EC Declaration of Conformity

EC Declaration of Conformity

According to

EMC Directive 2014/30/EU

For the following

Product	**:**	**SELFSAT FLY**
Model Name	**:**	**SELFSAT FLY-100**
Variant Model Name	**:**	**SELFSAT FLY-200**
Applicant Name	**:**	**I DO IT Co. Ltd.**
Applicant Address	**:**	**#637, Smart-Hub Industry-University Convergence Center, 237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea (429-793)**
Manufactured Name	**:**	**Same as above**
Manufactured Address	**:**	**Same as above**

We hereby declare, Electro Magnetic Compatibility Directive (2014/30/EU) are fulfilled, as laid out in the guide set down by the member states of the EEC Commission.
This declaration is valid for all samples that are part of this declaration, which are manufactured according to the production charts appendix.

The standards relevant for the evaluation of EMC requirements are as follows:

Test Standard : **EN 301 489-1 V2.2.0**
EN 301 489-17 V3.2.0
EN 61000-3-2:2014
EN 61000-3-3:2013

Date of issue: December 4, 2017

I DO IT Co., Ltd.
#637, Smart-Hub Industry-University Convergence Center
237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea (429-793)

(Name and signature of authorized person)

Korea Standard Testlab
#107-27, Jangdeokdong-gil, Namyang-eup, Hwaseong-si, Gyeonggi-do, Korea
Tel : +82-31-356-7333 FAX : +82-31-356-7303

CE CONFORMANCE TEST REPORT

Report No.	:	KST-CEM-170102
Date of Issue	:	December 4, 2017
Model / Type No.	:	SELFSAT FLY-100
Variant Model / Type No.		SELFSAT FLY-200
Kind of Product	:	SELFSAT FLY
Applicant Name	:	I DO IT Co. Ltd.
Applicant Address	:	#637, Smart-Hub Industry-University Convergence Center, 237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea(429-793)
Manufacturer Name	:	Same as above
Manufacturer Address	:	Same as above
Received Date	:	November 22, 2017
Test Period	:	Start : November 27, 2017 End : November 28, 2017
Test Result	:	■ In Compliance ☐ Not in Compliance
Applicable Standard	:	EN 301 489-1 V2.2.0 EN 301 489-17 V3.2.0 EN 61000-3-2:2014 EN 61000-3-3:2013

Tested by

Tae-Hun Cheon
EMC Test Engineer

Reviewed by

Yong-Seok You
EMC Technical Manager

TABLE OF CONTENTS

1. General Product Description

1.1. Tested Equipment

SELFSAT FLY, model SELFSAT FLY-100

1.2. Equipment Size, Mobility and Identification

Dimension	:	200 × 110 × 30 (mm)
Weight	:	531 g
Mobility	:	☐ Hand-held ■ Table-top ☐ Built-in ☐ Traveling ☐ Floor-standing
Serial No.	:	Prototype

1.3. Electrical Ratings or Specification

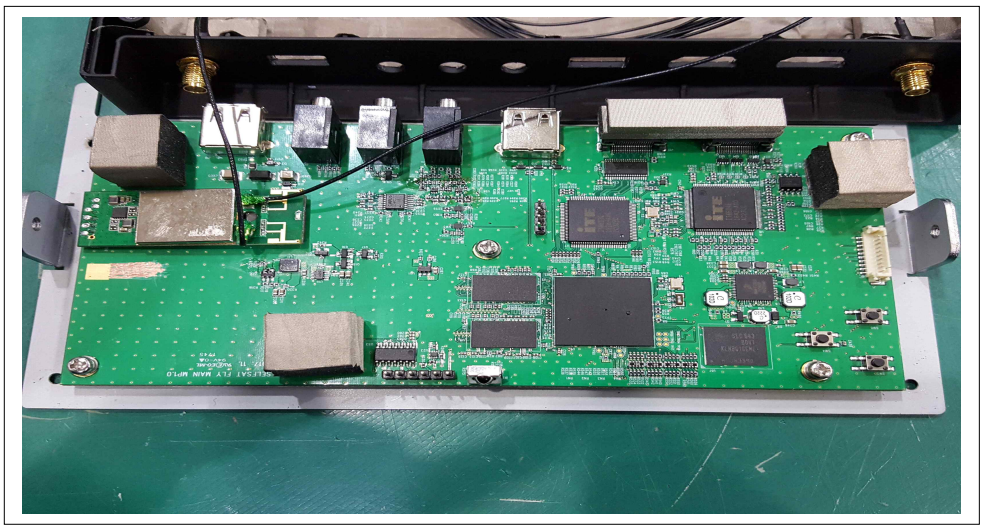
Power	:	220 V (ac) / 60 Hz
Maximum operating frequency	:	over 108 MHz
Port	:	HDMI, USB, MIC, IR

1.4. Test Voltage and Frequency

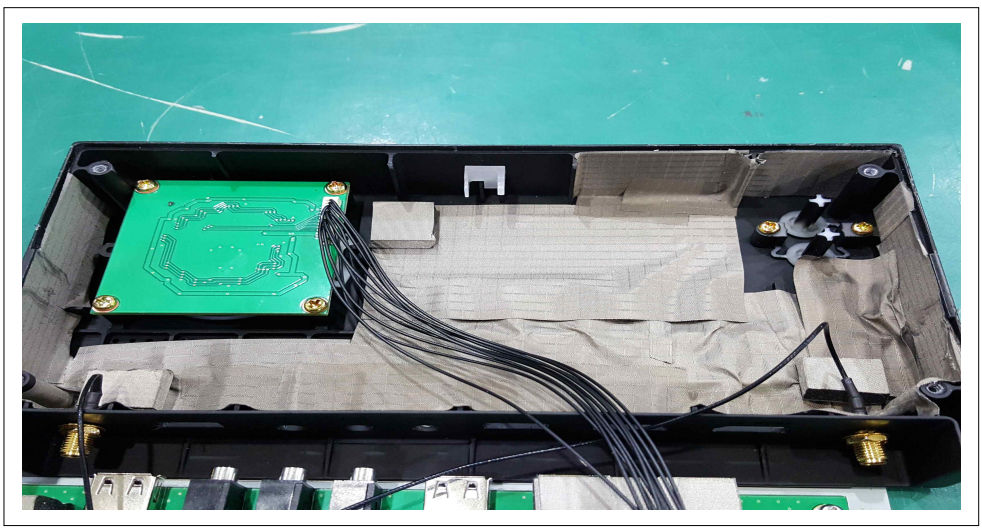
Unless otherwise indicated, the test voltage and frequency are as follows.

Voltage	:	230 V (ac)
Frequency	:	50 Hz

2. Device Modification



Shield EMI tape on the mainboard.



Shield EMI tape inside the E.U.T.

3. Model Difference

Model SELFSAT-FLY-200 is same as basic model SELFSAT-FLY-100 except for model designation.

4. EUT Configuration(s)

See Appendix A for individual test set-up configuration(s). The following peripheral devices and/or interface cables were connected during the measurement:

■ Peripheral Devices

Description	Model Number	Serial Number	Manufacturer
SELFSAT FLY	SELFSAT FLY-100	-	I DO IT Co. Ltd
Notebook Computer	NT500R5S	0HN391EH500205J	Samsung
Adapter1	A13-040N2A	CN60BA4400313AD ON863P00Y7	Chicony Power Technology Co., Ltd.
Monitor	LT24D390	002ZHNHHB00421B	Samsung
Adapter2	A3514_DPN	CN07BN4400592BS K28HARI558	POWERNET Technologies Corp.
Smart phone1	IM-A910K	353009061101717	Pantech
Smart phone2	SM-N920L	R39G903FA6	Samsung

■ System Configuration

Description	Model Number	Serial Number	Manufacturer
Switching Adaptor	CGSW-05002000	-	SHENZHEN BOPUDA INDUSTRIAL CO., LTD
IR TX	-	-	-
IR RX	-	-	-

■ Cable Description

#	Description	I/O Port	Description	I/O Port	Length (m)	Shielded
1	SELFSAT FLY	HDMI	Notebook Computer	HDMI	1.5	Shielded
2	SELFSAT FLY	HDMI	Monitor	HDMI	1.5	Shielded
3	SELFSAT FLY	AUX	Smart phone1	AUX	1.2	Unshielded
4	SELFSAT FLY	IR	IR TX	-	1.6	Unshielded
5	SELFSAT FLY	IR	IR RX	-	1.0	Unshielded

5. EUT Operating Mode(s)

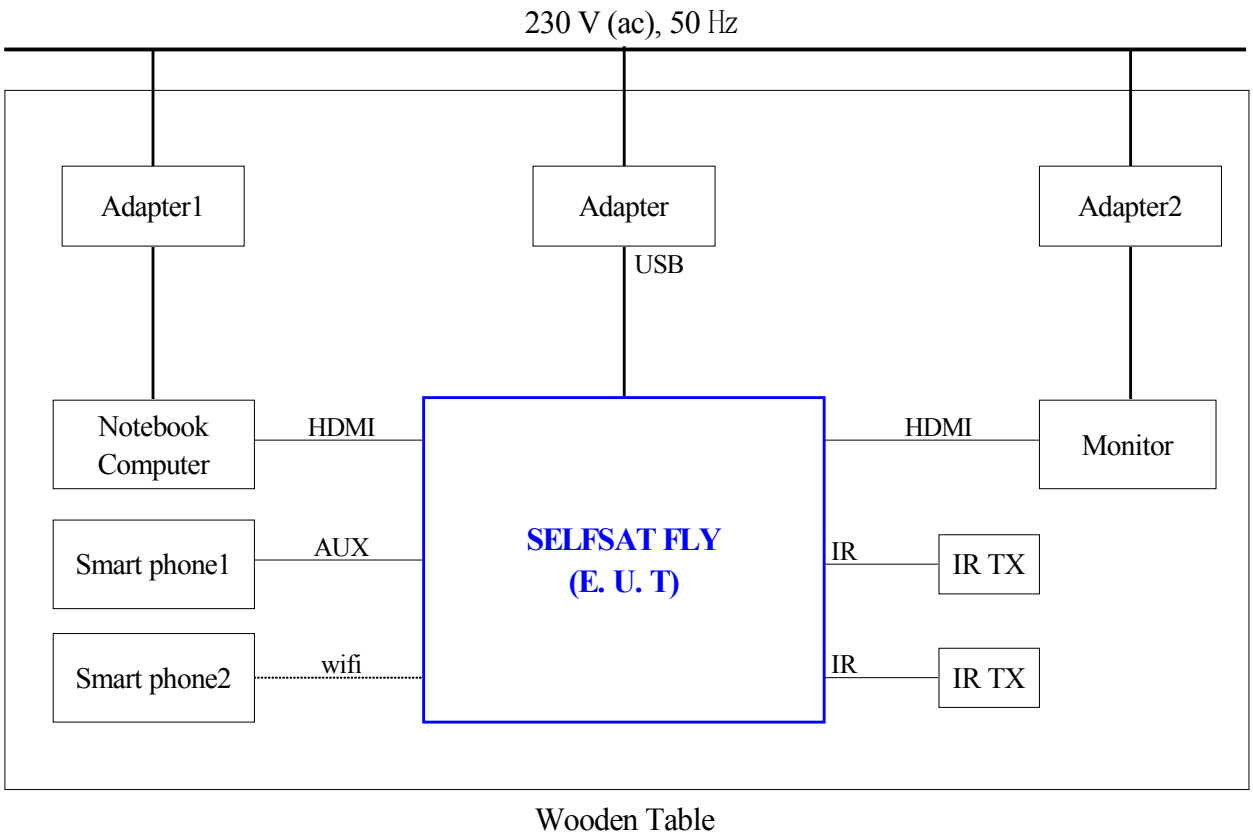
EUT was operated during the measurement under the following conditions:

☐ Standby ☐ Scrolling 'H'

☐ Display pattern ☐ Read / Write

■ Operating Mode : After it installed as like the bellow configuration, we monitored screen (color bar included 1kHz sound) at monitor and smart phone and checked 1kHz sound at EUT during tests.

6. Configuration of Test System



7. Calibration Detail of Equipments Used for Measurement

Test Equipments and accessories were calibrated on regular basis. The maximum period of calibration as recommended by manufacturer is one year, unless otherwise specified. All test equipments were calibrated by calibration institution as accredited according to ISO/IEC 17025.

8. Laboratory Information

The test laboratory, Korea Standard Testlab was accredited by RRA(National Radio Research Agency) in Korea according to ISO/IEC 17025.

-.Address

Korea Standard Testlab

#107-27, Jangdeokdong-gil, Namyang-eup, Hwaseong-si, Gyeonggi-do, Korea

Tel : +82-31-356-7333

FAX : +82-31-356-7303

-. The number of accreditation and listing for laboratory

KC Registration No. : KR0155

9. Measurement Uncertainty

The facilities of Korea Standard Testlab are accredited by Korea Radio Research Agency according to ISO/IEC 17025

Compliance of the product is based on the measured value.

However, the measurement uncertainty is included just by information purpose.

The measurement uncertainties as below are based on uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Measurement Type	Frequency Range	Expanded Uncertainty
Conducted Emission	150 kHz to 30 MHz	±2.3 dB
Radiated Emission	30 MHz to 1 000 MHz	±4.8 dB
	1 000 MHz to 6 000 MHz	±6.7 dB

10. Test Regulations

The emissions and immunity tests were performed according to following regulations :

■ EMC - Directive 2014/30/EU

☐ EMC - Directive 2014/53/EU

☐ EN 61000-6-1:2007

☐ EN 61000-6-2:2005

☐ EN 61000-6-3:2007+A1:2011

☐ EN 61000-6-4:2007+A1:2011

☐ EN 55011:2009+A1:2010	☐ Group 1 ☐ Class A	☐ Group 2 ☐ Class B
☐ EN 50130-4:1995+A1+A2:2003		
☐ EN 55014-1:2006/A2:2011		
☐ EN 55014-2:1997/A2:2008	☐ Category C1 ☐ Category C3	☐ Category C2 ☐ Category C4
☐ EN 60034-1:2010		
☐ EN 55015:2013		
☐ EN 55024:2010/A1:2015		
☐ EN 61326-2-1:2013		
☐ EN 61326-1:2013		
☐ EN 61547 :2009		
☐ EN 55022:2010/AC:2011	☐ Class A	☐ Class B
☐ EN 55032:2015	☐ Class A	☐ Class B
■ EN 61000-3-2:2014		
■ EN 61000-3-3:2013		
■ EN 301 489-1 V2.2.0	☐ Class A	■ Class B
☐ EN 301 489-3 V1.6.1		
■ EN 301 489-17 V3.2.0		
☐ EN 61800-3:2004/A1:2012	☐ Category C1 ☐ Category C3	☐ Category C2 ☐ Category C4

☐ FCC Part 15 Subpart B	☐ Class A	☐ Class B
☐ CISPR 11 :2010	☐ Group 1	☐ Group 2
	☐ Class A	☐ Class B

☐ CISPR 22:2008	☐ Class A	☐ Class B

☐ CISPR 14-1:2005+A1:2009

☐ CISPR 15:2005+A1+A2:2008

☐ J 55014-1(H27)

■ EN 61000-4-2:2009

■ EN 61000-4-3:2006+A2:2010

■ EN 61000-4-4:2012

■ EN 61000-4-5:2014

■ EN 61000-4-6:2014

☐ EN 61000-4-8:2010

■ EN 61000-4-11:2014

10.1. Conducted Disturbance Voltages

Test Date and Condition

Date	November 27, 2017	Temperature:	17.0 ℃	Humidity	33.0 %

Test Location

Shield Room

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Test Receiver	ROHDE & SCHWARZ	ESPI	101014	2018.05.30
□	LISN	Kyoritsu	KNW-407	8-1010-14	2018.05.30
■	LISN	HAMEG	HM6050-2	043810114	2018.06.07
■	LISN	ROHDE & SCHWARZ	ENV216	101732	2018.02.27
□	ISN	Schwarzbeck	ISN CAT3 8	CAT 3 8158-0022	2018.02.27
□	ISN	Schwarzbeck	ISN CAT5 8	CAT 3 8158-0032	2018.02.27
□	ISN	Schwarzbeck	ISN CAT6 8	8158-0030	2018.02.27

Frequency Range of Measurement

150 kHz to 30 MHz

Test Results

The requirements are : ■ MET □ NOT MET □ NOT APPLICABLE

■ Conducted Disturbance Voltage [0.15-30 MHz]

Freq. (MHz)	Correction Factor		Phase	EN 301489-1 V2.2.0					
				Quasi-Peak			Average		
	LISN	Cable		Limit (dBuV)	Corrected Amplitude (dBuV)	QP Margin	Limit (dBuV)	Corrected Amplitude (dBuV)	AV Margin
0.15	9.65	0.08	H	66.00	47.50	18.50	-	-	-
0.17	9.94	0.06	N	64.96	41.78	23.18	-	-	-
0.34	9.72	0.12	N	59.20	44.54	14.66	-	-	-
0.57	9.82	0.13	H	56.00	43.94	12.06	46.00	36.20	9.80
0.58	9.81	0.13	N	56.00	52.40	3.60	46.00	43.67	2.33
0.84	9.73	0.16	H	56.00	38.92	17.08	-	-	-
0.87	9.72	0.16	N	56.00	44.06	11.94	46.00	33.02	12.98
1.93	9.60	0.23	N	56.00	42.10	13.90	-	-	-
1.96	9.60	0.23	H	56.00	31.79	24.21	-	-	-
5.89	9.67	0.37	H	60.00	34.30	25.70	-	-	-
6.10	9.68	0.37	N	60.00	36.27	23.73	-	-	-
9.85	9.75	0.45	H	60.00	35.63	24.37	-	-	-
9.97	9.75	0.45	N	60.00	40.61	19.39	-	-	-

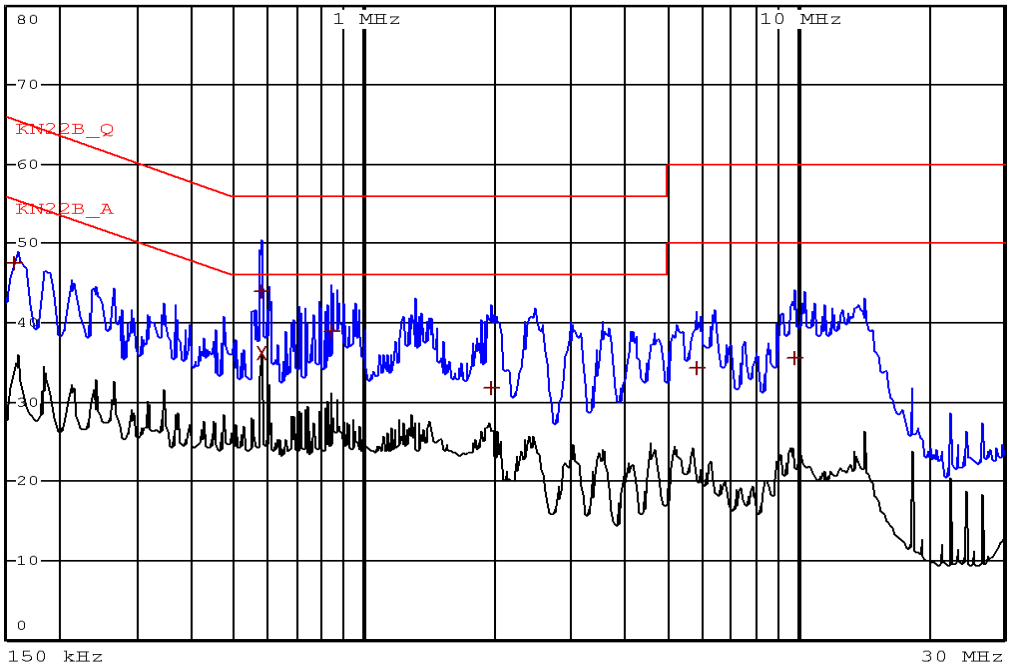
Worst case for frequency range

Frequency (MHz)	Corrected Amplitude(dBuV)	Margin(dB)	QP / AV	Line	Remark
0.58	52.40	3.60	QP	N	-
0.58	43.67	2.33	AV	N	-

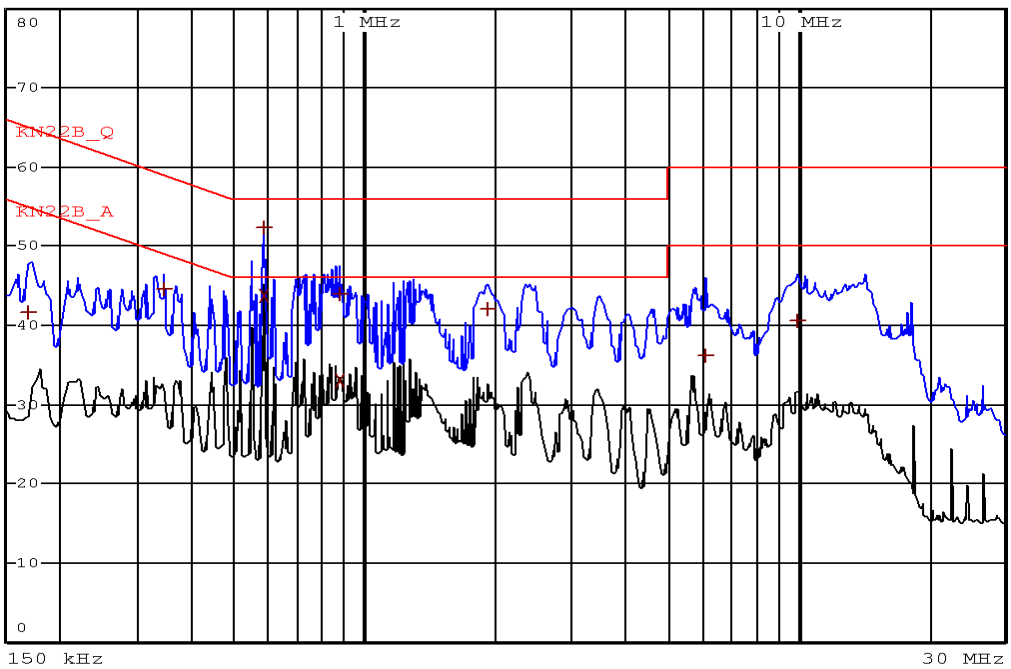
* "H": Hot Line, "N": Neutral Line
* Correction Factor = LISN Factor[dB] + Cable Loss[dB]
* Peak and quasi-peak values are omitted because the average measurement result is below the average reference value
* Result value and Reading value are same because Reading values are included correction factor.

Main Ports

Hot Line



Neutral Line



10.2. Radiated Electric Field Emission

Test Date and Condition

10 M OATS

Date	November 27, 2017	Temperature:	6.9 ℃	Humidity	38.0 %

Test Location

10 M OATS

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Bi-log Antenna	TDK RF Solutions Inc.	HLP-2006C	131010	2018.09.23
■	AMPLIFIER	SONOMA	310N	251847	2018.02.28
■	TEST RECEIVER	ROHDE & SCHWARZ	ESPI	101014	2018.05.30

Frequency Range of Measurement

30 MHz to 1 000 MHz

Test Results

The requirements are : ■ MET ☐ NOT MET ☐ NOT APPLICABLE

■ Radiated Electric Field Emissions (30 - 1 000 MHz)

Indicated	Antenna		EN 301489-1 V2.2.0					
Frequency (MHz)	Polar. (H/V)	Height (m)	Correction Factor			Limit (dBuV/m)	Corrected Amplitude (dBuV/m)	Margin (dB)
			Antenna (dB/m)	Cable (dB)	AMP (dB)			
83.36	V	1.6	8.27	1.52	32.62	30.00	20.47	9.53
192.57	V	2.1	12.22	2.50	32.58	30.00	20.26	9.74
209.04	V	2.5	11.67	2.63	32.57	30.00	24.78	5.22
591.85	V	3.5	18.86	5.39	32.97	37.00	25.57	11.43
592.18	H	2.8	18.86	5.39	32.97	37.00	25.49	11.51

Worst case for frequency range

Frequency (MHz)	Polar.	Corrected Amplitude (dBuV/m)	Margin(dB)	Remark
209.04	V	24.78	5.22	-

* "H": Horizontal, "V": Vertical
* Correction Factor = Antenna Factor[dB/m] + Cable Loss[dB] - Amp. Gain[dB]
* Result value and Reading value are same because Reading values are included correction factor.

Test Date and Condition

Anechoic chamber

Date	November 27, 2017	Temperature:	16.9 ℃	Humidity	32.0 %

Test Location

Anechoic chamber

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	EMI TEST Receiver	LIG Nex1	LSA-265	L07098033	2018.10.11
■	Pre Amplifier	GTC	GA-1825A	GT0929/003	2018.02.27
■	Horn Antenna	Schwarzbeck	BBHA 9120D	831	2018.07.21

Frequency Range of Measurement

1 000 MHz to 6 000 MHz

Test Results

The requirements are : ■ MET □ NOT MET □ NOT APPLICABLE

■ Radiated Electric Field Emissions (1 000 - 6 000 MHz)

Indicated	Antenna		Correction Factor			Detector (PK/AV)	EN 301489-1 V2.2.0		
Frequency (MHz)	Polar. (H/V)	Height (m)	Ant. (dB)	Cable (dB)	AMP (dB)		Limit (dBuV/m)	Corrected Amplitude (dBuV/m)	Margin (dB)
1038.04	H	1.0	24.57	3.25	27.27	PK	70.00	50.49	19.51
1482.67	V	1.0	25.37	4.29	26.83	PK	70.00	52.51	17.49
1482.75	H	1.0	25.37	4.30	26.83	PK	70.00	52.56	17.44
2672.46	H	1.0	27.91	5.62	25.79	PK	70.00	53.27	16.73
2706.55	V	1.0	27.95	5.69	25.79	PK	70.00	53.18	16.82
4423.47	V	1.0	32.09	6.70	22.93	PK	74.00	56.83	17.17
1038.04	H	1.0	24.57	3.25	27.27	AV	50.00	47.13	2.87
1482.67	V	1.0	25.37	4.29	26.83	AV	50.00	46.94	3.06
1482.75	H	1.0	25.37	4.30	26.83	AV	50.00	47.92	2.08
2672.46	H	1.0	27.91	5.62	25.79	AV	50.00	46.18	3.82
2706.55	V	1.0	27.95	5.69	25.79	AV	50.00	46.35	3.65
4423.47	V	1.0	32.09	6.70	22.93	AV	54.00	49.95	4.05

Worst case for frequency range

Frequency (MHz)	Polar.	Corrected Amplitude(dBuV)	Margin(dB)	PK / AV	Remark
2672.46	H	53.27	16.73	PK	-
1482.75	H	47.92	2.08	AV	-

* "H": Horizontal, "V": Vertical
* Correction Factor = Antenna Factor[dB/m] + Cable Loss[dB] - Amp. Gain[dB]
* Result value and Reading value are same because Reading values are included correction factor.

10.3. Harmonic Current Emissions

Test Date and Condition

Date	November 27, 2017	Temperature:	20.7 ℃	Humidity	38.0 %

Test Location

Harmonic & Flicker Section

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Harmonic & Flicker Tester (Signal conditioning unit)	Schaffner	CCN 1000-1-LR1	X71715	2018.05.31
■	Harmonic & Flicker Tester (Power Source)	Schaffner	NSG 1007	HK53453	2018.05.30

Classification of Equipment for Harmonic Current Emissions

■ Class A
☐ Class B
☐ Class C
☐ Class D

Test Results

The requirements are :

■ MET
☐ NOT MET
☐ NOT APPLICABLE

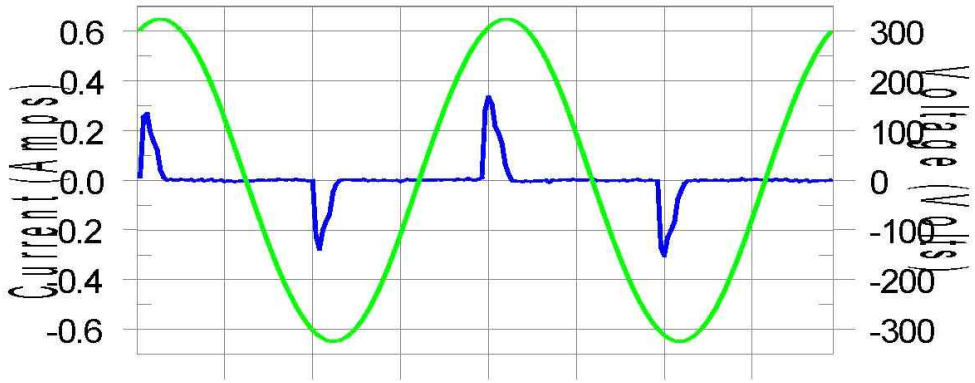
■ Measurement graphs

Harmonics – Class-A per Ed. 4.0 (2014)(Run time)

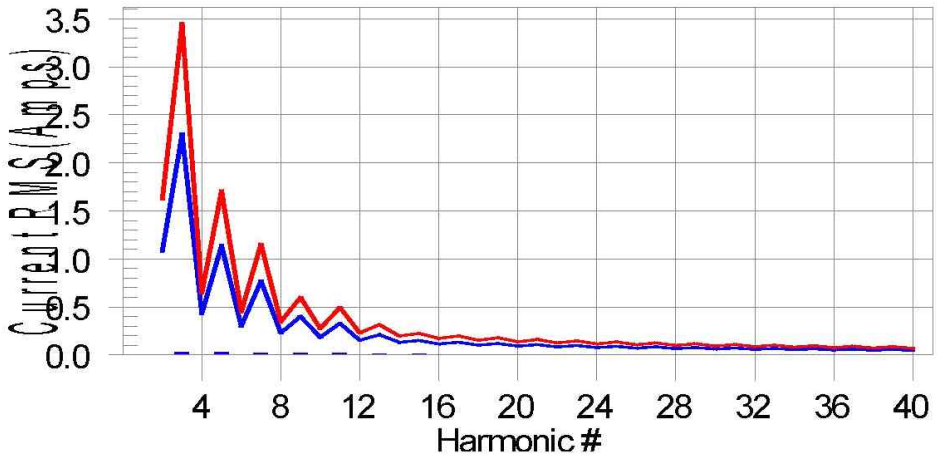
EUT: Equipment under test **Tested by: Tested by**
Test category: Class-A per Ed. 4.0 (2014) (European limits) **Test Margin: 100**
Test date: 2017-11-27 **Start time: PM 3:32:32** **End time: PM 3:42:54**
Test duration (min): 10 **Data file name: H-000055.cts_data**
Comment: Comment
Customer: Customer information

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line **European Limits**



Test result: Pass Worst harmonic was #15 with 6.2% of the limit.

Current Test Result Summary (Run time)

EUT: Equipment under test — Tested by: Tested by
Test category: Class-A per Ed. 4.0 (2014) (European limits) — Test Margin: 100
Test date: 2017-11-27 — Start time: PM 3:32:32 — End time: PM 3:42:54
Test duration (min): 10 — Data file name: H-000055.cts_data
Comment: Comment
Customer: Customer information

Test Result: Pass — Source qualification: Normal
THC(A): 0.059 — I-THD(%): 185.2 — POHC(A): 0.008 — POHC Limit(A): 0.251
Highest parameter values during test:

V_RMS (Volts):	229.45	Frequency(Hz):	50.00
I_Peak (Amps):	0.361	I_RMS (Amps):	0.070
I_Fund (Amps):	0.032	Crest Factor:	5.327
Power (Watts):	7.2	Power Factor:	0.461

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.000	1.080	N/A	0.000	1.620	N/A	Pass
3	0.031	2.300	1.3	0.031	3.450	0.9	Pass
4	0.000	0.430	N/A	0.000	0.645	N/A	Pass
5	0.028	1.140	2.5	0.028	1.710	1.7	Pass
6	0.000	0.300	N/A	0.001	0.450	N/A	Pass
7	0.025	0.770	3.2	0.025	1.155	2.2	Pass
8	0.000	0.230	N/A	0.001	0.345	N/A	Pass
9	0.021	0.400	5.2	0.021	0.600	3.5	Pass
10	0.000	0.184	N/A	0.001	0.276	N/A	Pass
11	0.016	0.330	5.0	0.017	0.495	3.4	Pass
12	0.000	0.153	N/A	0.000	0.230	N/A	Pass
13	0.013	0.210	6.0	0.013	0.315	4.0	Pass
14	0.000	0.131	N/A	0.000	0.197	N/A	Pass
15	0.009	0.150	6.2	0.009	0.225	4.2	Pass
16	0.000	0.115	N/A	0.000	0.173	N/A	Pass
17	0.007	0.132	5.3	0.007	0.198	3.6	Pass
18	0.000	0.102	N/A	0.000	0.153	N/A	Pass
19	0.006	0.118	5.0	0.006	0.178	3.4	Pass
20	0.000	0.092	N/A	0.000	0.138	N/A	Pass
21	0.005	0.107	5.1	0.006	0.161	3.5	Pass
22	0.000	0.084	N/A	0.000	0.125	N/A	Pass
23	0.005	0.098	5.4	0.005	0.147	3.6	Pass
24	0.000	0.077	N/A	0.000	0.115	N/A	Pass
25	0.005	0.090	N/A	0.005	0.135	N/A	Pass
26	0.000	0.071	N/A	0.000	0.107	N/A	Pass
27	0.004	0.083	N/A	0.004	0.125	N/A	Pass
28	0.000	0.066	N/A	0.000	0.099	N/A	Pass
29	0.004	0.078	N/A	0.004	0.116	N/A	Pass
30	0.000	0.061	N/A	0.000	0.092	N/A	Pass
31	0.003	0.073	N/A	0.003	0.109	N/A	Pass
32	0.000	0.058	N/A	0.000	0.086	N/A	Pass
33	0.003	0.068	N/A	0.003	0.102	N/A	Pass
34	0.000	0.054	N/A	0.000	0.081	N/A	Pass
35	0.002	0.064	N/A	0.003	0.096	N/A	Pass
36	0.000	0.051	N/A	0.000	0.077	N/A	Pass
37	0.002	0.061	N/A	0.002	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.002	0.058	N/A	0.002	0.087	N/A	Pass
40	0.000	0.046	N/A	0.000	0.069	N/A	Pass

Voltage Source Verification Data (Run time)

EUT: Equipment under test **Tested by: Tested by**
Test category: Class-A per Ed. 4.0 (2014) (European limits) **Test Margin: 100**
Test date: 2017-11-27 **Start time: PM 3:32:32** **End time: PM 3:42:54**
Test duration (min): 10 **Data file name: H-000055.cts_data**
Comment: Comment
Customer: Customer information

Test Result: Pass **Source qualification: Normal**

Highest parameter values during test:

Voltage (Vrms):	229.45	Frequency(Hz):	50.00
I_Peak (Amps):	0.361	I_RMS (Amps):	0.070
I_Fund (Amps):	0.032	Crest Factor:	5.327
Power (Watts):	7.2	Power Factor:	0.461

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.062	0.459	13.59	OK
3	1.054	2.065	51.04	OK
4	0.018	0.459	3.95	OK
5	0.065	0.918	7.10	OK
6	0.099	0.459	21.49	OK
7	0.067	0.688	9.76	OK
8	0.083	0.459	18.04	OK
9	0.021	0.459	4.52	OK
10	0.039	0.459	8.54	OK
11	0.021	0.229	9.09	OK
12	0.032	0.229	14.12	OK
13	0.019	0.229	8.17	OK
14	0.025	0.229	11.07	OK
15	0.015	0.229	6.61	OK
16	0.025	0.229	10.77	OK
17	0.011	0.229	4.61	OK
18	0.022	0.229	9.39	OK
19	0.010	0.229	4.57	OK
20	0.017	0.229	7.43	OK
21	0.019	0.229	8.43	OK
22	0.006	0.229	2.71	OK
23	0.013	0.229	5.68	OK
24	0.006	0.229	2.73	OK
25	0.010	0.229	4.42	OK
26	0.010	0.229	4.25	OK
27	0.013	0.229	5.48	OK
28	0.009	0.229	3.79	OK
29	0.007	0.229	3.11	OK
30	0.009	0.229	3.75	OK
31	0.007	0.229	3.10	OK
32	0.008	0.229	3.29	OK
33	0.007	0.229	3.04	OK
34	0.007	0.229	3.18	OK
35	0.007	0.229	3.23	OK
36	0.009	0.229	4.06	OK
37	0.011	0.229	4.83	OK
38	0.008	0.229	3.60	OK
39	0.009	0.229	3.87	OK
40	0.013	0.229	5.74	OK

10.4. Voltage Fluctuations and Flicker

Test Date and Condition

Date	November 27, 2017	Temperature:	20.5 ℃	Humidity	39.0 %

Test Location

Harmonic & Flicker Section

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Harmonic & Flicker Tester (Signal conditioning unit)	Schaffner	CCN 1000-1-LR1	X71715	2018.05.31
■	Harmonic & Flicker Tester (Power Source)	Schaffner	NSG 1007	HK53453	2018.05.30

Test Results

The requirements are :

■ MET
☐ NOT MET
☐ NOT APPLICABLE

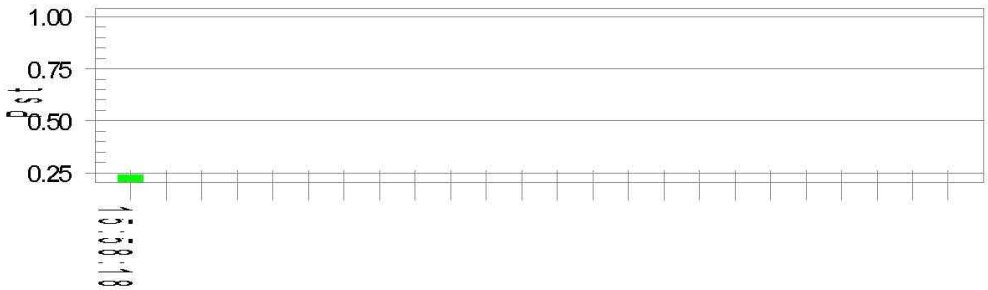
■ Measurement graphs

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

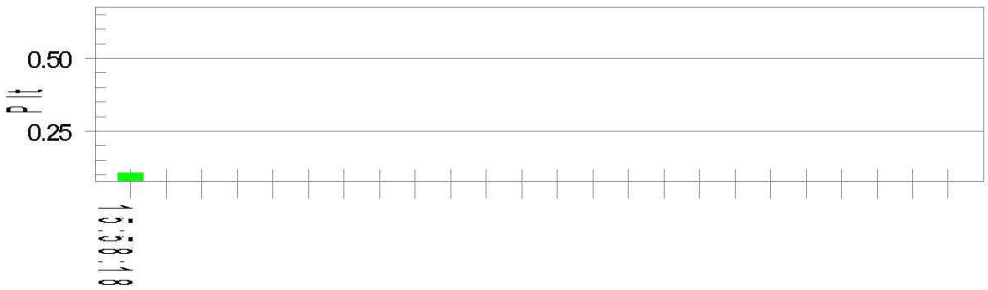
EUT: Equipment under test — **Tested by: Tested by**
Test category: All parameters (European limits) — **Test Margin: 100**
Test date: 2017-11-27 — **Start time: PM 3:47:48** — **End time: PM 3:58:19**
Test duration (min): 10 — **Data file name: F-000056.cts_data**
Comment: Comment
Customer: Customer information

Test Result: Pass — **Status: Test Completed**

Pst_i and limit line — **European Limits**



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.41			
Highest dt (%):	0.00	Test limit (%):	N/A	N/A
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.02	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.242	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.106	Test limit:	0.650	Pass

10.5. Performance Criteria (PC)

A Functional description of the performance criteria, during or as consequence of the immunity testing, shall be provided by the manufacturer and noted in the test report.

Performance criterion A :

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended.

The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Performance criterion B :

the equipment shall continue to operate as intended without operator intervention.

No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacturer, when the apparatus is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

EXAMPLE 1 A data transfer is controlled/checked by parity check or by other means. In the case of malfunctioning, such as caused by a lightning strike, the data transfer will be repeated automatically. The reduced data transfer rate at this time is acceptable.

EXAMPLE 2 During testing, an analogue function value may deviate. After the test, the deviation vanishes.

EXAMPLE 3 In the case of a monitor used only for man-machine monitoring, it is acceptable that some degradation takes place for a short time, such as flashes during the burst application.

EXAMPLE 4 An intended change of the operating state is allowed if self-recoverable.

Performance criterion C :

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

EXAMPLE 1 In the case of an interruption in the mains longer than the specified buffter time, the power supply stops at a defined position and is not left in a “crashed state.” The operator’s decision prompts may be necessary.

EXAMPLE 2 After a programme interruption caused by a disturbance, the processor functions of the equipment stops at a defined position and is not left in a “crashed state.” The operator’s decision prompts may be necessary.

EXAMPLE 3 The test result in an opening of an over-current protection device that is replaced or reset by the operator.

10.6. Electrostatic Discharge

Reference Standard

EN 61000-4-2:2009

Test Date and Condition

Date	November 28, 2017	Temperature	20.9 ℃	Humidity	39.0 %	Pressure	101.7

Test Location

Electrostatic Discharge Section

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	ESD SIMULATOR	NoiseKen	ESS-2002EX	ESS1030198	2018.05.31

Test Specifications

Discharge Factor : ≥ 1 s

Discharge Impedance : 330 Ω / 150 pF

Kind of Discharge : Air, Contact (direct and indirect)

Polarity : Positive and Negative

Number of Discharge : ≥ 10 at all locations

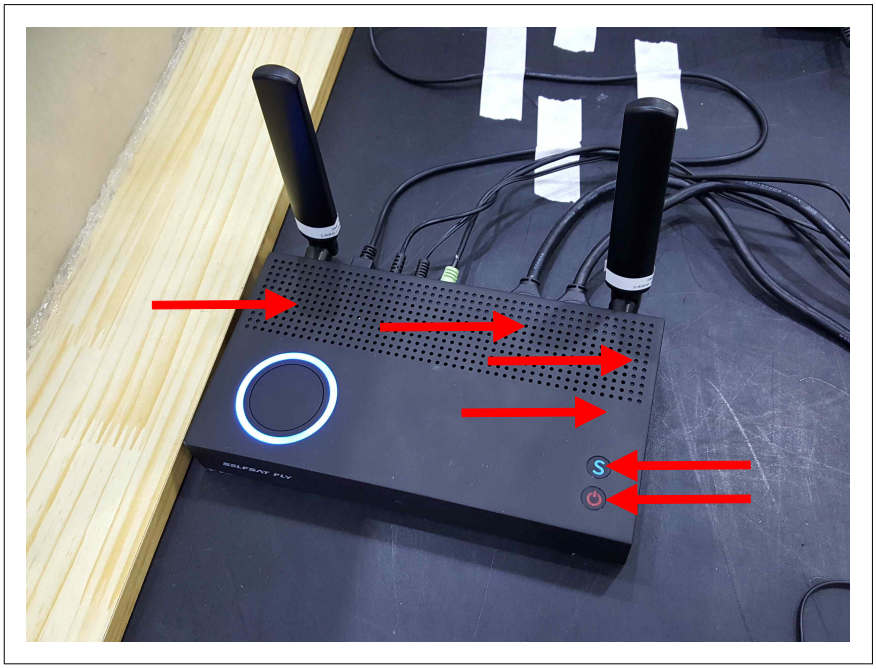
Discharge Voltage :

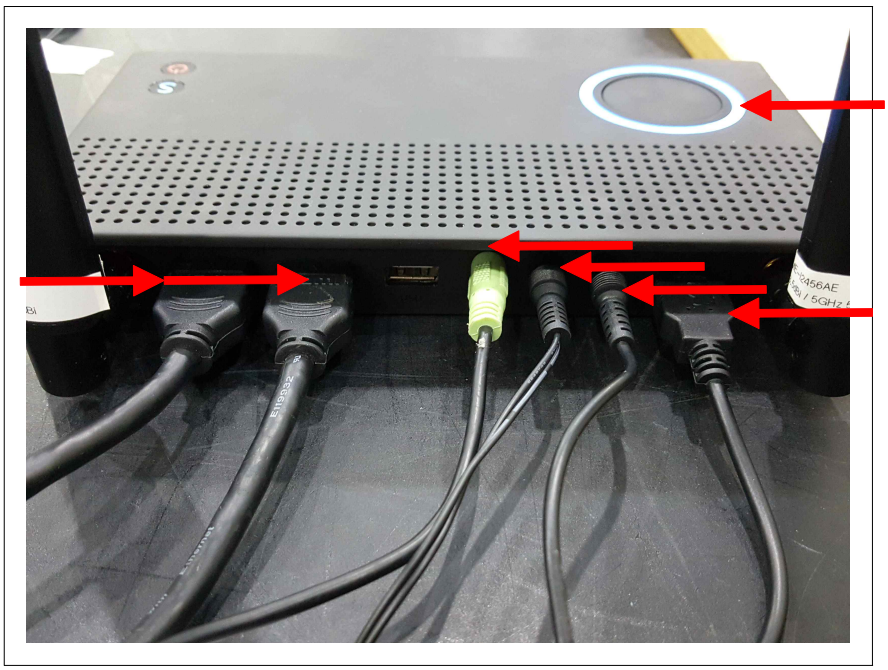
Contact	Air	HCP	VCP
☐ 2 kV	■ 2 kV	☐ 2 kV	☐ 2 kV
■ 4 kV	■ 4 kV	■ 4 kV	■ 4 kV
☐ 6 kV	☐ 6 kV	☐ 6 kV	☐ 6 kV
☐ 8 kV	■ 8 kV	☐ 8 kV	☐ 8 kV

Required Performance Criteria : B

Location of Discharge :

Contact:	→	Air :	→





Test Data

Test method	Test Point	Discharge method	Performance Criteria	Performance Results	Remarks
Indirect	HCP	Contact	B	A	
	VCP		B	A	

Test method	Test Point	Discharge method	Performance Criteria	Performance Results	Remarks
Direct	Enclosure	Air	B	A	
	Button	Air	B	A	
	LAMP	Air	B	A	
	Port	Air	B	A	

Performance Results

A: Normal performance within the specification limits.

B: Temporary degradation or loss of function or performance which is self-recoverable.

C: Temporary degradation or loss of function or performance which requires operator intervention or system reset.

Test Results

■ MET Required Performance Criteria

□ NOT MET Required Performance Criteria

Remark

- There are no deviations from EUT during the test.

10.7. Radiated Electric Field Immunity

Reference Standard

EN 61000-4-3:2006+A2:2010

Test Date and Condition

Date	November 28, 2017	Temperature	18.6 ℃	Humidity	36.0 %	Pressure	101.9

Test Location

Anechoic chamber

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Signal Generator	HP	E4432A	US37231205	2018.10.11
■	Signal Generator	ROHDE& SCHWARZ	SMJ100A	101608	2018.10.11
■	Power Amplifier	Schaffner	CBA9413A	4008	N/A
■	Power Amplifier	INFINITECH	ITA2500-100	2011 02 00001	N/A
■	Power Amplifier	INFINITECH	ITA1500-100	2011 02 00001	N/A
■	Power Amplifier	INFINITECH	ITA4500KL-50	2015090001	N/A
■	Power Meter	Boonton	4232A	56101	2018.05.29
■	Power Sensor	Boonton	51011-EMC	31978	2018.05.29
■	Bi-log Antenna	SCHWARZBECK	VULB9163	760	N/A
■	Horn Antenna	SCHWARZBECK	BBHA 9120D	831	2018.07.21

Test Specifications

Antenna Distance : 3 m

	Frequency Range	Field Strength
■	80 MHz to 6 000 MHz	3 V/m

Modulation : AM, 80 %, 1 kHz sine wave
Frequency step : 1 % step
Dwell time : 3 s
Required Performance Criteria : A

Test Data

No.	Test Point	Performance Criteria	Performance Results		Remarks
			Horizontal	Vertical	
1	Front side	A	A	A	
2	Rear side	A	A	A	
3	Right Side	A	A	A	
4	Left Side	A	A	A	

Performance Results

A: Normal performance within the specification limits.

B: Temporary degradation or loss of function or performance which is self-recoverable.

C: Temporary degradation or loss of function or performance which requires operator intervention or system reset.

Test Results

■ MET Required Performance Criteria

□ NOT MET Required Performance Criteria

Remark

- There are no deviations from EUT during the test.

10.8. Electrical Fast Transients / Bursts

Reference Standard

EN 61000-4-4:2012

Test Date and Condition

Date	November 28, 2017	Temperature	20.5 ℃	Humidity	39.0 %	Pressure	101.6

Test Location

Bust/Surge/Voltage Dip and Short Interrupts section

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
☐	Coupling Clamp	EM Test	HFK	1208-79	2018.05.30
■	Motor driven AC source	EM Test	MV2616	V0902104547	2018.05.30
■	Ultra Compact Simulator	EM Test	UCS 500 N5T	P1317117973	2018.05.30

Test Specifications

Pulse Amplitude & Polarity(Power Line) : ■ ± 1.0 kV ☐ ± 2.0 kV ☐ ± 4.0 kV
Pulse Amplitude & Polarity(Signal Line) : ☐ ± 0.5 kV ☐ ± 1.0 kV ☐ ± 2 kV
Burst Period : 300 ms± 20 %
Repetition Rate :
Duration of Test Voltage : 60 s
Rise time : 5.5 ns ± 30 %
Impulse duration : 45 ns ± 30 %
Burst duration : 15 ms ± 20 %
Required Performance Criteria : B

.

Test Data

■ Power Port

Test Point	Performance Criteria	Performance Results		Remarks
		+Burst	-Burst	
L1	B	A	A	
L2	B	A	A	
PE	B	N/A	N/A	
L1 - L2	B	A	A	
L1 - PE	B	N/A	N/A	
L2 - PE	B	N/A	N/A	
L1 - L2 - PE	B	N/A	N/A	

☐ Signal port

Test Point	Performance Criteria	Performance Results		Remarks
		+Burst	-Burst	

Performance Results

A: Normal performance within the specification limits.

B: Temporary degradation or loss of function or performance which is self-recoverable.

C: Temporary degradation or loss of function or performance which requires operator intervention or system reset.

Test Results

■ MET Required Performance Criteria

☐ NOT MET Required Performance Criteria

Remark

- There are no deviations from EUT during the test.

10.9. Surge Transients

Reference Standard

EN 61000-4-5:2014

Test Date and Condition

Date	November 28, 2017	Temperature	20.5 ℃	Humidity	38.0 %	Pressure	101.7

Test Location

Bust/Surge/Voltage Dip and Short Interrupts section

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Motor driven AC source	EM Test	MV2616	V0902104547	2018.05.30
■	Ultra Compact Simulator	EM Test	UCS 500 N5T	P1317117973	2018.05.30
□	CDN	EM Test	CNV 504N	V0902104546	N/A
□	CDN	EM Test	CNV 504S1	V0902104549	N/A

Test Specifications

Source Impedance : 12 Ω for line to line and 2 Ω for line to earth

Surge Amplitude : Line to Line

□ ± 0.5 kV ■ ± 1.0 kV

Line to Earth

□ ± 0.5 kV □ ± 1.0 kV □ ± 2.0 kV

Signal Line

□ ± 0.5 kV □ ± 1.0 kV

Number of Surges : 5 surge per angle

Angle : 0°, 90°, 180°, 270°

Repetition Rate : 1surge per 20s

Open-circuit voltage : 1.2/50 μs

Short-circuit current time : 8/20 μs

Required Performance Criteria : B

Test Data

■ Power Port

Test Point	Performance Criteria	Performance Results		Remarks
		+Surge	-Surge	
L1 - L2	B	A	A	
L1 - PE	B	N/A	N/A	
L2 - PE	B	N/A	N/A	

☐ Signal port

Test Point	Performance Criteria	Performance Results		Remarks
		+Surge	-Surge	

Performance Results

A: Normal performance within the specification limits.

B: Temporary degradation or loss of function or performance which is self-recoverable.

C: Temporary degradation or loss of function or performance which requires operator intervention or system reset.

Test Results

■ MET Required Performance Criteria

☐ NOT MET Required Performance Criteria

Remark

- There are no deviations from EUT during the test.

10.10. Conducted Disturbance Immunity

Reference Standard

EN 61000-4-6

Test Date and Condition

Date	November 28, 2017	Temperature	18.7 ℃	Humidity	36.0 %	Pressure	101.6

Test Location

Shield Room

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Continuous Wave Simulator	EM Test	CWS 500N1	V1143110967	2018.05.30
■	CDN	EM Test	CDN M2/M3	P1509150897	2018.05.30
■	Attenuator	ETI	RFA100NFF6	N/A	2018.05.29
□	EM Clamp	Schaffner	KEMZ801	14302	2018.10.11

Test Specifications

Frequency range : 150 kHz to 80 MHz
Voltage level : □ 1 Vrms ■ 3 Vrms □ 10 Vrms
Modulation : AM, 80 %, 1 kHz sine wave
Frequency step : 1 % step
Dwell time : 3 s
Required Performance Criteria : A

Test Data

■ Power Port

Coupling location	Coupling Method	Performance Criteria	Performance Results	Remarks
Power	CDN(M2)	A	A	-

□ Signal port

Coupling location	Coupling Method	Performance Criteria	Performance Results	Remarks

Performance Results

A: Normal performance within the specification limits.

B: Temporary degradation or loss of function or performance which is self-recoverable.

C: Temporary degradation or loss of function or performance which requires operator intervention or system reset.

Test Results

■ MET Required Performance Criteria

□ NOT MET Required Performance Criteria

Remark

- There are no deviations from EUT during the test.

10.11. Power Frequency Magnetic Field Immunity

Reference Standard

EN 61000-4-8

Test Date and Condition

Date		Temperature		Humidity		Pressure	

Test Location

Bust/Surge/Voltage Dip and Short Interrupts section

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
☐	MotorVariac	EM Test AG	MV2616	V0902104547	2018.05.30
☐	Ultra Compact Simulator	EM Test	UCS 500 N5T	P1317117973	2018.05.30
☐	Magnetic Field Generator	EM Test AG	MC2630	0608-85/0908-07	2018.05.30
☐	Magnetic Coil	EM Test AG	MS100	0608-85/0908-07	2018.05.30

Test Specifications

Field Strength : ☐ 1 A/m ☐ 3 A/m ☐ 10 A/m
Frequency : ☐ 50 Hz ☐ 60 Hz
Required Performance Criteria : A

Test Data

☐ Immersion

Coil orientation	Performance Criteria	Performance Results	Remarks

☐ Proximity

Coil orientation	Performance Criteria	Performance Results	Remarks

Performance Results

A: Normal performance within the specification limits.

B: Temporary degradation or loss of function or performance which is self-recoverable.

C: Temporary degradation or loss of function or performance which requires operator intervention or system reset.

Test Results

☐ MET Required Performance Criteria

☐ NOT MET Required Performance Criteria

Remark

Not Applicable

EUT is not affected by magnetic fields.

10.12. Voltage Dips and Short Interrupts

Reference Standard

EN 61000-4-11:2014

Test Date and Condition

Date	November 28, 2017	Temperature	20.6 ℃	Humidity	38.0 %	Pressure	101.7

Test Location

Bust/Surge/Voltage Dip and Short Interrupts section

Test Equipment

	Description	Manufacturer	Model Number	Serial Number	Cal. Due
■	Motor driven AC source	EM Test	MV2616	V0902104547	2018.05.30
■	Ultra Compact Simulator	EM Test	UCS 500 N4	V0902104544	2018.05.30

Test Specifications & Performance Results

	Test level		Duration [in Period/ms (50 Hz)	Performance Criteria	Performance Result
■	dips	0 %	■ 0.5 / 10	B	A
■		0 %	■ 1 / 20	B	A
■		70 %	■ 25 / 500	B	A
■	Interrupts	0 %	■ 250 / 5000	C	B

Performance Results

A: Normal performance within the specification limits.

B: Temporary degradation or loss of function or performance which is self-recoverable.

C: Temporary degradation or loss of function or performance which requires operator intervention or system reset.

Test Results

■ MET Required Performance Criteria

□ NOT MET Required Performance Criteria

Remark

- There are no deviations from EUT during voltage dip test(100%-0.5 and 1 period, 30%-25 period).
- The power of EUT took on and off repeatedly when voltage interrupts test(100%-250 period). After this test, EUT was operated normally.

APPENDIX A - Test Setup Photographs

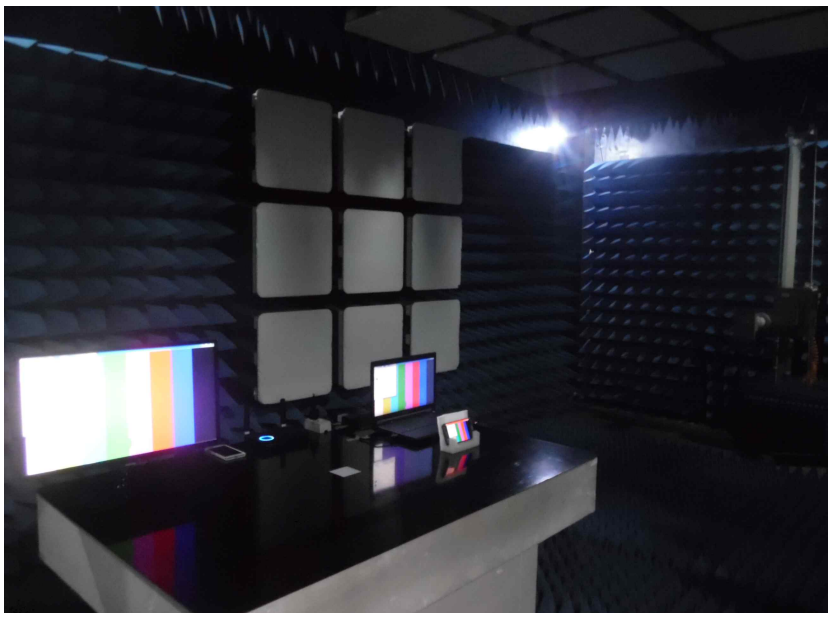
Conducted Disturbance Voltage (Main Port)

Conducted Disturbance Voltage (Communication Port)

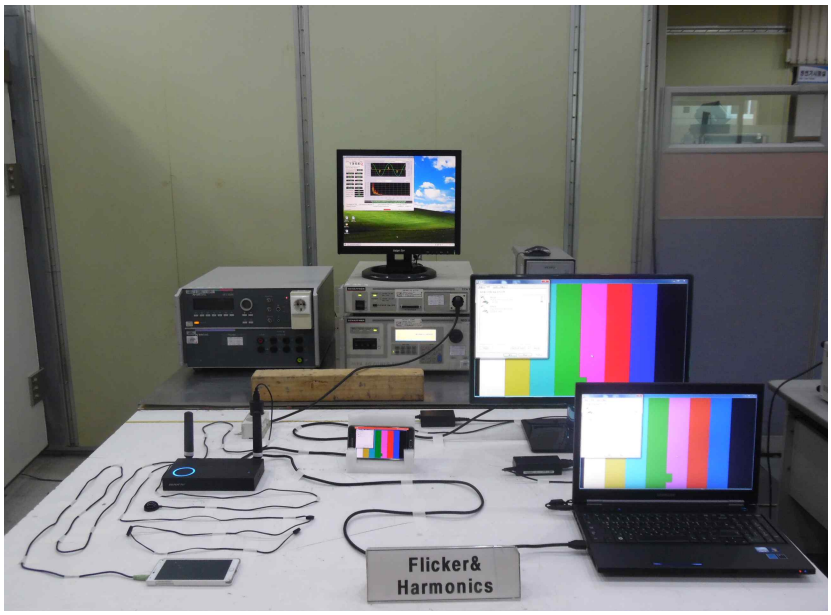
Not Applicable

Radiated Electric Field Emissions (30 - 1 000 MHz)

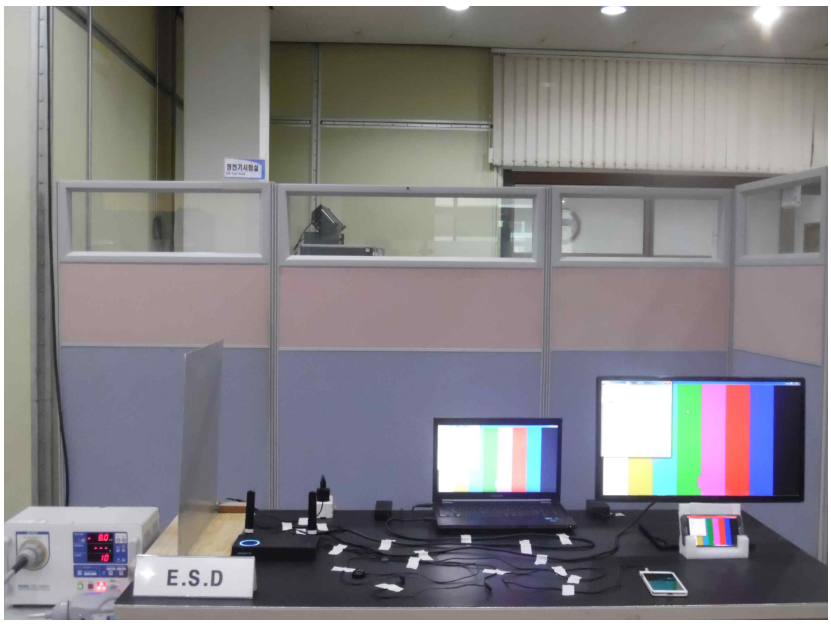
Radiated Electric Field Emissions (1 000- 6 000 MHz)



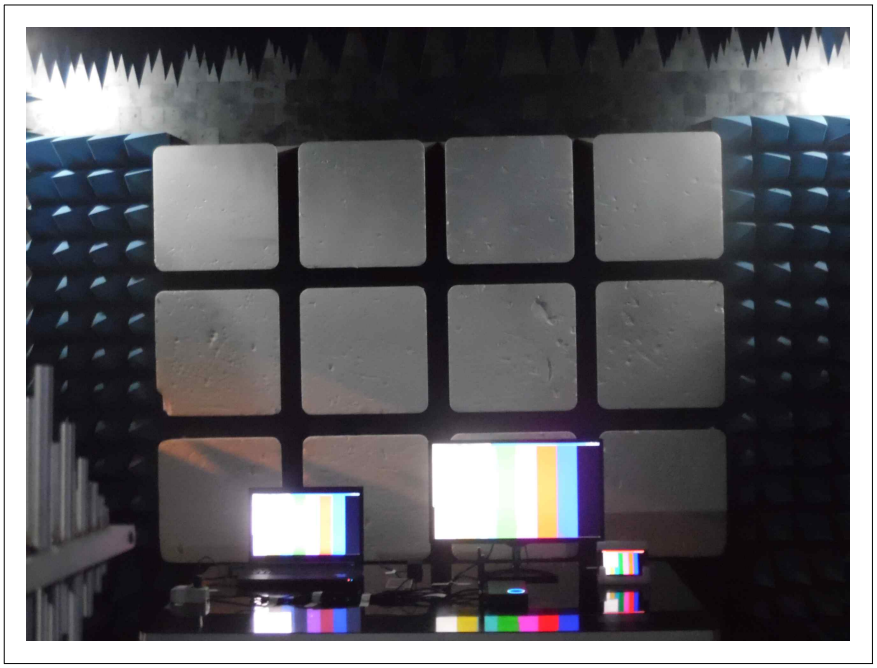
Harmonic & Flicker



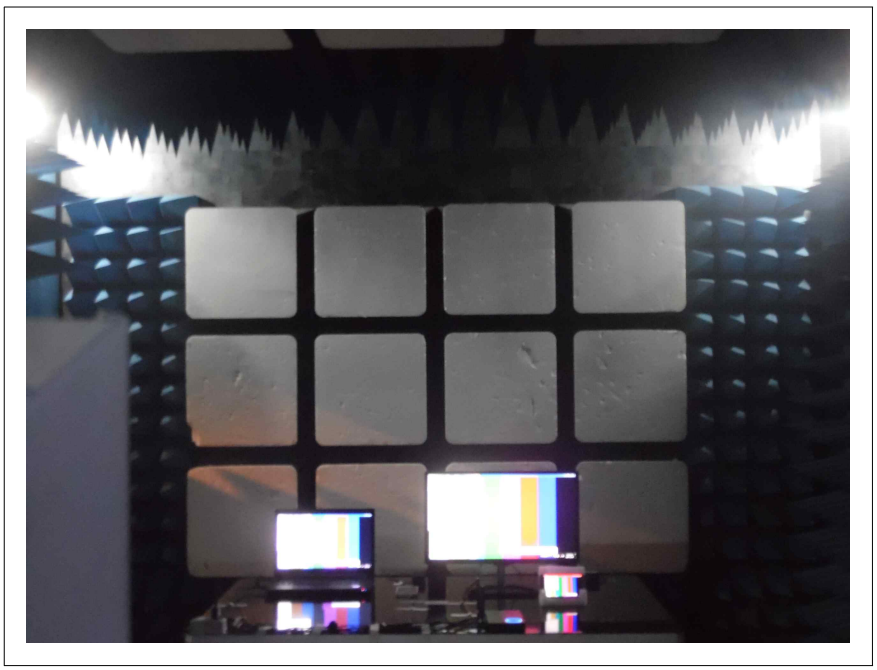
Electrostatic Discharge



Radiated Electric Field Immunity [80 - 1 000 MHz]



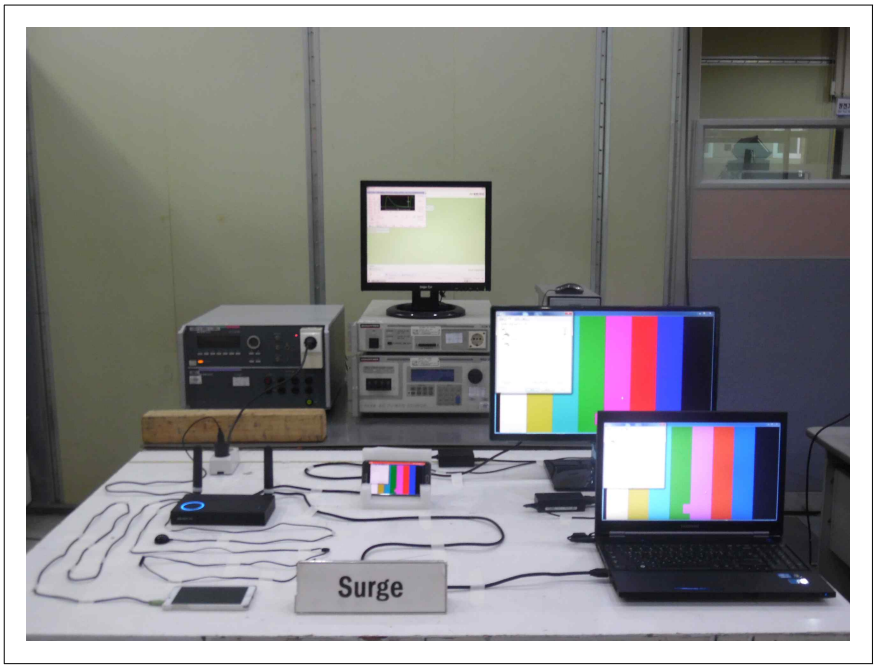
Radiated Electric Field Immunity [1 000 − 6 000 MHz]



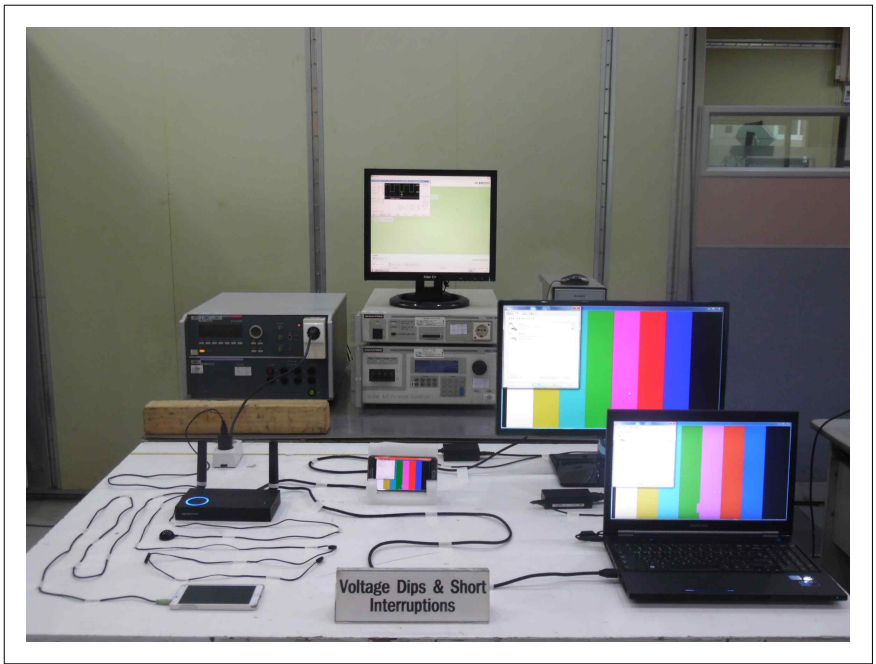
Electrical Fast Transients / Bursts

Surge Transients

Conducted Disturbance Immunity



Voltage Dips, Short Interrupts

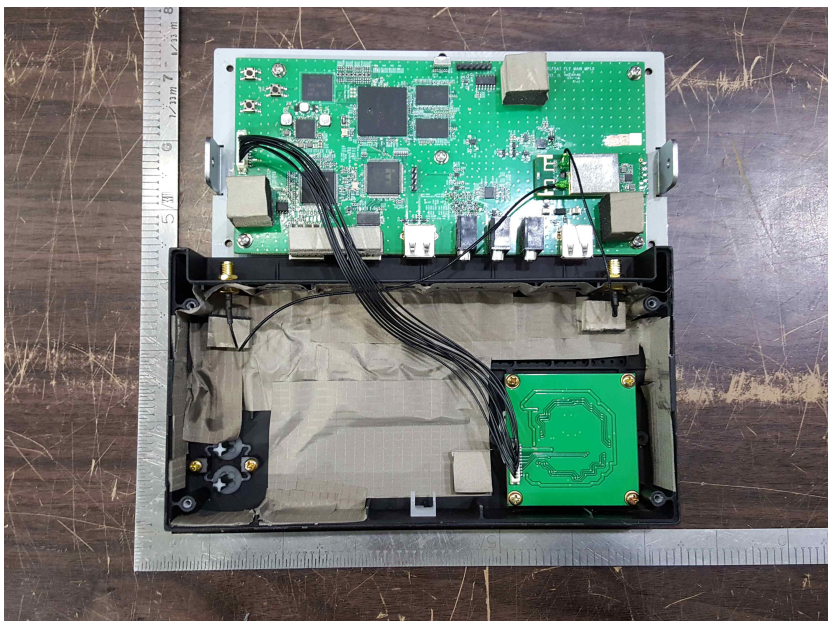


APPENDIX B - EUT Photographs

EUT : Front View

EUT : Rear View

EUT : Inside View



EC Declaration of Conformity

EC Declaration of Conformity

According to

LVD Directive 2014/35/EU

For the following

Product	**:**	**SELFSAT FLY**
Model Name	**:**	**SELFSAT FLY-100**
Variant Model Name	**:**	**SELFSAT FLY-200**
Applicant Name	**:**	**I DO IT Co. Ltd.**
Applicant Address	**:**	**#637, Smart-Hub Industry-University Convergence Center, 237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea (429-793)**
Manufactured Name	**:**	**Same as above**
Manufactured Address	**:**	**Same as above**

We hereby declare, Low Voltage Directive (2014/35/EU) is fulfilled, as laid out in the guide set down by the member states of the EEC Commission.

This declaration is valid for all samples that are part of this declaration, which are manufactured according to the production charts appendix.

The standards relevant for the evaluation of LVD requirements are as follows:

Test Standard

EN 60950-1: 2006 + A12: 2011 + A2: 2013

Date of issue : September 7, 2017

I DO IT Co., Ltd.
#637, Smart-Hub Industry-University Convergence Center
237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea (429-793)

(Name and signature of authorized person)

Korea Standard Testlab
107-27, Jangdeokdong-gil, Namyang-eup, Hwaseong-si, Gyeonggi-do18281, Korea
Tel : +82-31-356-7333 FAX : +82-31-356-7303

EN 60950-1
Information technology equipment – Safety –
Part 1: General requirements

Report No	:	KST-CSA-170103
Date of issue	:	2017-12-07
Total number of pages	:	38 pages
Testing laboratory	:	Korea Standard Testlab
Address	:	107-27, Jangdeokdong-gil, Namyang-eup,Hwasung-si, Gyeonggi-do 18281, Korea
Applicant	:	I DO IT Co., Ltd.
Address	:	#637, Smart-Hub Industry-University Convergence Center, 237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea
Manufacturer	:	I DO IT Co., Ltd.
Address	:	#637, Smart-Hub Industry-University Convergence Center, 237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea
Standard	:	EN 60950-1: 2006 + A12: 2011 + A2: 2013
Test Report Form No.	:	SAFETY-EN 60950-1(ver. 2)
TRF modified by	:	KST
Procedure deviation	:	N/A
Non-standard test method	:	N/A
National deviations	:	N/A

Tested by (+ signature)	Hyun-Il Shin / Engineer	Reviewed by (+ signature)	Yong-Seok You / Technical Manager

Summary of testing:
The item tested was found to be in compliance with the test standard of EN 60950-1: 2006 + A12: 2011 + A2: 2013

Tests performed(name of test and test clause):	**Testing location:**
Input current (1.6.2) Durability (1.7.11) Mechanical strength (4.2) Temperature (4.5.2)	Korea Standard Testlab 107-27, Jangdeokdong-gil, Namyang-eup, Hwaseong-si, Gyeonggi-do18281, Korea

Summary of compliance with National Differences: EU Group Differences

Copy of marking plate:

idbit

Model: SELFSAT FLY-100
Input: DC5.0 V ⎓, 2 A
S/No.:

CE

I DO IT Co., Ltd.

Made in Korea

Test item particulars .....:

Equipment mobility.....:■ movable
Connection to the mains ..... :■ not directly connected to the mains
Operating condition ..... :■ continuous
Access location ……..... :■ operator accessible
Overvoltage category (OVC) …….. :■ other
Mains supply tolerance (%) or absolute mains supply values ……. …… :No
Tested for IT power systems ……... :■ No
IT testing, phase-phase voltage (V) ……:N/A
Class of equipment …… :■ Class III
Considered current rating (A) …….. :No
Pollution degree (PD) …… :■ PD 2
IP protection class …….…… : IPX0
Altitude during operation (m) …… :< 2000
Altitude of test laboratory (m) ……... :< 2000
Mass of equipment (kg) …….…… :0.53

Possible test case verdicts:

- test case does not apply to the test object ..... : : N/A
- test case does not tested to the test object.... : : N/T
- test object does meet the requirement..... : : P(Pass)
- test object does not meet the requirement..... : : F(Fail)

Testing:

Receipt No. ..... : KST-2017-N-170353
Date of receipt of test item..... : : 2017-11-28
Date (s) of performance of tests..... : : 2017-11-30 to 2017-12-07

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.
Throughout this report a point is used as the decimal separator.

General product information:

This product is wireless video streamer supplied by 5V AC/DC adapter through USB connector, Class III and movable equipment and non-metallic enclosure applied.

Attachment: Photographs – 2 pages

NOTE: User manual is provided with the product.

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		**P**
1.5	Components		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1) Components, which are found to affect safety aspects, comply with the requirements of this standard or comply with the safety requirement of the relevant component standards	P
1.5.2	Evaluation and testing of components	Components, which are certified for IEC and/or national standards, are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment	P
1.5.3	Thermal controls	No thermal controls	N/A
1.5.4	Transformers	No transformers	N/A
1.5.5	Interconnecting cables	HDMI, USB cables used	N/A
1.5.6	Capacitors bridging insulation	No capacitors bridging insulation	N/A
1.5.7	Resistors bridging insulation	No resistors bridging insulation	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for power systems	Class III equipment: AC/DC adaptor used separately	N/A
1.5.9	Surge suppressors	No surge suppressors	N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.6	Power interface		P
1.6.1	AC power distribution systems	Class III equipment: No AC power distribution systems	N/A
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment		N/A
1.6.4	Neutral conductor		N/A
1.7	Marking and instructions		P
1.7.1	Power rating		P
	Rated voltage(s) or voltage range(s) (V) …… … :	5 V	P
	Symbol for nature of supply, for d.c. only ……... :	DC(⎓)	P
	Rated frequency or rated frequency range (Hz) … :		N/A
	Rated current (mA or A) …… :	2 A	P
	Manufacturer's name or trade-mark or identification mark …….. :	I DO IT Co., Ltd.	P
	Model identification or type reference ……..… :	SELF SAT FLY-100	P
	Symbol for Class II equipment only…….. :	Class III equipment	N/A
	Other markings and symbols ……... :	CE	P
1.7.2	Safety instructions and marking		P
1.7.2.1	General		P
1.7.2.2	Disconnect devices	No disconnect devices	N/A
1.7.2.3	Overcurrent protective device	No overcurrent protective device	N/A
1.7.2.4	IT power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone	No ozone	N/A
1.7.3	Short duty cycles	Continuous	N/A
1.7.4	Supply voltage adjustment …… :	No supply voltage adjustment	N/A
	Methods and means of adjustment; reference to installation instructions ……... :		N/A
1.7.5	Power outlets on the equipment ……... :	No power outlets	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ……... :	No fuse	N/A
1.7.7	Wiring terminals	No wiring terminals	N/A
1.7.7.1	Protective earthing and bonding terminals ……...:		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c.mains supply conductors		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8	Controls and indicators	No controls and indicators	N/A
1.7.8.1	Identification, location and marking ……..... :	The function of controls affecting safety is obvious regardless of language	P
1.7.8.2	Colours ……..... :	Only functional indicators use colour	P
1.7.8.3	Symbols according to IEC 60417 ……..... :	⏻ STAND-BY (60417-1-IEC-5009)	P
1.7.8.4	Markings using figures ……..... :		N/A
1.7.9	Isolation of multiple power sources ……..... :		N/A
1.7.10	Thermostats and other regulating devices ……..…. :	No thermostats and other regulating devices	N/A
1.7.11	Durability	Withstand the durability test	P
1.7.12	Removable parts	Not be placed on removable parts	P
1.7.13	Replaceable batteries	None	N/A
	Language(s) ……:		N/A
1.7.14	Equipment for restricted access locations ……..... :		N/A

2	**PROTECTION FROM HAZARDS**		**N/A**
2.1	Protection from electric shock and energy hazards		N/A
2.1.1	Protection in operator access areas	Class III equipment: No electric shock and energy hazards	N/A
2.1.1.1	Access to energized parts		N/A
	Test by inspection ……..... :		N/A
	Test with test finger (Figure 2A) ……..... :		N/A
	Test with test pin (Figure 2B) ……..... :		N/A
	Test with test probe (Figure 2C) ……..... :	No TNV circuit	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm) :	**(see appended table 2.10.5)**	—
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards ……..... :		N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Measured voltage (V); time-constant (s) …… :		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.8	Energy hazards - d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply ……... :		N/A
2.1.1.9	Audio amplifiers …….. :		N/A
2.1.2	Protection in service access areas		N/A
2.1.3	Protection in restricted access locations		N/A
2.2	SELV circuits		P
2.2.1	General requirements		P
2.2.2	Voltages under normal conditions (V) ……..... :	Not exceed 42.4 Vpeak or 60 Vdc	P
2.2.3	Voltage under fault conditions (V) ……. ……. :	Not exceed 42.4 Vpeak or 60 Vdc	P
2.2.4	Connection of SELV circuits to other circuits ……... :	HDMI, USB connection only	P
2.3	TNV circuits		N/A
2.3.1	Limits	No TNV circuits	N/A
	Type of TNV circuits ……. ::		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other construction …….. :		N/A
2.3.3	Separation from hazardous voltages		N/A
	Insulation employed ……... ::		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ……. ::		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	Limited current circuits		N/A
2.4.1	General requirements		N/A
2.4.2	Limit values	Class III equipment : No LCC	N/A
	Frequency (Hz) …… : :		—
	Measured current (mA)…… : :		—

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Measured voltage (V)……..…… :		—
	Measured circuit capacitance (nF or uF) ……... :		—
2.4.3	Connection of limited current circuits to other circuits		N/A
2.5	Limited power sources		N/A
	a) Inherently limited output	Class III equipment: No LPS	N/A
	b) Impedance limited output		N/A
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA) ……..……: :		—
	Current rating of overcurrent protective device (A) . :		—
2.6	Provisions for earthing and bonding		N/A
2.6.1	Protective earthing	Class III equipment: No provisions for earthing and bonding	N/A
2.6.2	Functional earthing		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ……..……..…: :		—
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A),cross-sectional area (mm^2), AWG ……..……..……..…: :		—
	Protective current rating (A), cross-sectional area (mm^2), AWG … : :		—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) …… :		N/A
2.6.3.5	Colour of insulation …… :		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rated current (A), type, nominal thread diameter (mm) ……..……..……: :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	Overcurrent and earth fault protection in primary circuits		N/A
2.7.1	Basic requirements	Class III equipment: No primary circuits	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices …… :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel …….. :		N/A
2.8	Safety interlocks		N/A
2.8.1	General principle	No safety interlocks	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches and relays		N/A
2.8.7.1	Contact gaps (mm) …… :		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.8.7.4	Electric strength test	(see appended table 5.2)	N/A
2.8.8	Mechanical actuators		N/A
2.9	Electrical insulation		N/A
2.9.1	Properties of insulating materials		N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (℃) …….. :		—
2.9.3	Grade of insulation		N/A
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used ……...:		—
2.10	Clearances, creepage distances and distances through insulation		N/A
2.10.1	General	Class III equipment: No requiring clearances, creepage distances and distances through insulation	N/A
2.10.1.1	Frequency ……..…….. :		N/A
2.10.1.2	Pollution degrees …… :		N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply ……..…… :		N/A
	b) Earthed d.c. mains supplies …….. :		N/A
	c) Unearthed d.c. mains supplies ……... :		N/A
	d) Battery operation ……... ……..... :		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.5	Clearances in circuits having starting pulses	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.3.6	Transients from a.c. mains supply …….. :		N/A
2.10.3.7	Transients from d.c. mains supply …….. :		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems …….. :		N/A
2.10.3.9	Measurement of transient voltage levels		N/A
	a) Transients from a mains supply……..…….. :		N/A
	For an a.c. mains supply ……. …….. :		N/A
	For an d.c. mains supply ……. …….. :		N/A
	b) Transients from a telecommunication networ.... :		N/A
2.10.4	Creepage distances		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index :		N/A
	CTI tests …….……... : **:**	**Material group IIIb assumed to be used**	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5	Cemented joints	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.5.6	Thin sheet material - General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) ……..…… :		N/A
2.10.5.8	Non-separable thin sheet material		N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test **:**	**(see appended table 2.10.5)**	—
2.10.5.10	Thin sheet material – alternative test procedure		N/A
	Electric strength test **:**	**(see appended table 2.10.5)**	—
2.10.5.11	Insulation in wound components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5.12	Wire in wound components		N/A
	Working voltage …….. :		N/A
	a) Basic insulation not under stress ……..... :		N/A
	b) Basic, supplementary, reinforced insulation ..... :		N/A
	c) Compliance with Annex U ……..... :		N/A
	Two wires in contact inside wound component; angle between 45° and 90° ……..... :		N/A
2.10.5.13	Wire with solvent-based enamel in wound components		N/A
	Electric strength test :	**(see appended table 2.10.5)**	—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage …… :		N/A
	-Basic insulation not under stress ……... :		N/A
	-Supplementary, reinforced insulation ……..…... :		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.2	Coated printed boards	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.3	Insulation between conductors on the same inner surface of printed board	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board		N/A
	Distance through insulation	(see appended table 2.10.5)	N/A
	Number of insulation layers (pcs) ……..…… :		N/A
2.10.7	Component external terminations	(see appended table 2.10.3 and 2.10.4)	N/A
2.10.8	Tests on coated printed boards and coated components		N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test	(see appended table 5.2)	N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling		N/A
2.10.10	Test for pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.10.12	Enclosed and sealed parts		N/A

3	WIRING, CONNECTIONS AND SUPPLY		N/A
3.1	General		N/A
3.1.1	Current rating and overcurrent protection	Class III equipment: No wiring, connections and supply	N/A
3.1.2	Protection against mechanical damage		N/A
3.1.3	Securing of internal wiring		N/A
3.1.4	Insulation of conductors	(see appended table 5.2)	N/A
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced threat screws		N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring		N/A

3.2	Connection to a mains supply		N/A
3.2.1	Means of connection	Class III equipment: No direct connection to a mains supply	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) ……. : :		—
3.2.4	Appliance inlets		N/A
3.2.5.1	AC power supply cords	(see appended table 1.5.1)	N/A
	Type …… : :		—
	Rated current (A), cross-sectional area (mm^2), AWG …… : :		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N)…… : :		—

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Longitudinal displacement (mm) ……..…… : :		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) ……..…… : :		—
	Radius of curvature of cord (mm)…….. : :		—
3.2.9	Supply wiring space		N/A

3.3	Wiring terminals for connection of external conductors		N/A
3.3.1	Wiring terminals	No wiring terminals for connection of external conductors	N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ……..…… : :		—
3.2.5	Wiring terminal sizes		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ……..…… : :		—
3.3.6	Wiring terminal design		N/A
3.3.7	Grounding of wiring terminals		N/A
3.3.8	Stranded wire		N/A

3.4	Disconnection from the mains supply		N/A
3.4.1	General requirement	Class III equipment: No disconnection from the mains supply	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles – single-phase and d.c. equipment		N/A
3.4.7	Number of poles – three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	Interconnection of equipment		N/A
3.5.1	General requirements	No interconnection of equipment	N/A
3.5.2	Types of interconnection circuits ……..… :		N/A
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		N/A
4	**PHYSICAL REQUIREMENT**		**P**
4.1	Stability		N/A
	Angle of 10°	Movable and transportable	N/A
	Test force (N) …….. :		N/A
4.2	Mechanical strength		P
4.2.1	General		P
4.2.2	Steady force test, 10 N	No hazard	P
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	No hazard	P
4.2.5	Impact test	No hazard	P
	Fall test	No hazard	P
	Swing test	No hazard	P
4.2.6	Drop test; height (mm) ……...…. :	750	P
4.2.7	Stress relief test	70 ℃ / 7 h: No shrinkage or distortion	P
4.2.8	Cathode ray tubes	None	N/A
	Picture tube separately certified …….. :	(see separate test report or attached certificate)	N/A
4.2.9	High pressure lamps	None	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) …... :		N/A
4.3	Design and construction		P
4.3.1	Edges and corners	Rounded and smoothed	P
4.3.2	Handles and manual controls; force (N) …… :	No handles and manual controls	N/A

EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.3	Adjustable controls	No adjustable controls	N/A
4.3.4	Securing of parts	Secured firmly	P
4.3.5	Connection by plugs and sockets		N/A
4.3.6	Direct plug-in equipment	No direct plug-in equipment	N/A
	Torque ..……..……..…….. : :		—
	Compliance with the relevant mains plug standard……..…. :		N/A
4.3.7	Heating elements in earthed equipment	No heating elements	N/A
4.3.8	Batteries	(see appended table 5.3)	N/A
	-Overcharging of a rechargeable battery		N/A
	-Unintentional charging of a non-rechargeable battery		N/A
	-Reversed charging rate for any battery		N/A
	-Excessive discharging rate for any battery		N/A
4.3.9	Oil and grease	No oil and grease	N/A
4.3.10	Dust, powders, liquids and gases	No dust, powders, liquids and gases	N/A
4.3.11	Containers for liquids or gases	No containers for liquids or gases	N/A
4.3.12	Flammable liquids …… :	No flammable liquids	N/A
	Quantity of liquid (ℓ) …… :		N/A
	Flash point (℃) …… :		N/A
4.3.13	Radiation	The equipment use IR flasher or extender for remote control optionally	P
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) ….……..…….. : :		—
	Measured high-voltage (kV) ….……..…….. : :		—
	Measured focus voltage (kV)….……..…….. : :		—
	CRT markings ……..……..…….. ::		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability classification …… :		N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ……. :		N/A
4.3.13.5	Laser (including LEDs)	Low power indicator	N/A
	Laser class ….……..... ::		—

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13.6	Other types …… :		N/A
4.4	Protection against hazardous moving parts		N/A
4.4.1	General	No moving parts	N/A
4.4.2	Protection in operator access areas ……..… :		N/A
4.4.3	Protection in restricted access locations……...… :		N/A
4.4.4	Protection in service access areas ……..…… :		N/A
4.5	Thermal requirements		P
4.5.1	General		P
4.5.2	Temperature tests		P
	Normal load condition per Annex ……..…… : **:**	**According to L.7**	—
4.5.3	Temperature limits for material	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat …… :		N/A
4.6	Openings in enclosures		P
4.6.1	Top and side openings	No openings	P
	Dimensions (mm)……..…… :		N/A
4.6.2	Bottoms of fire enclosures	Class III equipment: No requiring a fire enclosure	N/A
	Construction of the bottom, dimensions (mm) …… :		—
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ……. :		—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts …… :		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (℃), time (weeks)……. :		—
4.7	Resistance to fire		P
4.7.1	Reducing the risk of ignition and spread of flame		P
	Method 1, selection and application of components wiring and materials	(see appended table 1.5.1)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	N/A
4.7.2	Conditioning for a fire enclosure	Class III equipment: No requiring a fire enclosure	N/A
4.7.2.1	Parts requiring a fire enclosure		N/A
4.7.2.2	Parts not requiring a fire enclosure		N/A
4.7.3	Materials		N/A
4.7.3.1	General		N/A
4.7.3.2	Materials for fire enclosures		N/A
4.7.3.3	Materials for components and other parts outside fire enclosures		N/A
4.7.3.4	Materials for components and other parts inside fire enclosures		N/A
4.7.3.5	Materials for air filter assemblies	No air filter assemblies	N/A
4.7.3.6	Materials used in high-voltage components	No high-voltage components	N/A

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		**N/A**
5.1	Touch current and protective conductor current		N/A
5.1.1	General	Class III equipment: No requiring touch current test	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instruments		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V) **……..…… :** **:**		—
	Measured touch current (mA)…..……..…… : **:**		—
	Max. allowed touch current (mA) **……..…… :** **:**		—
	Measured protective conductor current (mA) **…..… :** **:**		—

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Clause	Requirement + Test	Result - Remark	Verdict
	Max. allowed protective conductor current (mA) …. : :		—
5.1.7	Equipment with touch current exceeding 3.5 mA		N/A
5.1.7.1	General ……... :		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	No telecommunication networks and cable distribution systems	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) ……..…… : :		—
	Measured touch current (mA)…..……..…… : :		—
	Max. allowed touch current (mA) ……..…… : :		—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a)EUT with earthed telecommunication ports …… :		N/A
	b)EUT whose telecommunication ports have no reference to protective earth		N/A
5.2	Electric strength		N/A
5.2.1	General	Class III equipment: No requiring electric strength test	N/A
5.2.2	Test procedure		N/A
5.3	Abnormal operating and fault conditions		N/A
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors	(see appended Annex B)	N/A
5.3.3	Transformers	(see appended Annex C)	N/A
5.3.4	Functional insulation ……..… :		N/A
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE…….. :	(see separate test report IEC/EN 60065)	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	N/A
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	(see appended table 5.3)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.1	During the tests		N/A
5.3.9.2	After the tests		N/A

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		**N/A**
6.1	Protection of telecommunication network service persons and users of other equipment connected to the network, from hazards in the equipment		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements	No connection to TNV	N/A
	Supply voltage (V) **…….. :**		—
	Current in the test circuit (mA) **…….. :**		—
6.1.2.2	Exclusions ……..…….... :		N/A

6.2	Protection of equipment users from overvoltages on telecommunication networks		N/A
6.2.1	Separation requirements	No connection to TNV	N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test	(see appended table 5.2)	N/A
6.2.2.2	Steady-state test	(see appended table 5.2)	N/A
6.2.2.3	Compliance criteria		N/A

6.3	Protection of the telecommunication wiring system from overheating		N/A
	Max. output current (A) **…….. :**	**No TNV wiring system**	—
	Current limiting method **…….. :**		—

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		**N/A**
7.1	**General**	**No connection to cable distribution systems**	N/A
7.2	**Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment**		N/A
7.3	**Protection of equipment users from overvoltages on the cable distribution system**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
7.4	**Insulation between primary circuits and cable distribution systems**		N/A
7.4.1	**General**		N/A
7.4.2	**Voltage surge test**	**(see appended table 5.2)**	N/A
7.4.3	**Impulse test**	**(see appended table 5.2)**	N/A

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**	**N/A**

B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**	**N/A**

C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		**N/A**
	Position ……..……..……..……..…. :		—
	Manufacturer……..……..……..…… :		—
	Rated values……..……..……..……..…… :		—
	Method of protection……..……..……..…. :		—
C.1	**Overload test**		N/A
C.2	**Insulation**		N/A
	Protection from displacement of winding …….. :		N/A

D	**ANNEX D, MEASURING INSTRUMENTS FORTOUCH-CURRENT TESTS (see 5.1.4)**		**N/A**
D.1	**Measuring instrument**		N/A
D.2	**Alternative measuring instrument**		N/A

E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**	**N/A**

F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**	**N/A**

G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**	**N/A**

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Clause	Requirement + Test	Result - Remark	Verdict
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		**N/A**
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (SEE 2.6.5.6)**		**N/A**
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		**N/A**
L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		**P**
L.1	**Typewriters**		N/A
L.2	**Adding machines and cash registers**		N/A
L.3	**Erasers**		N/A
L.4	**Pencil sharpeners**		N/A
L.5	**Duplicators and copy machines**		N/A
L.6	**Motor-operated files**		N/A
L.7	**Other business equipment**		P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		**N/A**
N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10,3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)**		**N/A**
P	**ANNEX P, NORMATIVE REFERENCES :**		**—**
Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)**		**N/A**
R	**ANNEX R, EXAMPLES OF EQUIPMENTS FOR QUALITY CONTROL PROGRAMMES**		**N/A**
S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)**		**N/A**
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		**N/A**
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		**N/A**
V.1	**Introduction**		N/A
V.2	**TN power distribution systems**		N/A

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W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		**N/A**
W.1	**Touch current from electronic circuits**		N/A
W.1.1	**Floating circuits**		N/A
W.1.2	**Earthed circuits**		N/A
W.2	**Interconnection of several equipments**		N/A
W.2.1	**Isolation**		N/A
W.2.2	**Common return, isolated from earth**		N/A
W.2.3	**Common return, connected to protective earth**		N/A

X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**	**N/A**

Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**	**N/A**

Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)**	**N/A**

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**	**N/A**

BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	—

EN 60950-1: 2006 – CENELEC COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations	P
General	Delete all the “country” notes in the reference document according to the following list: 1.4.8 Note 2 1.5.1 Note 2 & 3 1.5.7.1 Note 1.5.8 Note 2 1.5.9.4 Note 1.7.2.1 Note 4, 5 & 6 2.2.3 Note 2.2.4 Note 2.3.2 Note 2.3.2.1 Note 2 2.3.4 Note 2 2.6.3.3 Note 2 & 3 2.7.1 Note 2.10.3.2 Note 2 2.10.5.13 Note 3 3.2.1.1 Note 3.2.4 Note 3. 2.5.1 Note 2 4.3.6 Note 1 & 2 4.7 Note 4 4.7.2.2 Note	P

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Clause	Requirement + Test	Result - Remark	Verdict
	4.7.3.1 Note 2 5.1.7.1 Note 3 & 4 5.3.7 Note 1 6 Note 2 & 5 6.1.2.1 Note 2 6.1.2.2 Note 6.2.2 Note 6. 2.2.1 Note 2 6.2.2.2 Note 7.1 Note 3 7.2 Note 7.3 Note 1 & 2 G.2.1 Note 2 Annex H Note 2		
1.3.Z1	Add the following NOTE: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A
1.5.1	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC.		P
1.7.2.1	Add the following NOTE: NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;		N/A

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	c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	
2.7.2	This subclause has been declared "void"	P
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	P
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: | Up to and including 6 | 0,75 a) | | Over 6 up to and including 10 | (0,75) b) 1,0 | | Over 10 up to and including 16 | (1,0) c) 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition a). In NOTE 1, applicable to Table 3B, delete the second sentence.	P
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: | Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A.	P
4.3.13.6	Add the following NOTE: NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.	P
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.	N/A

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Biblio-graphy	Additional EN standards	—

ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESONDING EUROPEAN PUBLICATIONS**	—

ZB	**SPECIAL NATIONAL CONDITIONS**	**P**
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N/A
1.5.7.1	In **Finland**, **Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.	N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	N/A
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	P
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”	N/A

1.7.5	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	P
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	P
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	P
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	N/A
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3	N/A

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	shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	P
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998 Plug Type 25 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998 Plug Type 21 L+N 250 V, 16 A SEV 5934-2.1998 Plug Type 23 L+N+PE 250 V, 16 A	P
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.	N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.	N/A
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and	N/A

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	is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	N/A
3.3.4	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	N/A
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.	N/A

5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that ○ is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and ○ has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and ○ is provided with instructions for the installation of that conductor by a SERVICE PERSON;	P

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	• STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		
6.1.2.1	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400.	P
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre,	N/A

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	and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		P
7.3	In **Norway** and **Sweden**, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.		P
7.3	In **Norway**, for installation conditions see EN 60728-11:2005.		P
ZC	**A-DEVIATIONS (informative)**		**P**
1.5.1	**Sweden** (Ordinance 1990:944) Add the following: **NOTE In Sweden, switches containing mercury are not permitted.**		**P**
1.5.1	**Switzerland** (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.) Add the following: **NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.**		**P**
1.7.2.1	**Denmark** (Heavy Current Regulations) Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text: Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text: **"For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."**		N/A
1.7.2.1	**Germany** (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2).		N/A

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	If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. **Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.**	
1.7.5	**Denmark** (Heavy Current Regulations) **With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.**	N/A
1.7.13	**Switzerland** (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries) **Annex 2.15 of SR 814.81 applies for batteries.**	**P**
5.1.7.1	**Denmark** (Heavy Current Regulations, Chapter 707, clause 707.4) **TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.**	**P**

1.5.1	**TABLE: List of components**				**P**
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity**
AC/DC Adapter	**Shenzhen Guoyunda Technology Co., Ltd.**	**CGSW-05002000**	**Input: 100-240 V Output: DC 5 V / 2 A**	**EN 60950-1**	**CE**
PCB	**AMC Korea Co., Ltd.**	**2**	**V-0 / 130 ℃ (Min. 105 ℃)**	**EN 60950-1**	**Tested in appl. (UL E475806)**
Enclosure	**LG Chem Ltd.**	**ABS/ER-400**	**HB / Min. 1.5 mm thick**	**EN 60950-1**	**Tested in appl. (UL E67171)**
[1)]An asterisk indicates a mark which assures the agreed level of surveillance					

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)					P
U(V)	I(A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
DC 5 V	1.3 A	2 A	6.5	-	-	Maximum normal load
Supplementary information:						

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					N/A
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr. (mm)	cr (mm)
Functional:						
Basic/supplementary:						
Reinforced:						
Supplementary information:						

2.10.5	TABLE: Distance through insulation measurements				N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Supplementary information:					

4.3.8	TABLE: Batteries								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available				-					N/A
Is it possible to install the battery in a reverse polarity position?				-					N/A
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf, Specs.
Max. current during	-	-	-	-	-	-	-	-	-

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normal condition									
Max. current during fault condition	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Test results:		**Verdict**
-Chemical leaks		**N/A**
-Explosion of the battery		**N/A**
-Emission of flame or expulsion of molten metal		**N/A**
-Electric strength tests of equipment after completion of tests		**N/A**
Supplementary information:		

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4.5	TABLE: Thermal requirements			P
	Supply voltage (V) …… : :	DC 5 V		—
	Ambient T_{min} (°C) …… : :	19.9		—
	Ambient T_{max} (°C) …… : :	20.1		—
Maximum measured temperature T of part/at:		DC 5 V		Allowed T_{max} (°C)
		T(°C)	T(°C) at T_{ma}	
DC Input Terminal body(metal)		33.4	53.3	60
Cap.C34 body		44.4	64.3	105
IC, U1 body		34.6	54.5	105
PCB near U1		34.5	54.4	105
Enclosure (plastic)		30.2	50.1	95
Switch body		29.3	49.2	85
Ambient		20.1	40	-

Supplementary information:

1)Test has been conducted by a themocuple method.

2)Maximum temperature T at T_{ma}(40 °C) is calculated.(T at T_{ma} = T – T_{amb} + T_{ma})

3)T_{ma} = 40 °C.

Temperature T of winding	t_1 (°C)	R_1(Ω)	t_2 (°C)	R_2(Ω)	T(°C)	Allowed T_{max}(°C)	Insulation class

Supplementary information: N/A

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) …… : :	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)

Supplementary information: N/A

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4.7	TABLE: Resistance to fire				N/A
Part	**Manufacturer of material**	**Type of material**	**Thickness (mm)**	**Flammability class**	**Evidence**
Supplementary information: N/A					

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			N/A
Test voltage applied between:	**Voltage shape (AC, DC, impulse, surge)**	**Test voltage (V)**	**Breakdown Yes/No**	
Functional:				
Basic/supplementary:				
Reinforced:				
Supplementary information: N/A				

5.3	TABLE: Fault condition tests					P
	Ambient temperature (℃) ……..……..…..:				**20 - 30**	—
	Power source for EUT: Manufacturer, model/type, output rating ……..…... : :				**(see appended table 1.5.1)**	—
Component No.	**Fault**	**Supply voltage (V)**	**Test time**	**Fuse #**	**Fuse current (A)**	**Observation**
DC + and -	**short**	**DC 5 V**	**1 h**	**-**	**-**	**No Hazard.**
Supplementary information: N/A						

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Attachment 1 - Photographs

Overall Front View

Rear View

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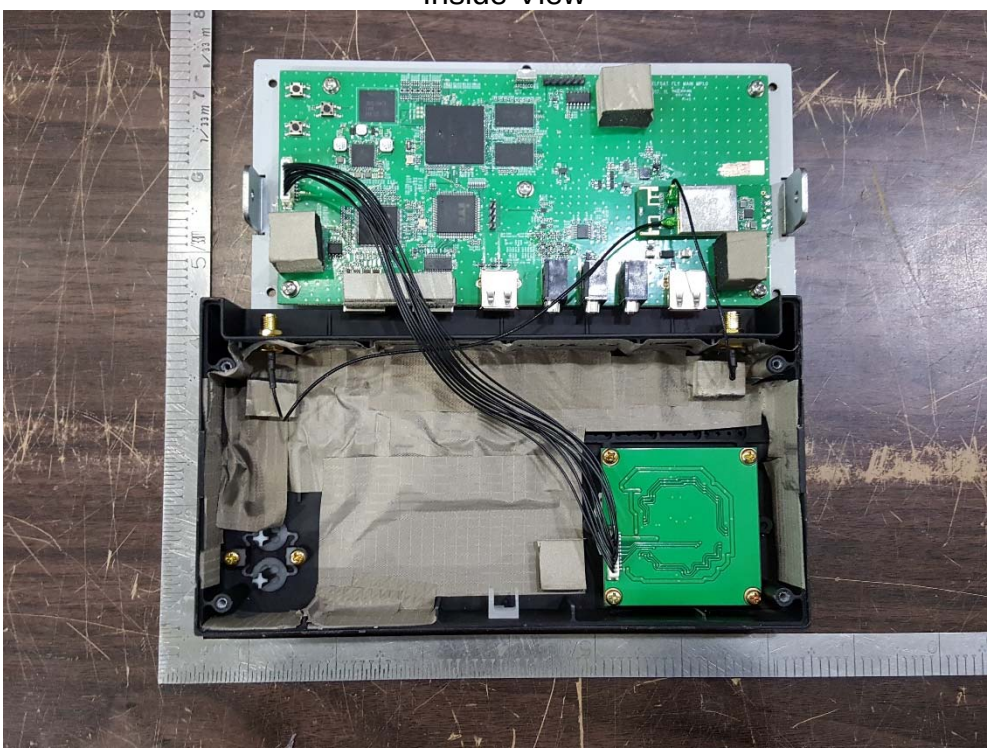
Inside View



Adapter

- End of Test Report -

Declaration of Conformity

Type of equipment:	**SELFSAT**
Model Name:	**SELFSAT FLY-100**
Variant Model:	**SELFSAT FLY-200**
Applicant:	**IDOIT Co., Ltd.**
Manufacturer / Address:	**IDOIT Co., Ltd.** **637, Smart-Hub Industry-University Convergence Center, 237, Sangidaehak-ro Siheung-si, Gyeonggi-do, KOREA (15073)**

We hereby declare that all major safety requirements concerning the CE Mark Directive (93/68/EEC), Electro Magnetic Compatibility Directive (2014/30/EU), Low Voltage Directive (2014/35/EU), and RoHS (2011/65/EU) are fulfilled, as laid out in the guidelines set forth by the member states of the EEC Commission.

a) The standards relevant for the evaluation of EMC (2014/30/EU) requirements are as follows:
EN 301 489-1 V2.2.0
EN 301 489-17 V3.2.0
EN 61000-3-2:2014
EN 61000-3-3:2013

b) The standards relevant for the evaluation of LVD (2014/35/EU) requirements are as follows:
EN 60950-1: 2006 + A12: 2011 + A2: 2013

c) RoHS (2011/65/EU) Applied harmonised standards:
EN 50581:2012

Date : Dec 4, 2017 **Place : Siheung-si**	#637, Smart-Hub Industry-University Convergence Center, 237 Sangidaehak-ro, Siheung-si, Gyeonggi-do, Korea(429-793) I DO IT CO., LTD CEO IM SEUNG JOON	..... **CEO IM SEUNG JOON**
(Place and date of issue)	(Manufacturer's seal)	(Name and signature of authorised person)