

APPENDIX 2: Data of EMI test

Radiated Emission below 30MHz (Fundamental and Spurious Emission)

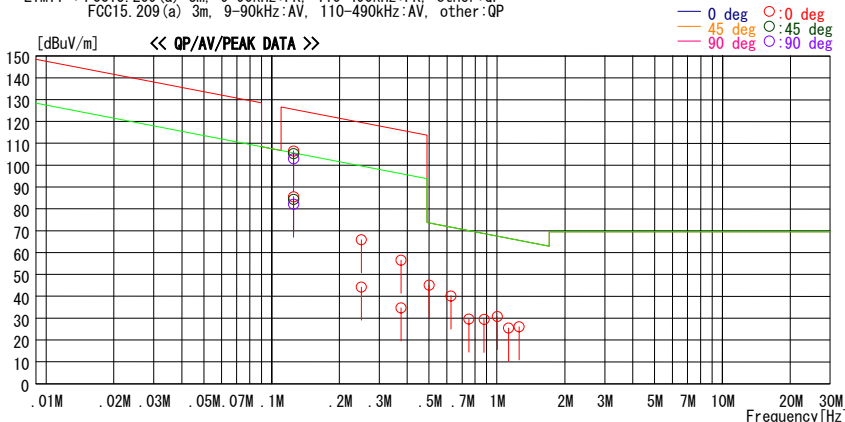
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2007/09/21

Company : OMRON Corporation Report No. : 28AE0205-HO
Kind of EUT : TPMS ECU / TPMS LF Initiator (LFI) Power : DC 12.0V
Model No. : G8D-366H-ECU-E / G8D-366H-ANT-D Temp./ Humi. : 26 deg. C. / 62 %
Serial No. : 99051/ 99141 Operator : Hidekazu Tanaka

Mode / Remarks : Transmitting 125kHz mode Worst-axis: X

LIMIT : FCC15. 209 (a) 3m, 9-90kHz: PK, 110-490kHz: PK, other: QP
FCC15. 209 (a) 3m, 9-90kHz: AV, 110-490kHz: AV, other: QP



Freq [MHz]	Reading [dBuV]	DET	Ant. Fac [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna [deg]	Table [deg]	Comment
0.12499	110.4	PEAK	19.9	0.2	27.5	103.0	125.6	22.6	90deg	359	
0.12499	112.7	PEAK	19.9	0.2	27.5	105.3	125.6	20.3	45deg	230	
0.12499	113.9	PEAK	19.9	0.2	27.5	106.5	125.6	19.1	0deg	247	Worst Angle
0.12499	93.0	AV	19.9	0.2	27.5	85.6	105.7	20.1	0deg	247	Worst Angle
0.12499	91.8	AV	19.9	0.2	27.5	84.4	105.7	21.3	45deg	230	
0.12499	89.5	AV	19.9	0.2	27.5	82.1	105.7	23.6	90deg	359	
0.25009	64.2	PEAK	19.8	10.0	28.1	65.9	119.6	53.7	0deg	269	
0.25009	42.5	AV	19.8	10.0	28.1	44.2	99.6	55.4	0deg	269	
0.37512	55.2	PEAK	19.7	10.0	28.3	56.6	116.1	59.5	0deg	106	
0.37512	33.3	AV	19.7	10.0	28.3	34.7	96.1	61.4	0deg	106	
0.50017	43.9	QP	19.7	10.0	28.4	45.2	73.6	28.4	0deg	259	
0.62506	38.8	QP	19.7	10.1	28.5	40.1	71.7	31.6	0deg	269	
0.75037	28.4	QP	19.6	10.1	28.6	29.5	70.1	40.6	0deg	276	
0.87557	28.4	QP	19.6	10.1	28.7	29.4	68.7	39.3	0deg	265	
1.00070	29.9	QP	19.6	10.1	28.8	30.8	67.6	36.8	0deg	275	
1.12517	24.5	QP	19.6	10.1	28.8	25.4	66.5	41.1	0deg	249	
1.25095	25.2	QP	19.6	10.1	28.8	26.1	65.6	39.5	0deg	282	

CHART : WITH FACTOR , ANT TYPE : LOOP , Except for the data below : adequate margin data below the limits.
CALCULATION : READING + ANT FACTOR + LOSS (CABLE + ATTEN. -AMP.)

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission above 30MHz (Spurious Emission)

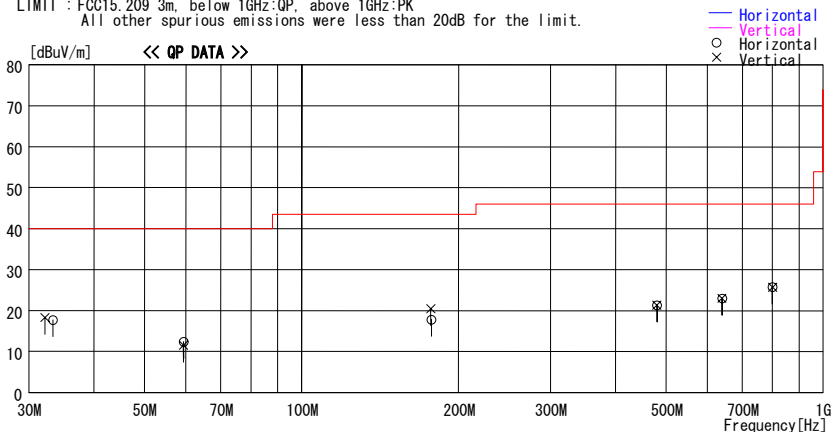
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2007/09/21

Company : OMRON Corporation
 Kind of EUT : TPMS ECU / TPMS LF Initiator (LFI)
 Model No. : G8D-366H-ECU-E / G8D-366H-ANT-D
 Serial No. : 99051/ 99141
 Report No. : 28AE0205-HO
 Power : DC 12.0V
 Temp./Humi. : 26deg. C. / 62%
 Operator : Hidekazu Tanaka

Mode / Remarks : Transmitting 125kHz mode Worst-axis:X

LIMIT : FCC15.209 3m. below 1GHz:QP, above 1GHz:PK
 All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin
			Factor	Gain						
			[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
32.201	22.5	QP	17.8	-22.0	18.3	289	100	Vert.	40.0	21.7
33.354	22.5	QP	17.2	-22.0	17.7	359	322	Hori.	40.0	22.3
59.343	24.8	QP	8.4	-21.7	11.5	257	100	Vert.	40.0	28.5
59.375	25.7	QP	8.4	-21.7	12.4	171	374	Hori.	40.0	27.6
176.932	24.3	QP	16.3	-20.2	20.4	11	100	Vert.	43.5	23.1
177.339	21.7	QP	16.3	-20.2	17.8	11	291	Hori.	43.5	25.7
480.000	22.4	QP	18.4	-19.5	21.3	0	100	Vert.	46.0	24.7
480.000	22.4	QP	18.4	-19.5	21.3	0	100	Hori.	46.0	24.7
640.000	22.0	QP	19.8	-18.8	23.0	0	100	Vert.	46.0	23.0
640.000	22.0	QP	19.8	-18.8	23.0	0	100	Hori.	46.0	23.0
800.000	21.6	QP	22.0	-17.9	25.7	0	100	Hori.	46.0	20.3
800.000	21.6	QP	22.0	-17.9	25.7	0	100	Vert.	46.0	20.3

CHART: WITH FACTOR ANT TYPE: -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz-: HORN
 CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission (Receiver Spurious Emission)

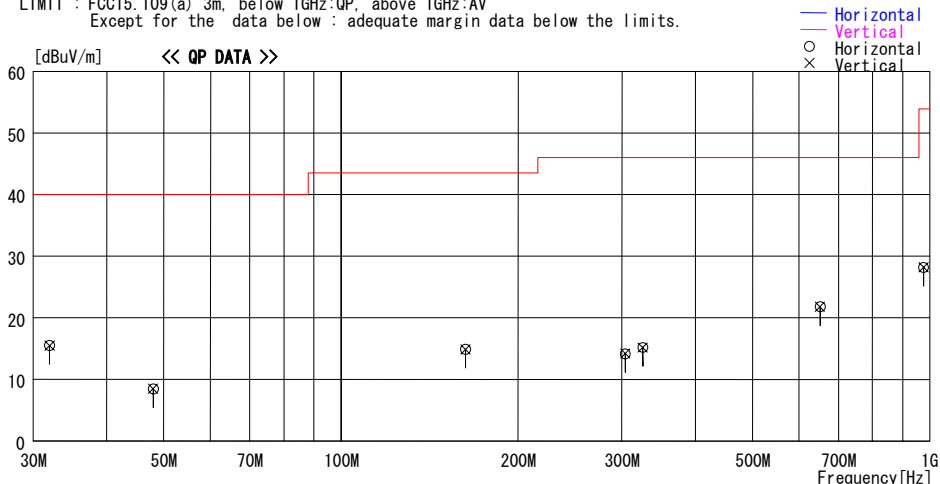
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2007/09/23

Company : OMRON Corporation
Kind of EUT : TPMS ECU / TPMS LF Initiator (LFI)
Model No. : G8D-366H-ECU-E / G8D-366H-ANT-C
Serial No. : 99001 / 99131
Report No. : 28AE0205-HO
Power : DC 12.0V
Temp./Humi. : 26deg.C. / 64%
Operator : Kenichi Adachi

Mode / Remarks : Receiving 314.98MHz mode, Worst-axis:X

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
32.000	22.1	QP	18.4	-25.0	15.5	0	400	Hori.	40.0	24.5
32.000	22.1	QP	18.4	-25.0	15.5	0	100	Vert.	40.0	24.5
48.000	22.1	QP	11.1	-24.7	8.5	0	400	Hori.	40.0	31.5
48.000	22.1	QP	11.1	-24.7	8.5	0	100	Vert.	40.0	31.5
162.840	22.4	QP	15.7	-23.2	14.9	0	400	Hori.	43.5	28.6
162.840	22.4	QP	15.7	-23.2	14.9	0	100	Vert.	43.5	28.6
304.280	22.1	QP	14.2	-22.1	14.2	0	100	Hori.	46.0	31.8
304.280	22.1	QP	14.2	-22.1	14.2	0	100	Vert.	46.0	31.8
325.680	22.1	QP	15.0	-21.9	15.2	0	100	Hori.	46.0	30.8
325.680	22.1	QP	15.0	-21.9	15.2	0	100	Vert.	46.0	30.8
651.360	22.5	QP	19.4	-20.1	21.8	0	100	Hori.	46.0	24.2
651.360	22.5	QP	19.4	-20.1	21.8	0	100	Vert.	46.0	24.2
977.040	22.5	QP	22.9	-17.2	28.2	0	100	Hori.	53.9	25.7
977.040	22.5	QP	22.9	-17.2	28.2	0	100	Vert.	53.9	25.7

CHART: WITH FACTOR ANT TYPE: -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (GABLE+ATTEN.) - GAIN (AMP)

*The test result is rounded off to one or two decimal places, so some differences might be observed.

Radiated Emission (Receiver Spurious Emission)

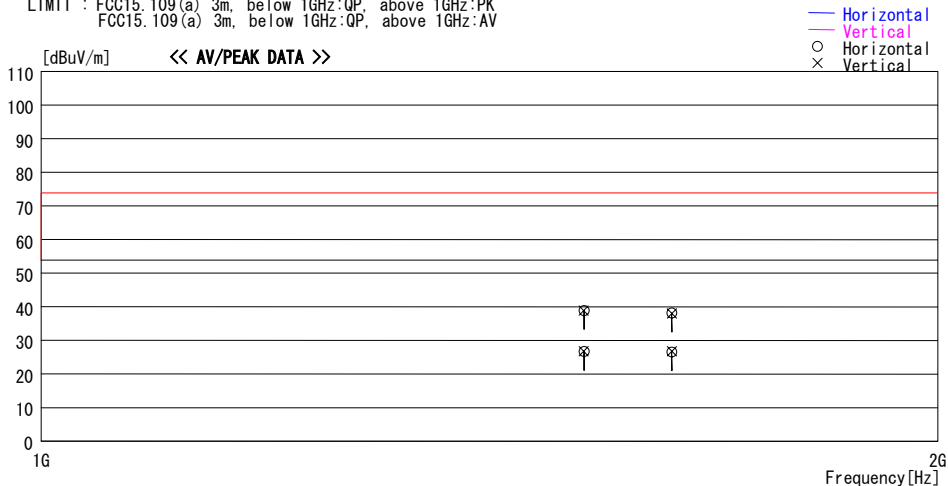
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2007/09/23

Company : OMRON Corporation
Kind of EUT : TPMS ECU / TPMS LF Initiator (LFI)
Model No. : G8D-366H-ECU-E / G8D-366H-ANT-C
Serial No. : 99001 / 99131
Report No. : 28AE0205-HO
Power : DC 12.0V
Temp./Humi. : 26deg. C. / 64%
Operator : Kenichi Adachi

Mode / Remarks : Receiving 314.98MHz mode, Worst-axis:X

LIMIT : FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:PK
FCC15.109(a) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin
			Factor [dB/m]	Gain [dB]					[dBuV/m]	[dB]
1521.400	43.5	PK	25.8	-30.4	38.9	0	100	Hori.	73.9	35.0
1521.400	31.3	AV	25.8	-30.4	26.7	0	100	Hori.	53.9	27.2
1521.400	43.4	PK	25.8	-30.4	38.8	0	100	Vert.	73.9	35.1
1521.400	31.3	AV	25.8	-30.4	26.7	0	100	Vert.	53.9	27.2
1628.400	42.1	PK	26.1	-30.1	38.1	0	100	Hori.	73.9	35.8
1628.400	30.6	AV	26.1	-30.1	26.6	0	100	Hori.	53.9	27.3
1628.400	42.0	PK	26.1	-30.1	38.0	0	100	Vert.	73.9	35.9
1628.400	30.7	AV	26.1	-30.1	26.7	0	100	Vert.	53.9	27.2

CHART WITH FACTOR ANT TYPE: -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

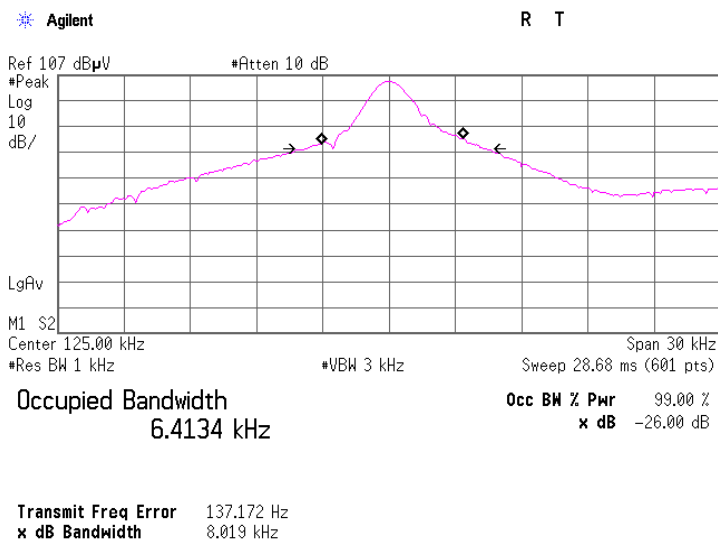
*The test result is rounded off to one or two decimal places, so some differences might be observed.

-26dB Bandwidth

UL Japan, Inc.
 Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY	: OMRON Corporation	REPORT NO	: 28AE0205-HO
EQUIPMENT	: TPMS ECU / TPMS LF Initiator (LFI)	REGULATION	: Reference data
MODEL	: G8D-366H-ECU-E / G8D-366H-ANT-D	TEST DISTANCE	: 3m
S/ N	: 99051/ 99141	DATE	: 09/21/2007
POWER	: DC 12.0V	TEMPERATURE	: 26 deg.C
MODE	: Transmitting 125kHz mode	HUMIDITY	: 62 %
	: Ant-Max	Engineer	: Hidekazu Tanaka

	FREQ	-26dB Bandwidth
	[kHz]	[kHz]
	125.0	8.019

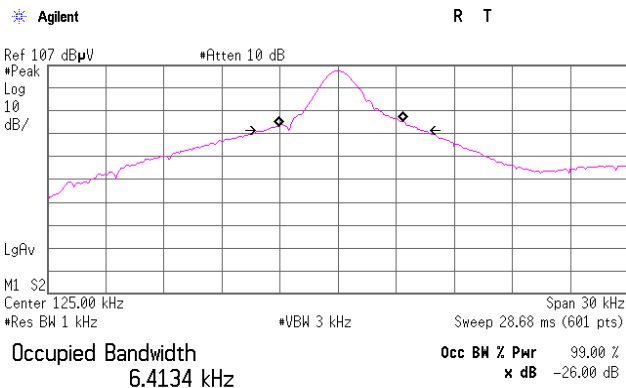


99% Occupied Bandwidth

UL Japan, Inc.
 Head Office EMC Lab. No.2 Semi Anechoic Chamber

COMPANY : OMRON Corporation EQUIPMENT : TPMS ECU / TPMS LF Initiator (LFI) MODEL : G8D-366H-ECU-E / G8D-366H-ANT-D S/ N : 99051/99141 POWER : DC 12.0V MODE : Transmitting 125kHz mode : Ant-Max	REPORT NO : 28AE0205-HO REGULATION : RSS-Gen 4.6.1 TEST DISTANCE : 3m DATE : 09/21/2007 TEMPERATURE : 26 deg.C HUMIDITY : 62 % Engineer : Hidekazu Tanaka
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	FREQ	99% Occupied Bandwidth
	[kHz]	[kHz]
	125.0	6.413



APPENDIX 3: Test instruments

EMI Test Instrument

<FCC15C>

Control No.	Instrument	Manufacturer	Model No.	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	ME,RE	2007/04/02 * 12
MLPA-02	Loop Antenna	Rohde & Schwarz	HFH2-Z2	ME	2006/12/19 * 12
MCC-31	Coaxial cable	UL Japan	-	ME	2007/06/04 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	ME	2007/02/27 * 12
MPA-09	Pre Amplifier	Agilent	8447D	ME,RE	2007/09/13 * 12
MPA-19	Pre Amplifier	MITEQ	MLA-10K01-B01-35	ME	2007/02/08 * 12
MAT-11	Attenuator(10dB)	Weinschel Corp	2	ME	2006/12/28 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	ME,RE	2007/09/05 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	ME,RE	2007/03/01 * 12
MJM-05	Measure	PROMART	SEN1955	ME,RE	-
MOS-02	Digital Humidity Indicator	N.T	NT-1800	ME,RE	2006/11/27 * 12
MMM-02	Digital Tester	Hioki	3255	ME,RE	2007/03/23 * 12
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	ME,RE	-
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2006/10/07 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2006/10/07 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2006/12/27 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2007/02/27 * 12
MCB-03	Car Battery	YUASA	40B19L	RE	Pre Check

<FCC15B>

Control No.	Instrument	Manufacturer	Model No.	Test Item	Calibration Date * Interval(month)
MAEC-03	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2007/03/05 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE	2007/02/03 * 12
MSA-09	Spectrum Analyzer	Advantest	R3273	RE	2006/12/08 * 12
MCC-51	Coaxial cable	UL Japan	-	RE	2007/07/26 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	RE	2007/03/16 * 12
MAT-30	Attenuator(6dB)	TME	UFA-01	RE	2007/03/05 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/01/19 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/01/19 * 12
MCC-56	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2007/03/29 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	RE	2007/03/02 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2007/04/14 * 12
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE	-
MJM-06	Measure	PROMART	SEN1955	RE	-
MOS-12	Thermo-Hygrometer	Custom	CTH-180	RE	2006/01/19 * 24
MCB-03	Car Battery	YUASA	40B19L	RE	Pre Check

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

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

ME: Radiated emission (9k-30MHz)

RE: Radiated emission (above 30MHz)

UL Japan, Inc.

Head Office EMC Lab.

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