

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi - Anechoic Chamber
Date : 2009/11/04

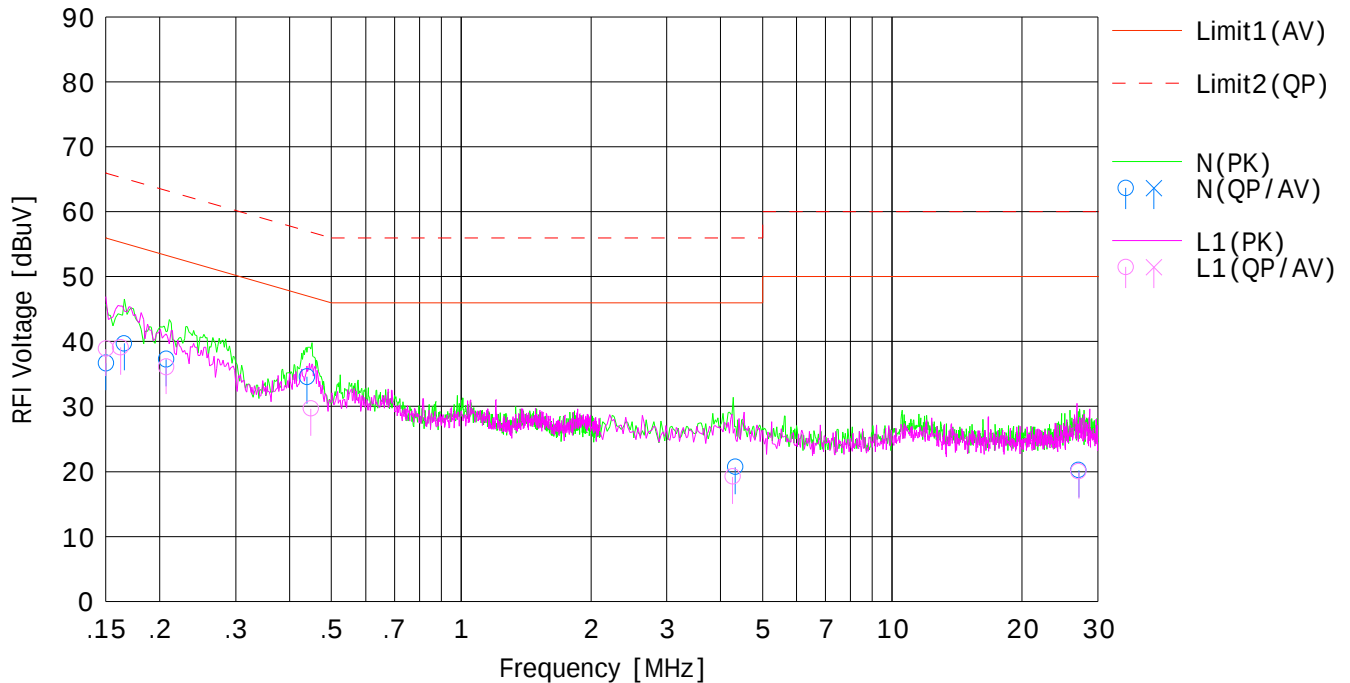
Company : BRIDGESTONE CORPORATION
Kind of EUT : TPMS(Tire Pressure Monitoring System)
Model No. : K612 (TAG-READER)
Serial No. : TR035

Mode : Transmitting 125kHz
Report No. : 30CE0195-SH-01-B
Power : DC3V (AC Adaptor 120V/60Hz)
Temp./Humi. : 26 /34%

Remarks : -

Limit1 : FCC 15C(15.207) AV
Limit2 : FCC 15C(15.207) QP

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dB]	<QP> [dB]		
1	0.15000	27.0	---	9.7	36.7	---	56.0	66.0	---	29.3	N	
2	0.16561	30.0	---	9.7	39.7	---	55.2	65.2	---	25.5	N	
3	0.20712	27.6	---	9.7	37.3	---	53.3	63.3	---	26.0	N	
4	0.43910	24.9	---	9.7	34.6	---	47.1	57.1	---	22.5	N	
5	4.32913	10.9	---	9.8	20.7	---	46.0	56.0	---	35.3	N	
6	27.07695	9.4	---	10.8	20.2	---	50.0	60.0	---	39.8	N	
7	0.15000	29.2	---	9.7	38.9	---	56.0	66.0	---	27.1	L1	
8	0.16225	29.4	---	9.7	39.1	---	55.3	65.3	---	26.2	L1	
9	0.20708	26.4	---	9.7	36.1	---	53.3	63.3	---	27.2	L1	
10	0.44850	20.0	---	9.7	29.7	---	46.9	56.9	---	27.2	L1	
11	4.27229	9.4	---	9.8	19.2	---	46.0	56.0	---	36.8	L1	
12	27.10900	9.2	---	10.8	20.0	---	50.0	60.0	---	40.0	L1	

Calculation:Result [dBuV]=Reading [dBuV]+C.Fac (LISN+Cable) [dB]

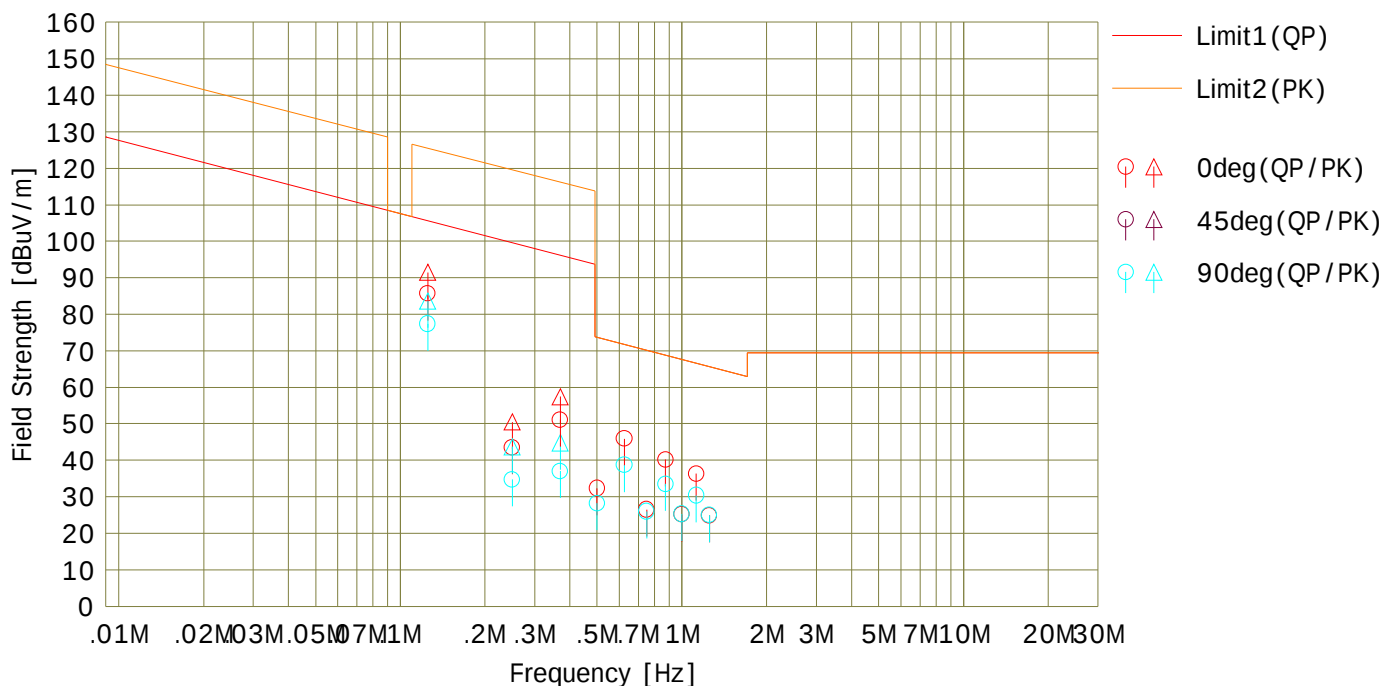
DATA OF MAGNETIC EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber
Date : 2009/11/07 20:35:49

Company : BRIDGESTONE CORPORATION Mode : Transmitting 125kHz
Kind of EUT : TPMS(Tire Pressure Monitoring System) Report No. : 30CE0195-SH-01-B
Model No. : K612(TAG-READER) Power : DC3V
Serial No. : TR035 Temp./Humi. : 26 /37%

Remarks :
Data Comment : Antenna:0deg→Ver_0deg, 90deg→Hor

Limit1 : FCC15.209(a) 3m, 9-90kHz, 110-490kHz:AV, other:QP
Limit2 : FCC15.209(a) 3m, 9-90kHz, 110-490kHz:PK, other:QP Tested by : Go Ishiwata



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna	Table	Comment
		<QP> [dBuV]	<PK> [dBuV]				<QP> [dBuV/m]	<PK> [dBuV/m]	<QP> [dBuV/m]	<PK> [dBuV/m]	<QP> [dB]	<PK> [dB]			
1	0.12500	91.6	97.4	20.0	5.9	31.8	85.7	91.5	105.7	125.6	20.0	34.1	0deg	274	QP→AV Detector
2	0.12500	83.3	89.5	20.0	5.9	31.8	77.4	83.6	105.7	125.6	28.3	42.0	90deg	264	QP→AV Detector
3	0.25000	49.9	56.8	19.9	5.9	32.1	43.6	50.5	99.6	119.6	56.0	69.1	0deg	277	QP→AV Detector
4	0.25000	41.0	50.0	19.9	5.9	32.1	34.7	43.7	99.6	119.6	64.9	75.9	90deg	276	QP→AV Detector
5	0.37000	43.4	51.2	19.8	5.9	32.1	37.0	44.8	96.2	116.2	59.2	71.4	90deg	275	QP→AV Detector
6	0.37000	57.5	63.8	19.8	5.9	32.1	51.1	57.4	96.2	116.2	45.1	58.8	0deg	278	QP→AV Detector
7	0.50000	38.7	---	19.8	5.9	32.1	32.3	---	73.6	73.6	41.3	---	0deg	275	
8	0.50000	34.6	---	19.8	5.9	32.1	28.2	---	73.6	73.6	45.4	---	90deg	267	
9	0.62500	52.3	---	19.8	5.9	32.1	45.9	---	71.7	71.7	25.8	---	0deg	273	
10	0.62500	45.1	---	19.8	5.9	32.1	38.7	---	71.7	71.7	33.0	---	90deg	272	
11	0.75000	32.9	---	19.8	5.9	32.1	26.5	---	70.1	70.1	43.6	---	0deg	276	
12	0.75000	32.4	---	19.8	5.9	32.1	26.0	---	70.1	70.1	44.1	---	90deg	266	
13	0.87500	46.6	---	19.8	5.9	32.1	40.2	---	68.7	68.7	28.5	---	0deg	273	
14	0.87500	39.9	---	19.8	5.9	32.1	33.5	---	68.7	68.7	35.2	---	90deg	277	
15	1.00000	31.6	---	19.8	5.9	32.1	25.2	---	67.6	67.6	42.4	---	0deg	268	
16	1.00000	31.7	---	19.8	5.9	32.1	25.3	---	67.6	67.6	42.3	---	90deg	278	
17	1.12500	42.7	---	19.8	5.9	32.1	36.3	---	66.5	66.5	30.2	---	0deg	275	
18	1.12500	36.8	---	19.8	5.9	32.1	30.4	---	66.5	66.5	36.1	---	90deg	269	
19	1.25000	31.3	---	19.8	5.9	32.1	24.9	---	65.6	65.6	40.7	---	0deg	278	
20	1.25000	31.4	---	19.8	5.9	32.1	25.0	---	65.6	65.6	40.6	---	90deg	269	

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

DATA OF RADIATED EMISSION TEST

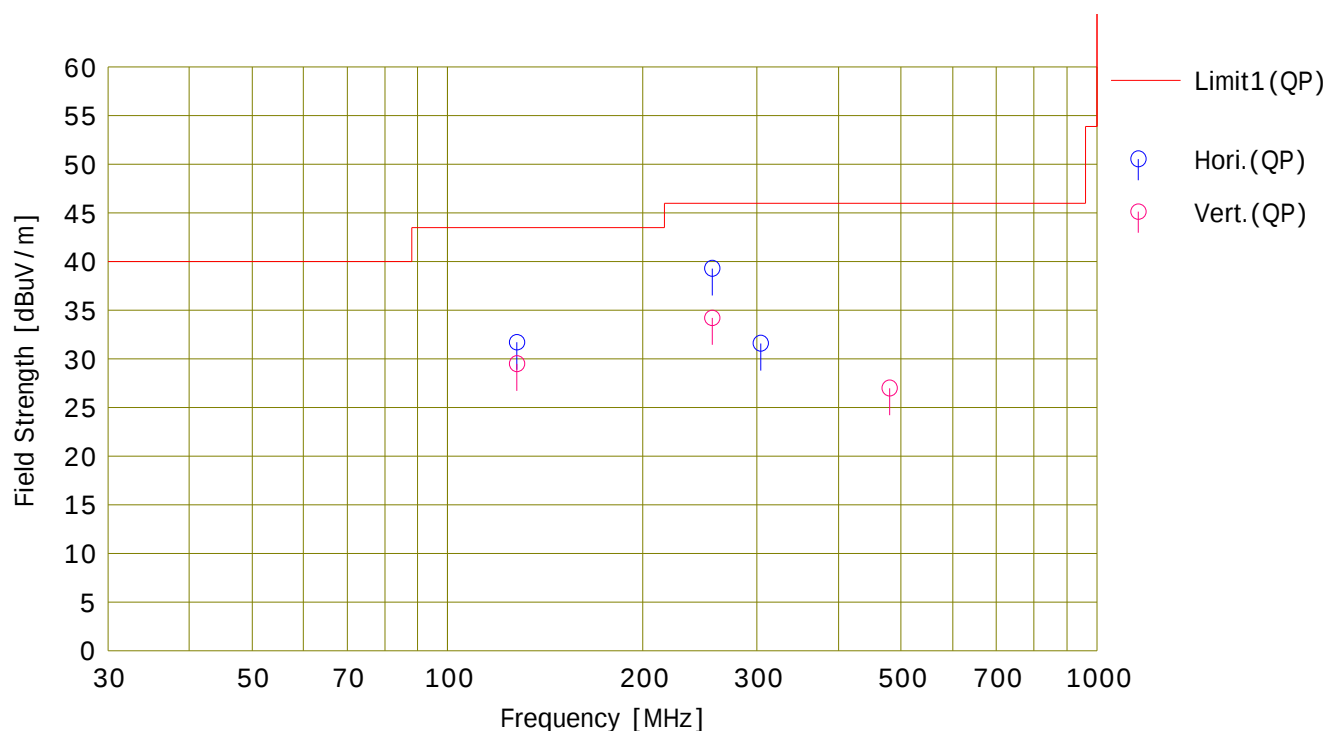
UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber
Date : 2009/11/05

Company : BRIDGESTONE CORPORATION
Kind of EUT : TPMS(Tire Pressure Monitoring System)
Model No. : K612(TAG-READER)
Serial No. : TR035
Mode : Transmitting 125kHz
Report No. : 30CE0195-SH-01-B
Power : DC3V
Temp./Humi. : 26 /37%

Remarks : Hor:Y Ver:Z

Limit1 : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK

Engineer : Go Ishiwata



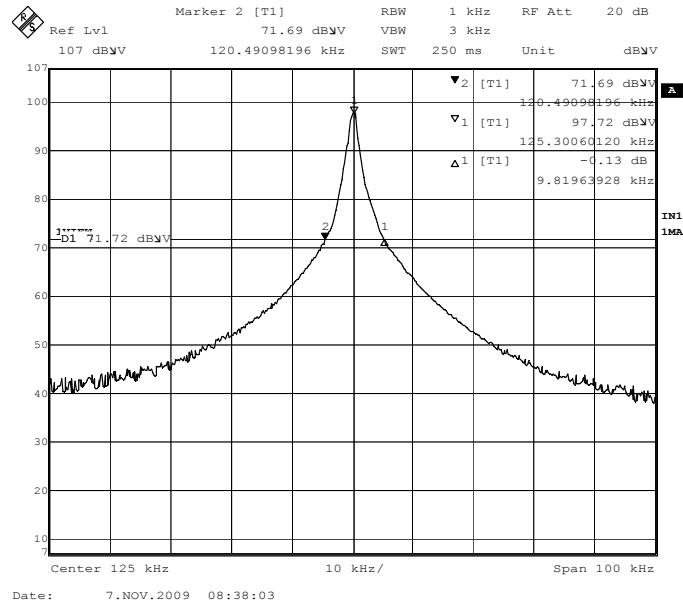
No.	Freq. [MHz]	Reading <QP>	Ant. Fac [dB/m]	Loss [dB]	Gain [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	128.000	42.8	13.6	7.3	32.0	31.7	43.5	11.8	Hori.	229	179	BC	
2	255.998	45.7	17.4	8.1	31.9	39.3	46.0	6.7	Hori.	130	0	BC	
3	303.999	41.4	13.8	8.3	31.9	31.6	46.0	14.4	Hori.	100	0	LP	
4	128.000	40.6	13.6	7.3	32.0	29.5	43.5	14.0	Vert.	100	94	BC	
5	255.999	40.6	17.4	8.1	31.9	34.2	46.0	11.8	Vert.	215	156	BC	
6	480.007	32.8	17.1	9.0	31.9	27.0	46.0	19.0	Vert.	100	257	LP	

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

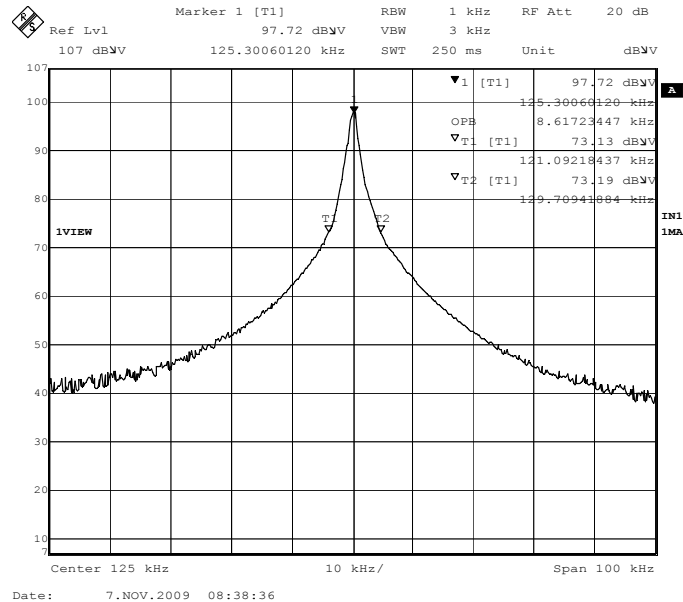
-20dB Bandwidth & Occupied Bandwidth(99%)

COMPANY	: BRIDGESTONE CORPORATION	REPORT NO	: 30CE0195-SH-01-B
EQUIPMENT	: TPMS(Tire Pressure Monitoring System)	DATE	: 2009/11/07
MODEL NUMBER	: K612	TEMP./HUMI	: 26deg.C./37%
SERIAL NUMBER	: TR035	TEST MODE	: Tx125kHz
POWER	: DC3V	ENGINEER	: Tatsuya Arai

-20dB Bandwidth: 9.8196kHz



99% Occupied Bandwidth: 8.6172kHz



APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2009/02/04 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	RE,BW,CE	2009/04/08 * 12
SJM-03	Measure	KOMELON	KMC-36	-	RE,CE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	1	RE,CE	-
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE,BW	2009/02/13 * 12
SAT6-05	Attenuator	JFW	50HF-006N	-	RE,BW	2009/02/13 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2009/03/20 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE,BW	2009/04/06 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0901	RE	2009/03/20 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2009/09/18 * 12
STR-01	Test Receiver	Rohde & Schwarz	ESU40	100093	RE	2009/04/02 * 12
SLP-02	Loop Antenna	Rohde & Schwarz	HFH2-Z2	100218	RE,BW	2009/10/06 * 12
SCC-C9/C10/SRSE-03	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-271(RF Selector)	CE	2009/04/06 * 12
SLS-05	LISN	Rohde & Schwarz	ENV216	100516	CE	2009/02/25 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	CE	2009/02/04 * 12

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 traceable calibrations . Each calibration is traceable to the national or international standards .

Test Item :

CE: Conducted emission.

RE: Radiated emission,

BW: Bandwidth,