EMI TEST REPORT

Test Report No.: 13384109S-C-R2

Applicant	:	**ALPS ALPINE CO., LTD.**
Type of EUT	:	**WEARABLE EYEWEAR**
Model Number of EUT	:	**JINS MEME CORE**
FCC ID		**CWTCVASW0A**
Test regulation	:	**FCC Part 15 Subpart B: 2020, Class B** **ICES-003 Issue 6: 2016 (SMSE-005-19) . Class B**
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.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by any agency of the Federal Government.
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 13384109S-C-R1. 13384109S-C-R1 is replaced with this report.

Date of test: August 12, 2020

Representative test engineer:
Koki Yamada
Engineer
Consumer Technology Division

Approved by:
Hikaru Shirasawa
Engineer
Consumer Technology Division

Testing LAB
RTL02610

☐ The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan.
☒ There is no testing item of "Non-accreditation".

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Shonan EMC Lab.
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REVISION HISTORY

Original Test Report No.: 13384109S-C

Revision	Test report No.	Date	Page revised	Contents
- (Original)	13384109S-C	September 16, 2020	-	-
1	13384109S-C-R1	September 18, 2020	P.1, P.5 P13 to P.17	Modification of “Type of EUT” from JINS MEME CORE to WEARABLE EYEWEAR
			P.1, P.5 P13 to P.17	Modification of “Model Number of EUT” from CVASW0A001B to JINS MEME CORE
			P.5	Addition of Rating: DC 5 V (USB)
2	13384109S-C-R2	September 23, 2020	P.1 and P.6	Modification of “Test regulation” from ICES-003 Issue 6: 2016+Amendment 1: 2017, Class B to ICES-003 Issue 6: 2016 (SMSE-005-19) , Class B
			P.8	Modification of “Type of EUT” from JINS MEME CORE to WEARABLE EYEWEAR
				Modification of “Model Number of EUT” from CVASW0A001B to JINS MEME CORE
			P.12	Modification of “Distance Factor” from (3.98.75 m*/3.0 m) to (3.9875 m*/3.0 m)

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	:	ALPS ALPINE CO., LTD.
Address	:	6-3-36, Nakazato, Furukawa, Osaki-city, Miyagi-pref., JAPAN 989-6181
Telephone Number	:	+81-229-23-5111
Facsimile Number	:	+81-229-23-5129
Contact Person	:	Yuji Ouchi

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 (EUT) other than the Receipt Date
- 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 (EUT)

2.1 Identification of EUT

Type	:	WEARABLE EYEWEAR
Model No.	:	JINS MEME CORE
Serial No.	:	Refer to SECTION 4.2
Rating	:	DC 3.7 V (battery) DC 5 V (USB)
Country of Mass-production	:	Japan
Condition	:	Production model
Modification	:	No modification by the test lab.
Receipt Date	:	July 6, 2020

2.2 Product Description

Model: JINS MEME CORE (referred to as the EUT in this report) is a WEARABLE EYEWEAR.

Radio Specification

Radio Type	:	Transceiver
Frequency of Operation	:	2402 MHz - 2480 MHz
Modulation	:	GFSK
Antenna type	:	Monopole Antenna
Antenna Gain	:	0.3 dBi max
Clock frequency (Maximum)	:	32 MHz

SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B
FCC Part 15 final revised on June 26, 2020 and effective July 27, 2020
Title : FCC 47CFR Part15 Radio Frequency Device
Subpart B Unintentional Radiators

Test Specification : ICES-003 Issue 6: 2016 (SMSE-005-19)
Title : Spectrum Management and Telecommunications
Interference-Causing Equipment Standard
Information Technology Equipment (ITE)
– Limits and methods of measurement

3.2 Procedures & Results

Item	Test procedure	Limits	Deviation	Worst margin	Result
Conducted emission	ANSI C63.4:2014 7. AC powerline conducted emission measurements	Class B	N/A	24.9 dB Freq.: 0.78802 MHz Detector: Average Phase: N	Complied a)
Radiated emission	ANSI C63.4:2014 8. Radiated emission measurements	Class B	N/A *1)	11.3 dB Freq.: 7949.562 MHz Detector: Average Polarization: Vertical	Complied b)
Note: UL Japan's EMI work procedure No. 13-EM-W0420 *1) Measurements have been performed up to 13 GHz since the highest frequency of internal source of the EUT is 2480 MHz.					
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.					

a) Refer to Appendix 2 (data of Conducted emission)
b) Refer to Appendix 2 (data of Radiated emission)

3. 3 Deviation from standard

No addition, exclusion nor deviation has been made from the standard.

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: 2020, Class B and ICES-003 Issue 6: 2016 (SMSE-005-19) , Class B.

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 (±)
Conducted emission (AC Mains) AMN/LISN	150 kHz-30 MHz	2.6 dB	2.6 dB	2.5 dB
Radiated emission (Measurement distance: 3 m)	30 MHz-200 MHz	4.6 dB	4.6 dB	4.6 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
	6 GHz-18 GHz	5.5 dB	5.5 dB	5.5 dB
Radiated emission (Measurement distance: 1 m)	1 GHz-18 GHz	5.8 dB	5.8 dB	5.8 dB

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
A2LA Certificate Number : 1266.03
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.

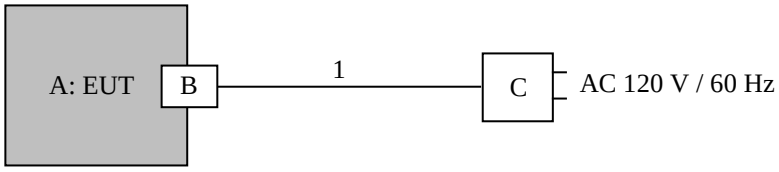
Test sequence is used: 1) Charge *
2) BLE Communication (Radiated emission only)

Software (Firmware): MEME Receiver
v0.3.3.0

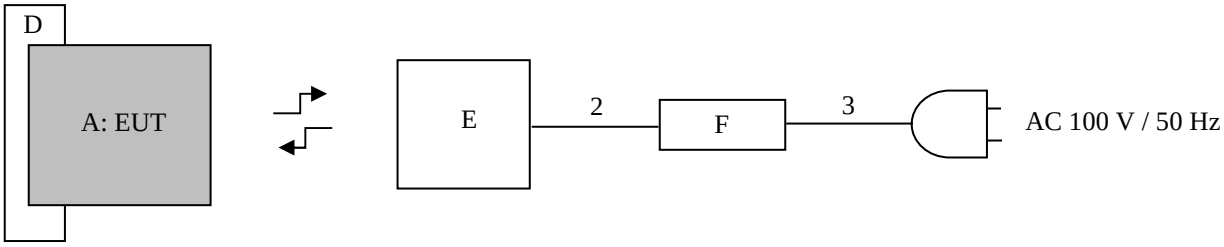
* BLE does not operate during charging.
Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals

Charge



BLE Communication



*As a result of comparing AC 120 V and AC 240 V at pre-check, conducted emission test was performed with AC 120 V of the worst voltage as representative.

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	WEARABLE EYEWEAR	JINS MEME CORE	JMC010	ALPS ALPINE CO., LTD.	EUT
B	Cradle	CNPME	001	ALPS ALPINE CO., LTD.	-
C	AC Adapter	A1385	E1862497H11 ITE	Apple	-
D	Glasses	CCDME	001	JINS	-
E	Laptop Computer	ThinkPad L580	TP00097A	Lenovo	-
F	AC Adapter	ADLX45YCC2A	SA10E75844	Lenovo	-

List of cable used

No.	Item	Length (m)	Shield	Remarks
1	USB	0.9	Shielded	Shielded
2	DC	0.9	Unshielded	Unshielded
3	AC	1.8	Unshielded	Unshielded

Section 5: Conducted emission

5. 1 Operating environment

Test room : Refer to data
Temperature : Refer to data
Humidity : Refer to data

5. 2 Test configuration

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 rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals was aligned and was flushed with rear of tabletop. All other surfaces of tabletop were at least 80 cm from any other grounded conducting surface. The EUT was located 0.8 m from Line Impedance Stabilization Network (LISN) They were folded back and forth forming a bundle 0.3 m to 0.4 m long. Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through an LISN to the input power source. Photographs of the set up are shown in Appendix 1.

5. 3 Test conditions

Frequency range : 0.15 MHz - 30 MHz
EUT position : Table top

5. 4 Test procedure

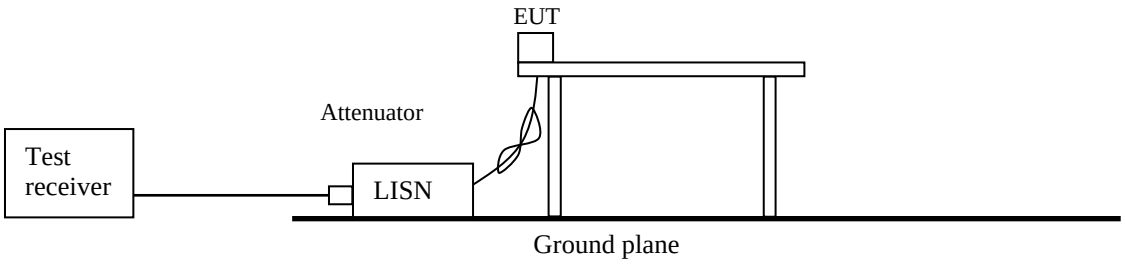
The AC Mains Terminal Continuous disturbance Voltage had been measured with the EUT in shielded room.
The EUT was connected to a LISN. An overview sweep with peak detection has been performed.
The measurements had been performed with a quasi-peak detector and if required, with a CISPR average detector (CAV).
The conducted emission measurements were made with the following detector function of the test receiver.

Detector Type : QP / CAV
IF Bandwidth : 9 kHz / 9 kHz

5. 5 Results

Summary of the test results : Pass

Figure 1. Test setup



SECTION 6: Radiated emission

6.1 Operating environment

Test room : Refer to data
Temperature : Refer to data
Humidity : Refer to data

6.2 Test configuration

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.
Photographs of the set up are shown in Appendix 3.

6.3 Test conditions

Frequency range : 30 MHz - 13 GHz
EUT position : Table top

6.4 Test procedure

The Radiated Electric Field Strength intensity has been measured on a Semi-Anechoic Chamber with a ground plane at a distance of 3 m*(below 1 GHz), 3 m (1 GHz - 10 GHz), 1 m (10 GHz - 13 GHz)
* Measuring distance
The boundary of the EUT is defined by an imaginary circular periphery.
The measuring antenna height was varied between 1 m 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 and spectrum analyzer.

		30 MHz -1000 MHz (Test receiver)	1 GHz – 13 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

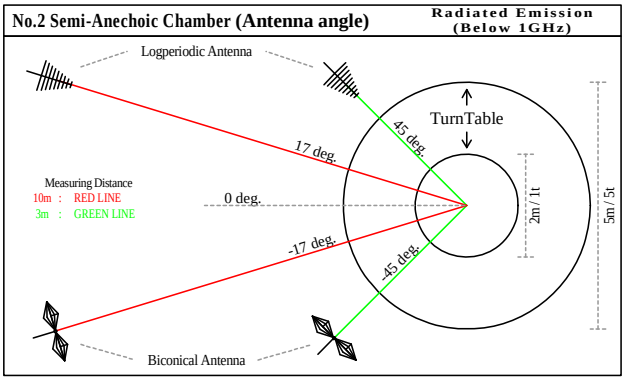
*1) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.
*2) The measurement data was adjusted to a 10 m distance using the following Distance Factor base on FCC subpart A Section 15.31 (f).
Distance Factor: (1 GHz – 10 GHz) 20 x log (3.9875 m / 3 m), (10 GHz – 13 GHz) 20 x log (1 m / 3 m)

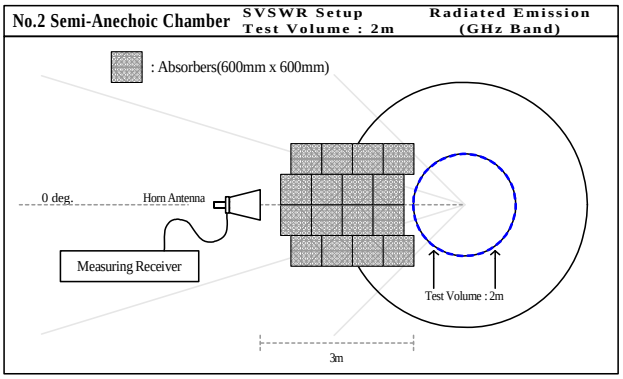
The noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

6. 5 Results

Summary of the test results : Pass

Figure 1. Antenna angle





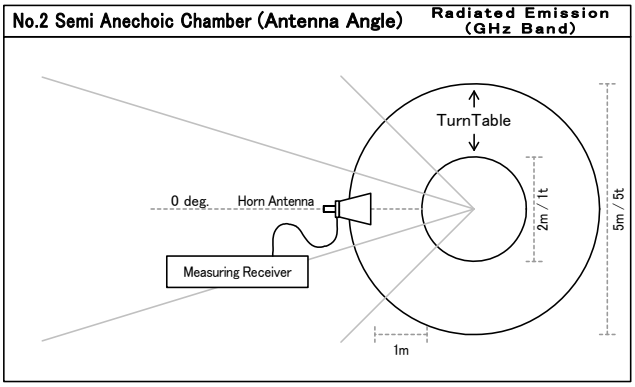
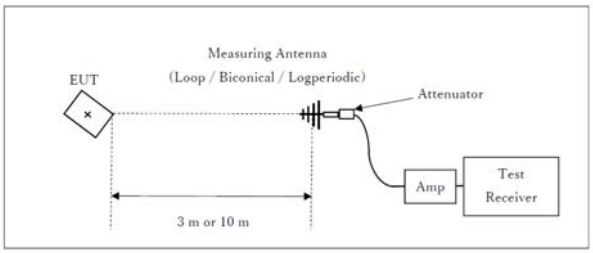


Figure 2: Test Setup

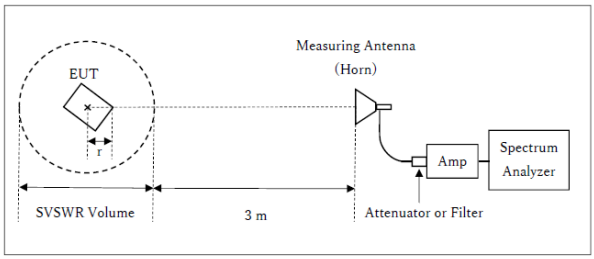
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 10 GHz

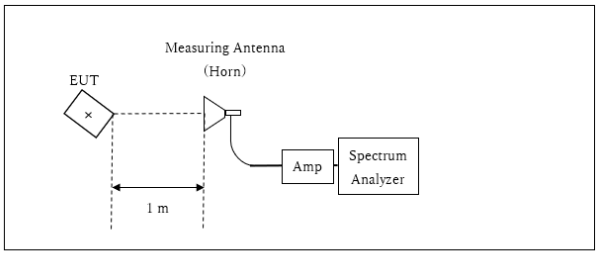


r : Radius of an outer periphery of EUT
× : Center of turn table

Distance Factor: 20 x log (3.9875 m*/3.0 m) = 2.48 dB
* Test Distance: (3 + SVSWR Volume /2) - r = 3.9875 m

SVSWR Volume: 2 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
r = 0.0125 m

10 GHz - 13 GHz



× : Center of turn table

Distance Factor: 20 x log (1.0 m* / 3.0 m) = 2.48 dB
*Test Distance: 1 m

5.5 Results

Summary of the test results : Pass

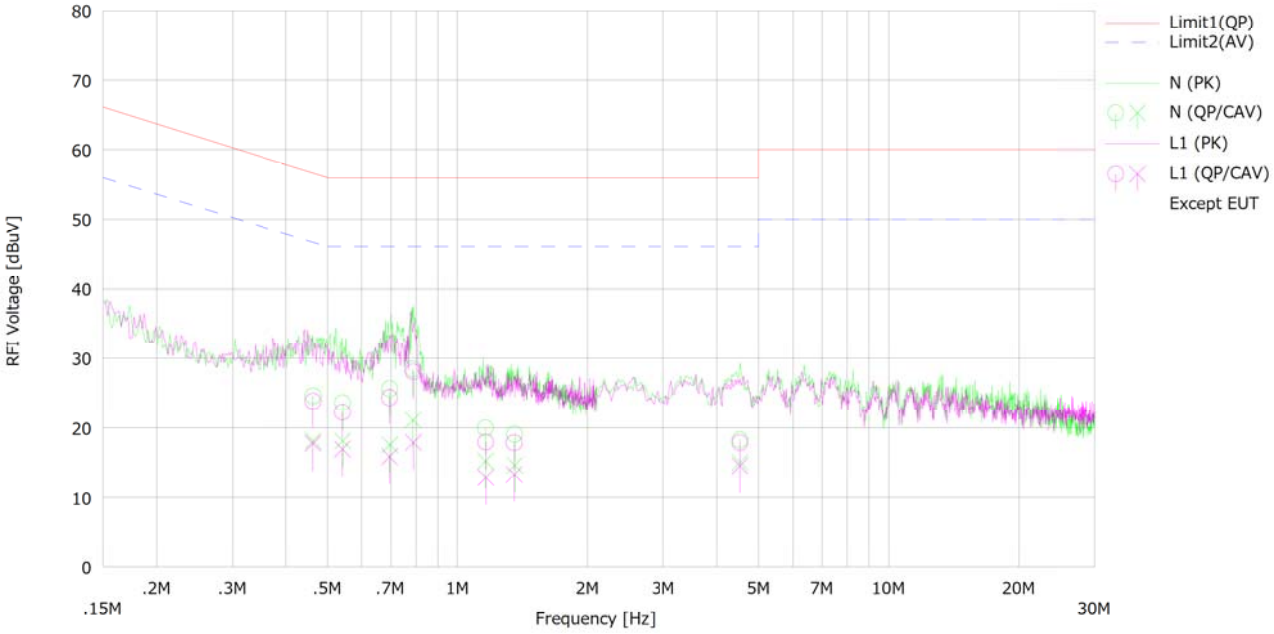
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.4 Shielded Room
Date : 2020/08/12

Company	: ALPS ALPINE CO., LTD.	Mode	: Charge
Kind of EUT	: WEARABLE EYEWEAR	Order No.	: 13384109S
Model No.	: JINS MEME CORE	Power	: DC 5 V (from USB)
Serial No.	: JMC10	Temp./Humi.	: 27 deg.C / 65 %RH
Remarks	: AC Adapter : AC 120 V / 60 Hz		

Limit : FCC_Part 15 Subpart B(15.107)_Class B

Engineer : Kouki Yamada



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		〈QP〉	〈CAV〉		〈QP〉	〈CAV〉	〈QP〉	〈AV〉	〈QP〉	〈AV〉		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.46363	12.00	5.50	12.62	24.62	18.12	56.63	46.63	32.0	28.5	N	
2	0.54186	11.00	5.50	12.62	23.62	18.12	56.00	46.00	32.3	27.8	N	
3	0.69719	13.00	4.90	12.65	25.65	17.55	56.00	46.00	30.3	28.4	N	
4	0.78802	15.80	8.40	12.66	28.46	21.06	56.00	46.00	27.5	24.9	N	
5	1.16072	7.20	2.50	12.73	19.93	15.23	56.00	46.00	36.0	30.7	N	
6	1.35527	6.30	1.90	12.74	19.04	14.64	56.00	46.00	36.9	31.3	N	
7	4.52142	5.20	2.00	13.06	18.26	15.06	56.00	46.00	37.7	30.9	N	
8	0.46329	11.20	5.10	12.64	23.84	17.74	56.63	46.63	32.7	28.8	L1	
9	0.54168	9.60	4.30	12.64	22.24	16.94	56.00	46.00	33.7	29.0	L1	
10	0.69639	11.70	3.20	12.67	24.37	15.87	56.00	46.00	31.6	30.1	L1	
11	0.78960	15.40	5.20	12.67	28.07	17.87	56.00	46.00	27.9	28.1	L1	
12	1.16286	5.20	0.20	12.72	17.92	12.92	56.00	46.00	38.0	33.0	L1	
13	1.35228	5.10	0.60	12.73	17.83	13.33	56.00	46.00	38.1	32.6	L1	
14	4.52395	4.80	1.50	13.03	17.83	14.53	56.00	46.00	38.1	31.4	L1	

Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN(AMN)+Cable+ATT)[dB]
LISN(AMN): SLS-02

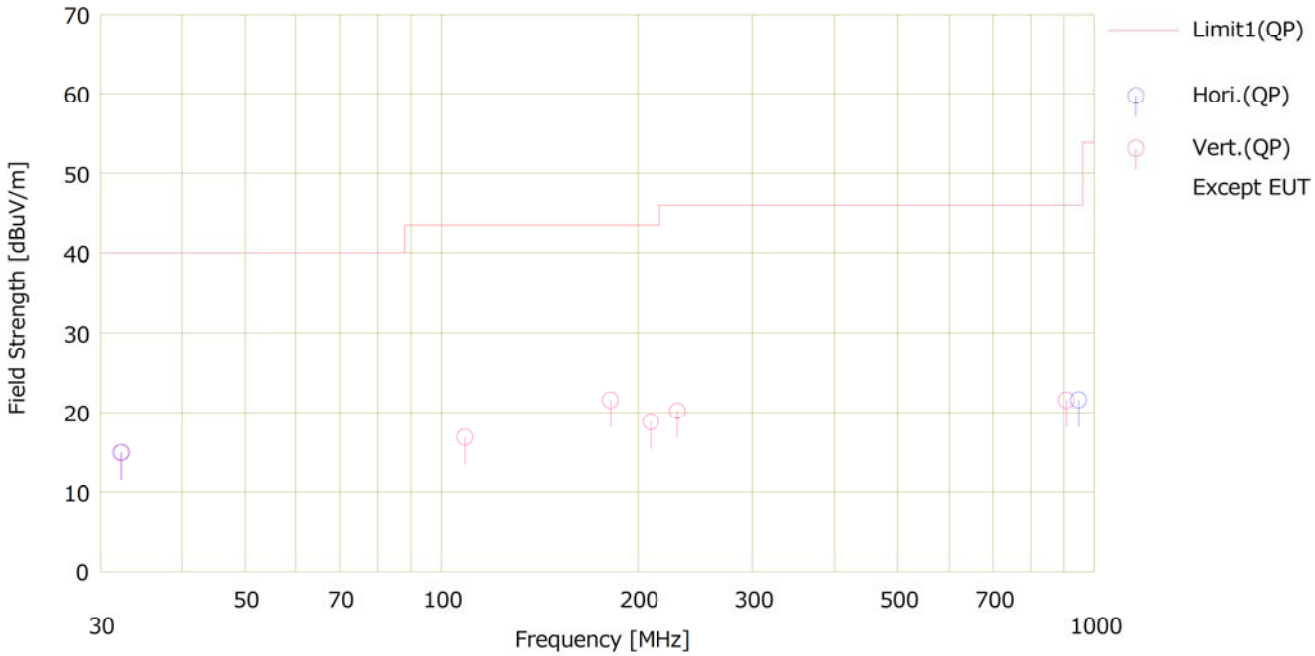
DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/08/12

Company	: ALPS ALPINE CO., LTD.	Mode	: Charge
Kind of EUT	: WEARABLE EYEWEAR	Order No.	: 13384109S
Model No.	: JINS MEME CORE	Power	: DC 5 V (from USB)
Serial No.	: JMC10	Temp./Humi.	: 27 deg.C / 65 %RH
Remarks	: EUT worst axis: H: X, V: X, AC Adapter : AC 120 V / 60 Hz		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada



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	32.380	22.20	17.80	6.98	31.90	-0.11	14.97	40.00	25.0	Hori.	100	34	BC	
2	948.019	20.50	21.93	9.67	30.52	0.00	21.58	46.00	24.4	Hori.	100	82	LP	
3	32.212	22.10	17.87	6.98	31.90	-0.11	14.94	40.00	25.0	Vert.	100	12	BC	
4	108.683	29.10	11.70	8.05	31.85	-0.11	16.89	43.50	26.6	Vert.	100	115	BC	
5	181.491	28.50	16.10	8.80	31.78	-0.06	21.56	43.50	21.9	Vert.	100	174	BC	
6	209.556	33.60	11.25	5.72	31.75	0.00	18.82	43.50	24.6	Vert.	100	42	LP	
7	230.412	34.70	11.34	5.89	31.72	0.00	20.21	46.00	25.7	Vert.	185	42	LP	
8	908.007	20.70	22.15	9.50	30.81	0.00	21.54	46.00	24.4	Vert.	100	34	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 **SH*: Horn Antenna

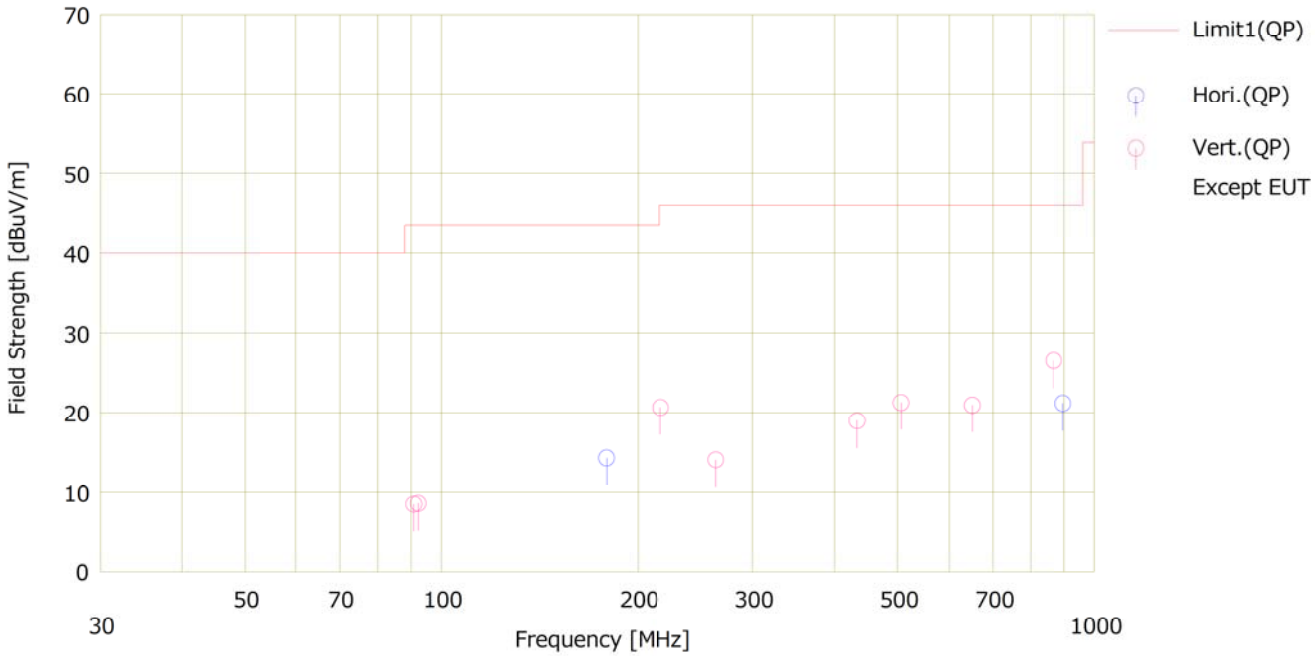
DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/08/12

Company	: ALPS ALPINE CO., LTD.	Mode	: BLE Communication
Kind of EUT	: WEARABLE EYEWEAR	Order No.	: 13384109S
Model No.	: JINS MEME CORE	Power	: DC 3.7 V(battery)
Serial No.	: JMC10	Temp./Humi.	: 27 deg.C / 65 %RH
Remarks	: EUT worst axis: H: X, V: X		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada



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	179.084	21.40	15.92	8.77	31.78	-0.04	14.27	43.50	29.2	Hori.	100	32	BC	
2	896.021	20.50	22.08	9.45	30.88	0.00	21.15	46.00	24.8	Hori.	100	11	LP	
3	90.868	23.80	8.42	7.83	31.87	0.32	8.50	43.50	35.0	Vert.	100	323	BC	
4	92.250	23.60	8.73	7.85	31.86	0.28	8.60	43.50	34.9	Vert.	100	74	BC	
5	216.900	35.40	11.18	5.78	31.74	0.00	20.62	46.00	25.3	Vert.	100	191	LP	
6	263.882	27.20	12.41	6.14	31.69	0.00	14.06	46.00	31.9	Vert.	100	271	LP	
7	433.809	27.20	16.11	7.26	31.63	0.00	18.94	46.00	27.0	Vert.	132	317	LP	
8	506.332	27.50	17.72	7.61	31.60	0.00	21.23	46.00	24.7	Vert.	188	17	LP	
9	650.702	25.00	19.20	8.34	31.62	0.00	20.92	46.00	25.0	Vert.	100	115	LP	
10	867.600	26.20	21.96	9.32	31.00	0.00	26.48	46.00	19.5	Vert.	100	144	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 **SH*: Horn Antenna

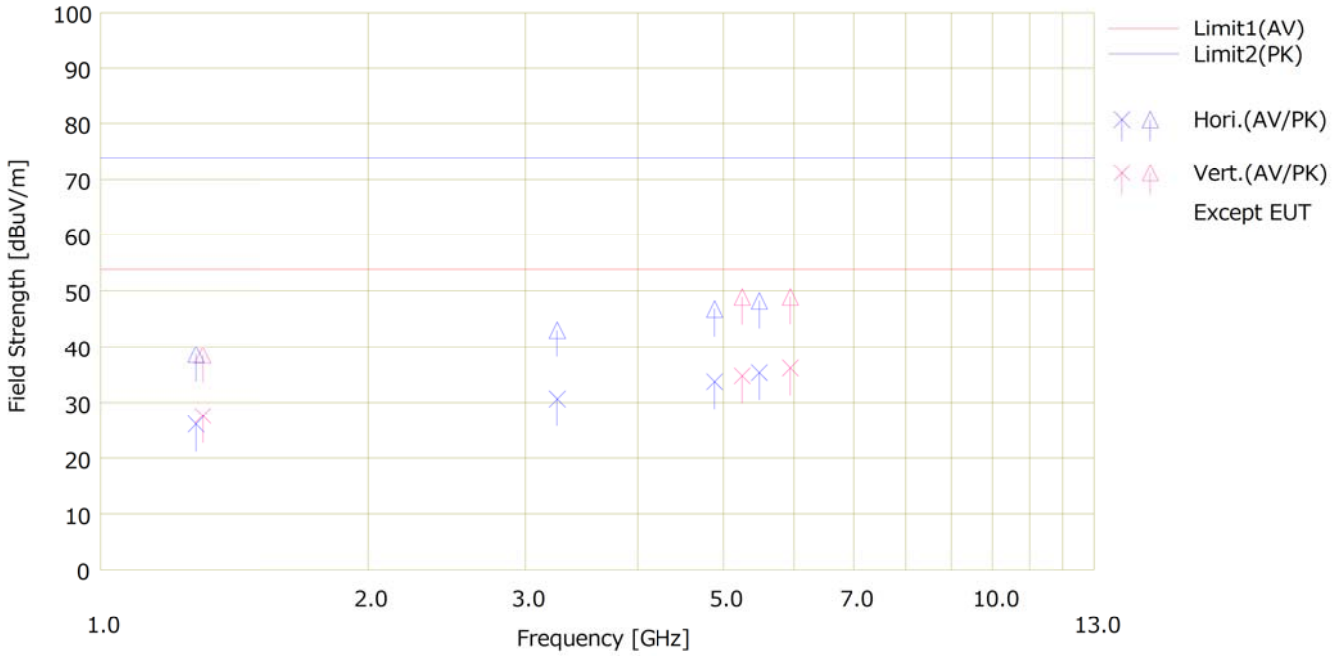
DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/08/12

Company	: ALPS ALPINE CO., LTD.	Mode	: Charge
Kind of EUT	: WEARABLE EYEWEAR	Order No.	: 13384109S
Model No.	: JINS MEME CORE	Power	: DC 5 V (from USB)
Serial No.	: JMC10	Temp./Humi.	: 27 deg.C / 65 %RH
Remarks	: EUT worst axis: H: X, V: X, AC Adapter : AC 120 V / 60 Hz, Test Distance=398.75 cm(1 GHz - 10 GHz), 100 cm(10 GHz - 13 GHz)		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada



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	1279.988	33.96	46.55	25.64	2.95	38.98	2.48	26.05	38.64	53.90	73.90	27.8	35.2	Hori.	100	280	31SH2	
2	3253.577	32.58	45.00	29.09	4.80	38.30	2.48	30.65	43.07	53.90	73.90	23.2	30.8	Hori.	100	23	31SH2	
3	4891.504	32.24	45.33	31.58	5.96	38.54	2.48	33.72	46.81	53.90	73.90	20.1	27.0	Hori.	100	311	31SH2	
4	5485.814	32.76	45.66	32.59	6.33	38.82	2.48	35.34	48.24	53.90	73.90	18.5	25.6	Hori.	100	127	31SH2	
5	1301.936	35.41	46.22	25.73	2.98	38.98	2.48	27.62	38.43	53.90	73.90	26.2	35.4	Vert.	100	223	31SH2	
6	5251.712	32.74	46.90	32.03	6.20	38.69	2.48	34.76	48.92	53.90	73.90	19.1	24.9	Vert.	100	86	31SH2	
7	5942.852	32.85	45.62	33.25	6.64	39.05	2.48	36.17	48.94	53.90	73.90	17.7	24.9	Vert.	100	12	31SH2	

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

DATA OF RADIATED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.2 Semi-Anechoic Chamber
Date : 2020/08/12

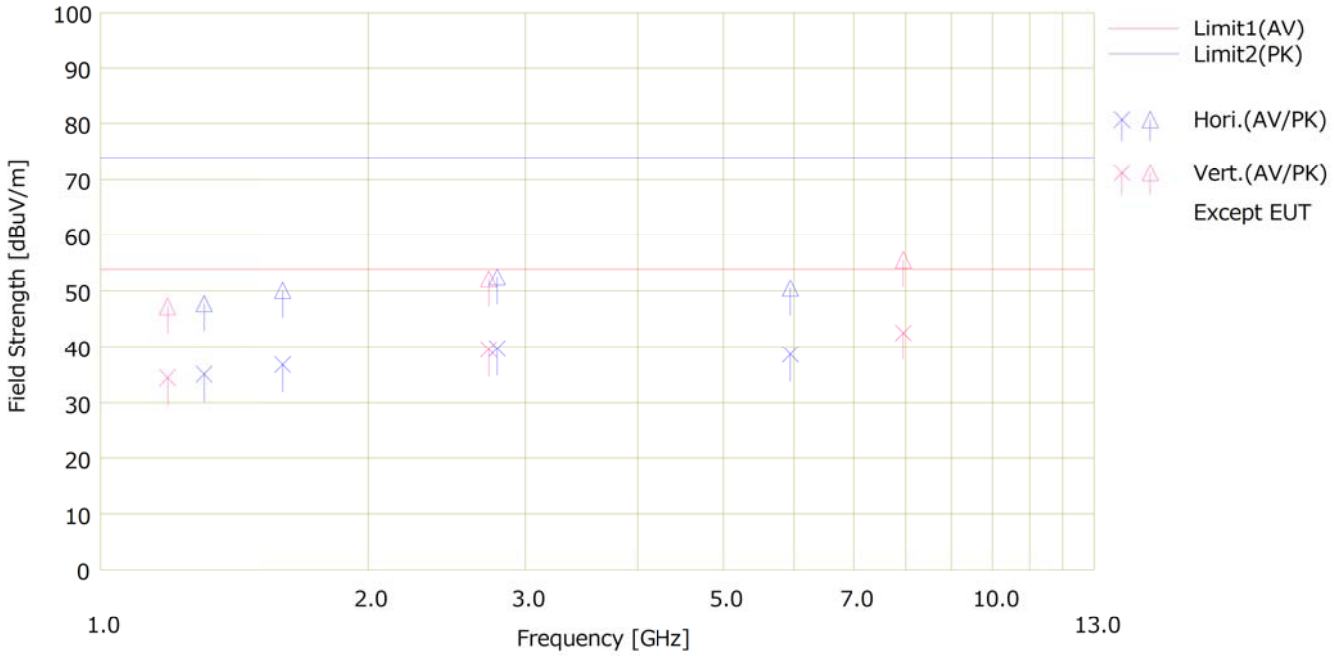
Company : ALPS ALPINE CO., LTD.
Kind of EUT : WEARABLE EYEWEAR
Model No. : JINS MEME CORE
Serial No. : JMC10
Remarks : EUT worst axis: H: X, V: X, Test Distance=398.75 cm(1 GHz - 10 GHz), 100 cm(10 GHz - 13 GHz)

Mode : BLE Communication
Order No. : 13384109S
Power : DC 3.7 V(battery)
Temp./Humi. : 27 deg.C / 65 %RH

: BLE Communication

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Kouki Yamada



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	1307.815	32.92	45.57	25.75	12.93	38.99	2.48	35.09	47.74	53.90	73.90	18.8	26.1	Hori.	100	145	31SH2	
2	1604.745	34.69	48.00	25.35	13.27	39.00	2.48	36.79	50.10	53.90	73.90	17.1	23.8	Hori.	100	197	31SH2	
3	2787.346	32.75	45.54	28.63	14.38	38.51	2.48	39.73	52.52	53.90	73.90	14.1	21.3	Hori.	100	287	31SH2	
4	5946.383	34.79	46.67	33.26	7.15	39.05	2.48	38.63	50.51	53.90	73.90	15.2	23.3	Hori.	100	11	31SH2	
5	1188.996	32.89	45.70	25.25	12.78	38.96	2.48	34.44	47.25	53.90	73.90	19.4	26.6	Vert.	100	245	31SH2	
6	2726.240	32.86	45.45	28.43	14.33	38.53	2.48	39.57	52.16	53.90	73.90	14.3	21.7	Vert.	100	342	31SH2	
7	7949.562	33.04	46.06	38.09	8.25	39.29	2.48	42.57	55.59	53.90	73.90	11.3	18.3	Vert.	100	213	31SH2	

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

APPENDIX 2

Test Instruments

EMI test equipment

Test Name	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
CE	SAT3-13	150923	Attenuator	JFW	50HF-003N	-	2020/01/30	12
CE	SCC-B12/B13/SRSE-02	144969	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-270(RF Selector)	2020/04/17	12
CE	SLS-02	145539	LISN	Rohde & Schwarz	ENV216	100512	2020/02/18	12
CE	SOS-22	191839	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/12	12
CE,RE	COTS-SEMI-5	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
CE,RE	KJM-10	146454	Measure	KOMELON	KMC-36	-	-	-
CE,RE	STR-01	145790	Test Receiver	Rohde & Schwarz	ESU40	100093	2020/04/24	12
CE,RE	STS-02	145793	Digital Hitester	Hioki	3805-50	80997819	2020/04/09	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	2020/05/07	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	2020/06/03	12
RE	SAT10-05	145136	Attenuator(above1GHz)	Keysight Technologies Inc	8493C-010	74864	2019/11/06	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	SBA-02	145022	Biconical Antenna	Schwarzbeck Mess - Elektronik	BBA9106	91032665	2020/04/04	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)	2020/04/17	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)	2020/04/17	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	SCC-G69	200009	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	575617/4	2020/07/07	12
RE	SFL-18	145305	Highpass Filter	MICRO-TRONICS	HPM50111	119	2020/04/03	12
RE	SHA-02	145384	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA9120D	9120D-726	2020/06/15	12
RE	SHA-09	194684	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA 9120 C	695	2020/02/17	12
RE	SLA-06	145528	Logperiodic Antenna	Schwarzbeck Mess - Elektronik	VUSLP9111B	195	2020/04/04	12
RE	SOS-21	191838	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/12	12
RE	STR-07	146209	Test Receiver	Rohde & Schwarz	ESU26	100484	2019/09/13	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:
CE: Conducted emission,
RE: Radiated emission