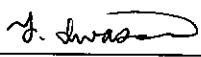


DATA OF RADIATED EMISSIONS

UL APex Co., Ltd.
EMC HEAD OFFICE DIVISION No.1 SEMI ANECHOIC CHAMBER

COMPANY : TOHOKU ALPS CO., LTD.
EQUIPMENT : Keyless Entry System (Hand Unit)
MODEL : TFWB1U614
S/N : 1
FCC ID : NHVWBU614
POWER : DC3.0V
Mode : Transmitting

REPORT NO : 23IE0015-HO
REGULATION : Fcc Part15 Subpart C 231(b) / 205
TEST DISTANCE : 3m,1m
DATE : 2003/05/26
TEMPERATURE : 25°C
HUMIDITY : 32%


ENGINEER : Yoshiaki Iwasa

Below 1GHz PK/QP DETECT (Test Receiver: BW 120kHz)

Above 1GHz PK/AV DETECT (Spectrum Analyzer : RBW 1MHz and VBW 1MHz)

No.	FREQ [MHz]	T/R READING : PK		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
0	433.92	46.26	46.6	17.7	27.5	9.0	0.0	45.5	45.8	80.8	35.3	35.0

No.	FREQ [MHz]	T/R READING : QP		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
1	867.80	29.6	26.5	22.7	27.0	9.7	0.0	35.0	31.9	60.8	25.8	28.9

Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
No.	FREQ [MHz]	T/R READING : PK		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
2	1301.85	47.1	49.9	23.6	37.5	3.2	0.0	26.9	29.7	74.0	47.1	44.3
3	1735.73	45.4	45.5	27.3	37.1	3.7	0.0	29.8	29.9	80.8	51.0	50.9
4	2169.63	44.8	44.2	30.7	36.9	4.2	0.0	33.3	32.7	80.8	47.5	48.1
5	2603.55	46.2	45.4	31.1	37.0	4.7	0.0	35.5	34.7	80.8	45.3	46.1
6	3037.47	43.6	44.6	32.5	37.2	5.1	0.0	34.5	35.5	80.8	46.3	45.3
7	3471.39	44.2	44.1	31.3	37.0	5.4	0.0	34.4	34.3	80.8	46.4	46.5
8	3905.31	43.1	43.0	33.1	36.8	5.8	0.0	35.7	35.6	74.0	38.3	38.4
9	4339.18	43.3	43.7	33.4	36.9	6.1	0.0	36.4	36.8	74.0	37.6	37.2

Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass - Dfac												
No.	FREQ [MHz]	T/R READING : AV		ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	Duty Factor [dB]	RESULT		Limit [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
10	1301.85	35.9	38.9	23.6	37.5	3.2	0.0	15.7	18.7	54.0	38.3	35.3
11	1735.73	34.8	34.9	27.3	37.1	3.7	0.0	19.2	19.3	60.8	41.6	41.5
12	2169.63	33.8	33.8	30.7	36.9	4.2	0.0	22.3	22.3	60.8	38.5	38.5
13	2603.55	34.5	34.6	31.1	37.0	4.7	0.0	23.8	23.9	60.8	37.0	36.9
14	3037.47	34.0	34.0	32.5	37.2	5.1	0.0	24.9	24.9	60.8	35.9	35.9
15	3471.39	34.0	34.0	31.3	37.0	5.4	0.0	24.2	24.2	60.8	36.6	36.6
16	3905.31	32.3	32.5	33.1	36.8	5.8	0.0	24.9	25.1	54.0	29.2	28.9
17	4339.18	32.8	32.8	33.4	36.9	6.1	0.0	25.9	25.9	54.0	28.1	28.1

REMARKS

ANTENNA TYPE:30-300MHz Biconical / 300-1000MHz Logperiodic / 1-4.5GHz Horn

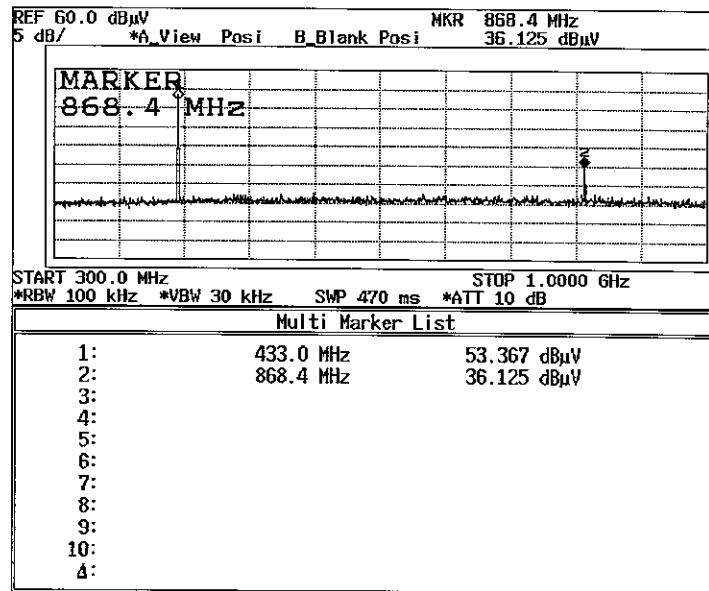
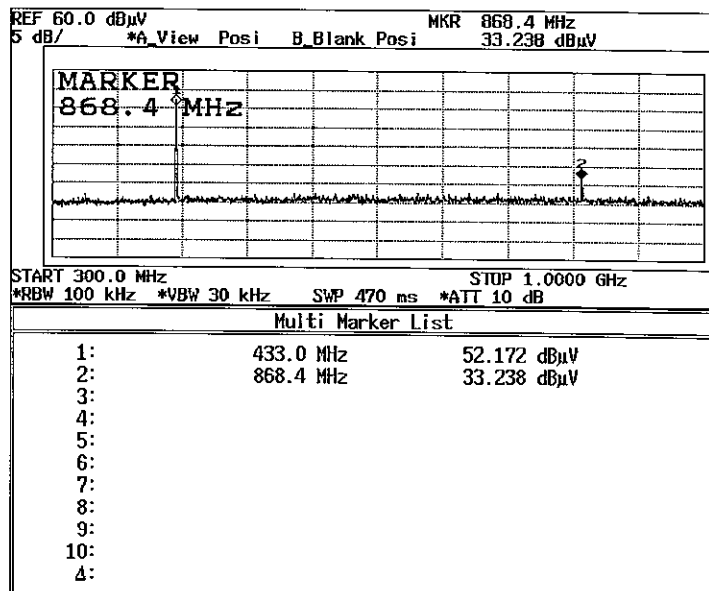
CALCULATION RESULT=Reading + ANT Factor - Amp Gain + LOSS (Cable+ ATTEN.)+Duty factor

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*The noise was measured at each position of all three axes X, Y and Z to compare the level, and the maximum noise.

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) =

9.5 dB

Data of Emission (Radiated 300MHz-1GHz)**EUT: FCC-SAMPLE 433.92MHz NO2****Operation Mode: Continuous Transmitting****EUT: X-axis , Antenna: Horizontal****EUT: Z-axis , Antenna: Vertical**

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