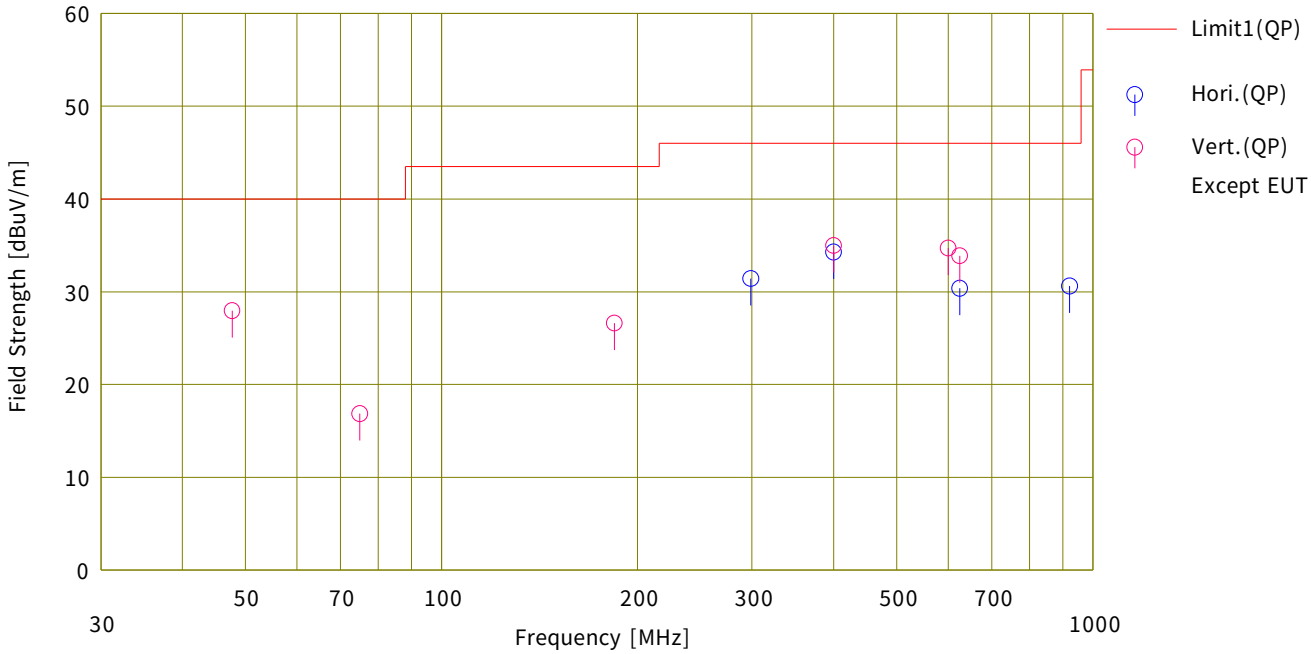
UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/04/01

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Other, EUT:X-axis

Mode : FM Receiving (97.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 24 deg.C / 45 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka



No.	Freq. [MHz]	Reading <QP> [dBuV]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP> [dBuV/m]	Limit <QP> [dBuV/m]	Margin <QP> [dB]	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
1	298.672	42.80	13.51	6.77	31.67	0.00	31.41	46.00	14.5	Hori.	129	252	LP	
2	400.003	42.90	15.45	7.55	31.63	0.00	34.27	46.00	11.7	Hori.	207	132	LP	
3	625.012	34.10	19.25	8.63	31.61	0.00	30.37	46.00	15.6	Hori.	146	262	LP	
4	921.636	29.70	21.68	9.94	30.71	0.00	30.61	46.00	15.3	Hori.	105	145	LP	
5	47.738	40.70	11.90	7.27	31.89	-0.03	27.95	40.00	12.0	Vert.	100	91	BC	
6	75.006	34.70	6.23	7.66	31.88	0.14	16.85	40.00	23.1	Vert.	100	305	BC	
7	184.329	33.10	16.35	9.01	31.77	-0.08	26.61	43.50	16.8	Vert.	100	279	BC	
8	400.002	43.60	15.45	7.55	31.63	0.00	34.97	46.00	11.0	Vert.	100	232	LP	
9	600.011	38.80	18.99	8.51	31.60	0.00	34.70	46.00	11.3	Vert.	100	235	LP	
10	625.012	37.60	19.25	8.63	31.61	0.00	33.87	46.00	12.1	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

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/03/31

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Local, Test Distance=362 cm, EUT:Y-axis

Mode : FM Receiving (87.75 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka

<< AV/PK DATA >>

No.	Freq.	Reading		Ant.Fac	Loss	Gain	D.Fac	Result		Limit		Margin		Pola.	Height	Angle	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[H/V]	[cm]	[deg]		
1	1492.500	36.37	49.37	25.36	3.20	38.98	1.63	27.58	40.58	53.90	73.90	26.3	33.3	Hori.	100	298	31SH2	
2	1841.820	33.30	47.33	25.87	3.55	38.95	1.63	25.40	39.43	53.90	73.90	28.5	34.4	Hori.	173	125	31SH2	
3	1492.500	35.38	49.00	25.36	3.20	38.98	1.63	26.59	40.21	53.90	73.90	27.3	33.6	Vert.	100	156	31SH2	
4	1841.820	35.13	47.70	25.87	3.55	38.95	1.63	27.23	39.80	53.90	73.90	26.6	34.1	Vert.	316	206	31SH2	

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

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/03/31

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Local, Test Distance=362 cm, EUT:Y-axis

Mode : FM Receiving (97.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka

<< AV/PK DATA >>

No.	Freq.	Reading		Ant.Fac	Loss	Gain	D.Fac	Result		Limit		Margin		Pola.	Height	Angle	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[H/V]	[cm]	[deg]		
1	1567.110	36.50	52.27	25.37	3.28	38.97	1.63	27.81	43.58	53.90	73.90	26.0	30.3	Hori.	102	48	31SH2	
2	1957.120	35.13	48.31	26.19	3.66	38.93	1.63	27.68	40.86	53.90	73.90	26.2	33.0	Hori.	301	128	31SH2	
3	1567.110	39.05	53.81	25.37	3.28	38.97	1.63	30.36	45.12	53.90	73.90	23.5	28.7	Vert.	193	155	31SH2	
4	1957.120	33.80	47.97	26.19	3.66	38.93	1.63	26.35	40.52	53.90	73.90	27.5	33.3	Vert.	100	187	31SH2	

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

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/04/01

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Local, Test Distance=362 cm, EUT:Y-axis

Mode : FM Receiving (107.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka

<< AV/PK DATA >>

No.	Freq.	Reading		Ant.Fac	Loss	Gain	D.Fac	Result		Limit		Margin		Pola.	Height	Angle	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[H/V]	[cm]	[deg]		
1	1833.550	35.38	48.70	25.83	3.54	38.95	1.63	27.43	40.75	53.90	73.90	26.4	33.1	Hori.	102	333	31SH2	
2	1941.410	36.03	49.13	26.11	3.65	38.94	1.63	28.48	41.58	53.90	73.90	25.4	32.3	Hori.	107	335	31SH2	
3	1833.550	35.88	48.67	25.83	3.54	38.95	1.63	27.93	40.72	53.90	73.90	25.9	33.1	Vert.	110	183	31SH2	
4	1941.410	35.35	49.23	26.11	3.65	38.94	1.63	27.80	41.68	53.90	73.90	26.1	32.2	Vert.	258	182	31SH2	

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

DATA OF RADIATED EMISSION TEST

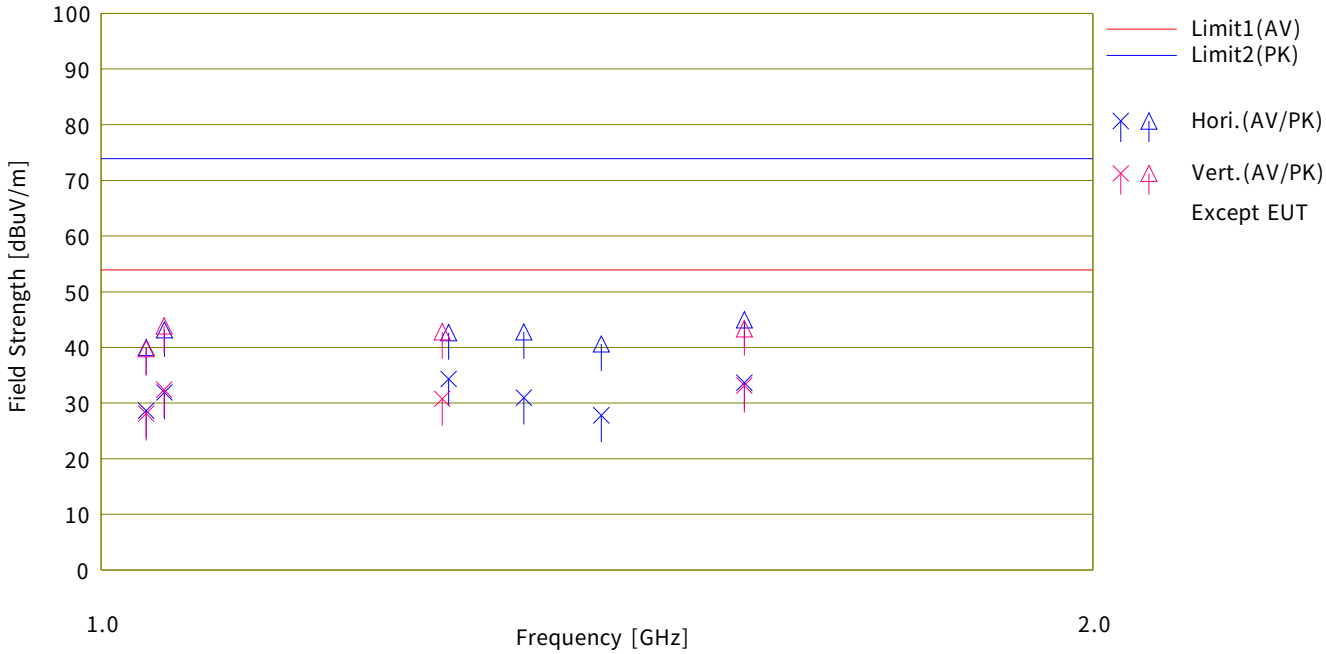
UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/03/31

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116
Remarks : Other, Test Distance=362 cm, EUT:Y-axis

Mode : FM Receiving (97.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Makoto Hosaka



No.	Freq.	Reading <AV>	Reading <PK>	Ant.Fac	Loss	Gain	D.Fac	Result <AV>	Result <PK>	Limit <AV>	Limit <PK>	Margin <AV>	Margin <PK>	Pola.	Height	Angle	Ant. Type	Comment
	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[H/V]	[cm]	[deg]		
1	1032.234	38.56	49.89	24.71	2.66	38.93	1.63	28.63	39.96	53.90	73.90	25.2	33.9	Hori.	100	244	31SH2	
2	1045.365	41.92	53.16	24.63	2.67	38.93	1.63	31.92	43.16	53.90	73.90	21.9	30.7	Hori.	184	340	31SH2	
3	1275.005	43.10	51.42	25.63	2.94	38.96	1.63	34.34	42.66	53.90	73.90	19.5	31.2	Hori.	271	347	31SH2	
4	1343.882	39.43	51.26	25.84	3.03	38.96	1.63	30.97	42.80	53.90	73.90	22.9	31.1	Hori.	355	190	31SH2	
5	1418.742	36.37	49.16	25.66	3.12	38.97	1.63	27.81	40.60	53.90	73.90	26.0	33.3	Hori.	202	123	31SH2	
6	1568.035	42.36	53.63	25.37	3.28	38.97	1.63	33.67	44.94	53.90	73.90	20.2	28.9	Hori.	339	306	31SH2	
7	1032.211	38.05	49.67	24.71	2.66	38.93	1.63	28.12	39.74	53.90	73.90	25.7	34.1	Vert.	252	105	31SH2	
8	1045.289	42.39	53.85	24.63	2.67	38.93	1.63	32.39	43.85	53.90	73.90	21.5	30.0	Vert.	148	186	31SH2	
9	1269.425	39.56	51.60	25.61	2.94	38.96	1.63	30.78	42.82	53.90	73.90	23.1	31.0	Vert.	128	17	31SH2	
10	1568.035	41.83	52.04	25.37	3.28	38.97	1.63	33.14	43.35	53.90	73.90	20.7	30.5	Vert.	115	195	31SH2	

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

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/**03/31**

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116

Mode : FM Receiving (87.75 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Remarks : Local

Engineer : Makoto Hosaka

LIMIT(Fundamental) : FCC Part15 SubpartB_Antenna terminal / FCC Part15 SubpartB_Antenna terminal
LIMIT(Harmonics) : FCC Part15 SubpartB_Antenna terminal / 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	87.706	28.6	19.2	-13.0	15.6	6.2	51.7	45.5
	175.410	28.9	19.3	-12.8	16.1	6.5	51.7	45.2
	263.120	29.9	19.9	-12.7	17.2	7.2	51.7	44.5
	350.820	----	19.5	-12.5	----	7.0	51.7	44.7
	438.530	----	19.7	-12.4	----	7.3	51.7	44.4
	526.240	----	19.7	-12.2	----	7.5	51.7	44.2
	613.940	----	19.9	-12.0	----	7.9	51.7	43.8
	701.650	----	19.7	-11.8	----	7.9	51.7	43.8
	789.350	----	19.8	-11.8	----	8.0	51.7	43.7
	877.060	----	19.9	-11.9	----	8.0	51.7	43.7
	964.760	----	20.3	-11.9	----	8.4	51.7	43.3
	1052.470	36.9	----	-12.0	24.9	----	51.7	26.8
	1140.180	37.5	----	-12.1	25.4	----	51.7	26.3
	1227.880	37.5	----	-12.0	25.5	----	51.7	26.2
	1315.590	38.0	----	-12.0	26.0	----	51.7	25.7
	1403.290	37.1	----	-11.9	25.2	----	51.7	26.5
	1491.000	37.6	----	-11.7	25.9	----	51.7	25.8
	1578.710	37.8	----	-11.7	26.1	----	51.7	25.6
	1666.410	37.5	----	-11.7	25.8	----	51.7	25.9
	1754.120	38.0	----	-11.4	26.6	----	51.7	25.1
	1841.820	38.3	----	-11.4	26.9	----	51.7	24.8
	1929.530	37.7	----	-11.4	26.3	----	51.7	25.4
	87.794	----	19.3	-13.0	----	6.3	51.7	45.4
	175.590	----	19.4	-12.8	----	6.6	51.7	45.1
	263.380	----	19.7	-12.7	----	7.0	51.7	44.7
	351.180	----	34.6	-12.5	----	22.1	51.7	29.6
	438.970	----	19.7	-12.4	----	7.3	51.7	44.4
	526.760	----	19.7	-12.2	----	7.5	51.7	44.2
	614.560	----	19.9	-12.0	----	7.9	51.7	43.8
	702.350	----	19.7	-11.8	----	7.9	51.7	43.8
	790.150	----	19.7	-11.8	----	7.9	51.7	43.8
	877.940	----	19.9	-11.9	----	8.0	51.7	43.7
	965.740	----	20.3	-11.9	----	8.4	51.7	43.3
	1053.530	37.2	----	-12.0	25.2	----	51.7	26.5
	1141.320	37.3	----	-12.1	25.2	----	51.7	26.5
	1229.120	37.0	----	-12.0	25.0	----	51.7	26.7
	1316.910	37.8	----	-12.0	25.8	----	51.7	25.9
	1404.710	37.1	----	-11.9	25.2	----	51.7	26.5
	1492.500	39.4	----	-11.7	27.7	----	51.7	24.0
	1580.290	37.7	----	-11.7	26.0	----	51.7	25.7
	1668.090	37.8	----	-11.6	26.2	----	51.7	25.5
	1755.880	37.4	----	-11.4	26.0	----	51.7	25.7
	1843.680	38.1	----	-11.4	26.7	----	51.7	25.0
	1931.470	37.7	----	-11.4	26.3	----	51.7	25.4

Calculation:Rsult[dBuV]=Reading[dBuV]+Fac(Cable+Matching Pad-Amp)[dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/**03/31**

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116

Mode : FM Receiving (97.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Remarks : Local

Engineer : Makoto Hosaka

LIMIT(Fundamental) : FCC Part15 SubpartB_Antenna terminal / FCC Part15 SubpartB_Antenna terminal
LIMIT(Harmonics) : FCC Part15 SubpartB_Antenna terminal / 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	97.856	----	19.3	-13.0	----	6.3	51.7	45.4
	195.710	----	19.4	-12.8	----	6.6	51.7	45.1
	293.570	----	20.3	-12.6	----	7.7	51.7	44.0
	391.420	----	19.9	-12.5	----	7.4	51.7	44.3
	489.280	----	19.7	-12.2	----	7.5	51.7	44.2
	587.140	----	19.9	-12.1	----	7.8	51.7	43.9
	684.990	----	19.6	-11.8	----	7.8	51.7	43.9
	782.850	----	19.7	-11.8	----	7.9	51.7	43.8
	880.700	----	19.8	-11.9	----	7.9	51.7	43.8
	978.560	----	20.4	-11.9	----	8.5	51.7	43.2
	1076.420	37.7	----	-12.1	25.6	----	51.7	26.1
	1174.270	38.2	----	-12.1	26.1	----	51.7	25.6
	1272.130	37.5	----	-12.0	25.5	----	51.7	26.2
	1369.980	37.4	----	-11.9	25.5	----	51.7	26.2
	1467.840	37.3	----	-11.7	25.6	----	51.7	26.1
	1565.690	37.1	----	-11.7	25.4	----	51.7	26.3
	1663.550	38.2	----	-11.7	26.5	----	51.7	25.2
	1761.410	37.3	----	-11.4	25.9	----	51.7	25.8
	1859.260	38.0	----	-11.4	26.6	----	51.7	25.1
	1957.120	38.3	----	-11.2	27.1	----	51.7	24.6
	97.944	----	19.4	-13.0	----	6.4	51.7	45.3
	195.890	----	19.4	-12.8	----	6.6	51.7	45.1
	293.830	----	19.8	-12.6	----	7.2	51.7	44.5
	391.780	----	19.9	-12.5	----	7.4	51.7	44.3
	489.720	----	19.6	-12.2	----	7.4	51.7	44.3
	587.660	----	19.8	-12.1	----	7.7	51.7	44.0
	685.610	----	19.6	-11.8	----	7.8	51.7	43.9
	783.550	----	36.4	-11.8	----	24.6	51.7	27.1
	881.500	----	19.9	-11.9	----	8.0	51.7	43.7
	979.440	----	20.3	-11.9	----	8.4	51.7	43.3
	1077.390	37.3	----	-12.1	25.2	----	51.7	26.5
	1175.330	36.6	----	-12.1	24.5	----	51.7	27.2
	1273.270	37.0	----	-12.0	25.0	----	51.7	26.7
	1371.220	37.3	----	-11.9	25.4	----	51.7	26.3
	1469.160	37.4	----	-11.7	25.7	----	51.7	26.0
	1567.110	38.4	----	-11.7	26.7	----	51.7	25.0
	1665.050	37.3	----	-11.7	25.6	----	51.7	26.1
	1762.990	38.0	----	-11.4	26.6	----	51.7	25.1
	1860.940	37.6	----	-11.4	26.2	----	51.7	25.5
	1958.880	37.8	----	-11.2	26.6	----	51.7	25.1

Calculation:Rsult[dBuV]=Reading[dBuV]+Fac(Cable+Matching Pad-Amp)[dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/**03/31**

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116

Mode : FM Receiving (107.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Remarks : Local

Engineer : Makoto Hosaka

LIMIT(Fundamental) : FCC Part15 SubpartB_Antenna terminal / FCC Part15 SubpartB_Antenna terminal
LIMIT(Harmonics) : FCC Part15 SubpartB_Antenna terminal / 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	107.856	----	19.3	-13.0	----	6.3	51.7	45.4
	215.710	----	19.6	-12.8	----	6.8	51.7	44.9
	323.570	----	19.4	-12.6	----	6.8	51.7	44.9
	431.420	----	19.7	-12.4	----	7.3	51.7	44.4
	539.280	----	19.7	-12.1	----	7.6	51.7	44.1
	647.140	----	19.7	-11.8	----	7.9	51.7	43.8
	754.990	----	19.8	-11.8	----	8.0	51.7	43.7
	862.850	----	37.0	-11.9	----	25.1	51.7	26.6
	970.700	----	20.3	-11.9	----	8.4	51.7	43.3
	1078.560	37.1	----	-12.1	25.0	----	51.7	26.7
	1186.420	37.1	----	-12.1	25.0	----	51.7	26.7
	1294.270	37.1	----	-12.0	25.1	----	51.7	26.6
	1402.130	37.6	----	-11.9	25.7	----	51.7	26.0
	1509.980	37.9	----	-11.7	26.2	----	51.7	25.5
	1617.840	38.0	----	-11.7	26.3	----	51.7	25.4
	1725.690	37.8	----	-11.5	26.3	----	51.7	25.4
	1833.550	42.9	----	-11.4	31.5	----	51.7	20.2
	1941.410	38.8	----	-11.3	27.5	----	51.7	24.2
	107.944	----	19.3	-13.0	----	6.3	51.7	45.4
	215.890	----	19.6	-12.8	----	6.8	51.7	44.9
	323.830	----	19.5	-12.6	----	6.9	51.7	44.8
	431.780	----	23.8	-12.4	----	11.4	51.7	40.3
	539.720	----	19.8	-12.1	----	7.7	51.7	44.0
	647.660	----	19.7	-11.8	----	7.9	51.7	43.8
	755.610	----	19.7	-11.8	----	7.9	51.7	43.8
	863.550	----	19.8	-11.9	----	7.9	51.7	43.8
	971.500	----	20.4	-11.9	----	8.5	51.7	43.2
	1079.440	37.5	----	-12.1	25.4	----	51.7	26.3
	1187.390	37.7	----	-12.1	25.6	----	51.7	26.1
	1295.330	37.7	----	-12.0	25.7	----	51.7	26.0
	1403.270	38.0	----	-11.9	26.1	----	51.7	25.6
	1511.220	37.0	----	-11.7	25.3	----	51.7	26.4
	1619.160	37.0	----	-11.7	25.3	----	51.7	26.4
	1727.110	37.5	----	-11.5	26.0	----	51.7	25.7
	1835.050	42.3	----	-11.4	30.9	----	51.7	20.8
	1942.990	38.4	----	-11.3	27.1	----	51.7	24.6

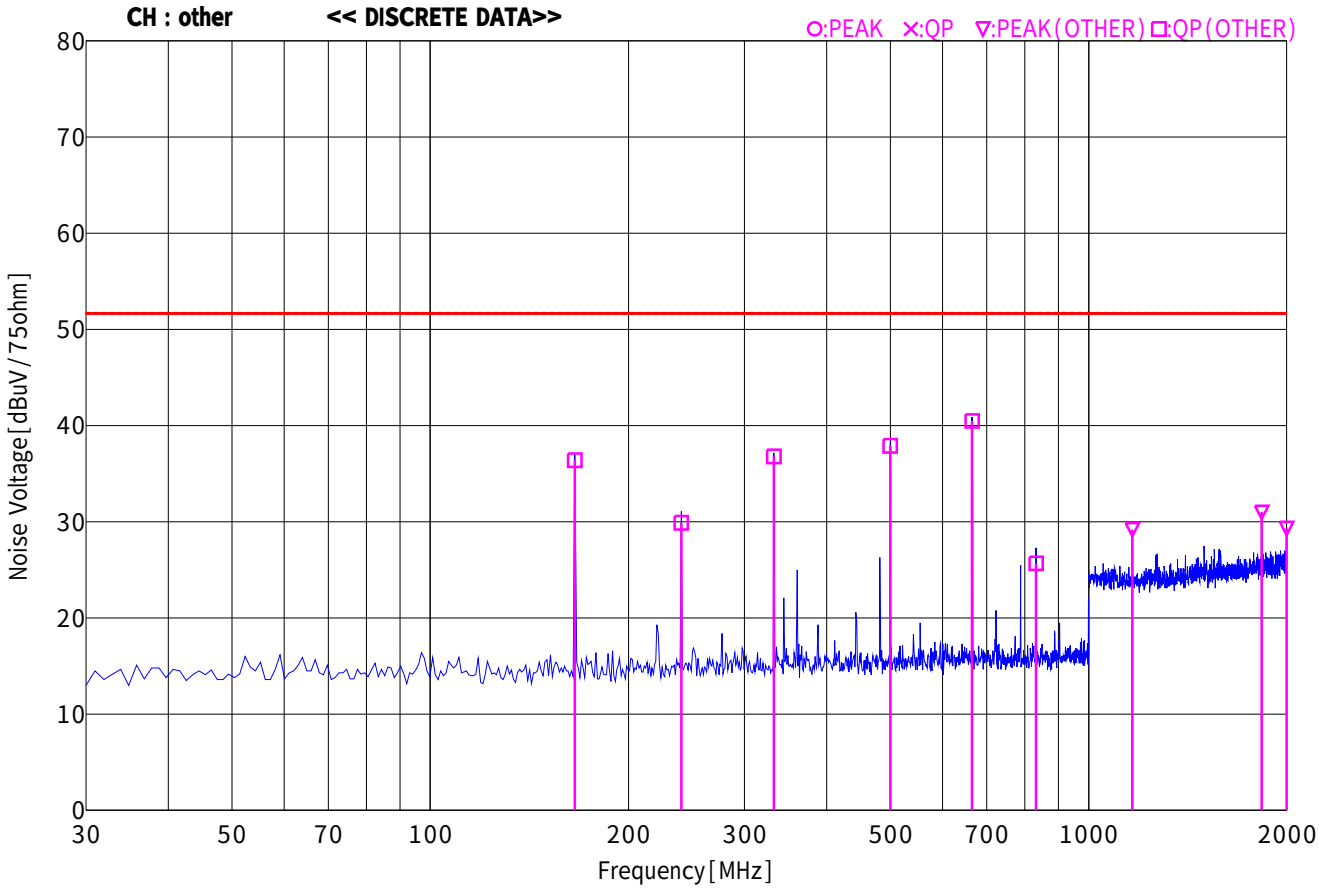
Calculation:Rsult[dBuV]=Reading[dBuV]+Fac(Cable+Matching Pad-Amp)[dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/**03/31**

Company	: Panasonic Corporation	Mode	: FM Receiving (97.9 MHz)_analog
Kind of EUT	: Car radio tuner	Order No.	: 13251731S
Model No.	: CQ-TH1AN0MX	Power	: DC 6 V, DC 9 V
Serial No.	: 1911116	Temp./Humi.	: 23 deg.C / 34 %RH
Remarks	: Other		
		Engineer	: Makoto Hosaka

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



Calculation:Rsult[dBuV]=Reading[dBuV]+Fac(Cable+Matching Pad-Amp)[dB]

DATA OF ANTENNA TERMINAL TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/**03**/**31**

Company : Panasonic Corporation
Kind of EUT : Car radio tuner
Model No. : CQ-TH1AN0MX
Serial No. : 1911116

Remarks : Other

Mode : FM Receiving (97.9 MHz)_analog
Order No. : 13251731S
Power : DC 6 V, DC 9 V
Temp./Humi. : 23 deg.C / 34 %RH

Engineer : Makoto Hosaka

LIMIT(Fundamental) : FCC Part15 SubpartB_Antenna terminal / FCC Part15 SubpartB_Antenna terminal
LIMIT(Harmonics) : FCC Part15 SubpartB_Antenna terminal / 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	*165.800	----	49.2	-12.8	----	36.4	51.7	15.3
	*240.490	----	42.6	-12.7	----	29.9	51.7	21.8
	*332.640	----	49.3	-12.5	----	36.8	51.7	14.9
	*499.481	----	50.1	-12.2	----	37.9	51.7	13.8
	*665.346	----	52.3	-11.8	----	40.5	51.7	11.2
	*832.181	----	37.5	-11.8	----	25.7	51.7	26.0
	*1165.000	41.3	----	-12.1	29.2	----	51.7	22.5
	*1831.000	42.4	----	-11.4	31.0	----	51.7	20.7
	*1998.000	40.5	----	-11.2	29.3	----	51.7	22.4

Calculation:Rsult[dBuV]=Reading[dBuV]+Fac(Cable+Matching Pad-Amp)[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	TEPTO-DV(AT,TV)	2	-	-
AT	SAF-07	145006	Pre Amplifier	TSJ	MLA-8k03-D01-35	81212	2019/06/17	12
AT	SCC-AT1/AT2/KMP-09	180424	Coaxial cable,Matching pad	TAMAGAWA	5D2W/ZT-130	-/1454514E	2019/06/17	12
RE	COTS-SEMI-5	170932	EMI Software	TSJ	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
RE	KBA-03	144932	Biconical Antenna	Schwarzbeck Mess - Elektronik	BBA9106	1926	2019/05/07	12
RE	SAEC-02(NSA)	145563	Semi-Anechoic Chamber	TDK	SAEC-02(NSA)	2	2020/03/20	12
RE	SAEC-02(SVSWR)	145598	Semi-Anechoic Chamber	TDK	SAEC-02(SVSWR)	2	2019/05/09	12
RE	SAF-02	145004	Pre Amplifier	SONOMA	310N	290212	2020/02/19	12
RE	SAF-05	145128	Pre Amplifier	Toyo Corporation	TPA0118-36	1440490	2019/07/12	12
RE	SAT3-11	150921	Attenuator	JFW	50HF-003N	-	2020/01/30	12
RE	SAT6-14	167095	Attenuator	JFW	50HF-006N	-	2020/02/21	12
RE	SCC-B1/B3/B5/B7/B8/B13/SRSE-02	144975	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	2019/04/19	12
RE	SCC-B2/B4/B6/B7/B8/B13/SRSE-02	144976	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	2019/04/19	12
RE	SCC-G41	151617	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	1612S006	2020/01/08	12
RE	SCC-G50	178573	Coaxial Cable	HUBER+SUNER	SUCOFLEX_104_E	MY13407/4E	2020/03/09	12
RE	SCC-G51	178572	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	800288 /4A	2020/03/09	12
RE	SHA-02	145384	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA9120D	9120D-726	2019/06/26	12
RE	SJM-09	145336	Measure	PROMART	SEN1935	-	-	-
RE	SLA-07	145529	Logperiodic Antenna	Schwarzbeck Mess - Elektronik	VUSLP9111B	196	2019/05/07	12
RE,AT	SOS-21	191838	Humidity Indicator	CUSTOM	CTH-201	-	2019/12/12	12
RE,AT	STR-07	146209	Test Receiver	Rohde & Schwarz	ESU26	100484	2019/09/13	12
RE,AT	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