TEST REPORT

Ref. Report No.
00-341-009-01

Name and address of the applicant

ID-TECK CO., LTD.
684-1, Deungchon-Dong, Gangsuh-Gu,
Seoul, Korea 157-030

Standard / Test regulation

FCC Part 15, Subpart C

Test result

Pass

Incoming date : Feburary 12, 2000

Test date : March 29, 2000

Test item(s) ;

Low Power Transmitter Below 1705 kHz (Door Access Controller)

Model/type ref. ;

STAR100R

Manufacturer ;

ID-TECK CO., LTD.

Additional information ;
-Required Authorization : Certification
-FCC ID. : OYUSTAR100R
-Note : Test report(Verification) of Digital Device(Class A) portion of this unit is issued on Ref. Report No. 00-341-009-02.

Issue date : April 14, 2000

Tested and reported by

Jeong-Min Kim , Senior Engineer

Reviewed by

Seok-Jin Kim , EMC Team Leader

KOREA TESTING LABORATORY

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¥ ° GENERAL INFORMATION

1. Grantee Name and Mailing Address	:	ID-TECK CO., LTD. 684-1, Deungchon-Dong, Gangsuh-Gu, Seoul, Korea, 157-030
2. Manufacturer's Name and Mailing Address	:	ID-TECK CO., LTD. 684-1, Deungchon-Dong, Gangsuh-Gu, Seoul, Korea, 157-030

3. Equipment Descriptions

3.1 Operating Frequency	:	125 kHz
3.2 Modulation Method	:	PSK
3.3 Used Oscillator	:	4 MHz
3.4 Power Supply	:	DC 12V (DC Power Supply)

4. Rules and Regulations	:	FCC Part 15, Subpart C
5. Measuring Procedure	:	ANSI C63.4-1992

6. Date of Measurement

6.1 Line Conducted	:	Not Applicable
6.2 Radiated Emission	:	March 29, 2000

¥ ± GENERAL REQUIREMENTS OF THE EUT

1. Labelling Requirement (Section 15.19)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interface, and (2) this device must accept any interference received, including interference that may cause undesired operation.

1.1 Location of Label : Bottom side of EUT

1.2 How Applied : By ink-printing on adhesive label

2. Information to User (Section 15.21)

The following or similar statements were provided in the manual for user instruction.

Please refer page 13 of the attached manual for details.

CAUTION : Any changes or modifications in construction of this device which are not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

3. Special Accessories (Section 15.27)

3.1 Were the special Accessories provided? [ ] yes, [x] no

3.2 If yes, details for the special accessories are as follows :

3.3 If yes, were the appropriate instructions provided on the first page of the text concerned with the device?

[ ] yes, [ ] no

3.4 Are these accessories provided of the type which can be readily obtained from multiple retail outlets ?

[ ] yes, [ ] no

And therefore does the manual specify what additional components or accessories are required to used in order to comply with the Rules?

[ ] yes, [ ] no

¥ ²RADIATED EMISSION MEASUREMENT (Section 15.209)

1. Test Procedure

1.1 Preliminary Testing for Reference

Preliminary testing was performed in a KTL absorber-lined room to determine the emission characteristics of the EUT. The EUT was placed on the wooden table which has dimensions of 0.8 meters in height, 1 meter in length and 1.5 meters in width. Receiving antenna(Loop antenna : 0.009 to 30 MHz) was placed at the distance of 1 meter from the EUT.

An attempt was made to maximize the emission level with the various configurations of the EUT while rotating the table.

Emissions level from the EUT with various configurations were examined on a Spectrum Analyzer connected with a RF amplifier and graphed by a plotter.

1.2 Final Radiated Emission Test at a Absorber-Lined Room

The final measurement of radiated field strength was carried out in a KTL absorber-lined room that was listed up at FCC according to the "Radiated Emissions Testing" procedure specified by ANSI C63.4.

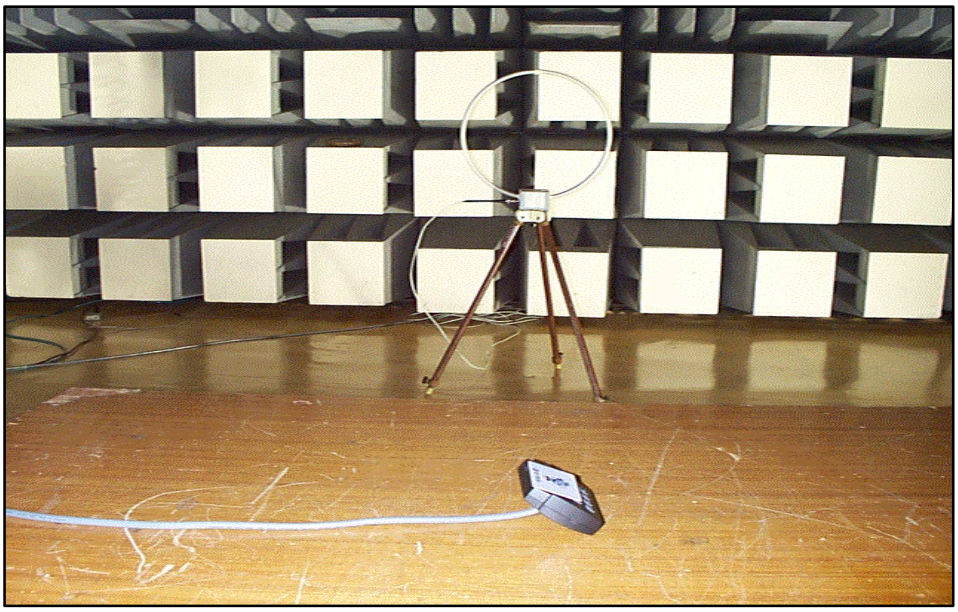
Based on the test results in preliminary test, measurement was made in same test set up and configuration which produced maximum emission level. Receiving antenna was installed at 3-meter distance from the EUT, and was connected to an EMI receiver or spectrum analyzer with a RF amplifier.

Turntable was rotated through 360 degrees and the center of the loop antenna was 1 meter above the ground plane. And the loop antenna was rotated about its vertical axis and positioned horizontally to read maximum emission level.

If necessary, the radiated emission measurements could be performed at a closer distance than specified distance to ensure higher accuracy and their results were extrapolated to the specified distance using the square of an inverse linear distance extrapolation factor(40dB/decade) as per Section 15.31(f).

The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

2. Photograph for the worst case configuration



3. Sample Calculation

The emission level measured in decibels above one microvolt (dB § Å was converted into microvolt per meter (§ Åm) as shown in following sample calculation.

For example :

	Measured Value at	0.125 MHz	69.4 dB § Å
+	Antenna Factor		9.9 dB
+	Cable Loss		0.0 dB
-	Preamplifier		0.0 dB
-	Distance Correction Factor *		80.0 dB
=	Radiated Emission		-0.7 dB § Åm
			(= 0.9 § Åm)

* Extrapolated from the measured distance(3 m) to the specified distance(300 m) using the square of an inverse linear distance extrapolation.

4. Measurement Data

- Resolution Bandwidth : x Average (6dB Bandwidth : 200 Hz)
  _____ Peak (3dB Bandwidth : 100 kHz)
  _____ CISPR Quasi-Peak (6dB Bandwidth : 200 Hz)
- Measurement Distance : 3 Meter

Frequency (MHz)	* D.M.	* A.P.	Measured Value (dB§ Å	* A.F. + C.L (dB)	* A.G. (dB)	* D.C.F. (dB)	Emission Level (dB§ Åm)	Emission Level (§ Åm)	Limit (§ Åm)	** Margin (dB)
0.125	A	H	69.4	9.9	-	-80.0	-0.7	0.9	19.2	-26.4
0.250	A	H	28.5	9.8	-	-80.0	-41.7	0.0	9.6	-61.3
0.375	A	H	29.3	9.8	-	-80.0	-40.9	0.0	6.4	-57.0
0.500	A	H	16.9	9.8	-	-40.0	-13.3	0.2	48.0	-46.9
0.625	A	H	17.3	9.7	-	-40.0	-13.0	0.2	38.4	-44.7
0.750	A	H	13.1	9.7	-	-40.0	-17.2	0.1	32.0	-47.3
-	-	-	-	-	-	-	-	-	-	-

Note

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizontal, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor
< : Less than

** Margin (dB) = Emission Level (dB) - Limit (dB)

¥ ³ TEST EQUIPMENT USED FOR MEASUREMENTS

Equipment	Model No.	Manufacturer	Serial No.	Effective Cal. Duration
[ ] EMI Receiver (20 MHz – 1 GHz)	ESVS30	R & S	830516/002	06/29/99-06/29/00
[x] Spectrum Analyzer (9 kHz - 26.5 GHz)	8563A	H. P.	3222A02069	02/18/99-02/18/01
[ ] Spectrum Analyzer (100 Hz – 22 GHz)	8566B	H. P.	3014A07057	05/29/99-05/29/00
[ ] Quasi-Peak Adapter (10 kHz – 1 GHz)	85650A	H. P.	3107A01511	05/29/99-05/29/00
[ ] RF-Preselector (20 Hz – 2 GHz)	85685A	H. P.	3010A01181	05/29/99-05/29/00
[x] Test Receiver (9 kHz – 30 MHz)	ESH3	R & S	860905/001	06/29/99-06/29/00
[x] Pre-Amplifier (0.1 – 3000 MHz, 30 dB)	8347A	H. P.	2834A00543	05/29/99-05/29/00
[ ] Pre-Amplifier (1 - 26.5 GHz, 35 dB)	8449B	H. P.	3008A00302	06/29/99-06/29/00
[ ] LISN(50 ohm , 50 μH) (10 kHz – 100 MHz)	3825/2	EMCO	9010-1710	-
[ ] LISN(50 ohm , 50 μH) (10 kHz – 100 MHz)	3825/2	EMCO	9011-1720	-
[x] Plotter	7470A	H. P.	3104A21292	-
[x] Active Loop Ant. (10 kHz – 30 MHz)	6502	EMCO	9009-2532	*
[ ] Tuned Dipole Ant. (30 MHz – 300 MHz)	VHA 9103	Schwarzbeck	-	*
[ ] Tuned Dipole Ant. (300 MHz – 1 GHz)	UHA 9105	Schwarzbeck	-	*
[ ] Biconical Ant. (30 MHz – 300 MHz)	BBA 9106	Schwarzbeck	-	*
[ ] Log Periodic Ant. (200 MHz – 1 GHz)	3146	EMCO	-	*
[ ] Horn Ant. (1 GHz – 18 GHz)	3115	EMCO	-	*
[ ] DC Power Supply	6260B	H.P.	1145A04822	-
[ ] Shielded Room (5.0 m x 4.5 m)	-	SIN-MYUNG	-	-

* Each set of antennas has been calibrated to ensure correlation with ANSI C63.5 standard. The calibration of antennas is traceable to Korea Standard Research Institute(KSRI).