SK TECH CO., LTD.

FCC-Certificate of Compliance

Test Report No.:	**SKTTRT-070808-021**		
KOLAS No.:	**KT191**		
Applicant:	**LAMPUSTECH Co., Ltd.**		
Applicant Address:	4F, Samgong Bldg., 58-7, Banpo4-dong, Seocho-gu, Seoul, 137-803, South Korea		
Manufacturer:	**LAMPUSTECH Co., Ltd.**		
Manufacturer Address:	4F, Samgong Bldg., 58-7, Banpo4-dong, Seocho-gu, Seoul, 137-803, South Korea		
Equipment Under Test:	**DuoPass**		
FCC ID:	**VEVLFRDP-5100**	**Model No.:**	**DP-5100**
Receipt No.:	SKTEU07-0585	**Date of receipt:**	June 14, 2007
Date of Issue:	Aug. 08, 2007		
Location of Testing:	**SK TECH CO., LTD.** 820-2, Wolmoon-Ri, Wabu-Up, Namyangju-Si, Kyunggi-Do, Korea		
Test Procedure:	**ANSI C63.4 / 2003**		
Test Specification:	**47CFR, Part 15 Subpart C**		
Equipment Class:	**DXX - Part 15 Low Power Communication Device Transmitter**		
Test Result:	The above-mentioned device has been tested and passed.		

Tested & Reported by: *Seong-Baek, Ko*

2007. 08. 08

Signature *Date*

Approved by: *Jong-Soo, Yoon*

2007. 08. 08

Signature *Date*

Other Aspects:	
Abbreviations:	**· OK, Pass = passed · Fail = failed · N/A = not applicable**

☞

- **This test report is not permitted to copy partly and entirely without our permission.**
- **This test result is dependent on only equipment to be used.**
- **This test result is based on a single evaluation of submitted samples of the above mentioned.**
- **This test report is the accredited testing items by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.**

>> CONTENTS <<

1. GENERAL

These tests were performed using the test procedure outlined in ANSI C63.4, 2003 for intentional radiators, and in accordance with the limits set forth in FCC Part 15.225. The EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards.

We attest to the accuracy of data. All measurements reported herein were performed by SK Tech Co., Ltd. and were made under Chief Engineer's supervision.
We assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

2. TEST SITE

SK TECH Co., Ltd.

2.1 Location

820-2, Wolmoon-Ri, Wabu-Up, Namyangju-Si, Kyunggi-Do, Korea
(FCC Reristered Test Site Number: 90752)

This test site is in compliance with ISO/IEC 17025 for general requirements for the competence of testing and calibration laboratories.
This laboratory is recognized as a Conformity Assessment Body(CAB) for CAB's Designation Number: KR0007 by FCC, is accredited by NVLAP for NVLAP Lab. Code: 200220-0, DATech for DAR-Registration No.: DAT-P-076/97-01 and KOLAS for Accreditation No. : KT191.

2.2 List of Test and Measurement Instruments

Description	Manufacturer	Model #	Serial #	
Spectrum Analyzer	Agilent	E4405B	US40520856	
EMC Spectrum Analyzer	Agilent	E7405A	US40240203	☒
EMI Test Receiver	Rohde&Schwarz	ESIB40	100277	☒
EMI Test Receiver	Rohde&Schwarz	ESHS10	835871/002	
EMI Test Receiver	Rohde&Schwarz	ESHS10	862970/019	☒
Artificial Mains Network	Rohde&Schwarz	ESH2-Z5	834549/011	☒
Pre-amplifier	HP	8447F	3113A05153	☒
Pre-amplifier	MITEQ	AFS44	1116321	
Pre-amplifier	MITEQ	AFS44	1116322	
Power Meter	Agilent	E4418B	US39402179	
Power Sensor	HP	8485A	3318A13916	
Oscilloscope	Agilent	54820A	US40240160	
Diode detector	Agilent	8473C	1882A03173	
High Pass Filter	Wainwright	WHKX3.0/18G	8	
Attenuator (10dB)	HP	8491B	38067	☒
Dumy Load	-	-	-	☒
VHF Precision Dipole Antenna(TX/RX)	Schwarzbeck	VHAP	1014 / 1015	
UHF Precision Dipole Antenna(TX/RX)	Schwarzbeck	UHAP	989 / 990	
Loop Antenna	Schwarzbeck	HFH2-Z2	863048/019	☒
TRILOG Broadband Antenna	Schwarzbeck	VULB9160	3141	☒
Biconical Antenna	Schwarzbeck	VHA9103	2265	
Log-Periodic Antenna	Schwarzbeck	UHALP9107	1819	
Horn Antenna	AH Systems	SAS-200/571	304	
Horn Antenna	EMCO	3115	00040723	
Horn Antenna	EMCO	3115	00056768	
Vector Signal Generator	Agilent	E4438C	MY42080359	
PSG analog signal generator	Agilent	E8257D-520	MY45141255	
DC Power Supply	HP	6634A	2926A-01078	
DC Power Supply	HP	6622A	3448A03950	
Digital Multimeter	HP	HP3458A	2328A14389	
PCS Interface	HP	83236B	3711J00881	
CDMA Mobile Test Set	HP	8924C	US35360253	
Hygro/Thermo Graph	SATO	PC-5000TRH-II	-	☒
Temperature/Humidity Chamber	All Three	ATH-50M	20030425	☒

2.3 Test Date

Date of Application : June 14, 2007

Date of Test : June 26, 2007 ~ Aug. 07, 2007

2.4 Test Environment

See each test item's description.

3. DESCRIPTION OF THE EQUIPMENT UNDER TEST

The product specification described herein was obtained from the product data sheet or user's manual.

3.1 Rating and Physical Characteristics

No. Of Unit		One (13.56 MHz Transmitter)
Type / Model No.		DuoPass/ DP-5100
Power source		External AC/DC adaptor(Output: DC 12 V, 3 A)
Local Oscillator or X-Tal		Local Oscillator: 33.5 MHz X-Tal: 32.768 kHz, 14.7456 MHz
Tx Frequency		13.56 MHz
Antenna Type		PCB Loop Antenna(Diameter : 37 mm, 3 turns)
Type of Modulation		ASK
External Ports	- TCP/IP Port - RS232 Port - RS485 Port - Wiegand Port - DC Input Port	- 10 base-T Ethernet - full duplex - half duplex(default speed is 9600 bps) - when interfacing with ACU - AC/DC Adaptor used Manufacturer: Dream Electronic Co., Ltd. Model Name: HASU11FB Input: AC 100 – 240 V, 50/60 Hz, 1.5 A Output: DC 12 V, 3.0 A

**: The test report for compliance with FCC Part 15B as a Class B digital device was made under DoC process with separate the report.

3.2 Equipment Modifications

None.

3.3 Submitted Documents

Block diagram

Schematic diagram

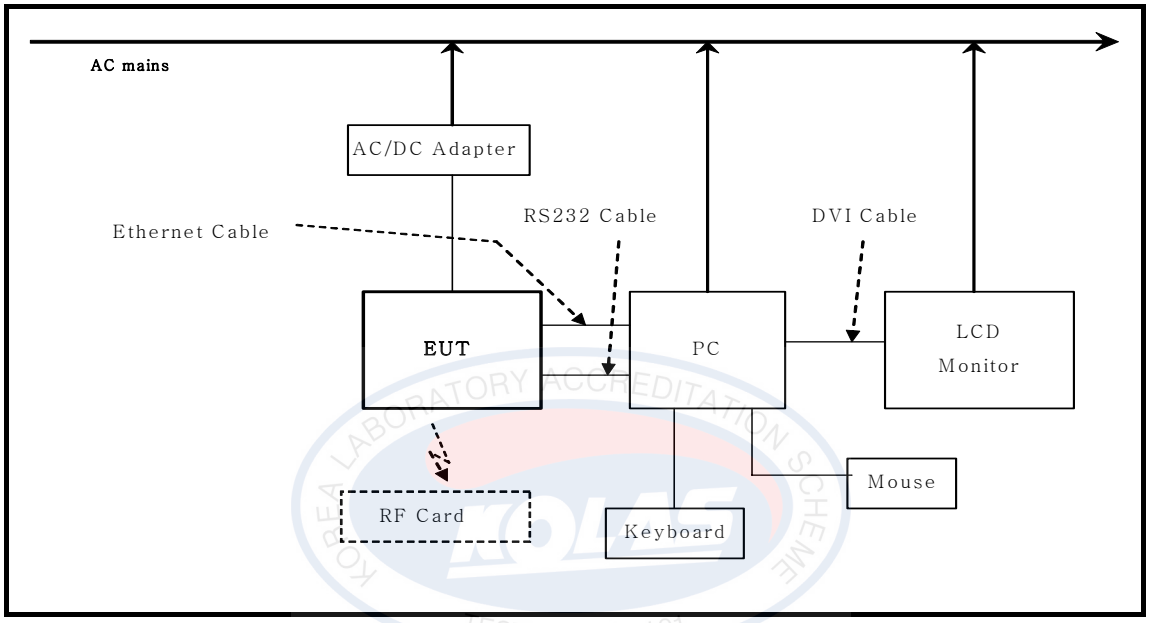
Part List

User manual

4. MEASUREMENT CONDITIONS

4.1 Description of test configuration

The measurements were taken in a test mode for RF transmitting continuously.



4.2 List of Peripherals

Equipment Type	Manufacture	Model	Cable Description
AC/DC Adapter #1	Dream Electronic Co., Ltd.	HASU11FB	DC Power Cable: 1.5 m, Shielded (Ferrite Core)
PC	DELL	OPTIPLEX GX620	Ethernet Cable : 3.0 m, Unshielded
			RS232 Cable: 0.3 m + 3.0 m(extended cable) Unshielded
LCD MONITOR	DELL	1707FPt	DVI Cable: 1.8 m, Shielded
Mouse(USB type)	DELL	MO56UOA	1.5 m, Unshielded
Keyboard(USB type)	DELL	SK-8115	1.5 m, Shielded(Ferrite Core)
RF Card	Supplied by the applicant		-

4.3 Uncertainty

Measurement Item	Combined Standard Uncertainty Uc	Expanded Uncertainty U = KUc (K = 2)
Radiated disturbance	± 2.30 dB	± 4.60 dB
Conducted disturbance	± 1.96 dB	± 3.92 dB

5. TEST AND MEASUREMENTS

Summary of Test Results

Requirement	FCC, 47CFR15	Report Section	Test Result
Antenna Requirement	15.203	5.1	PASS
Radiated Emissions Field Strength within the band 13.553-13.567 MHz	15.225(a)	5.2	PASS
Field Strength within the bands 13.410-13.553 MHz and 13.567-13.710 MHz 13.110-13.410 MHz and 13.710-14.010 MHz	15.225(b) & (c)	5.2	PASS
Radiated Harmonics and Spurious Emissions Outside of the 13.110 – 14.010 MHz	15.225(d)	5.2	PASS
Frequency Tolerance of Carrier Signal	15.225(e)	5.3	PASS
Power Line Conducted Emissions	15.207(a)	5.4	PASS

5.1 ANTENNA REQUIREMENT

5.1.1 Regulation

FCC section 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of Part 15C. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31 (d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

5.1.2 Result: PASS

The EUT has an integral PCB loop antenna (13.56 MHz transmitter), and meets the requirements of this section.

5.2 RADIATED EMISSIONS

5.2.1 Regulation

FCC 47CFR15 – 15.225

(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.

(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 (MHz)	Field strength limit (μV/m) @ 30 m	Field strength limit (dBμV/m) @ 30 m	Field strength limit (dBμV/m) @ 3 m
13.110 – 13.410	106	40.5	80.5
13.410 – 13.553	334	50.5	90.5
13.553 – 13.567	15,848	84.0	124.0
13.567 – 13.710	334	50.5	90.5
13.710 – 14.010	106	40.5	80.5

FCC 47CFR15 – 15.209

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength limit (μV/m)	Field strength limit (dBμV/m)	Measurement Distance (m)
0.009 – 0.490	2400/F (kHz) = 266.7 – 4.9	48.5 – 13.8	300
0.490 – 1.705	24000/F (kHz) = 49.0 – 14.1	33.8 – 23.0	30
1.705 – 30.0	30	29.5	30
30 – 88	100	40.0	3
88 – 216	150	43.5	3
216 – 960	200	46.0	3
Above 960	500	54.0	3

* Use quasi-peak below 1000 MHz and averaging meter above 1000 MHz.

* The lower limit shall apply at the transition frequencies.

5.2.2 Measurement Procedure

Radiated Emissions Test, 9 kHz to 30 MHz (Magnetic Field Test)

1. The preliminary radiated measurements were performed to determine the frequency producing the maximum emissions at a distance of 3 meters according to Section 15.31(f)(2).
2. The EUT was placed on the top of the 0.8-meter height, 1 × 1.5 meter non-metallic table.
3. Emissions from the EUT are maximized by adjusting the orientation of the Loop antenna and rotating the EUT on the turntable. Manipulating the system cables also maximizes EUT emissions if applicable.
4. To obtain the final measurement data, each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.

Radiated Emissions Test, 30 MHz to 18000 MHz

1. The preliminary radiated measurements were performed to determine the frequency producing the maximum emissions in an anechoic chamber at a distance of 3 meters.
2. The EUT was placed on the top of the 0.8-meter height, 1 × 1.5 meter non-metallic table. To find the maximum emission levels, the height of a measuring antenna was changed and the turntable was rotated 360˚.
3. The antenna polarization was also changed from vertical to horizontal. The spectrum was scanned from 30 to 1000 MHz using the TRILOG broadband antenna, and from 1000 MHz to 18000 MHz using the horn antenna.
4. To obtain the final measurement data, the EUT was arranged on a turntable situated on a 4 × 4 meter at the Open Area Test Site. The EUT was tested at a distance 3 meters.
5. Each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.
6. The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT.

5.2.3 Calculation of the field strength limits below 30 MHz

1. No special calculation for obtaining the field strength in dBμV/m is necessary, because the EMI receiver and the active loop antenna operate as a system, where the reading gives directly the field strength result (dBμV/m). The antenna factors and cable losses are already taken into consideration.
2. For test distance other than what is specified, but fulfilling the requirements of section 15.31 (f) (2) the field strength is calculated by adding additionally an extrapolation factor of 40dB/decade (inverse linear distance for field strength measurements).
3. All following emission measurements were performed using the test receiver's average, peak, and quasi-peak detector function with specified bandwidth.
4. The basic equation is as follows;

FS= RA + DF

Where

FS = Field strength in dBμV/m

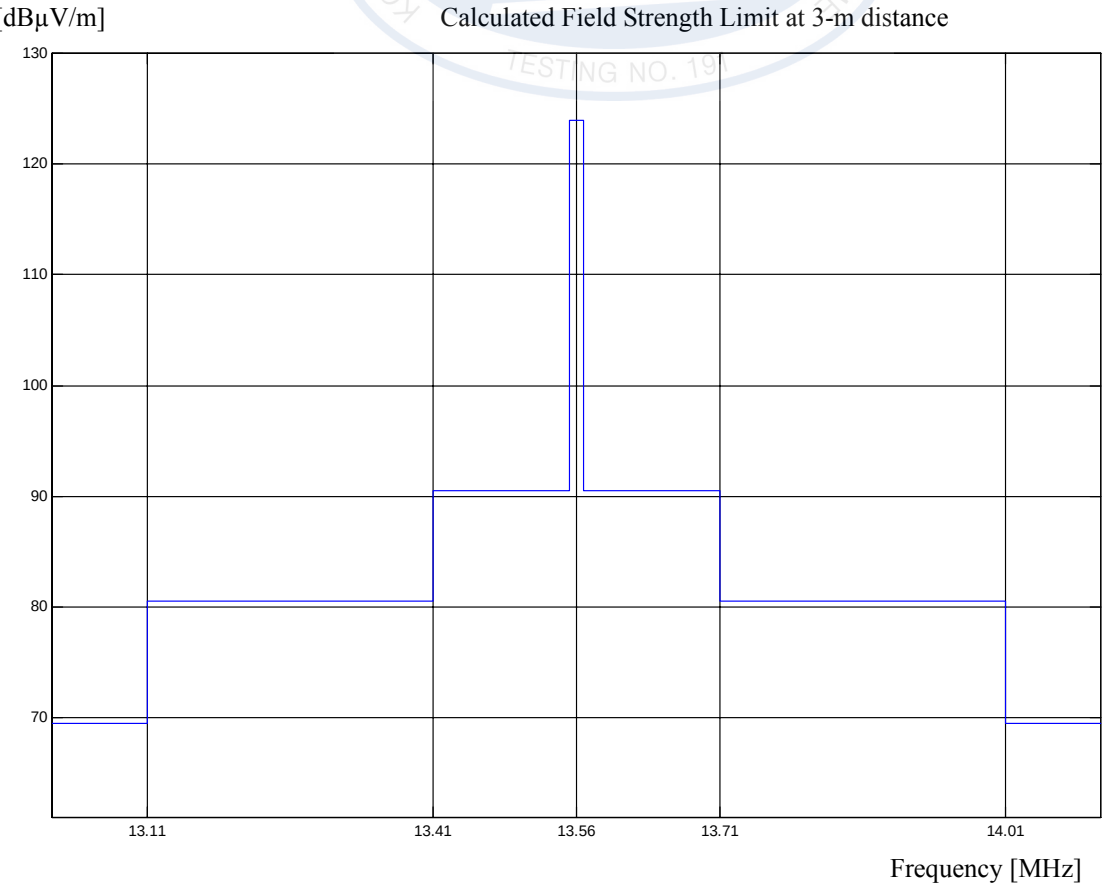
RA = Receiver Amplitude in dBμV/m

DF = Distance Extrapolation Factor in dB

Where DF = $40\log(D_{TEST} / D_{SPEC})$ where D_{TEST} = Test Distance and D_{SPEC} = Specified Distance

DF = 40log(3m/300m) = -80dB, for frequency band: 0.009 to 0.490MHz

DF = 40log(3m/30m) = -40dB, for frequency band: 0.490 to 30MHz



5.2.4 Test Results: PASS

TEST MODE: Continuously Transmitting condition(modulated)

Table 1: Field strength below 30 MHz

Frequency [MHz]	RBW [kHz]	Reading [dB(μV/m)]	Amp Gain [dB]	Cable Loss [dB]	Actual [dB(μV/m)]	Limit (at 3m) [dB(μV/m)]	Margin [dB]
Emissions Quasi-peak DATA under 15.225(a), (b)&(c)							
13.560	9	69.9	-	0.3	70.2	124.0	53.8
13.426	9	45.8	-	0.3	46.1	90.5	44.4
13.482	9	48.3	-	0.3	48.6	90.5	41.9
13.637	9	48.1	-	0.3	48.4	90.5	42.1
13.693	9	46.1	-	0.3	46.4	90.5	44.1
Emissions Quasi-peak DATA under 15.225(d), 15.209							

Actual (dBμV/m) = Reading + Cable Loss
Margin (dB) = Limit – Actual

TEST MODE: Continuously Transmitting condition(modulated)

Table 2: Field strength above 30 MHz

Frequency [MHz]	RBW [kHz]	Pol.	Angle [degree]	Height [m]	Reading [dBuV/m]	Amp Gain [dBuV/m]	AF [dB(1/m)]	CL [dB(1/m)]	Actual [dBuV/m]	Limit [dBuV/m]	Margin [dB]
129.05	120	H	262	1.57	22.4	-	10.7	1.1	34.2	43.5	9.3
135.62	120	V	321	1.00	25.0	-	10.7	1.1	36.8	43.5	6.7
298.33	120	H	73	1.00	24.7	-	11.3	1.6	37.6	46.0	8.4
311.91	120	H	63	1.37	26.5	-	12.9	1.7	41.1	46.0	4.9
339.02	120	H	347	1.00	29.1	-	12.9	1.7	43.7	46.0	2.3*
366.16	120	H	77	1.00	22.1	-	14.1	1.8	38.0	46.0	8.0

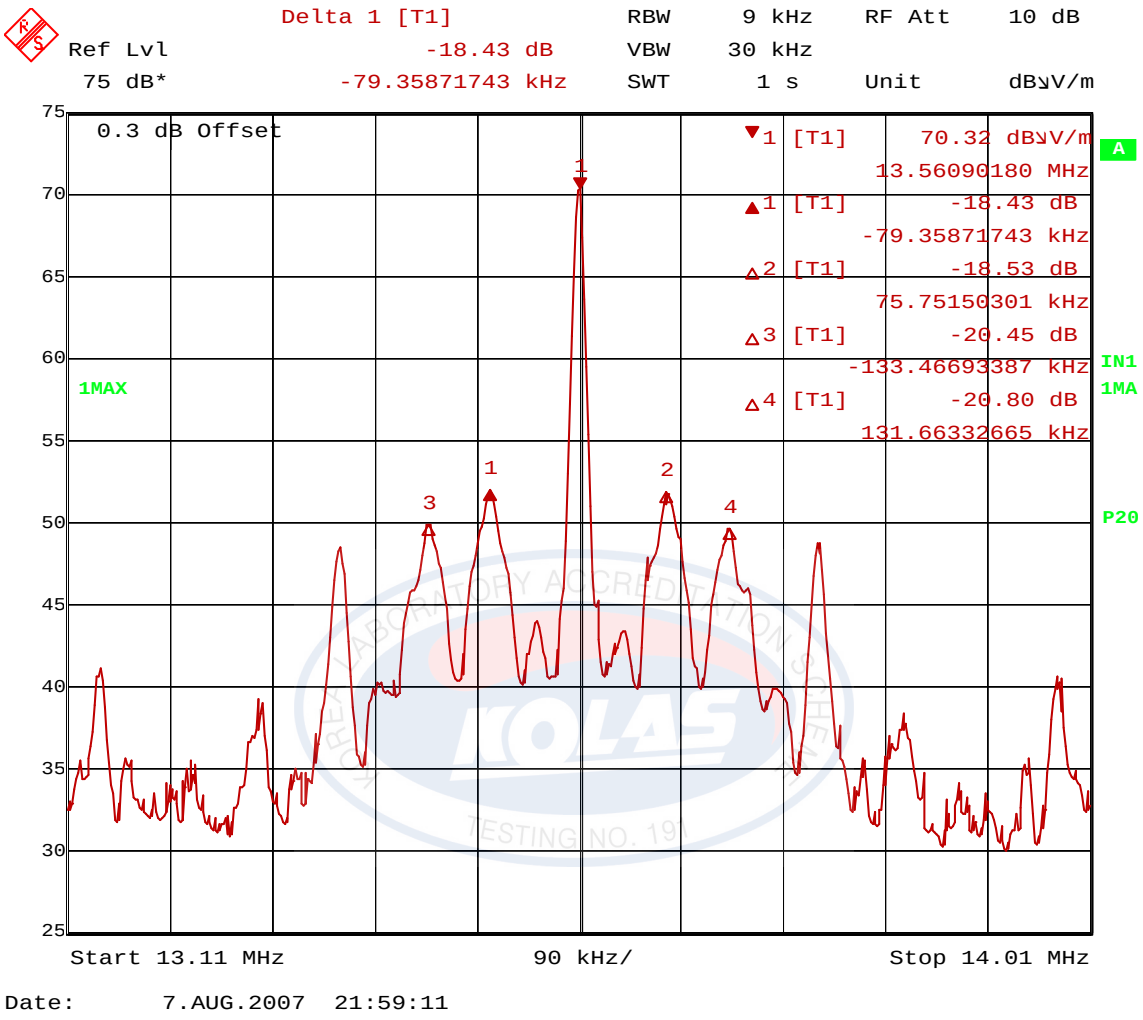
Margin (dB) = Limit – Actual
[Actual = Reading + AF + CL]
1. H = Horizontal, V = Vertical Polarization
2. AF/CL = Antenna Factor and Cable Loss

* The measured result is within the test standard limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliance based on the 95 % level of confidence. However, the result indicates that compliance is more probable than non-compliance.

NOTE: The spectrum was scanned from 30 MHz to 1 GHz. All emissions not reported were more than 20 dB below the specified limit or in the noise floor.

Figure 1. Plot of the Band edge

TEST MODE: Continuously Transmitting condition(modulated)



Offset(0.3 dB) = Cable Loss(0.3 dB)

Spectrum Analyzer setting was as follows;

Frequency range: 13.11 to 14.01 MHz

Resolution bandwidth: 9 kHz

Detector: Peak

Trace: Max Hold Mode

5.3 FREQUENCY TOLERANCE OF CARRIER SIGNAL

5.3.1 Regulation

FCC 47CFR15 – 15.225(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.

5.3.2 Measurement Procedure

Frequency stability versus environmental temperature

1. Supply the EUT with nominal AC voltage.
2. Turn the EUT off, and place it inside an environmental temperature chamber. For devices that are normally operated continuously, the EUT may be energized while inside the test chamber. For devices that have oscillator heaters, energize only the heater circuit while the EUT is inside the chamber.
3. RF output was connected to a frequency counter or other frequency-measuring instrument via feed through attenuators.
4. Set the temperature control on the chamber to the highest specified EUT operating temperature, and allow the temperature inside the chamber to stabilize at the set temperature before starting frequency measurements.
5. While maintaining a constant temperature inside the environmental chamber, turn the EUT on and record the operating frequency at startup and two, five, and ten minutes after the EUT is energized.
6. After all measurements have been made at the highest specified temperature turn the EUT off.
7. Repeat the above measurement process for the EUT with the test chamber set at the appropriate temperature.

Frequency Stability versus Input Voltage

1. At room temperature (20 ± 5 °C), supply the EUT with nominal AC voltage.
2. Couple RF output to a frequency counter or other frequency-measuring instrument.
3. Turn the EUT on, and measure the EUT operating frequency at startup and two, five, and ten minutes after startup.
4. Supply it with 85% of the nominal AC voltage and repeat the above procedure.
5. Supply it with 115% of the nominal AC voltage and repeat the above procedure.

5.3.3 Test Results: PASS

TEST MODE: without RFID card (unmodulated)

Table 3: Frequency Tolerance

Reference Frequency: 13.5600MHz, LIMIT: within ± 1356 Hz									
Environment Temperature	Power Supplied	Carrier Frequency Measured with Time Elapsed							
		STARUP		2 minutes		5 minutes		10 minutes	
[°C]	[V_{AC}]	[MHZ]	Err [Hz]	[MHZ]	Err [Hz]	[MHZ]	Err [Hz]	[MHZ]	Err [Hz]
+50	120	13.560581	581	13.560577	577	13.560575	575	13.560575	575
+40	120	13.560537	537	13.560534	534	13.560531	531	13.560530	530
+30	120	13.560488	488	13.560485	485	13.560485	485	13.560486	486
+20	120	13.560441	441	13.560432	432	13.560429	429	13.560427	427
+10	120	13.560494	494	13.560486	486	13.560485	485	13.560485	485
0	120	13.560561	561	13.560558	558	13.560554	554	13.560553	553
-10	120	13.560507	507	13.560503	503	13.560501	501	13.560499	499
-20	120	13.560453	453	13.560445	445	13.560442	442	13.560441	441

Reference Frequency: 13.5600MHz, LIMIT: 100 PPM (within ± 1356 Hz)								
Power Supplied	Carrier Frequency Measured with Time Elapsed							
	STARUP		2 minutes		5 minutes		10 minutes	
[V_{AC}]	[MHZ]	Err [Hz]	[MHZ]	Err [Hz]	[MHZ]	Err [Hz]	[MHZ]	Err [Hz]
85 %	13.560447	447	13.560435	435	13.560433	433	13.560433	433
100 %	13.560447	447	13.560435	435	13.560433	433	13.560433	433
115 %	13.560447	447	13.560435	435	13.560433	433	13.560433	433

Err [Hz] = Measured carrier frequency (MHz) - Reference Frequency (13.56 MHz)

5.4 CONDUCTED EMISSIONS(15.207)

5.4.1 Regulation

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Qausi-peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 – 30	60	50

* Decreases with the logarithm of the frequency.

5.4.2 Test Procedure

1. The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 cm in which is located 40 cm away from the vertical wall and 1.5m away from the side wall of the shielded room.
2. Each current-carrying conductor of the EUT power cord was individually connected through a 50Ω/50μH LISN, which is an input transducer to a Spectrum Analyzer or an EMI/Field Intensity Meter, to the input power source.
3. Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.
4. The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 MHz to 30 MHz.
5. The measurements were made with the detector set to PEAK amplitude within a bandwidth of 10 kHz or to QUASI-PEAK and AVERAGE within a bandwidth of 9 kHz. The EUT was in transmitting mode during the measurements.

5.4.3 Test Results: **PASS**

Table 3: Measured values of the Conducted Emissions

Frequency [MHz]	Reading [dBμV]	L / N	CF [dB]	CL [dB]	Actual [dBμV]	Limit [dBμV]	Margin [dB]
QUASI-PEAK DATA							
0.150	44.60	L	0.13	0.01	44.74	66.00	21.26
0.160	45.62	L	0.13	0.01	45.76	65.46	19.70
0.440	36.42	L	0.13	0.04	36.59	57.06	20.47
1.635	34.62	L	0.15	0.07	34.84	56.00	21.16
4.670	35.94	L	0.24	0.16	36.34	56.00	19.66
8.200	44.29	L	0.41	0.22	44.92	60.00	15.08
8.920	41.41	L	0.41	0.22	42.04	60.00	17.96
13.555*	38.06	L	0.66	0.27	38.99	60.00	21.01
18.430	35.12	L	0.94	0.35	36.41	60.00	23.59
27.120	33.92	L	1.18	0.43	35.53	60.00	24.47
AVERAGE DATA							
0.150	29.40	L	0.13	0.01	29.54	56.00	26.46
0.160	26.86	L	0.13	0.01	27.00	55.46	28.46
0.440	28.20	L	0.13	0.04	28.37	47.06	18.69
1.635	20.17	L	0.15	0.07	20.39	46.00	25.61
4.670	28.23	L	0.24	0.16	28.63	46.00	17.37
8.200	35.48	L	0.41	0.22	36.11	50.00	13.89
8.920	31.92	L	0.41	0.22	32.55	50.00	17.45
13.560*	32.12	N	0.51	0.27	32.90	50.00	17.10
18.430	30.99	N	0.71	0.35	32.05	50.00	17.95
27.120	30.64	L	1.18	0.43	32.25	50.00	17.75

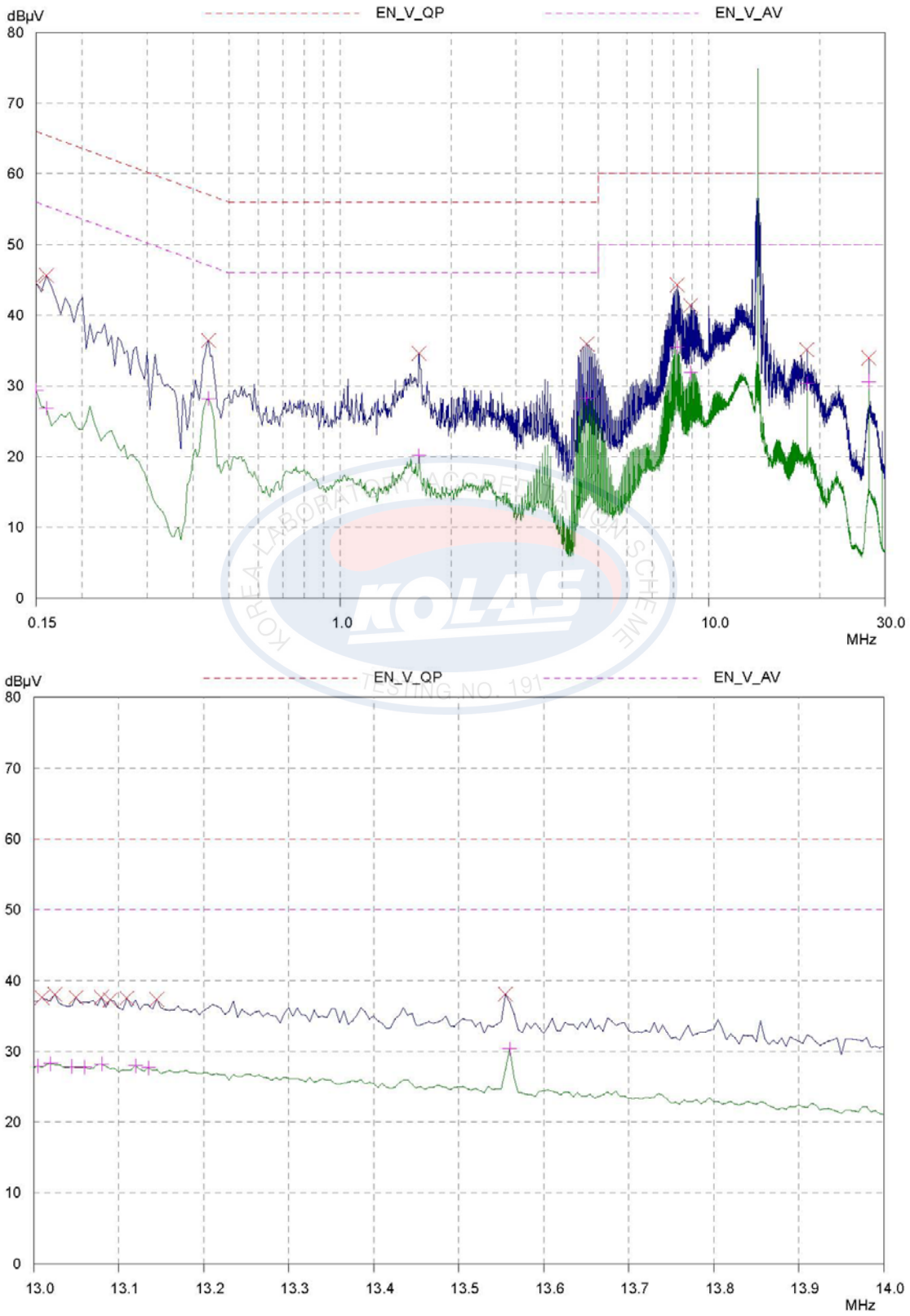
Margin (dB) = Limit – Actual
[Actual = Reading + CF + CL]
L/N = LINE / NEUTRAL
CF/CL = Correction Factor and Cable Loss

* : Only the fundamental emission band of the transmitter was retested with the 50 ohm dumy load instead of the transmitter antenna.

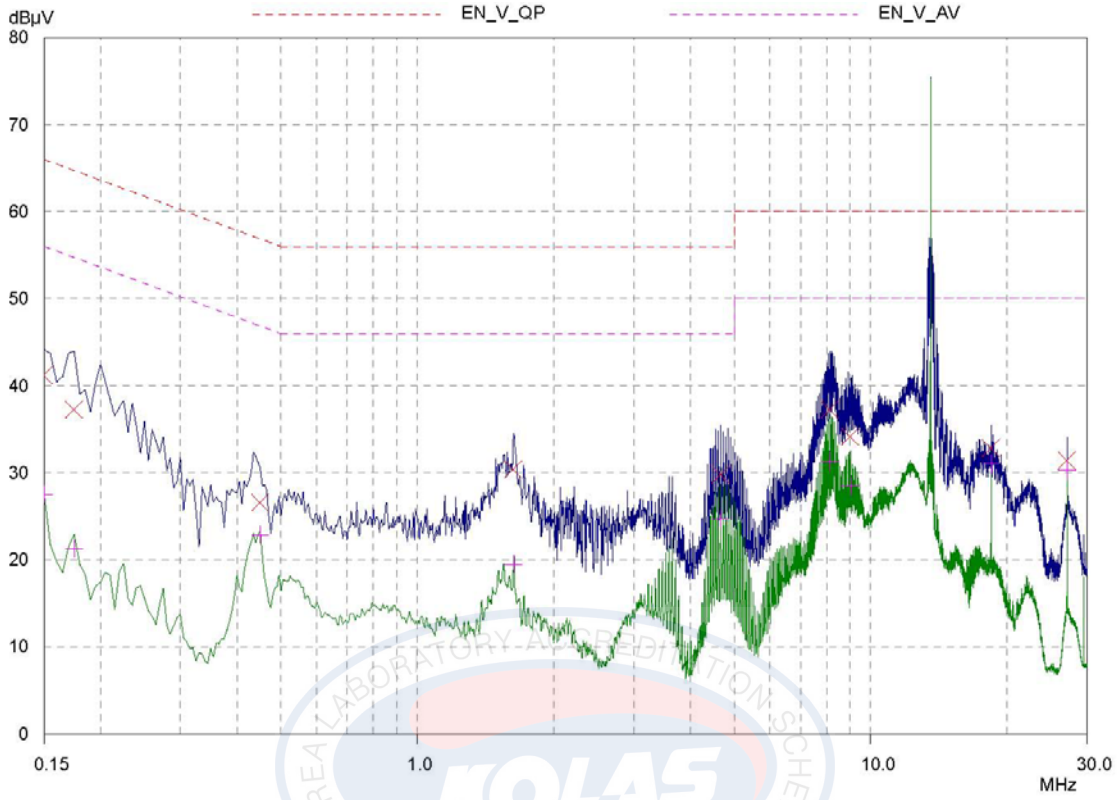
NOTE: The frequency range was scanned from 150 kHz to 30 MHz. All emissions not reported were more than 20 dB below the specified limit.

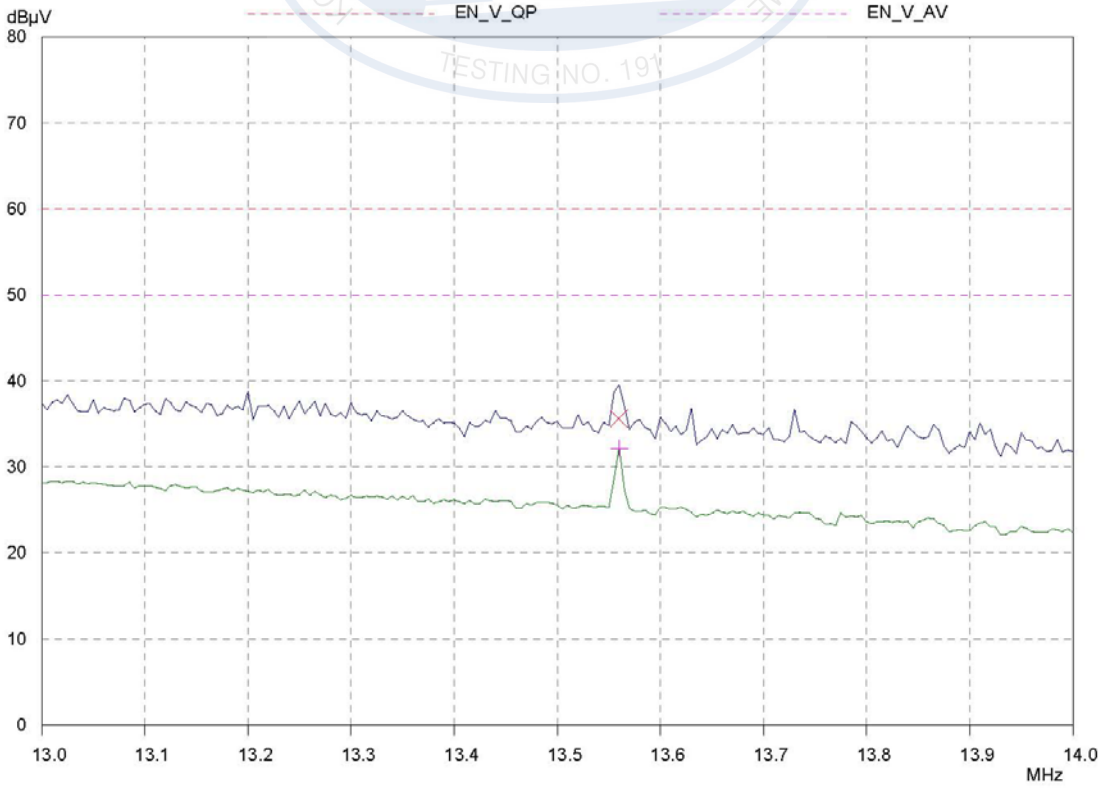
Figure 2. Plot of the Conducted Emissions

Line - PE



Neutral - PE


dBµV
EN_V_QP
EN_V_AV
80
70
60
50
40
30
20
10
0
0.15
1.0
10.0
30.0
MHz


dBµV
EN_V_QP
EN_V_AV
80
70
60
50
40
30
20
10
0
13.0
13.1
13.2
13.3
13.4
13.5
13.6
13.7
13.8
13.9
14.0
MHz