RADIO TEST REPORT

Test Report No. : 12789650H-R1

Applicant	:	**ALPS ALPINE CO., LTD.**
Type of Equipment	:	**Remote Keyless Entry (Hand Unit)**
Model No.	:	**TWB1G0076**
FCC ID	:	**CWTWB1G0076**
Test regulation	:	**FCC Part 15 Subpart C: 2018**
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 above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report covers Radio technical requirements. It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
6. The all test items in this test report are conducted by UL Japan, Inc. Ise EMC Lab.
7. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
8. The information provided from the customer for this report is identified in SECTION 1.
9. This report is a revised version of 12789650H. 12789650H is replaced with this report.

Date of test: April 20, 2019

Representative test engineer:
T. Nakagawa
Tomohisa Nakagawa
Engineer
Consumer Technology Division

Approved by:
S. Miyazono
Shinichi Miyazono
Engineer
Consumer Technology Division

NVLAP TESTING
NVLAP LAB CODE: 200572-0

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REVISION HISTORY

Original Test Report No.: 12789650H

Revision	Test report No.	Date	Page revised	Contents
- (Original)	12789650H	May 8, 2019	-	-
1	12789650H-R1	June 4, 2019	P.5	Correction of worst margin (for Electric Field Strength of Fundamental Emission and Electric Field Strength of Spurious Emission tests) in Clause 3.2
1	12789650H-R1	June 4, 2019	P.12	Deletion of "*" in the table.
1	12789650H-R1	June 4, 2019	P.13	1. Correction of Duty Factor; from -9.3 to -9.1 2. Correction of test result 3. Addition of description about Duty Factor

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CONTENTS **PAGE**

SECTION 1: Customer information....4
SECTION 2: Equipment under test (E.U.T.)....4
SECTION 3: Test specification, procedures & results....5
SECTION 4: Operation of E.U.T. during testing....8
SECTION 5: Radiated emission (Electric Field Strength of Fundamental and Spurious Emission)....9
SECTION 6: Automatically deactivate....11
SECTION 7: -20 dB and 99 % Occupied Bandwidth....11
APPENDIX 1: Test data....12
Automatically deactivate....12
Radiated Emission (Electric Field Strength of Fundamental and Spurious Emission)....13
-20dB and 99% Occupied Bandwidth....15
Duty Cycle....16
APPENDIX 2: Test instruments....18
APPENDIX 3: Photographs of test setup....19
Radiated emission....19
Worst case position....20

SECTION 1: Customer information

Company Name	:	ALPS ALPINE CO., LTD.
Address	:	6-3-36, Nakazato, Furukawa, Osaki-city, Miyagi-pref, 989-6181, Japan
Telephone Number	:	+81-229-23-5111
Facsimile Number	:	+81-229-23-5129
Contact Person	:	Yasuhiro Yabe

The information provided from the customer is as follows;
- Applicant, Type of Equipment, Model No. on the cover and other 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	:	Remote Keyless Entry (Hand Unit)
Model No.	:	TWB1G0076
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 3.0 V
Receipt Date of Sample (Information from test lab.)	:	April 17, 2019
Country of Mass-production	:	China
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

2.2 Product Description

Model: TWB1G0076 (referred to as the EUT in this report) is a Remote Keyless Entry (Hand Unit).

Radio Specification

Radio Type	:	Transmitter
Frequency of Operation	:	433.92 MHz
Modulation	:	ASK
Antenna Type	:	PWB Pattern antenna
Operating temperature range	:	-10 deg. C to +60 deg. C

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C
FCC Part 15 final revised on March 12, 2018 and effective April 11, 2018

Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.231 Periodic operation in the band 40.66-40.70 MHz and above 70 MHz.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted emission	**FCC:** ANSI C63.10:2013 6 Standard test methods **IC:** RSS-Gen 8.8	**FCC:** Section 15.207 **IC:** RSS-Gen 8.8	N/A	N/A	*1)
Automatically Deactivate	**FCC:** ANSI C63.10:2013 6 Standard test methods **IC:** -	**FCC:** Section 15.231(a)(1) **IC:** RSS-210 A1.1	N/A	Complied a)	Radiated
Electric Field Strength of Fundamental Emission	**FCC:** ANSI C63.10:2013 6 Standard test methods **IC:** RSS-Gen 6.12	**FCC:** Section 15.231(b) **IC:** RSS-210 A1.2	17.4 dB 433.920 MHz Horizontal PK with Duty factor	Complied b)	Radiated
Electric Field Strength of Spurious Emission	**FCC:** ANSI C63.10:2013 6 Standard test methods **IC:** RSS-Gen 6.13	**FCC:** Section 15.205 Section 15.209 Section 15.231(b) **IC:** RSS-210 A1.2, 4.4 RSS-Gen 8.9	11.8 dB 867.840 MHz PK with Duty factor	Complied b)	Radiated
-20dB Bandwidth	**FCC:** ANSI C63.10:2013 6 Standard test methods **IC:** -	**FCC:** Section 15.231(c) **IC:** Reference data	N/A	Complied c)	Radiated

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.
*1) The test is not applicable since the EUT does not have AC Mains.

a) Refer to APPENDIX 1 (data of Automatically deactivate)
b) Refer to APPENDIX 1 (data of Radiated Emission (Electric Field Strength of Fundamental and Spurious Emission))
c) Refer to APPENDIX 1 (data of -20dB and 99% Occupied Bandwidth)

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.

FCC Part 15.31 (e)
This test was performed with the New Battery (DC 3.0 V) and the constant voltage was supplied to the EUT during the tests. Therefore, the EUT complies with the requirement.

FCC Part 15.203 Antenna requirement
It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied Bandwidth	**IC:** RSS-Gen 6.7	**IC:** RSS-210 A1.3	N/A	-	Radiated
Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.					

Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

There is no applicable rule of uncertainty in this applied standard. Therefore, the following results are derived depending on whether or not laboratory uncertainty is applied.

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

Test distance	Radiated emission (+/-)
	9 kHz to 30 MHz
3 m	3.3 dB
10 m	3.2 dB

*Measurement distance

Polarity	Radiated emission (Below 1 GHz)			
	(3 m*)(+/-)		(10 m*)(+/-)	
	30 MHz to 200 MHz	200 MHz to 1000 MHz	30 MHz to 200 MHz	200 MHz to 1000 MHz
Horizontal	4.8 dB	5.2 dB	4.8 dB	5.0 dB
Vertical	5.0 dB	6.3 dB	4.9 dB	5.0 dB

Radiated emission (Above 1 GHz)				
(3 m*)(+/-)		(1 m*)(+/-)		(10 m*)(+/-)
1 GHz to 6 GHz	6 GHz to 18 GHz	10 GHz to 26.5 GHz	26.5 GHz to 40 GHz	1 GHz to 18 GHz
5.0 dB	5.3 dB	5.8 dB	5.8 dB	5.2 dB

* Measurement distance

Automatically Deactivate
0.10 %

Bandwidth
0.96 %

3.5 Test Location

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Telephone: +81 596 24 8999, Facsimile: +81 596 24 8124
NVLAP Lab. code: 200572-0 / FCC Test Firm Registration Number: 199967

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms	Maximum measurement distance
No.1 semi-anechoic chamber	2973C-1	19.2 x 11.2 x 7.7	7.0 x 6.0	No.1 Power source room	10 m
No.2 semi-anechoic chamber	2973C-2	7.5 x 5.8 x 5.2	4.0 x 4.0	-	3 m
No.3 semi-anechoic chamber	2973C-3	12.0 x 8.5 x 5.9	6.8 x 5.75	No.3 Preparation room	3 m
No.3 shielded room	-	4.0 x 6.0 x 2.7	N/A	-	-
No.4 semi-anechoic chamber	2973C-4	12.0 x 8.5 x 5.9	6.8 x 5.75	No.4 Preparation room	3 m
No.4 shielded room	-	4.0 x 6.0 x 2.7	N/A	-	-
No.5 semi-anechoic chamber	-	6.0 x 6.0 x 3.9	6.0 x 6.0	-	-
No.6 shielded room	-	4.0 x 4.5 x 2.7	4.0 x 4.5	-	-
No.6 measurement room	-	4.75 x 5.4 x 3.0	4.75 x 4.15	-	-
No.7 shielded room	-	4.7 x 7.5 x 2.7	4.7 x 7.5	-	-
No.8 measurement room	-	3.1 x 5.0 x 2.7	3.1 x 5.0	-	-
No.9 measurement room	-	8.8 x 4.6 x 2.8	2.4 x 2.4	-	-
No.11 measurement room	-	6.2 x 4.7 x 3.0	4.8 x 4.6	-	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 m x 2.0 m for No.1, No.2, No.3, and No.4 semi-anechoic chambers and No.3 and No.4 shielded rooms.

3.6 Test data, Test instruments, and Test set up

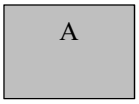
Refer to APPENDIX.

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

4.1 Operating Mode(s)

Test Item*	Mode
Automatically Deactivate Duty Cycle	Mode1: Normal use mode
Electric Field Strength of Fundamental Emission Electric Field Strength of Spurious Emission -20 dB & 99 % Occupied Bandwidth	Mode2: Transmitting mode (Tx) *1)
* The system was configured in typical fashion (as a user would normally use it) for testing. *1) The software of this mode is the same as one of normal product, except that EUT continues to transmit when transmitter button is being pressed (For Normal use mode, EUT stops to transmit in a given time, even if transceiver button is being pressed.) End users cannot change the settings of the output power of the product.	

4.2 Configuration and peripherals



* Test data was taken under worse case conditions.

Description of EUT

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Remote Keyless Entry (Hand Unit)	TWB1G0076	19041601 *1) 19041602 *2)	ALPS ALPINE CO., LTD.	EUT

*1) Used for “Mode1”
*2) Used for “Mode2”

SECTION 5: Radiated emission (Electric Field Strength of Fundamental and Spurious Emission)

Test Procedure and conditions

[For below 30 MHz]
The noise level was checked by moving a search-coil (Loop Antenna) close to the EUT.

[For 30 MHz to 1 GHz]
EUT was placed on a urethane platform of nominal size, 0.5 m by 1.0 m, raised 0.8 m above the conducting ground plane.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

[For above 1 GHz]
EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 1.5 m above the conducting ground plane.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with absorbent materials lined on a ground plane.

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 strength.
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 / spectrum analyzer.

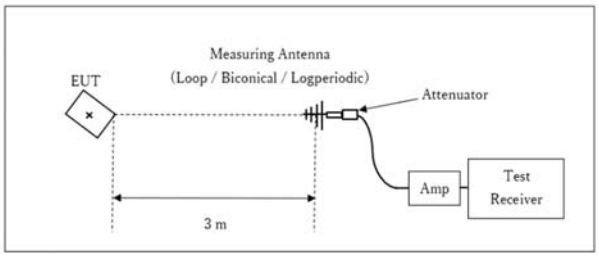
Test Antennas are used as below;

Frequency	Below 30 MHz	30 MHz to 200 MHz	200 MHz to 1 GHz	Above 1 GHz
Antenna Type	Loop	Biconical	Logperiodic	Horn

	From 9 kHz to 90 kHz and From 110 kHz to 150 kHz	From 90 kHz to 110 kHz	From 150 kHz to 490 kHz	From 490 kHz to 30 MHz	From 30 MHz to 1 GHz	Above 1 GHz
Detector Type	Peak	Peak	Peak	Peak	Peak and Peak with Duty factor	Peak and Peak with Duty factor
IF Bandwidth	200 Hz	200 Hz	9.0 kHz	9.0 kHz	120 kHz	PK: S/A: RBW 1 MHz, VBW: 3 MHz

[Test Setup]

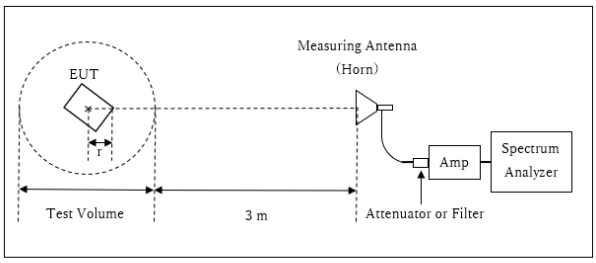
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 10 GHz



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

Distance Factor: 20 x log (4 m / 3.0 m) = 2.50 dB
* Test Distance: (3 + Test Volume /2) - r = 4 m

Test Volume : 2 m
(Test Volume has been calibrated based on CISPR 16-1-4.)
r = 0.0 m

* The test was performed with r = 0.0 m since EUT is small and it was the rather conservative condition.

- The carrier level (or, noise levels) was (or were) measured at each position of all three axes X, Y and Z, and the position that has the maximum noise was determined.
Noise levels of all the frequencies were measured at the position.

This EUT has two modes which mechanical key is folded or not. The worst case was confirmed folded and un-folded mechanical key, as a result, the test un-folded mechanical key was the worst case. Therefore the test un-folded mechanical key was performed only.

*The result is rounded off to the second decimal place, so some differences might be observed.

Measurement range : 9 kHz - 4.4 GHz
Test data : APPENDIX
Test result : Pass

SECTION 6: Automatically deactivate

Test Procedure

The measurement was performed with Electric field strength using a spectrum analyzer.

Test data : APPENDIX
Test result : Pass

SECTION 7: -20 dB and 99 % Occupied Bandwidth

Test Procedure

The test was measured with a spectrum analyzer using a test fixture.

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20 dB Bandwidth	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak *1)	Max Hold *1)	Spectrum Analyzer
99 % Occupied Bandwidth	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak *1)	Max Hold *1)	Spectrum Analyzer
*1) The measurement was performed with Peak detector, Max Hold since the duty cycle was not 100 %. Peak hold was applied as Worst-case measurement.							

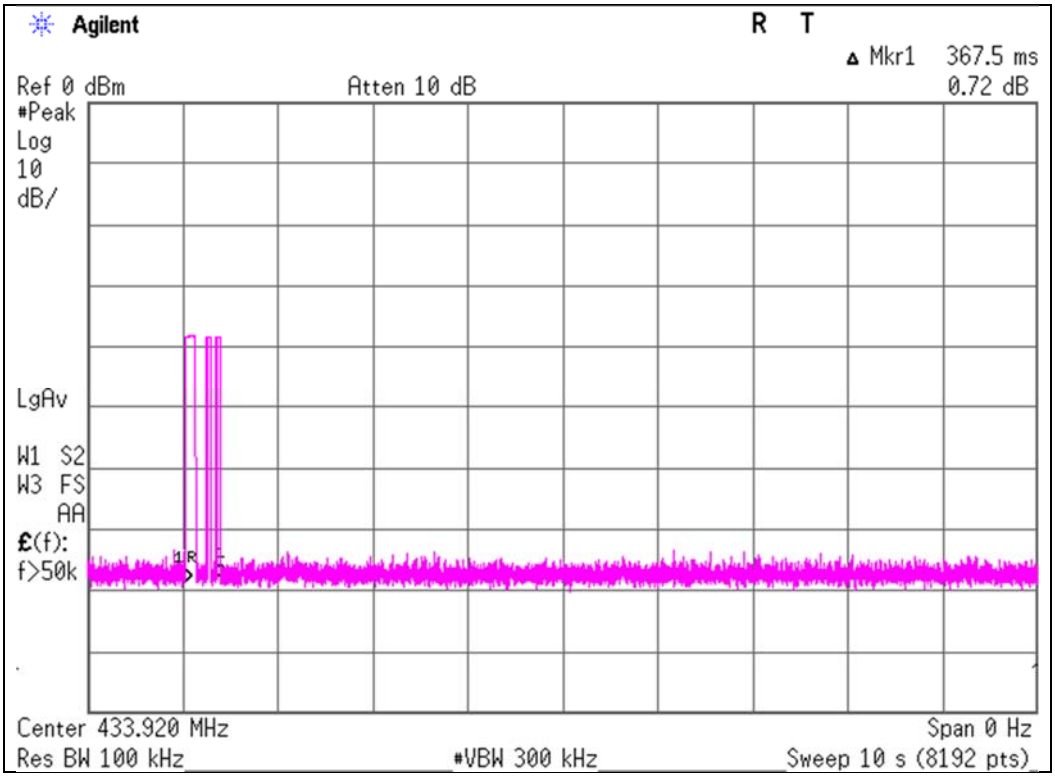
Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

Automatically deactivate

Report No.	12789650H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	April 20, 2019
Temperature / Humidity	20 deg. C / 37 % RH
Engineer	Tomohisa Nakagawa
Mode	Mode 1

Time of Transmitting [sec]	Limit [sec]	Result
0.3675	5.00	Pass



Radiated Emission (Electric Field Strength of Fundamental and Spurious Emission)

Report No.	12789650H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	April 20, 2019
Temperature / Humidity	20 deg. C / 37 % RH
Engineer	Tomohisa Nakagawa
Mode	Mode 2

PK

Frequency	Detector	Reading [dBuV]		Ant Factor	Loss	Gain	Duty Factor	Result [dBuV/m]		Limit	Margin [dB]		Remark Inside or Outside
[MHz]		Hor	Ver	[dB/m]	[dB]	[dB]	[dB]	Hor	Ver	[dBuV/m]	Hor	Ver	of Restricted Bands
433.920	PK	77.2	75.9	16.2	11.0	32.0	-	72.5	71.2	100.8	28.3	29.6	Carrier
867.840	PK	53.7	52.3	22.0	13.5	31.1	-	58.1	56.7	80.8	**22.7**	24.1	Outside
1301.760	PK	52.0	52.0	25.9	4.3	34.6	-	47.6	47.6	73.9	26.3	26.3	Inside
1735.680	PK	45.1	44.6	25.5	4.5	33.6	-	41.5	41.0	80.8	39.3	39.8	Outside
2169.600	PK	45.5	44.4	28.3	4.8	32.9	-	45.7	44.7	80.8	35.1	36.1	Outside
2603.520	PK	41.6	42.9	27.9	5.0	32.7	-	41.9	43.2	80.8	38.9	37.6	Outside
3037.440	PK	41.7	41.8	28.9	5.2	32.4	-	43.4	43.5	80.8	37.4	37.3	Outside
3471.360	PK	42.4	41.2	29.1	5.4	32.3	-	44.6	43.4	80.8	36.2	37.4	Outside
3905.280	PK	42.3	41.0	30.0	5.6	32.1	-	45.9	44.6	73.9	28.0	29.3	Inside
4339.200	PK	41.9	39.9	30.7	5.8	31.9	-	46.5	44.4	73.9	27.4	29.5	Inside

PK with Duty factor

Frequency	Detector	Reading [dBuV]		Ant Factor	Loss	Gain	Duty Factor	Result [dBuV/m]		Limit	Margin [dB]		Remark
[MHz]		Hor	Ver	[dB/m]	[dB]	[dB]	[dB]	Hor	Ver	[dBuV/m]	Hor	Ver	
433.920	PK	77.2	75.9	16.2	11.0	32.0	-9.1	63.4	62.1	80.8	17.4	18.7	Carrier
867.840	PK	53.7	52.3	22.0	13.5	31.1	-9.1	49.0	47.6	60.8	**11.8**	13.2	Outside
1301.760	PK	52.0	52.0	25.9	4.3	34.6	-9.1	38.5	38.5	53.9	15.4	15.4	Inside
1735.680	PK	45.1	44.6	25.5	4.5	33.6	-9.1	32.4	31.9	60.8	28.4	28.9	Outside
2169.600	PK	45.5	44.4	28.3	4.8	32.9	-9.1	36.6	35.6	60.8	24.2	25.2	Outside
2603.520	PK	41.6	42.9	27.9	5.0	32.7	-9.1	32.8	34.1	60.8	28.0	26.7	Outside
3037.440	PK	41.7	41.8	28.9	5.2	32.4	-9.1	34.3	34.4	60.8	26.5	26.4	Outside
3471.360	PK	42.4	41.2	29.1	5.4	32.3	-9.1	35.5	34.3	60.8	25.3	26.5	Outside
3905.280	PK	42.3	41.0	30.0	5.6	32.1	-9.1	36.7	35.5	53.9	17.2	18.4	Inside
4339.200	PK	41.9	39.9	30.7	5.8	31.9	-9.1	37.3	35.3	53.9	16.6	18.6	Inside

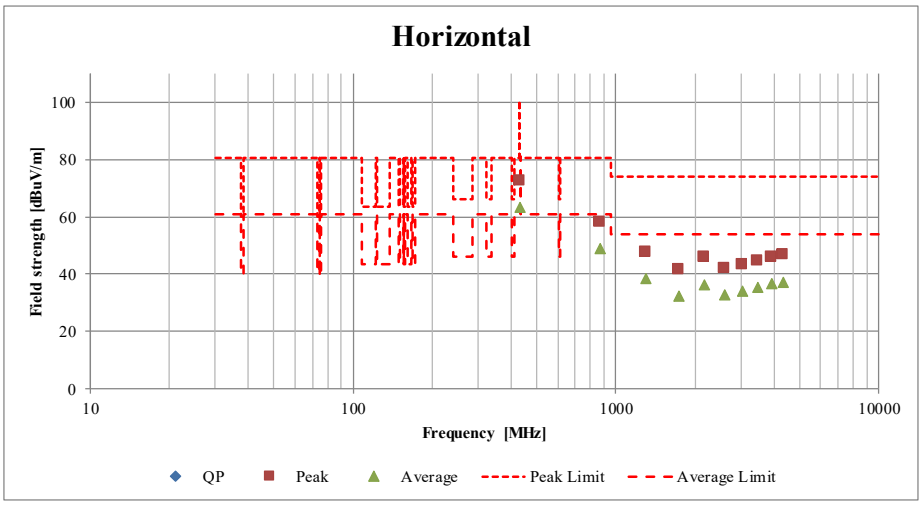
Sample calculation:
Result of PK = Reading + Ant Factor + Loss {Cable + Attenuator + Distance factor (above 1 GHz)} - Gain (Amplifier)
Result of PK with Duty factor = Reading + Ant Factor + Loss {Cable + Attenuator + +Distance factor (above 1 GHz)} - Gain (Amplifier) + Duty factor

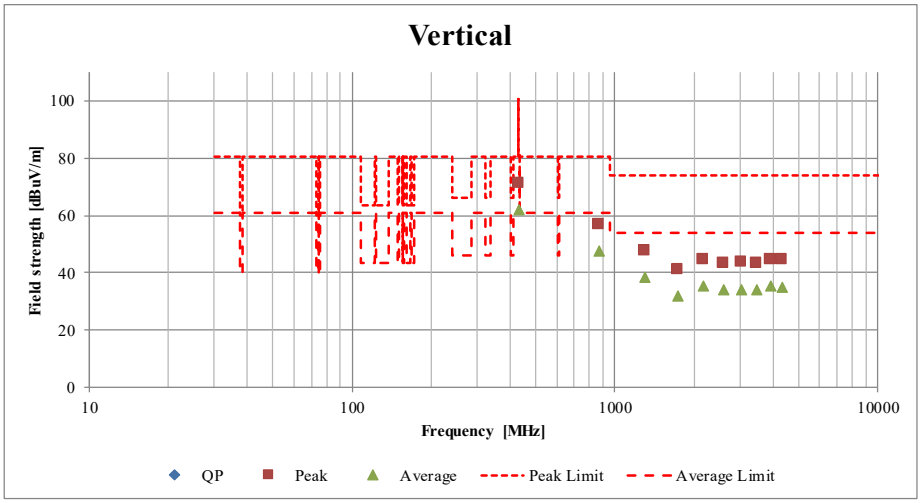
After the product specifications and actual measured value were compared, 35%(Max.) of the product specifications was the worst result.
Therefore, -9.1 [dB] was applied to the Duty factor.
Please refer to the “Theory of Operation” for details.
Duty factor = 20 x log (35/100) = -9.1 dB

For above 1GHz : Distance Factor: 20 x log (4.0 m/3.0 m) = 2.50 dB
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

Radiated Spurious Emission
(Plot data, Worst case)

Report No.	12789650H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	April 20, 2019
Temperature / Humidity	20 deg. C / 37 % RH
Engineer	Tomohisa Nakagawa
Mode	Mode 2





*These plots data contains sufficient number to show the trend of characteristic features for EUT.

-20dB and 99% Occupied Bandwidth

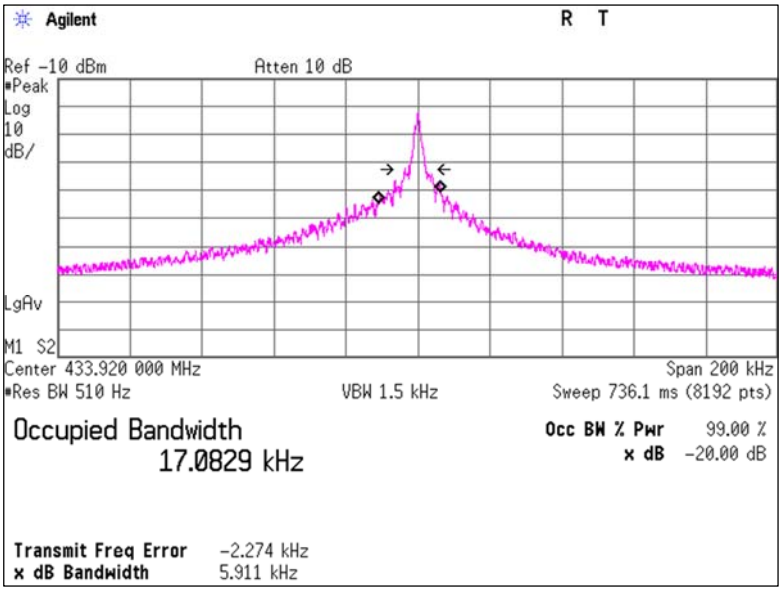
Report No.	12789650H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	April 20, 2019
Temperature / Humidity	20 deg. C / 37 % RH
Engineer	Tomohisa Nakagawa
Mode	Mode 2

Bandwidth Limit : Fundamental Frequency **433.92** MHz x 0.25% = 1084.80 kHz

* The above limit was calculated from more stringent nominal frequency.

-20dB Bandwidth [kHz]	Bandwidth Limit [kHz]	Result
5.911	1084.80	Pass

99% Occupied Bandwidth [kHz]	Bandwidth Limit [kHz]	Result
17.0829	1084.80	Pass



Duty Cycle

Report No.	12789650H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	April 20, 2019
Temperature / Humidity	20 deg. C / 37 % RH
Engineer	Tomohisa Nakagawa
Mode	Mode 2

Type	Times	ON time(One pulse) [ms]	ON time(in 100ms) [ms]
A	15	0.489	7.3275
B	1	4.141	4.141
C	25	0.906	22.64

*1)ON time(in 100ms) = Times * ON time(One pulse)
*2)The train of pulses was exceeding 100msec, and that sampled 100msec was the worst case against the pulse train.

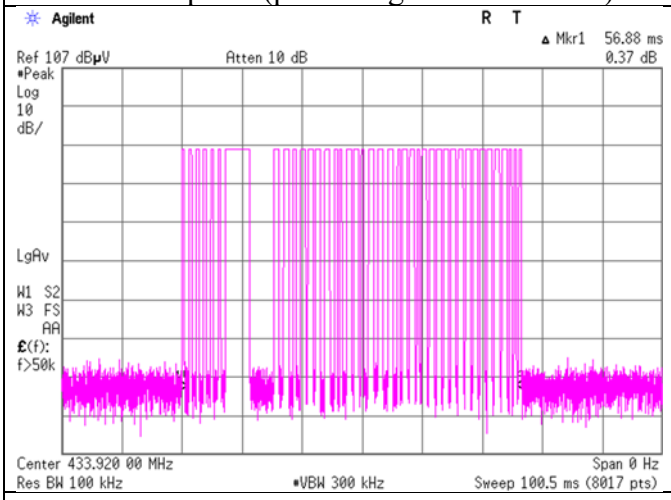
(Total)

ON time [ms]	Cycle [ms]	Duty (On time/Cycle)	Duty [dB]
34.11	100.00	0.34	-9.3

*3)ON time = sum of the type A,B and C (in 100msec)
*4)Duty = $20\log_{10}$(ON time/Cycle)

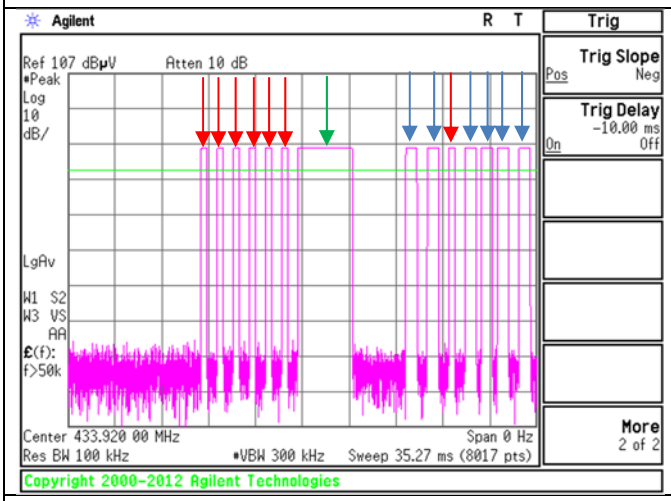
Duty Cycle

Overview of pulse (pulse length is 56.88msec)

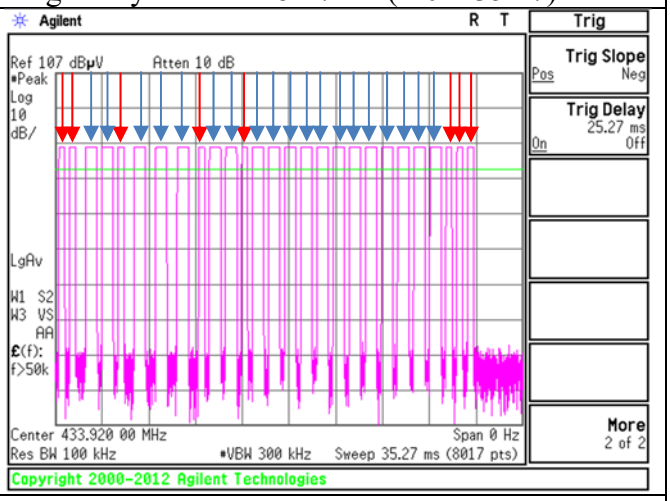


Type A is red arrow
Type B is green arrow
Type C is Blue arrow

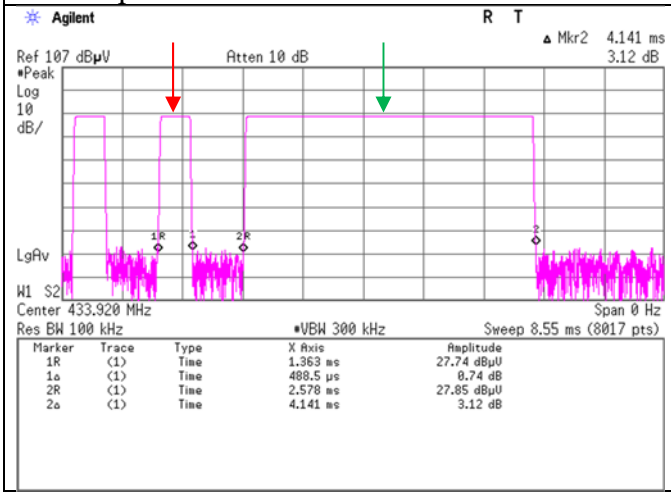
Pulse train (1 of 2)



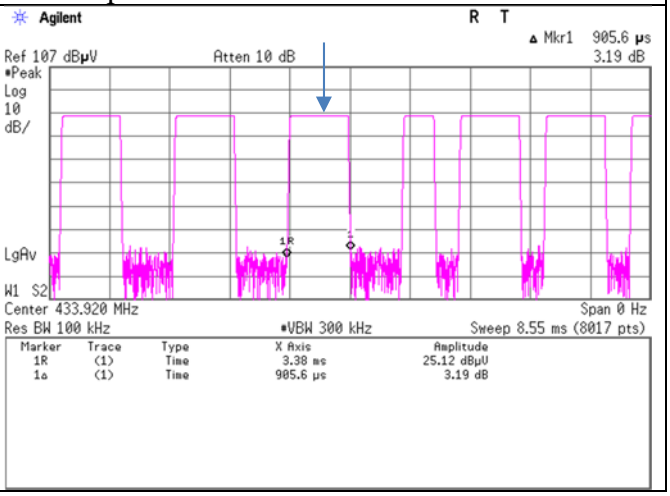
Pulse train (2 of 2)
Trig Delay is set as 25.27 ms (-10 + 35.27)



Zoom up



Zoom up



APPENDIX 2: Test instruments

Test item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Due Date	Cal Int
RE	141899	Spectrum Analyzer	AGILENT	E4448A	MY46180655	8/10/2018	8/31/2019	12
RE	142183	Measure	KOMELON	KMC-36	-	-	-	-
RE	141424	Biconical Antenna	Schwarzbeck	BBA9106	1915	6/4/2018	6/30/2019	12
RE	141266	Logperiodic Antenna(200-1000MHz)	Schwarzbeck	VUSLP9111B	911B-191	3/25/2019	3/31/2020	12
RE	141323	Coaxial cable	UL Japan	-	-	7/3/2018	7/31/2019	12
RE	141532	DIGITAL HiTESTER	HIOKI	3805	51201197	1/29/2019	1/31/2020	12
RE	141152	EMI measurement program	TSJ	TEPTO-DV	-	-	-	-
RE	141582	Pre Amplifier	SONOMA INSTRUMENT	310	260834	2/8/2019	2/29/2020	12
RE	142008	AC3_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	6/26/2018	6/30/2020	24
RE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	8/6/2018	8/31/2019	12
RE	141554	Thermo-Hygrometer	CUSTOM	CTH-180	1301	1/11/2019	1/31/2020	12
RE	142013	AC3_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	4/6/2018	4/30/2019	12
RE	141507	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	6/7/2018	6/30/2019	12
RE	141580	MicroWave System Amplifier	AGILENT	83017A	MY39500779	3/5/2019	3/31/2020	12
RE	177964	Microwave Cable	Junkosha INC.	MMX221	1901S329(1m)/ 1902S579(5m)	3/5/2019	3/31/2020	12
RE	148897	Attenuator	KEYSIGHT	8491A	MY52462349	12/20/2018	12/31/2019	12
RE	142645	Loop Antenna	UL Japan	-	-	-	-	-

***Hyphens for Last Calibration Date, Calibration Due 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.
All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

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

Test item:
RE: Radiated emission, 99 % Occupied Bandwidth, -20 dB bandwidth, Automatically deactivate and Duty cycle tests