ETS Dr.Genz Taiwan PS Co., LTD

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679

Accredited Testing Laboratory

A2LA Cert.No.: 2300.01

PTCRB Accredited Type Certification Test House

FCC

TEST - REPORT

FCC RULES PART 15 / SUBPART C

FCC ID:TEUSUNIONCF1700T

Test report no.:

W6M20505-5917-P-15

ETS DR. GENZ TAIWAN PS CO., LTD.
6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU, TAIPEI 114, TAIWAN, R.O.C.
PHONE 886-2-66068877 FAX 886-2-66068879

Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

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1 General Information

1.1 Notes

The purpose of conformity testing is to increase the probability of adherence to the essential requirements or conformity specifications, as appropriate.
The complexity of the technical specifications, however, means that full and thorough testing is impractical for both technical and economic reasons.
Furthermore, there is no guarantee that a test sample which has Passed all the relevant tests conforms to a specification.
Neither is there any guarantee that such a test sample will interwork with other genuinely open systems.
The existence of the tests nevertheless provides the confidence that the test sample possesses the qualities as maintained and that is performance generally conforms to representative cases of communications equipment.

The test results of this test report relate exclusively to the item tested as specified in 1.5.
The test report may only be reproduced or published in full.
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Tester:

Date	ETS-Lab.	Name	Signature
01.07.2005		Pierce Peng	Pierce Peng

Technical responsibility for area of testing:

Date	ETS	Name	Signature
01.07.2005		Steven Chuang	Steven Chuang

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1.2 Testing laboratory

1.2.1 Location

OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)

Company
ETS DR. GENZ TAIWAN PS CO., LTD.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

1.2.2 Details of accreditation status

Accredited testing laboratory

A2LA-registration number: 2300.01

FCC filed test laboratory Reg. No. 930600

Industry Canada filed test laboratory Reg. No. IC 5679

PTCRB Accredited Type Certification Test House

1.3 Details of approval holder

Name : Sunion Electronics Corp.
Street : 11F, No.123-7, Shing De Rd., San Chung City
Town : Hong Kong
Country : China
Telephone : +886-2-8512-1456
Fax : +886-2-8512-1457
Contact : Mr. Alex Lu
Telephone : +886-2-8512-1456

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1.4 Application details

Date of receipt of application : 19.05.2005
Date of receipt of test item : 15.06.2005
Date of test : 15.06.2005 – 21.06.2005

1.5 General information of Test item

Description of test item : RFID-CF Card reader

Type identification : CF-1700T

Serial number : Test sample without serial number

Transmitting frequency : 13.56 MHz

Operation mode : duplex

Voltage supply : 120 V AC

(If the device is using battery, please check if the device is tested under fresh battery condition.)

Antenna type : Loop antenna

Photos : see Annex

Manufacturer:
(if applicable)

Name : ./.
Street : ./.
Town : ./.
Country : ./.

Additional information : --

1.6 Test standards

Technical standard : FCC RULES PART 15 / SUBPART B § 15.207/ SUBPART C § 15.209, § 15.225

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2 Technical test

2.1 Summary of test results

No deviations from the technical specification(s) were ascertained in the course of the tests performed. ☒

or

The deviations as specified in 2.5 were ascertained in the course of the tests performed. ☐

2.2 Test environment

Temperature	: 23 °C
Relative humidity content	: 20 ... 75 %
Air pressure	: 86 ... 103 kPa
Details of power supply	: 120 VAC (AC/DC ADAPTOR)
Extrem conditions parameters	: --

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2.3 Test Equipment List

No.	Test equipment	Type	Serial No.	Manufacturer	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2005/11/8
ETSTW-CE 002	PREREULATOR MODE DC POWER SUPPLY				
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2006/11/8
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2006/11/3
ETSTW-CE 006	IMPULS-BEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	2006/11/10
ETSTW-CE 007	SPECTRUM ANALYZER 5GHz	FSB	849670/001	R&S	
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	ABSORPTIONS-MESSWANDLER-ZANGE	2006/11/4
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2005/5/10
ETSTW-CE 010	Comb Generator-conducted			ETS	
ETSTW-CE 011	Power Line Conducted Emission Only			ETS	
ETSTW-CE 012	Dual-Phase-V-Network	NNB-2/16Z	03/10201	Telemeter	2006/4/11
ETSTW-CS 001	SIGNAL GENERATOR	SMX	849254/003	R&S	2005/10/31
ETSTW-CS 002	COUPLING AND DECOUPLING NETWORK	CDN S751	19263	CHAFFNER	2006/11/3
ETSTW-CS 003	COUPLING AND DECOUPLING NETWORK	CDN T400	19820	CHAFFNER	2006/11/3
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	CHAFFNER	2006/11/3
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	2005/11/3
ETSTW-CS 006	Terminal 50O Load	50T-116 M		JFW	
ETSTW-CS 007	Terminal 50O Load	50T-116 F		JFW	
ETSTW-CS 008	6 dB Attenautor	HFP-5100-3/06 N M/F	2010876106		
ETSTW-RE 001	Controller	CD 1000	C01000/154/867 /004/L	Heinrich Deisel	
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	2005/11/3
ETSTW-RE 003	EMI TEST RECEIVER	ESI	831438/001	R&S	2005/11/16
ETSTW-RE 004	EMI TEST RECEIVER	ESI	831459/012	R&S	2005/11/9
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2005/11/1
ETSTW-RE 008	Controller	HD100	C0100-L/047/6670703/L	Heinrich Deisel	
ETSTW-RE 009	Controller	HD100	100/341	Heinrich Deisel	

ETSTW-RE 010	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070181	MOTECH	
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0036	397	K&L	
ETSTW-RE 014	DUAL TRACKING WITH 5V FIXED	GPC-3030D		GW	
ETSTW-RE 015	ANTENNA	HK116	841489/003	R&S	
ETSTW-RE 016	ANTENNA	HL223	848953/006	R&S	
ETSTW-RE 017	ANTENNA	HL025	352886/001	R&S	
ETSTW-RE 018	ANTENNA	AT4560	27212	AR	2006/11/7
ETSTW-RE 019	ANTENNA , HORN	22240-25	121074	FM	
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2005/11/10
ETSTW-RE 022	AMPLIFIER	8447D	2944A09837	Agilent	2005/11/1
ETSTW-RE 023	Shielded room	SR 1		Frankonia	
ETSTW-RE 024	Anechoic Chamber	CHC 1		Frankonia	
ETSTW-RE 025	Anechoic Chamber	CHC 2		Frankonia	
ETSTW-RE 026	Open Area Test Site	10m		ETS	
ETSTW-RE 027	Passive Loop Antenna	6512	34563	EMCO	2006/6/29
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148	34429	EMCO	2006/6/14
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2006/6/16
ETSTW-RE 030	Double-Ridged Waveguide Horm Antenna	3117	35224	EMCO	2006/5/4
ETSTW-RE 031	Comb Generator-radiated			ETS	
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2005/11/17
ETSTW-RE 033	4CH 1GHz 5GS/s DSO	WAVERUNNER 6100A	LCRY0604P14508	LeCory	
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2005/11/17
ETSTW-RE 035	1.5GHz Active Voltage Probe	HFP1500	2332	LeCory	
ETSTW-RE 036	100MHz High Voltage Diff Probe	ADP305	3305	LeCory	
ETSTW-RE 037	Log-Periodic DipoleArray Antenna	3148	00034546	EMCO	2006/11/17
ETSTW-RE 038	Log-Periodic DipoleArray Antenna	3148	00034547	EMCO	2006/11/17
ETSTW-RE 039	Biconical Antenna	3110B	41760	EMCO	2006/11/17
ETSTW-RE 040	Biconical Antenna	3110B	41761	EMCO	2006/11/17
ETSTW-RE 041	Anechoic Chamber	CHC 3		Frankonia	

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ETSTW-RE 042	ANTENNA	HK116	100172	R&S	2007/1/13
ETSTW-RE 043	ANTENNA	HL223	100166	R&S	2006/4/15
ETSTW-RE 044	ANTENNA	HL050	100094	R&S	
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2006/3/21
ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	93	EMC-PARTNER	2005/11/17
ETSTW-EMS 001	Clamp BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	2005/11/1
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014		
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2005/11/1
ETSTW-EMS 004	ESD generator minizap	ESD2000	016	EMC-PARTNER	2005/11/1
ETSTW-EMS 005	Attenautor (50O)	VERI50	051	EMC-PARTNER	2006/8/30
ETSTW-EMS 006	Attenautor (1 KO)	VERI1K	019	EMC-PARTNER	2006/10/20
ETSTW-EMS 007	20GO Divider	ESD-VERI-V	021	EMC-PARTNER	2006/3/16
ETSTW-RS 001	14" COLOR VIDEO MONITOR	TP-1480HR	P009799	TOPICA	
ETSTW-RS 002	14" COLOR VIDEO MONITOR	TP-1480HR	P009814	TOPICA	
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	
ETSTW-RS 004	RF Power Amplifier	150W1000	307009	AR	2005/11/18
ETSTW-RS 005	Electric Field Probe Type 8.3	EMR-20	BN 2244/20	nadar	2005/9/3
ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	2005/11/15
ETSTW-RS 007	AUDIO ANALYZER	UPA3	843458/029	R&S	2005/11/15
ETSTW-EMS 008	Safety Test Solutions	ELT-400	E-0039	Narda	2006/1/4
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	2006/12/2
ETSTW-GSM 01	SIM Simulator	IT3	B2004-50106	ORGA Testsystems GmBh	
ETSTW-GSM 02	Universal Radio Communication Tester	CMU 200	103489	R&S	
ETSTW-GSM 03	Agilent 8960 Test Set 1	E5515C	GB44052675	Agilent	2006/7/14
ETSTW-GSM 04	Agilent 8960 Test Set 2	E5515C	GB44052665	Agilent	2006/7/14
ETSTW-GSM 05	Agilent 8960 Test Set 3	E5515C	GB44052852	Agilent	2006/7/17
ETSTW-GSM 06	Agilent 8960 Test Set 4	E5515C	GB44052984	Agilent	2006/7/16
ETSTW-GSM 07	Agilent 8960 Test Set 5	E5515C	GB44052658	Agilent	2006/7/14
ETSTW-GSM 08	Agilent 8960 Test Set 6	E5515C	GB44052666	Agilent	2006/7/16
ETSTW-GSM 09	Controler PC	Dell GX 270	700F61J	Dell	
ETSTW-GSM 10	Combiner Wessex / Anite	B4605/100	053	Wessex / Anite	07.06
ETSTW-GSM 11	GSM 850,900,1800,1900 Test system	TS8950G		Rohde & Schwarz	11.05
ETSTW-GSM 12	Acoustical Calibrator	4231	2463874	Brüel&Kjær	

ETSTW-GSM 13	Conditioning Amplifier	2690--0S2	2437856	Brüel&Kjær	
ETSTW-GSM 14	Telephone Test Head	4602B	2465324	Brüel&Kjær	2005/11/17
ETSTW-GSM 15	Mouth Simulator	4227	2462516	Brüel&Kjær	
ETSTW-GSM 16	TEMP.&HUMIDITY CHAMBER	GTH-120-40-1P-U	MAA0501002	GIANT FORCE	12/290/2005
ETSTW-GSM 17	ANTENNT COPLER	CMU-Z10	100988	R&S	

2.4 General Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-2003 using a 50µH LISN (if necessary). Both lines were observed. The bandwidth of the spectrum analyzer was 10 kHz with an appropriate sweep speed.

RADIATION INTERFERENCE: The test procedure used was according to ANSI STANDARD C63.4-2003 employing a spectrum analyzer. For investigated frequency is equal to or below 1GHz, the RBW and VBW of the spectrum analyzer was 100 kHz and 100kHz respectively with an appropriate sweep speed. For investigated frequency is above 1GHz, both of RBW and VBW of the spectrum analyzer were 1 MHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient. temperature of the UUT was 23°C with a humidity of 40 %.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBµV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)	METER READING + ACF + CABLE LOSS (to the receiver) = FS
33	20 dBµV + 10.36 dB + 6 dB = 36.36 dBµV/m @3m

The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m (non metallic table) and arranged according to ANSI C63.4-2003 Section 13.1.2. The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to the frequency specified as follows:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.
(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.
(4) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a)(1)-(a)(3) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this Section, whichever is the higher frequency range of investigation.

For hand-held devices, a exploratory test was performed with three (3) orthogonal planes to determine the highest emissions.
Measurements were made by ETS Dr. Genz Taiwan PS Co., Ltd. at the registered open field test site located No.5-1, Shuang Sing Village, LiShuei Rd., Wanli Township, Taipei County 207, Taiwan (R.O.C.). The Registration Number: 930600.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

The formula is as follows:
Average = Peak + Duty Factor
Duty Factor = 20 log (dwell time/T)
T = 100ms when the pulse train period is over 100 ms or the period of the pulse train.

Modified Limits for peak according to 15.35 (b) = Max Permitted average Limits + 20dB

ANTENNA & GROUND:
This unit uses Loop antenna.

3 Test results (enclosure)

TEST CASE	Para. Number	Required	Test passed	Test failed
Output Power Field Strength	15.225 (a) (b) (c)	☒	☒	☐
Out of Band Radiated Emissions	15.225 (d)	☒	☒	☐
Frequency Stability	15.225 (e)	☒	☒	☐
Power Line Conducted Emission	15.207 (a)	☒	☒	☐

The follows is intended to leave blank.

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3.1 Output Power (Field Strength)

FCC Rules: 15.225 (a) (b) (c), 15.205, 15.209, 15.35
Operation within the band 13.110 - 14.010 MHz
Limit

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

Measurement Results:

The field strength at 3 meter distance as 53.47 dBµV/m. Extrapolated with 40dB to 30 meter distance it would be 13.47 dBµV/m.

Test condition		Transmitter field strength (dBµV/m)	Limit (dBµV/m)
T_{nom}= 23 °C	V_{nom} = 120V AC	13.47	84
Measurement uncertainty		< 3 dB	

Remarks: see attached diagrams

Test equipment used: ETSTW-RE 003, ETSTW-RE 026, ETSTW-RE 027, ETSTW-RE 025

3.2 Out of Band Radiated Emissions

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Frequency of Emission (MHz)	Limit	Measurement distance
0.009 – 0.490	2400 / f (KHz)	300
0.49 – 1.705	24000 / f (KHz)	30
1.705 – 30	30	30
30 – 88	100	3
88 – 216	150	3
216 – 960	200	3
Above 960	500	3

Calculation of test results:
Such factors like antenna correction, cable loss, external attenuation etc. are already included in the provided measurement results. This is done by using validated test software and calibrated test system according the accreditation requirements.

Summary table with radiated data of the test plots

Freq	Used Ch	Frequency Marker [MHz]	Polari-zation	corrections dB	Corrected Reading [dBuV/m]	Compliance Limit [dBuV/m]	Detec-tor	BW [MHz]	Margin
1		66.362845	V		17.89	40	PK	0.1	22.11
1		66.362845	H		27.26	40	PK	0.1	12.74
1		145.273673	V		25.03	43.5	PK	0.1	18.47
1		145.273673	H		29.97	43.5	PK	0.1	13.53
1		164.577699	V		42.16	43.5	QP	0.1	1.34
1		164.577699	H		42.56	43.5	QP	0.1	0.94
1		188.741243	V		40.33	43.5	QP	0.1	3.17
1		188.741243	H		42.23	43.5	QP	0.1	1.27
2		205.594766	V		38.27	43.5	PK	0.1	5.23
2		205.594766	H		40.11	43.5	PK	0.1	3.39
2		682.478	V		44.82	46	PK	0.1	1.18
2		682.478	H		45.03	46	PK	0.1	0.97
2		933.192	V		38.54	46	PK	0.1	7.46
2		933.192	H		44.63	46	PK	0.1	1.37

Freq. – Frequency Range:

1:	30	-	200 MHz
2:	200	-	1000MHz
3:	1	-	4 GHz
4:	4	-	8 GHz

All other not noted test plots do not contain significant test results in relation to the limits
Test results: The unit meet the FCC requirements.

Comment: See attached diagrams.

Test equipment used: ETSTW-RE 003, ETSTW-RE 026, ETSTW-RE 027, ETSTW-RE 028, ETSTW-RE 029, ETSTW-RE 025

3.3 Frequency tolerance

(e) The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Measurement Results:

Temperature Degrees °C	Voltage	Frequency MHz	Frequency deviation Hz	Limit Hz (0.01%)
25	102	13.560684	684	1356
50	120	13.560346	346	1356
-20	120	13.560938	938	1356
-10	120	13.560987	987	1356
25	138	13.560707	707	1356

Test equipment used: ETSTW-RE 003, ETSTW-CE 009

3.4 Power Line Conducted Emission

For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the table bellows with this provision shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminals.

This measurement was transact first with instrumentation using an average and peak detector and a 10 kHz bandwidth. If the peak detector achieves a calculated level, the measurement is repeated by an instrumentation using a quasi-peak detector.

Frequency	Level (dBµV)	
	quasi-peak	average
150 kHz	lower limit line	Lower limit line

Measurement Result: "_ Fin AV"

Frequency (MHz)	Level (N) dBµV	Transd dB	Limit dBµV	Margin dB
0.2	16.96	10.1	54	37.04
0.22	35.81	10.1	55	19.19
0.555	28.26	10.1	46	17.74
5.775	18.17	10.1	50	31.83

Frequency (MHz)	Level (L1) dBµV	Transd dB	Limit dBµV	Margin dB
0.2	9.27	10.1	54	44.73
0.22	35.03	10.1	55	19.97
0.555	24.07	10.1	46	21.93
5.775	17.15	10.1	50	32.85

Measurement Result: "_ Fin QP"

Frequency (MHz)	Level (N) dBµV	Transd dB	Limit dBµV	Margin dB
0.2	48.16	10.1	54	5.84
0.22	45.69	10.1	55	9.31
0.555	35.88	10.1	46	9.88
5.775	37.53	10.1	50	12.47

Frequency (MHz)	Level (L1) dBµV	Transd dB	Limit dBµV	Margin dB
0.2	40.07	10.1	54	13.93
0.22	45.24	10.1	55	9.76
0.555	31.26	10.1	46	14.74
5.775	33.5	10.1	50	16.5

Limits:

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi Peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

Test is not required if the sample is using a battery.

Test equipment used: ETSTW-CE 004, ETSTW-CE 001, ETSTW-RE 023, ETSTW-CE 003, ETSTW-CE 006

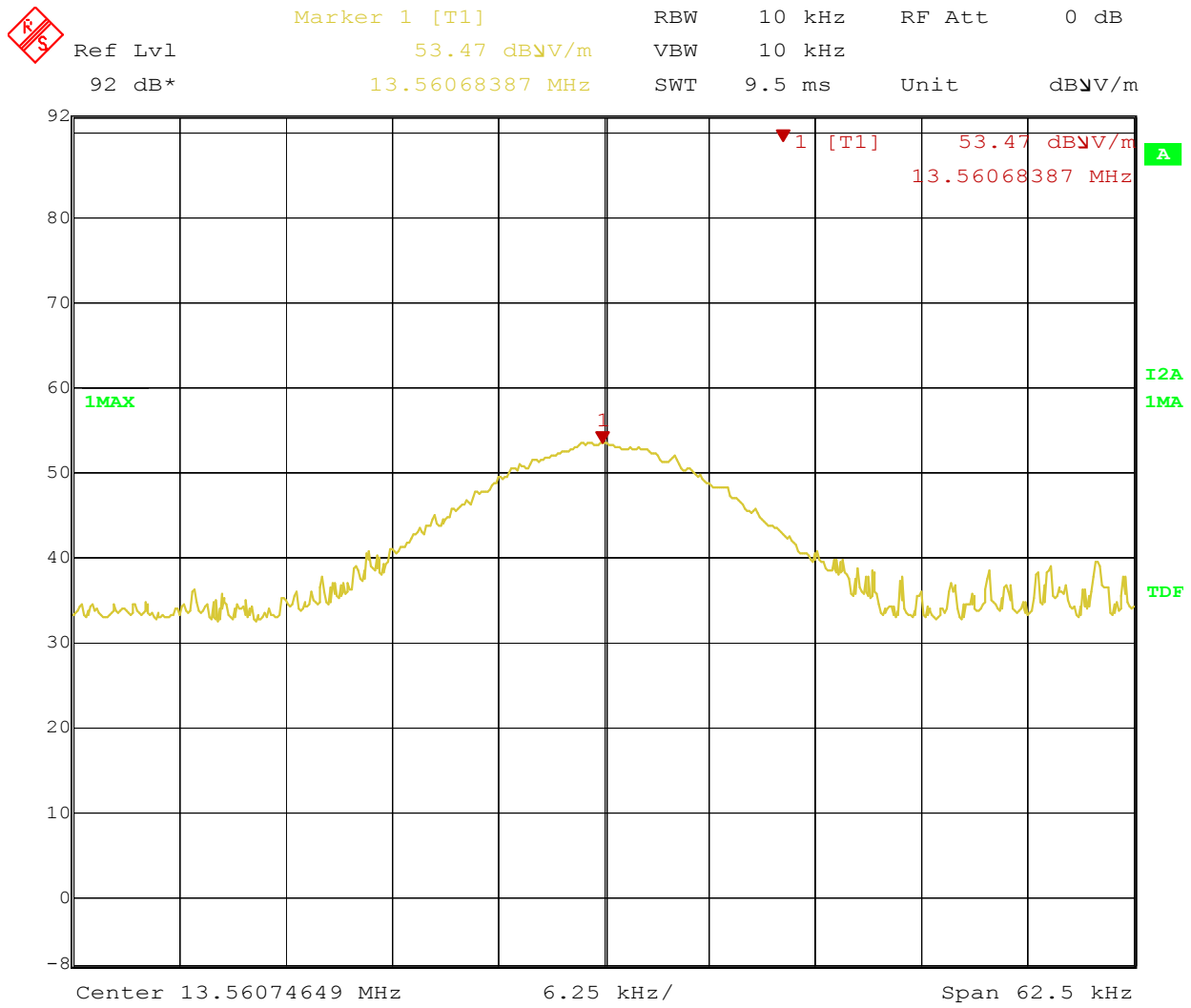
Comment: see attached diagram

Appendix

A Output Power Field Strength
B Out of Band Radiated Emissions
C Power Line Conducted Emission
D Pictures

Appendix A

Output Power Field Strength



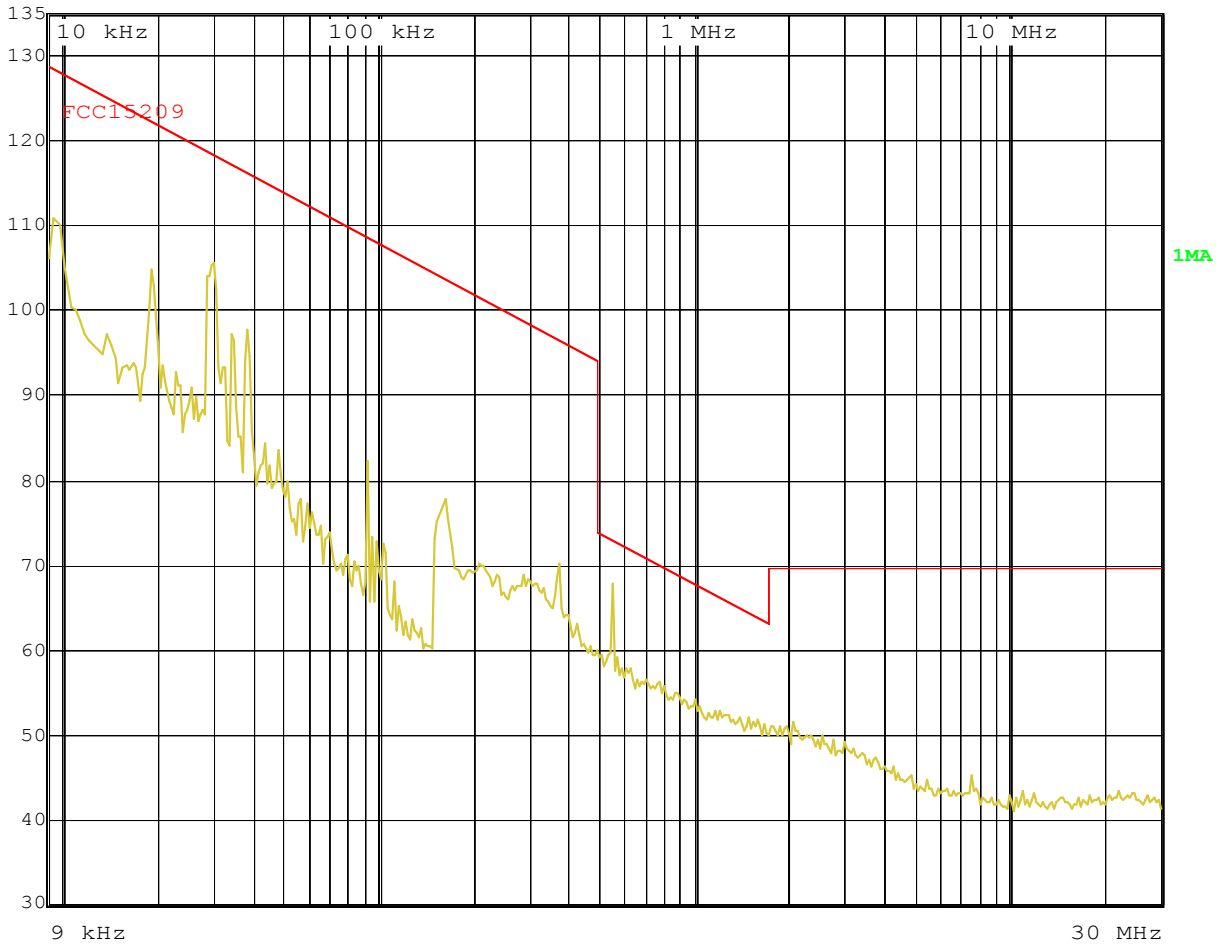
Title: POWER TEST DISTANCE AT 3m
Date: 2.JUN.2005 12:21:38

Appendix B

Out of Band Radiated Emissions

Att 10 dB
INPUT 2

Det AV Trd C
ResBW 10 kHz
Meas T 100 ms Unit dBµV/m

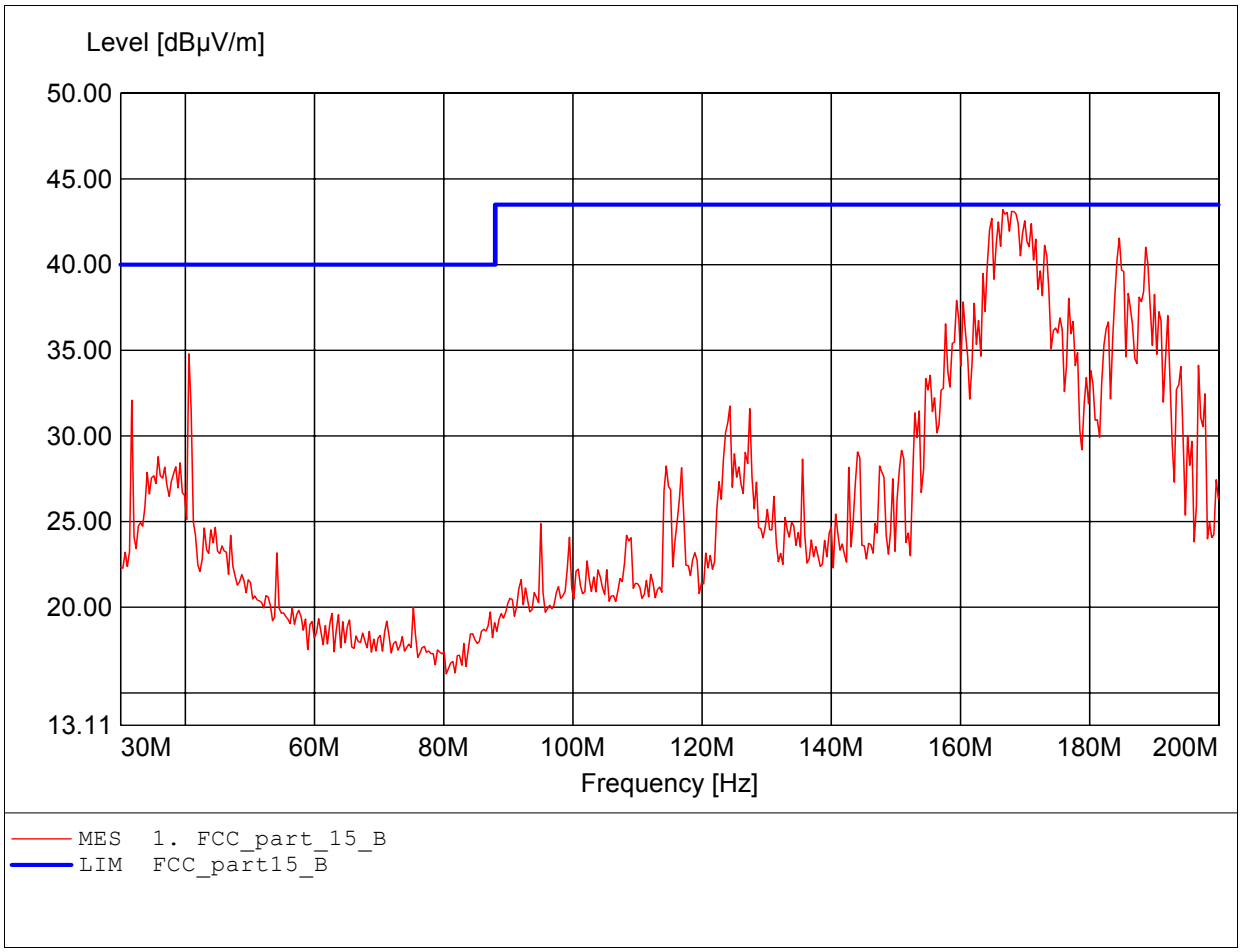


Title: TEST DISTANCE AT 3m
Date: 2.JUN.2005 12:13:27

Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

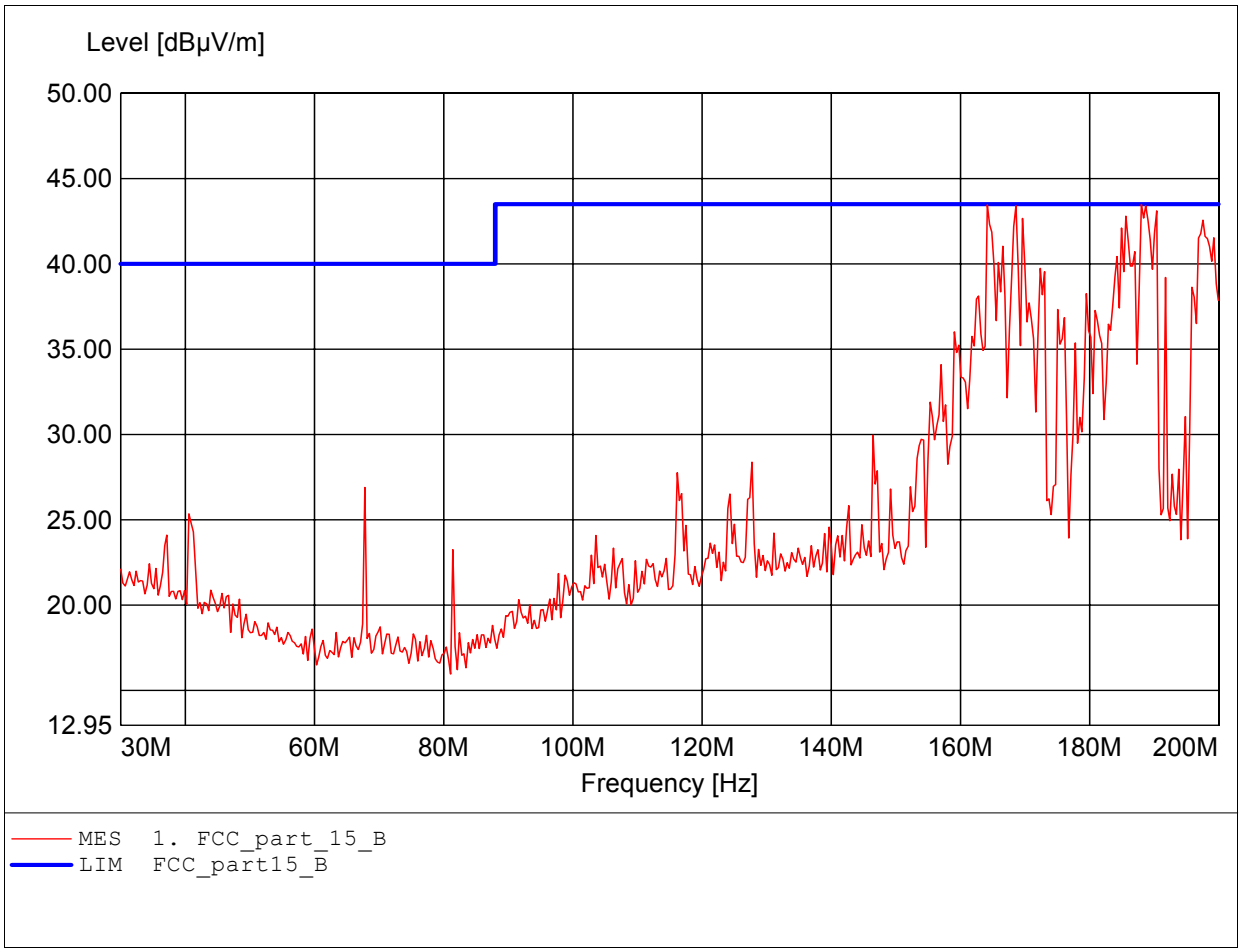
EUT:	RFID-CF Card reader
Model:	CF-1700T
Approval Holder:	Sunion Electronics Corp.
Test Site / Operator:	ETS / Henry
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120VAC(AC/DC ADAPTOR)
Test Specification:	according to subpart B
	Dist.: 3m, Ant.: HK 116
	Freq:166.613MHz Emax:43.21dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

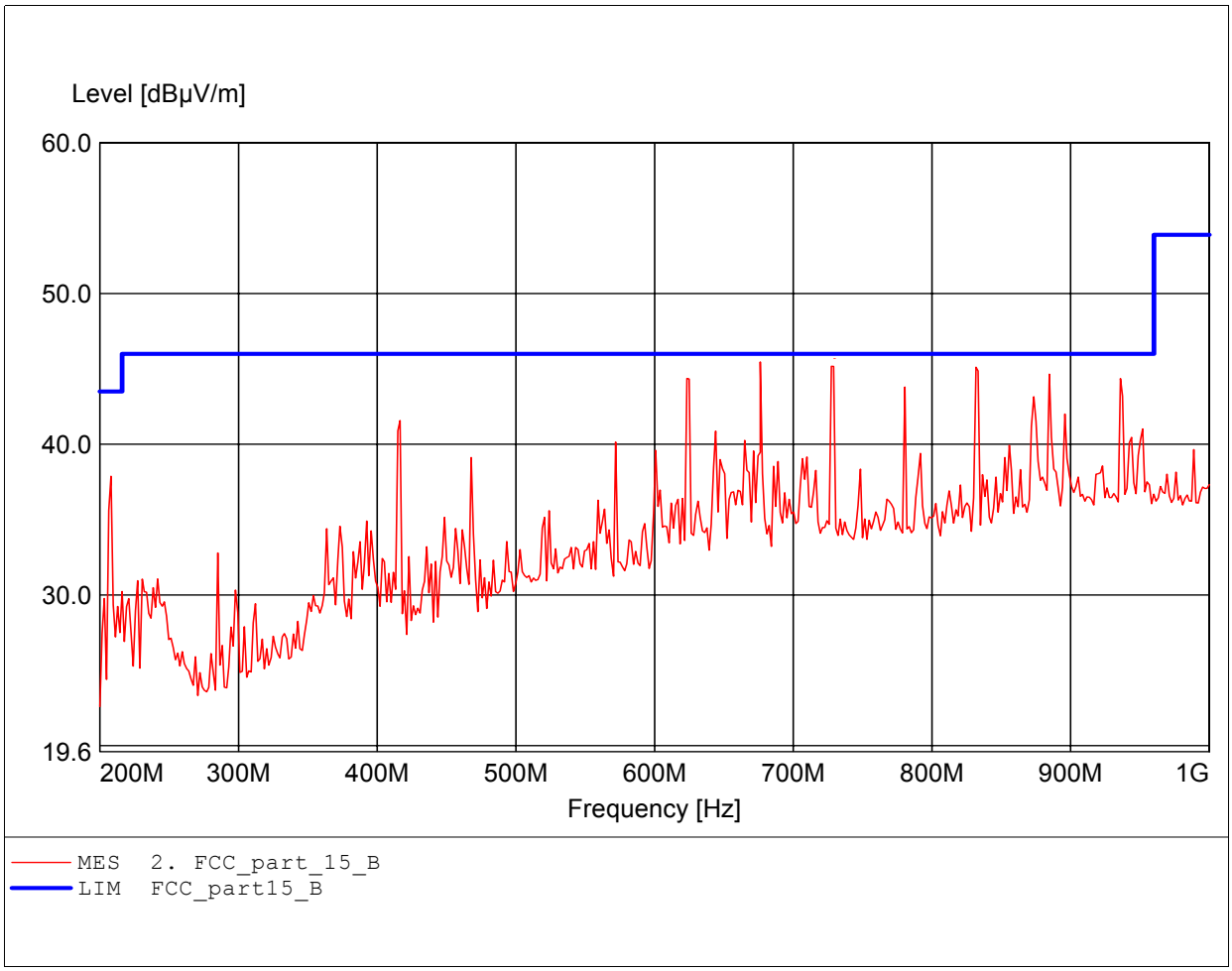
EUT:	RFID-CF Card reader
Model:	CF-1700T
Approval Holder:	Sunion Electronics Corp.
Test Site / Operator:	ETS / Henry
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120VAC(AC/DC ADAPTOR)
Test Specification:	according to subpart B
	Dist.: 3m, Ant.: HK 116
	Freq:188.076MHz Emax:43.48dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

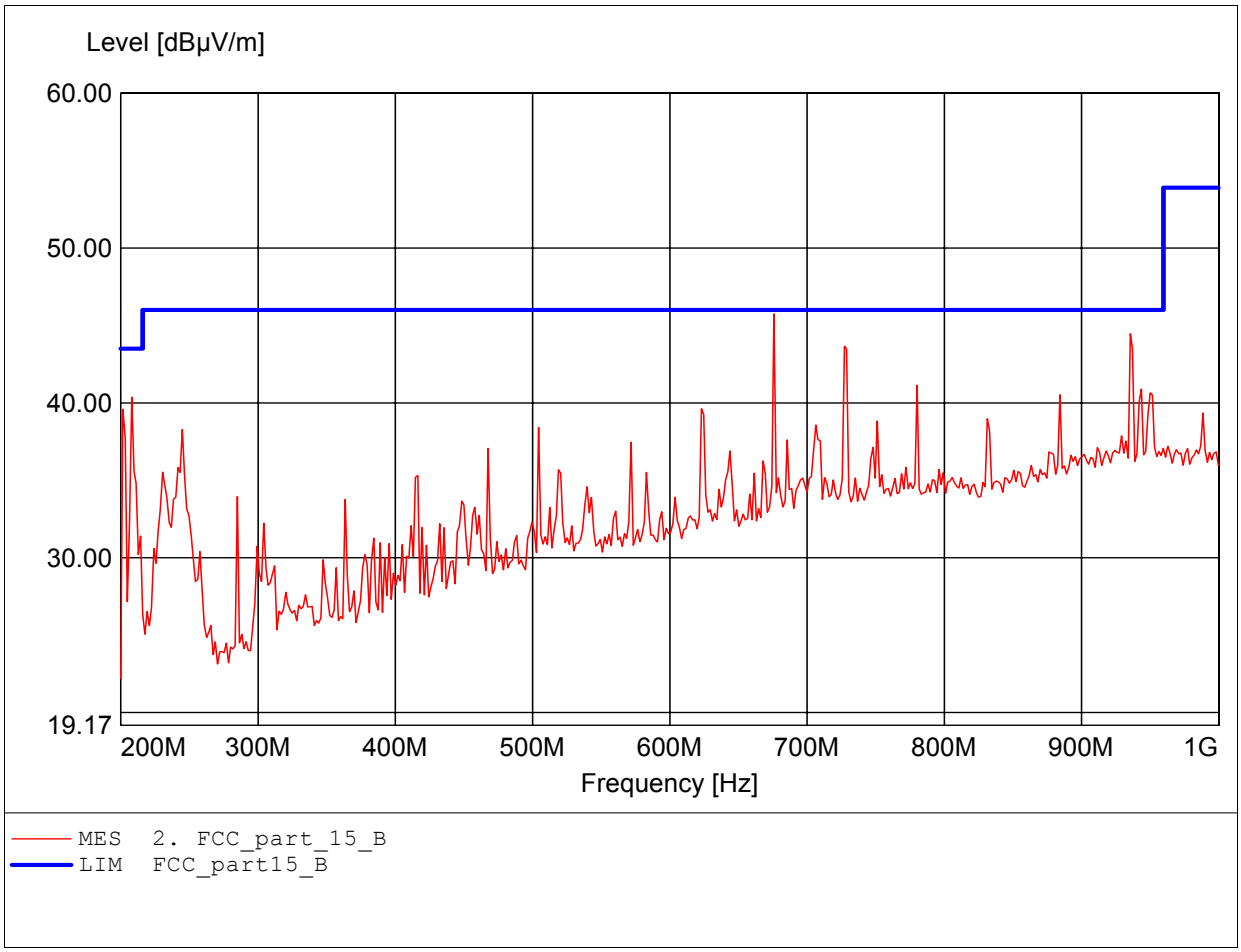
EUT:	RFID-CF Card reader
Model:	CF-1700T
Approval Holder:	Sunion Electronics Corp.
Test Site / Operator:	ETS / Henry
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120VAC(AC/DC ADAPTOR)
Test Specification:	according to subpart B
	Dist.: 3m, Ant.: HL 223, ampl.
	Freq:676.152MHz Emax:45.47dBµV/m RBW: 100 kHz



Field Strength under normal conditions

FCC RULES PART 15, SUBPART B

EUT:	RFID-CF Card reader
Model:	CF-1700T
Approval Holder:	Sunion Electronics Corp.
Test Site / Operator:	ETS / Henry
Temperature/Voltage:	Temp.: 23°C/ Unom.: 120VAC(AC/DC ADAPTOR)
Test Specification:	according to subpart B
	Dist.: 3m, Ant.: HL 223, ampl.
	Freq:676.152MHz Emax:45.75dBµV/m RBW: 100 kHz



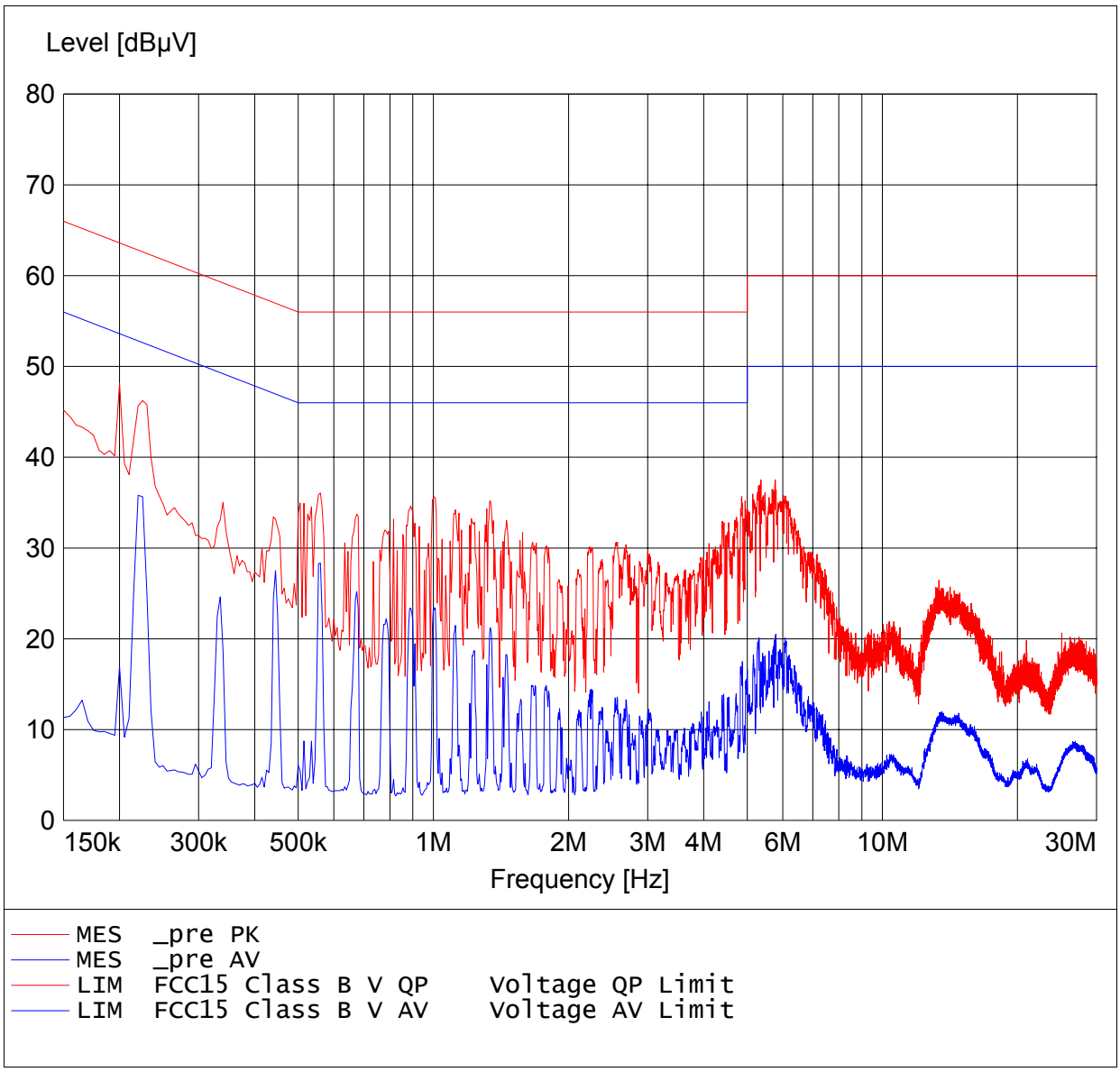
Appendix C

Power Line Conducted Emission

EMI voltage test in the ac-mains according to FCC Part 15

Class B

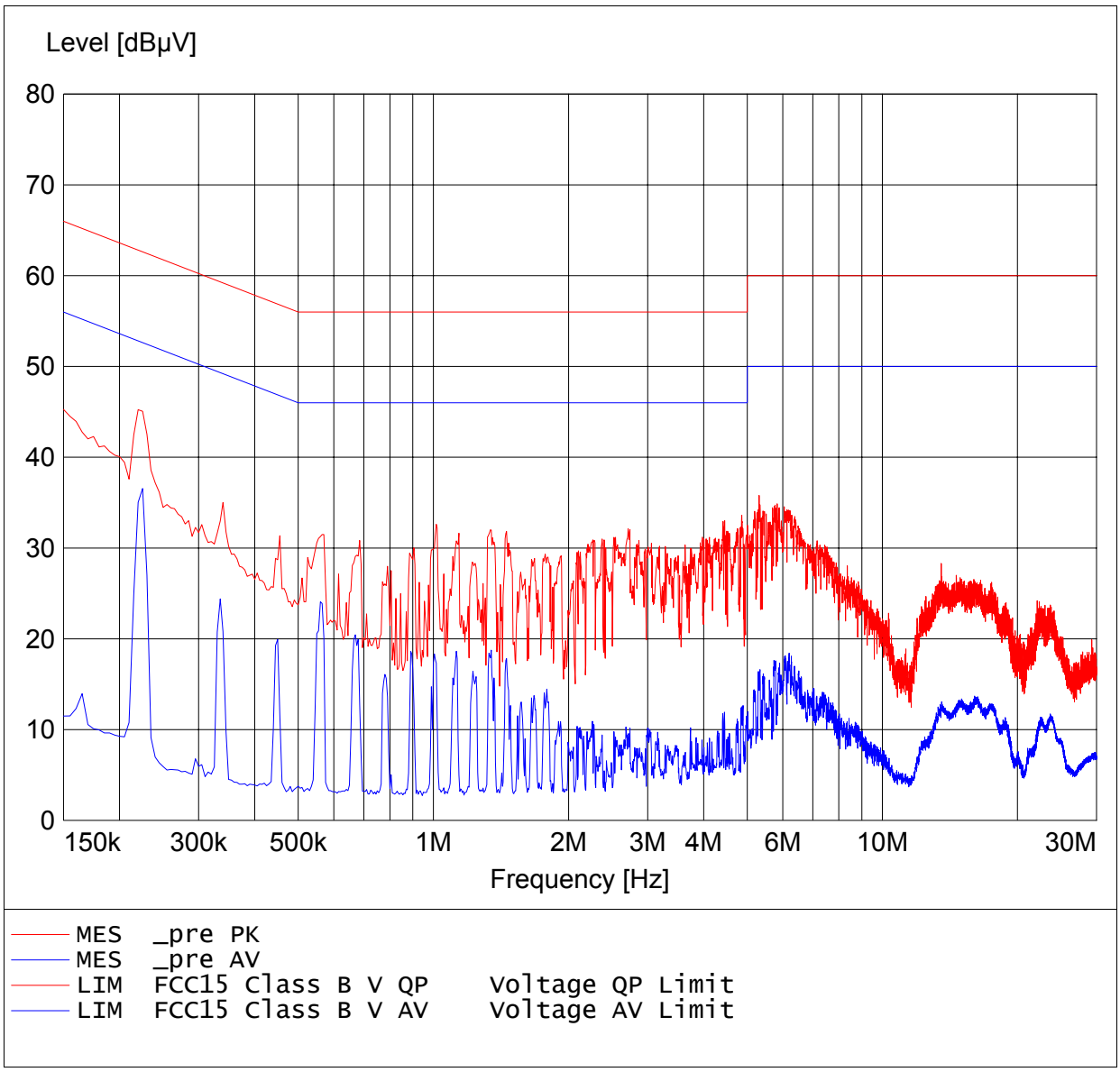
EUT:	RFID-CF Card reader
Manufacturer:	Sunion Electronics Corp.
Operating Condition:	Unom: 120VAC(AC/DC ADAPTOR) , Tnom: 23°C
Test Site:	ETS
Operator:	Catey
Test Specification:	V-network: ESH3-Z5 N
Comment:	model:CF-1700T mode: active



EMI voltage test in the ac-mains according to FCC Part 15

Class B

EUT:	RFID-CF Card reader
Manufacturer:	Sunion Electronics Corp.
Operating Condition:	Unom: 120VAC(AC/DC ADAPTOR) , Tnom: 23°C
Test Site:	ETS
Operator:	Catey
Test Specification:	V-network: ESH3-Z5 L1
Comment:	model:CF-1700T mode: active

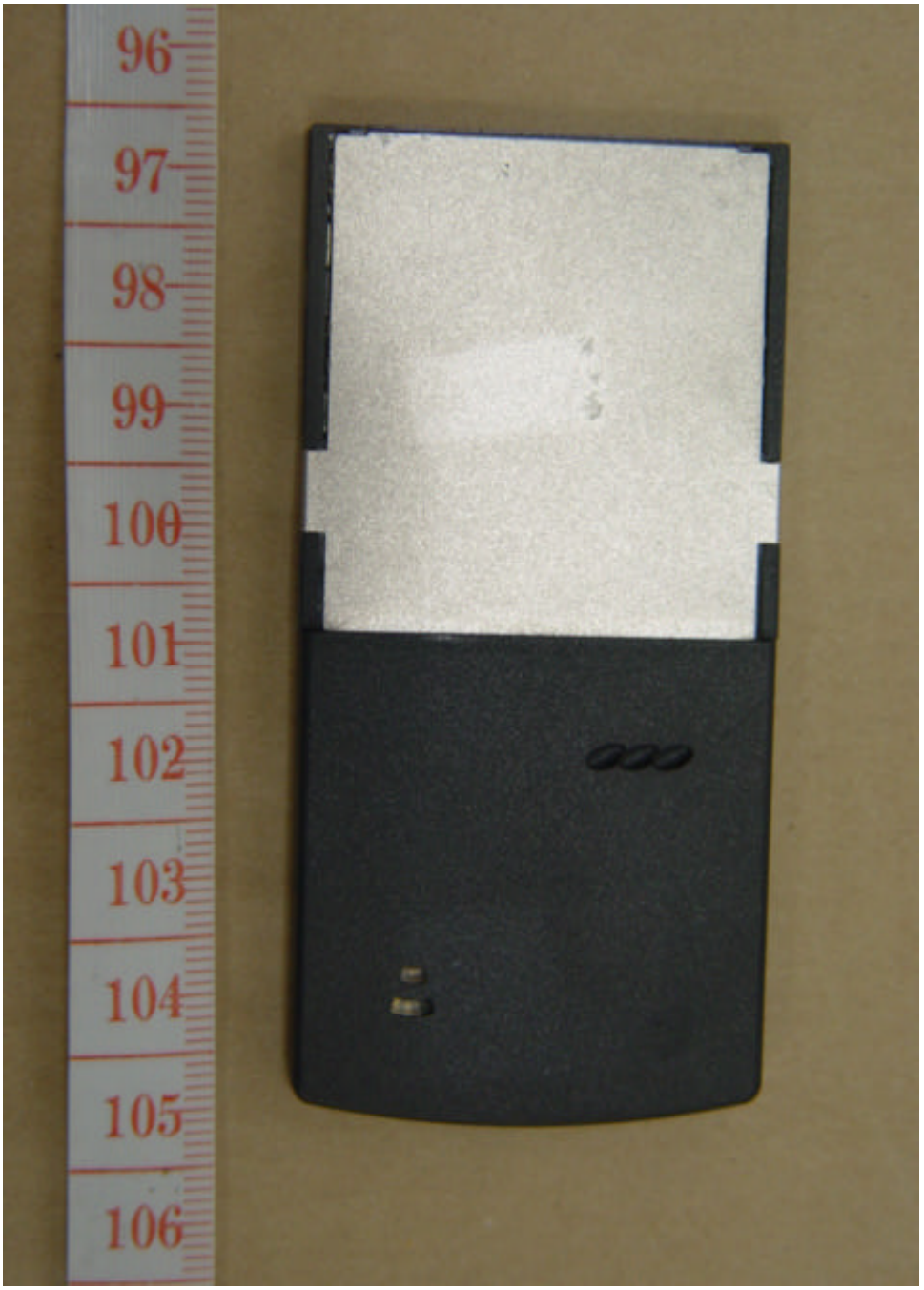


Appendix D

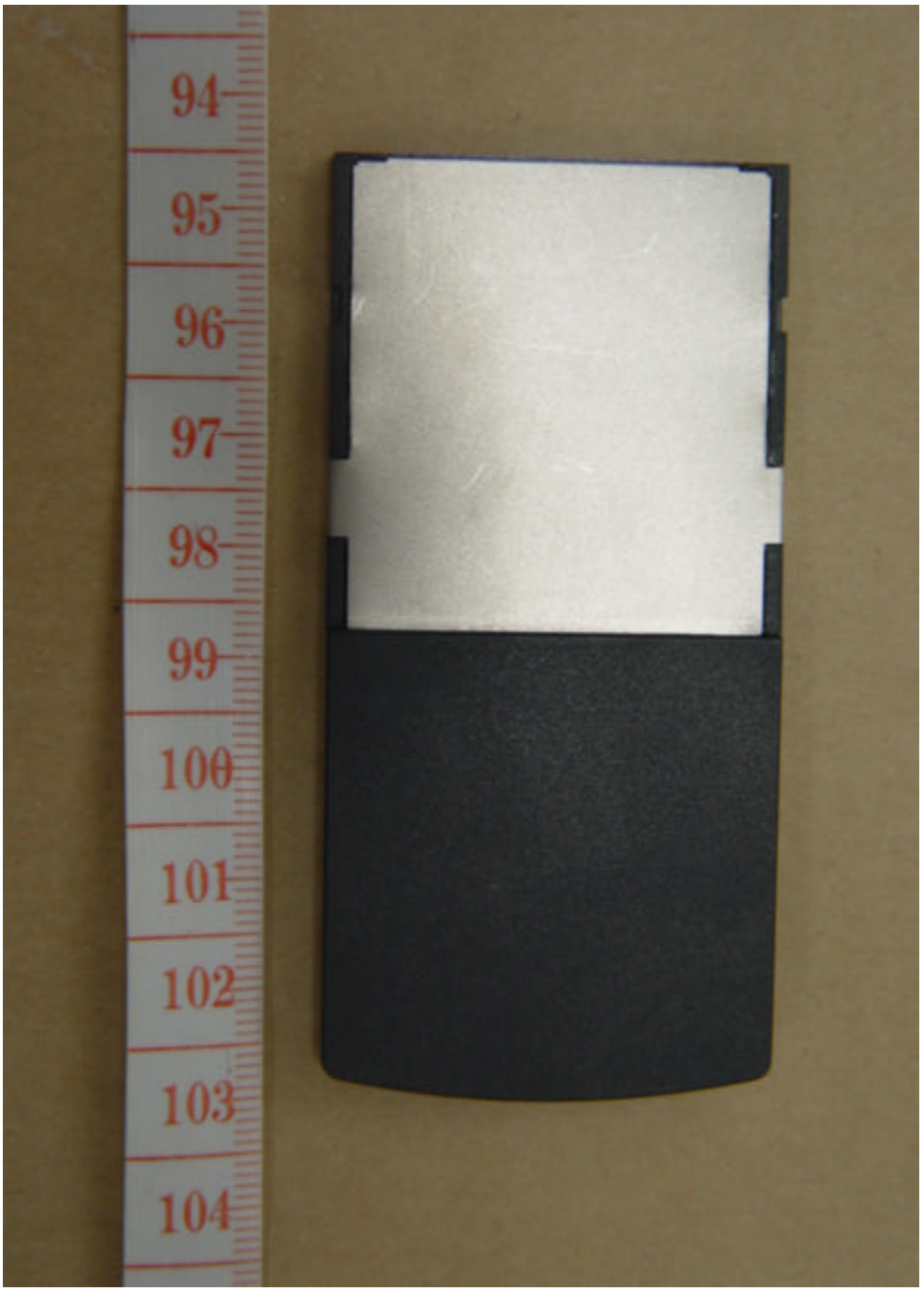
Pictures

Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

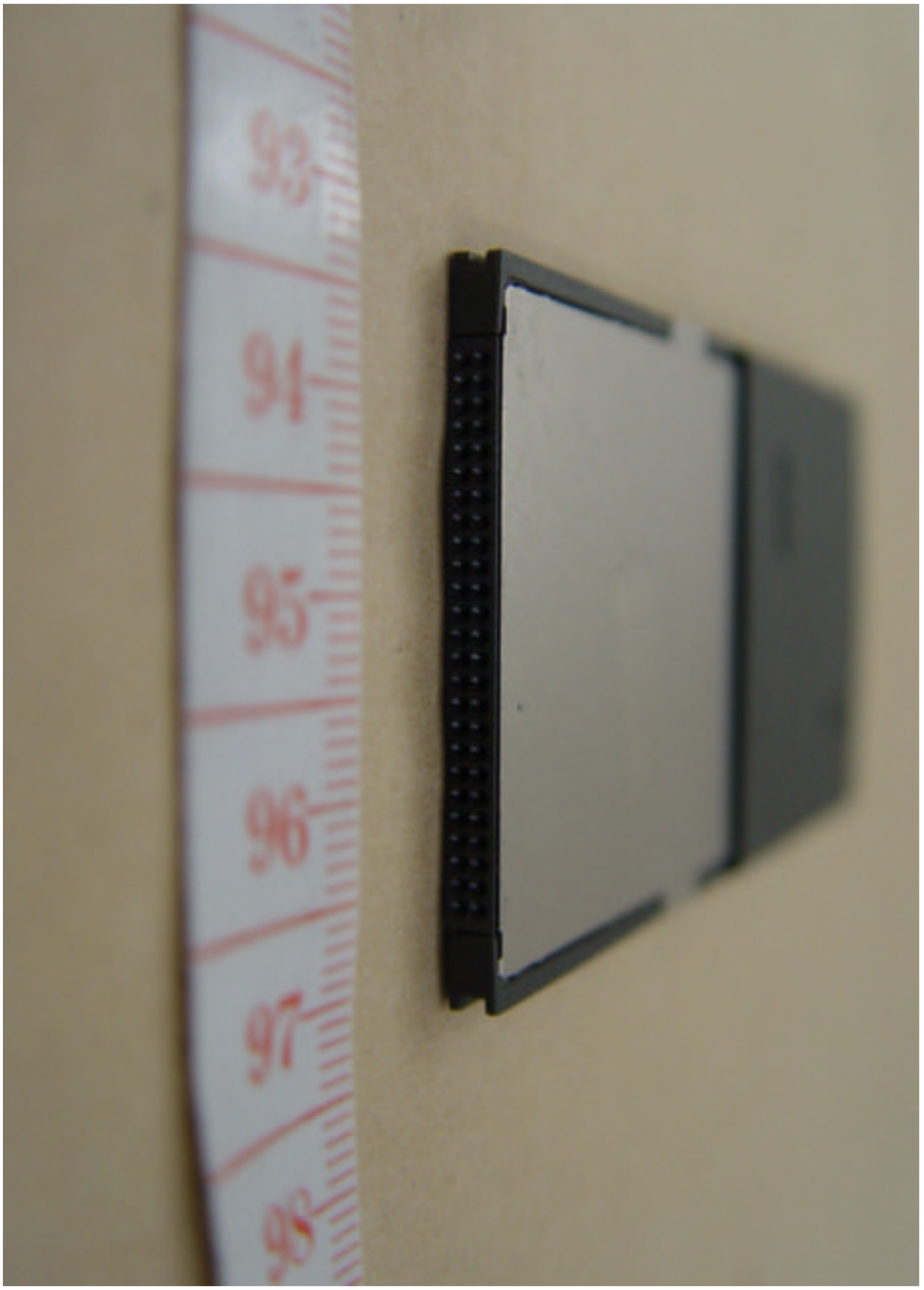
External Photo



Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T



Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T



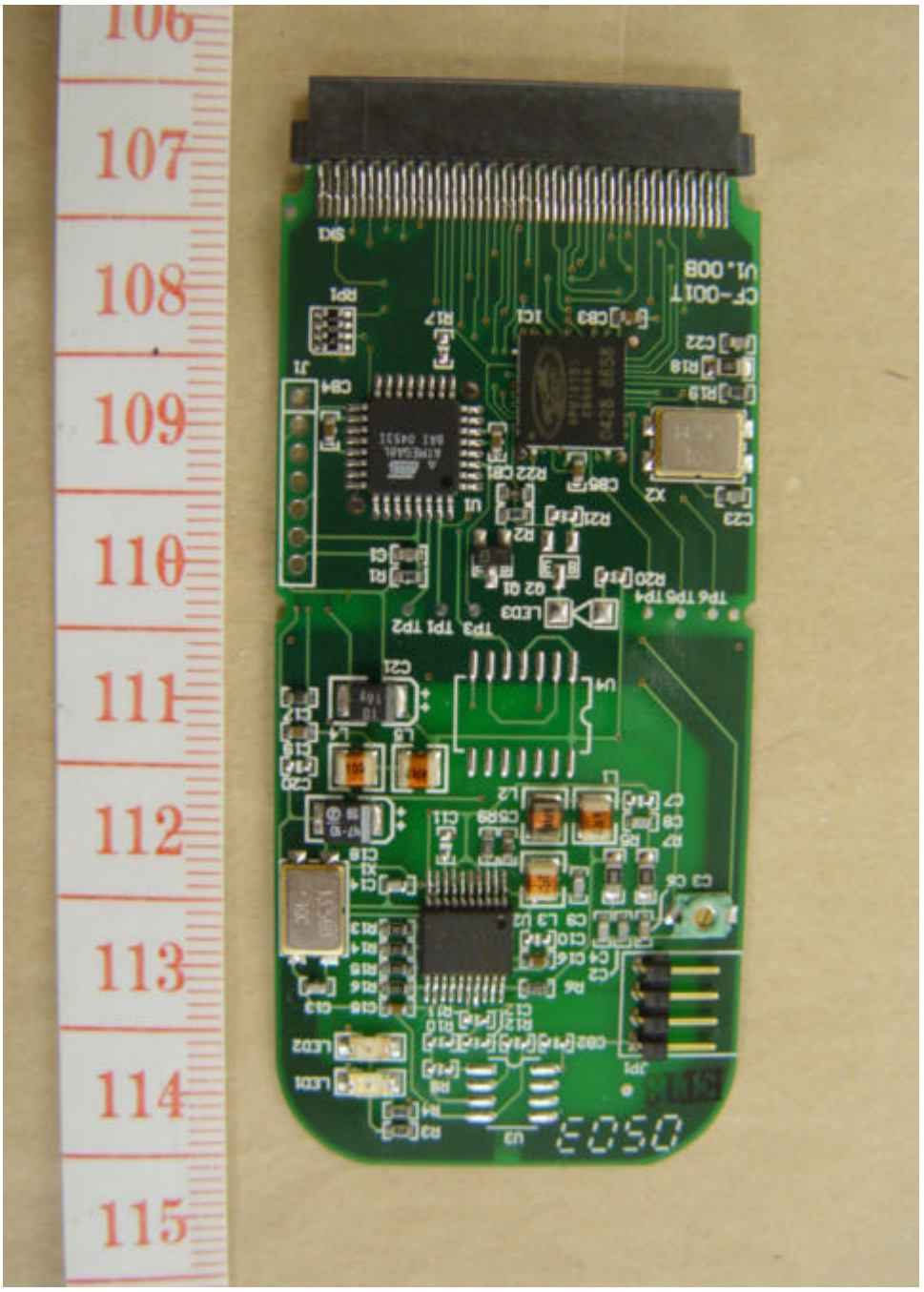
Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

Internal Photo



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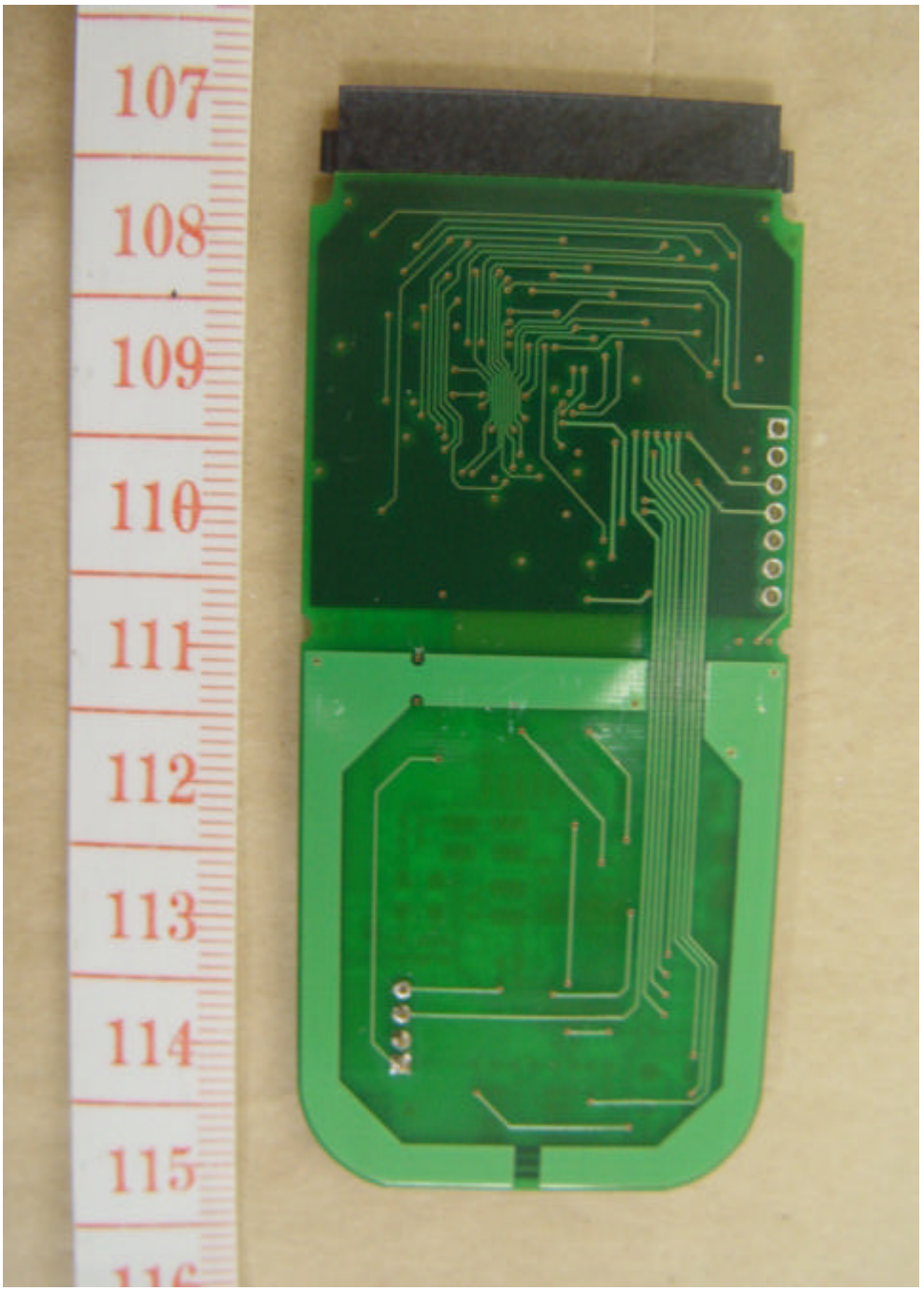
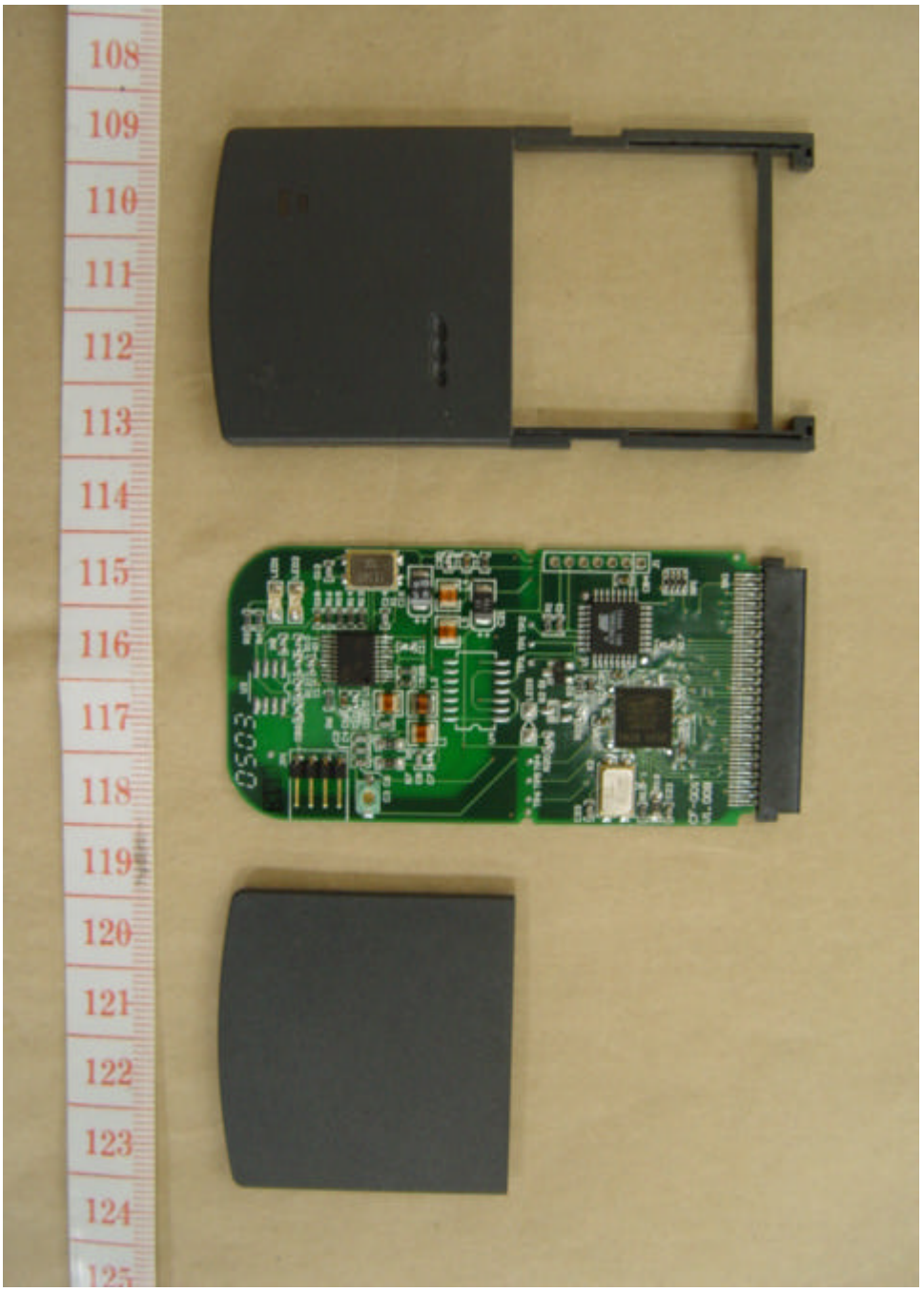
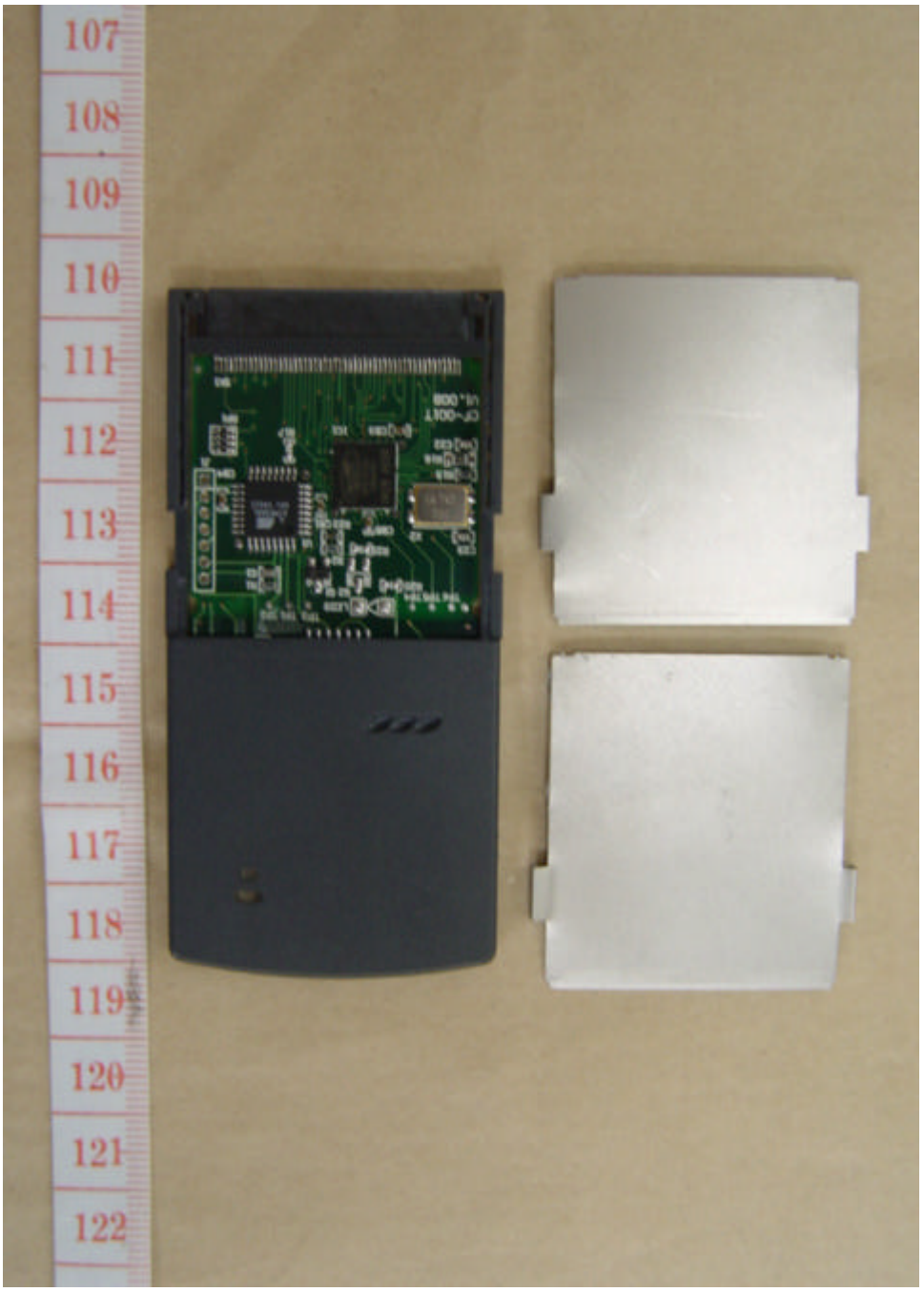
FCC ID: TEUSUNIONCF1700T



Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

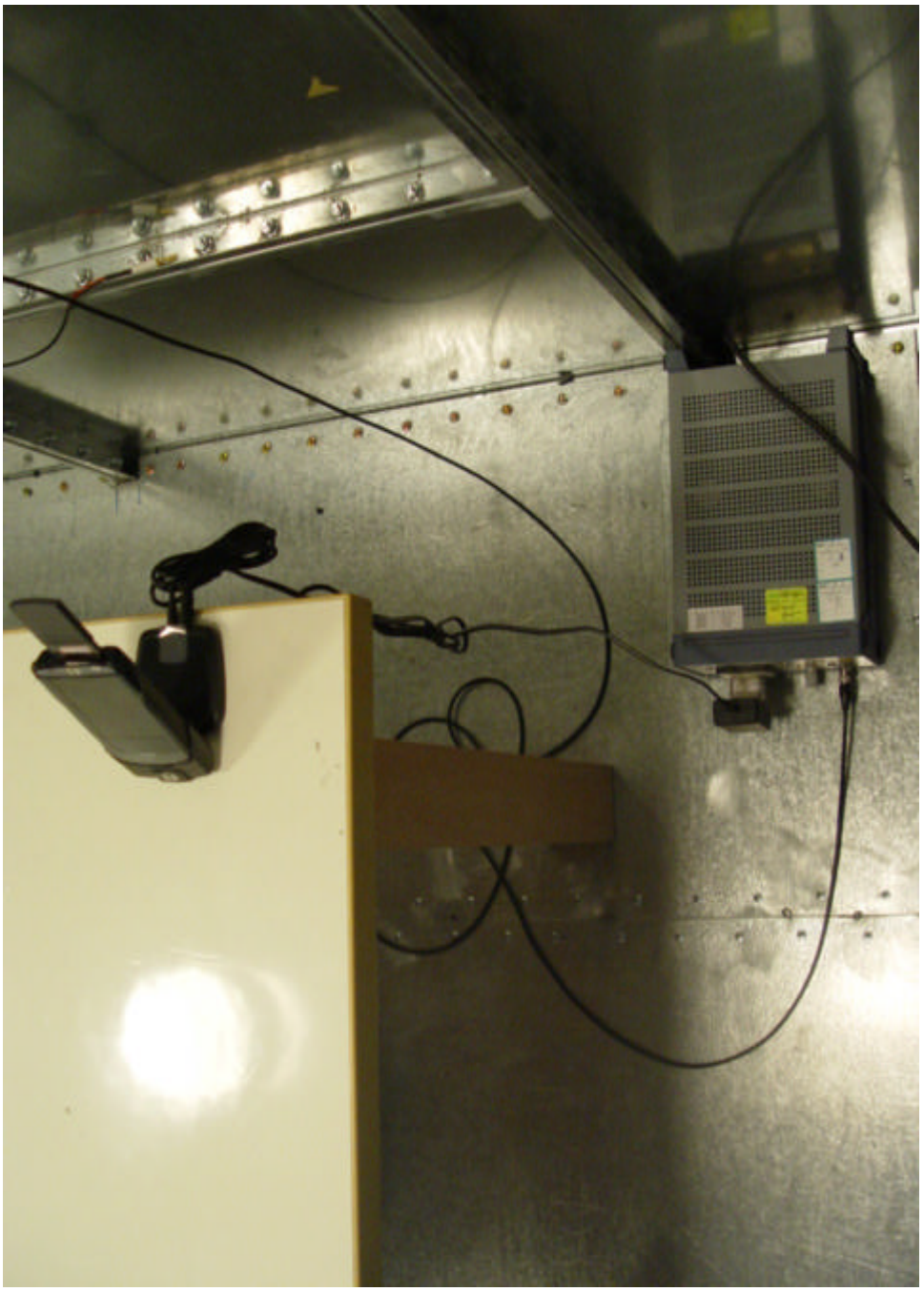


Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T



Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

Setup Photo

Registration number: W6M20505-5917-P-15
FCC ID: TEUSUNIONCF1700T

Registration number: W6M20505-5917-P-15
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