

APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Superior Electronics Corporation

Heavy-Duty Outdoor Access Control Keypad with Proximity Reader

Model No.: SK-3133-PPQ

FCC ID: K4E3133PPQ

Prepared for : Superior Electronics Corporation
Address : No. 10 Lane 31, Chongde St., Sinyi District, Taipei City,
Taiwan 110

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Report No. : ATE20181750
Date of Test : October 9-October 11, 2018
Date of Report : October 12, 2018

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Test Report Declaration

Applicant : Superior Electronics Corporation
 Address : No. 10 Lane 31, Chongde St., Sinyi District, Taipei City, Taiwan
 110

Manufacturer : Superior Electronics Corporation
 Address : No. 10 Lane 31, Chongde St., Sinyi District, Taipei City, Taiwan
 110

Product : Heavy-Duty Outdoor Access Control Keypad with Proximity Reader

Model No. : SK-3133-PPQ

Measurement Procedure Used:

FCC CFR47 Part 15 Subpart C Section 15.207 and 15.209
ANSI C63.10: 2013

The device described above is tested by Shenzhen Accurate Technology Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both radiated and conducted emissions. The measurement results are contained in this test report and Shenzhen Accurate Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test : October 9-October 11, 2018
 Date of Report : October 12, 2018

Prepared by : Star Yang
 (Star Yang, Engineer)

Approved & Authorized Signer : Sean Liu
 (Sean Liu, Manager)



1. TEST RESULTS SUMMARY

Test Items	Test Standard	Test Results
Power Line Conducted Emission	FCC Part 15.207	Pass
Radiated Emission	FCC Part 15.209	Pass

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

M/N	:	SK-3133-PPQ
Operation Frequency	:	125kHz
Modulation Type	:	GFSK
Antenna Gain	:	0dBi
Type of Antenna	:	Coil Antenna
Rating	:	12-24V AC/DC

2.2. Special Accessory and Auxiliary Equipment

N/A

2.3. Description of Test Facility

- EMC Lab : Recognition of accreditation by Federal Communications Commission (FCC)
The Designation Number is CN1189
The Registration Number is 708358
- Listed by Innovation, Science and Economic Development Canada (ISED)
The Registration Number is 5077A-2
- Accredited by China National Accreditation Service for Conformity Assessment (CNAS)
The Registration Number is CNAS L3193
- Accredited by American Association for Laboratory Accreditation (A2LA)
The Certificate Number is 4297.01
- Name of Firm : Shenzhen Accurate Technology Co., Ltd
Site Location : 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

2.4. Measurement Uncertainty

- Conducted emission expanded uncertainty : U=2.23dB, k=2
- Radiated emission expanded uncertainty (9kHz-30MHz) : U=3.08dB, k=2
- Radiated emission expanded uncertainty (30MHz-1000MHz) : U=4.42dB, k=2
- Radiated emission expanded uncertainty (Above 1GHz) : U=4.06dB, k=2

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. The Equipment Used to Measure Conducted Disturbance

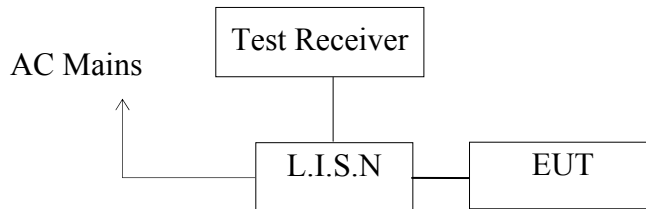
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.06, 2018	1 Year
2.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan.06, 2018	1 Year
3.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100305	Jan.06, 2018	1 Year
4.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283936	Jan.06, 2018	1 Year
5.	RF Coaxial Cable	SUHNER	N-2m	No.2	Jan.06, 2018	1 Year
6.	Measurement Software: ES-K1 V1.71					

3.2. The Equipment Used to Measure Radiated Emission

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan.06, 2018	1 Year
2.	Test Receiver	Rohde& Schwarz	ESR	101817	Jan.06, 2018	1 Year
3.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan.06, 2018	1 Year
4.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan.06, 2018	1 Year
5.	RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	Jan.06, 2018	1 Year
6.	Pre-Amplifier	Agilent	8447D	294A10619	Jan.06, 2018	1 Year
7.	Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	Jan.06, 2018	1 Year
8.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.06, 2018	1 Year
9.	RF Coaxial Cable	RESENBERGER	N-12m	No.11	Jan.06, 2018	1 Year
10.	RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	Jan.06, 2018	1 Year
11.	RF Coaxial Cable	SUHNER	N-2m	No.13	Jan.06, 2018	1 Year
12.	RF Coaxial Cable	SUHNER	N-0.5m	No.15	Jan.06, 2018	1 Year
13.	RF Coaxial Cable	SUHNER	N-2m	No.16	Jan.06, 2018	1 Year
14.	RF Coaxial Cable	RESENBERGER	N-6m	No.17	Jan.06, 2018	1 Year
15.	Measurement Software: EZ EMC V1.1.4.2					

4. POWER LINE CONDUCTED MEASUREMENT

4.1. Block Diagram of Test Setup



4.2. Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μ V)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

NOTE1: The lower limit shall apply at the transition frequencies.
 NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

4.3. Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

4.3.1. Heavy-Duty Outdoor Access Control Keypad with Proximity Reader (EUT)

Model Number : SK-3133-PPQ

Manufacturer : Superior Electronics Corporation

4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 4.1.

4.4.2. Turn on the power of all equipment.

4.4.3. Let the EUT work in test mode and measure it.

4.5. Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Measurement. The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

4.6. Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dBμV)	Average Level (dBμV)	QuasiPeak Limit (dBμV)	Average Limit (dBμV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	10.6	25.3	17.0	59.0	49.0	33.7	32.0	Pass

Transducer value = Insertion loss of LISN + Cable Loss
 Result = Quasi-peak Level/Average Level + Transducer value
 Limit = Limit stated in standard

Calculation Formula:

Margin = Limit – Reading level value – Transducer value

4.7. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

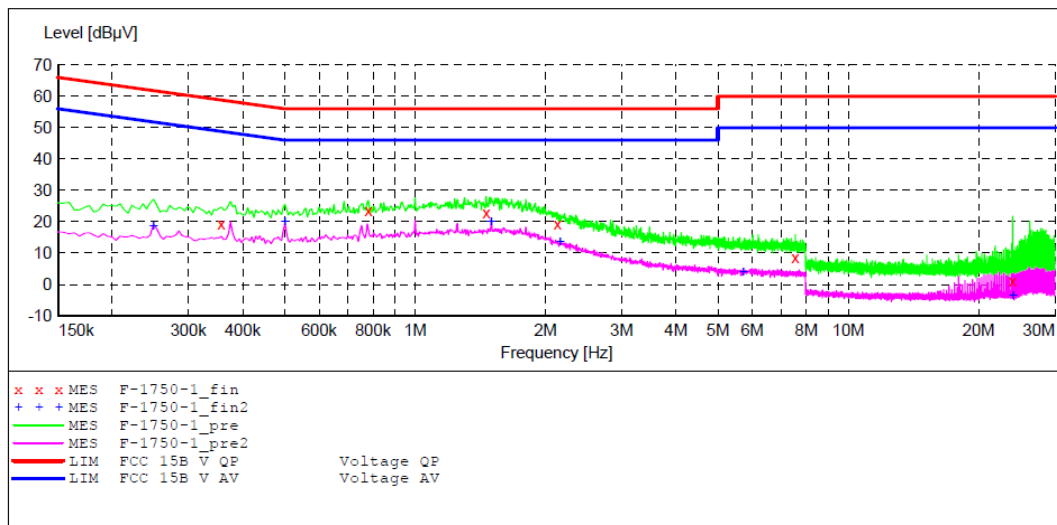
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15C

EUT: Heavy-Duty Outdoor Access Control Keypad with Proximity Reader
 Manufacturer: SUPERIOR ELECTRONICS CORPORATION
 Operating Condition: ON
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: N 24V/60Hz
 Comment: Report NO.:ATE20181750 M/N: SK-3133-PPQ
 Start of Test: 2018-10-9 / 9:46:54

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1750-1_fin"

2018-10-9 9:49

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.357000	19.40	10.9	59	39.4	QP	N	GND
0.780000	23.60	11.1	56	32.4	QP	N	GND
1.459500	23.00	11.2	56	33.0	QP	N	GND
2.130000	19.20	11.3	56	36.8	QP	N	GND
7.543500	8.60	11.5	60	51.4	QP	N	GND
23.968500	1.20	11.7	60	58.8	QP	N	GND

MEASUREMENT RESULT: "F-1750-1_fin2"

2018-10-9 9:49

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.249000	18.60	10.9	52	33.2	AV	N	GND
0.501000	20.10	11.0	46	25.9	AV	N	GND
1.500000	20.00	11.2	46	26.0	AV	N	GND
2.161500	13.40	11.3	46	32.6	AV	N	GND
5.721000	4.00	11.5	50	46.0	AV	N	GND
23.968500	-3.40	11.7	50	53.4	AV	N	GND

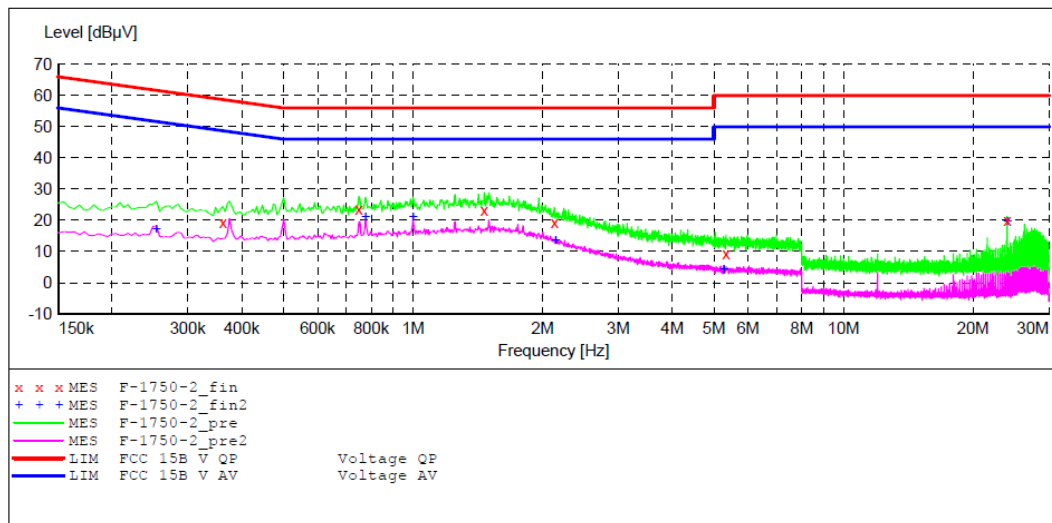
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15C

EUT: Heavy-Duty Outdoor Access Control Keypad with Proximity Reader
 Manufacturer: SUPERIOR ELECTRONICS CORPORATION
 Operating Condition: ON
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: L 24V/60Hz
 Comment: Report NO.:ATE20181750 M/N: SK-3133-PPQ
 Start of Test: 2018-10-9 / 9:50:45

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1750-2_fin"

2018-10-9 9:52

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.361500	19.40	10.9	59	39.3	QP	L1	GND
0.748500	23.70	11.1	56	32.3	QP	L1	GND
1.464000	23.10	11.2	56	32.9	QP	L1	GND
2.130000	19.20	11.3	56	36.8	QP	L1	GND
5.338500	9.40	11.5	60	50.6	QP	L1	GND
24.004500	20.00	11.7	60	40.0	QP	L1	GND

MEASUREMENT RESULT: "F-1750-2_fin2"

2018-10-9 9:52

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.253500	17.00	10.9	52	34.6	AV	L1	GND
0.775500	21.10	11.1	46	24.9	AV	L1	GND
1.000500	21.00	11.1	46	25.0	AV	L1	GND
2.143500	13.40	11.3	46	32.6	AV	L1	GND
5.271000	4.20	11.4	50	45.8	AV	L1	GND
24.004500	19.60	11.7	50	30.4	AV	L1	GND

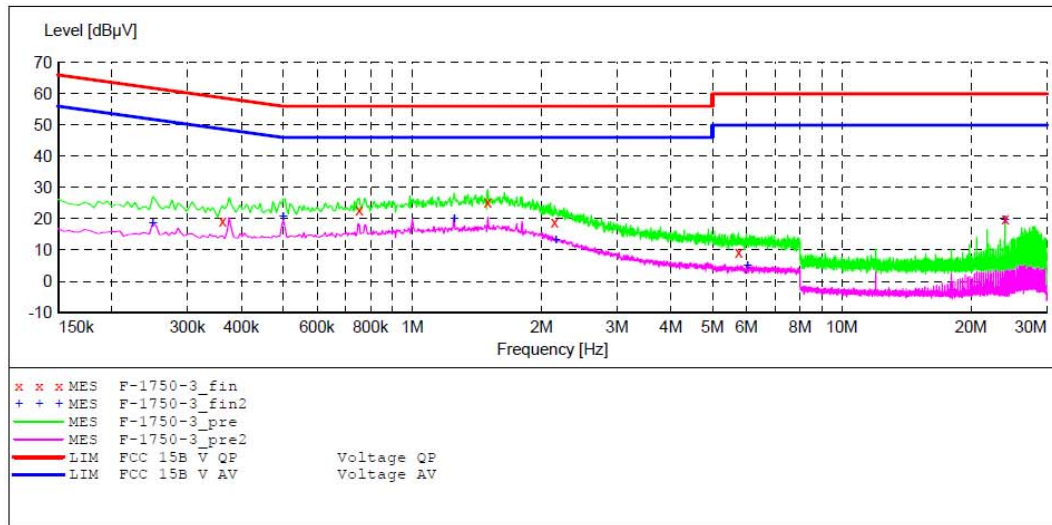
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15C

EUT: Heavy-Duty Outdoor Access Control Keypad with Proximity Reader
 Manufacturer: SUPERRIOR ELECTRONICS CORPORATION
 Operating Condition: ON
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: L 12V/60Hz
 Comment: Report NO.:ATE20181750 M/N: SK-3133-PPQ
 Start of Test: 2018-10-9 / 9:53:17

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1750-3_fin"

2018-10-9 9:55

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.361500	19.40	10.9	59	39.3	QP	L1	GND
0.753000	22.80	11.1	56	33.2	QP	L1	GND
1.500000	25.50	11.2	56	30.5	QP	L1	GND
2.143500	19.00	11.3	56	37.0	QP	L1	GND
5.752500	9.40	11.5	60	50.6	QP	L1	GND
24.004500	19.90	11.7	60	40.1	QP	L1	GND

MEASUREMENT RESULT: "F-1750-3_fin2"

2018-10-9 9:55

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.249000	18.60	10.9	52	33.2	AV	L1	GND
0.501000	20.60	11.0	46	25.4	AV	L1	GND
1.252500	19.90	11.2	46	26.1	AV	L1	GND
2.161500	13.20	11.3	46	32.8	AV	L1	GND
6.031500	5.10	11.5	50	44.9	AV	L1	GND
24.004500	19.70	11.7	50	30.3	AV	L1	GND

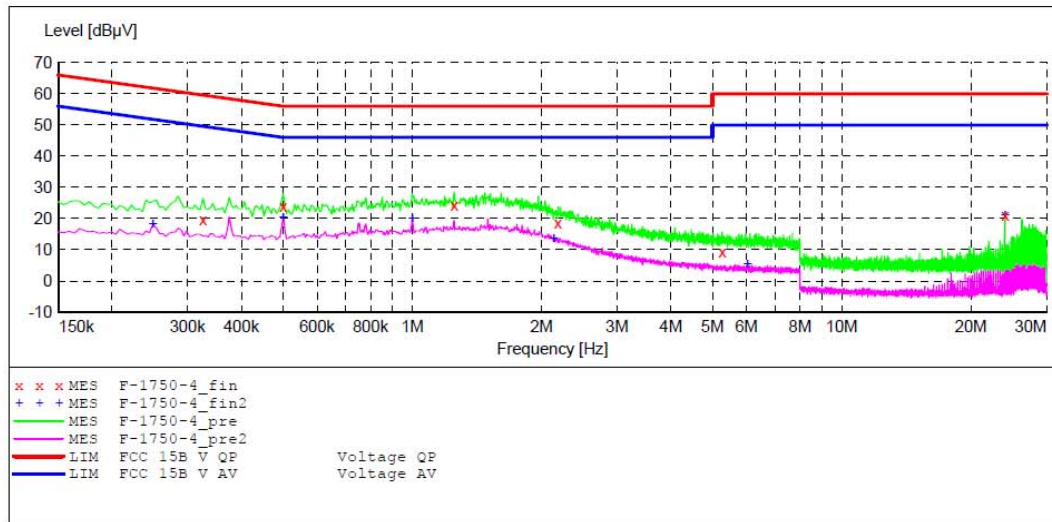
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15C

EUT: Heavy-Duty Outdoor Access Control Keypad with Proximity Reader
 Manufacturer: SUPERRIOR ELECTRONICS CORPORATION
 Operating Condition: ON
 Test Site: 2#Shielding Room
 Operator: Frank
 Test Specification: N 12V/60Hz
 Comment: Report NO.:ATE20181750 M/N: SK-3133-PPQ
 Start of Test: 2018-10-9 / 9:55:54

SCAN TABLE: "V 150K-30MHz fin"

Short Description: _SUB_STD_VTERM2 1.70
 Start Stop Step Detector Meas. IF Transducer
 Frequency Frequency Width Time Bandw.
 150.0 kHz 30.0 MHz 4.5 kHz QuasiPeak 1.0 s 9 kHz NSLK8126 2008
 Average



MEASUREMENT RESULT: "F-1750-4_fin"

2018-10-9 9:58

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.325500	19.60	10.9	60	40.0	QP	N	GND
0.501000	23.80	11.0	56	32.2	QP	N	GND
1.252500	24.40	11.2	56	31.6	QP	N	GND
2.184000	18.50	11.3	56	37.5	QP	N	GND
5.271000	9.40	11.4	60	50.6	QP	N	GND
24.004500	20.90	11.7	60	39.1	QP	N	GND

MEASUREMENT RESULT: "F-1750-4_fin2"

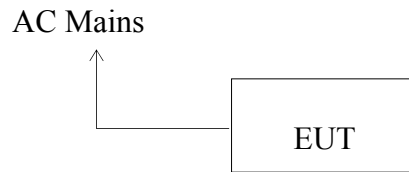
2018-10-9 9:58

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.249000	18.40	10.9	52	33.4	AV	N	GND
0.501000	20.20	11.0	46	25.8	AV	N	GND
1.000500	20.10	11.1	46	25.9	AV	N	GND
2.134500	13.50	11.3	46	32.5	AV	N	GND
6.031500	5.20	11.5	50	44.8	AV	N	GND
24.004500	20.90	11.7	50	29.1	AV	N	GND

5. RADIATED EMISSION MEASUREMENT

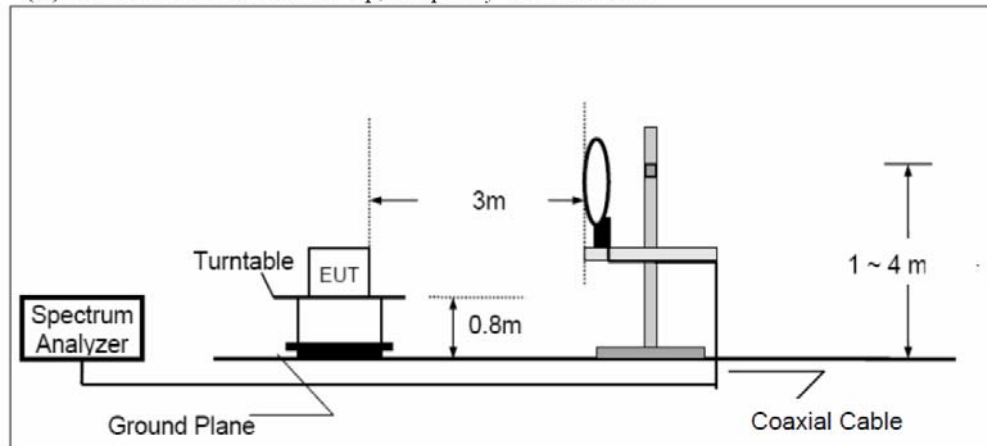
5.1. Block Diagram of Test

5.1.1. Block diagram of connection between the EUT and simulators

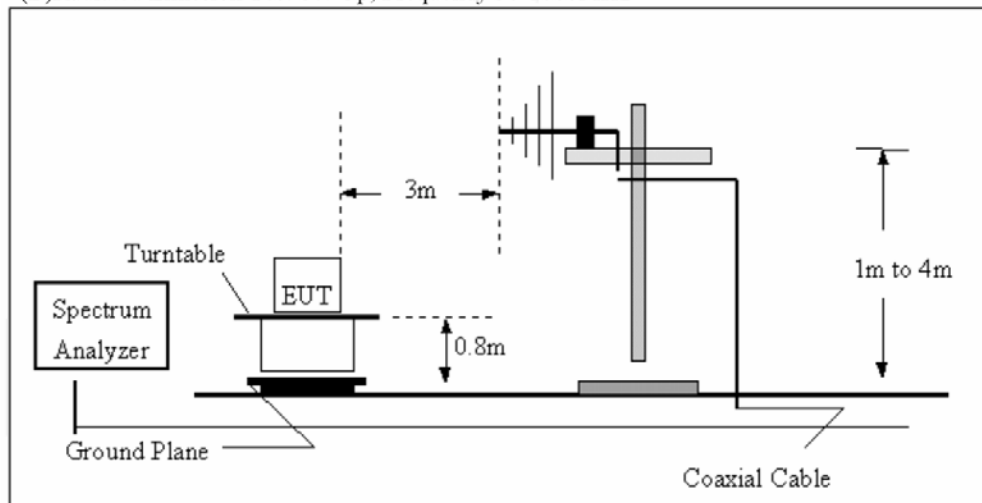


5.1.2. Block diagram of test setup (In chamber)

(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



5.2. Radiated Emission Limit

Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	10000 * 2400/F(KHz)	20log 2400/F(KHz) + 80
0.490 – 1.705	24000 / F(KHz)	30m	100 * 24000/F(KHz)	20log 24000/F(KHz) + 40
1.705 – 30.00	30	30m	100* 30	20log 30 + 40
30.0 – 88.0	100	3m	100	20log 100
88.0 – 216.0	150	3m	150	20log 150
216.0 – 960.0	200	3m	200	20log 200
Above 960.0	500	3m	500	20log 500

Limit: $\frac{2400}{125}=19.2\mu\text{V/m}@300\text{m}$

Distance Correction Factor= $40\log(\text{test distance}/\text{specific distance})$

5.3. EUT Configuration on Measurement

The following equipments are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.3.1. Heavy-Duty Outdoor Access Control Keypad with Proximity Reader (EUT)

Model Number : SK-3133-PPQ

Manufacturer : Superior Electronics Corporation

5.4. Operating Condition of EUT

5.4.1. Setup the EUT and simulator as shown as Section 5.1.

5.4.2. Turn on the power of all equipment.

5.4.3. Let the EUT work in test mode and measure it.

5.5. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated emission measurement.

From 9kHz to 30MHz at distance 3m The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

From 30MHz to 1000MHz at distance 3m The measuring antenna height varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization.

The final measurement will be performed with an EMI Receiver set to Quasi Peak detector for the frequency bands 9kHz to 90kHz and 110 to 490 kHz where an average detector will be used according to Section 15.209(d)(2).

The final level, expressed in dBuV/m, is arrived at by taking the reading from the EMI receiver(Level dBuV) and adding the antenna correction factor and cable loss factor(Factor dB) to it. This result then has to be compared with the relevant FCC limit. The resolution bandwidth during the measurement is as follows:

9kHz – 150kHz: ResBW: 200Hz

150kHz – 30MHz: ResBW: 9kHz

The bandwidth of the EMI test receiver (R&S ESCS30) is set at 120kHz from 30MHz to 1000MHz.

5.6.Data Sample

Frequency(MHz)	Reading (dB μ v)	Factor (dB/m)	Result (dB μ v/m)	Limit (dB μ v/m)	Margin (dB)	Remark
X.XX	49.83	-22.03	27.80	43.50	-15.70	QP

Frequency(MHz) = Emission frequency in MHz

Reading(dB μ v) = Uncorrected Analyzer/Receiver reading

Factor (dB/m)= Antenna factor + Cable Loss – Amplifier gain

Result(dB μ v/m) = Reading + Factor

Limit (dB μ v/m)= Limit stated in standard

Calculation Formula:

Margin(dB) = Result (dB μ v/m)–Limit(dB μ v/m)

Result(dB μ v/m)= Reading(dB μ v)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

5.7.Radiated Emission Measurement Result

PASS.

The EUT has pretest form 12V to 24V AC/DC, the worst case data 24Vac was recorded in the report

Emissions attenuated more than 20 dB below the permissible value are not reported.

The spectral diagrams are attached as below.

From 9kHz to 30MHz: TX Mode

Polarization: X

Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)
*0.125	50.20	11.77	61.97	102.32	-40.35	QP	124	176
0.552	40.93	3.54	44.47	72.76	-28.29	QP	150	355
0.920	35.04	0.66	35.67	68.32	-32.65	QP	202	228
1.288	29.43	-0.28	29.15	65.41	-36.26	QP	145	208
18.516	29.76	-4.86	24.90	69.54	-44.64	QP	154	35
29.594	27.60	-7.02	20.58	69.54	-48.96	QP	148	38

Polarization: Y

Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)
*0.125	46.19	11.77	57.96	102.32	-44.36	QP	112	201
0.368	34.28	6.13	40.41	96.29	-55.88	QP	139	138
0.552	34.25	3.54	37.79	72.76	-34.97	QP	120	323
0.920	32.41	0.66	33.07	68.33	-35.26	QP	150	230
1.288	25.71	-0.28	25.43	65.41	-39.98	QP	154	193
18.802	35.22	-4.95	30.27	69.54	-39.27	QP	135	330

Polarization: Z

Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit @3m (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)
*0.125	45.22	11.77	56.99	102.32	-45.33	QP	130	146
0.588	34.49	3.54	38.03	72.21	-34.18	QP	201	301
0.920	30.19	0.66	30.85	68.33	-37.48	QP	156	258
1.288	27.85	-0.28	27.57	65.41	-37.84	QP	200	322
18.147	23.92	-4.86	19.06	69.54	-50.48	QP	236	146
29.361	25.36	-7.02	18.34	69.54	-51.20	QP	145	198

“ * ” : Fundamental frequency

Part 15 Section 15.31(f)(2) (9kHz-30MHz)

Limit at 3m=Limit@300m-40*log(3(m)/300(m))

Limit at 3m=Limit@30m-40*log(3(m)/30(m))

From 30MHz to 1000MHz: TX Mode

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Fax:+86-0755-26503396

Job No.: frank2018 #1812

Polarization: Horizontal

Standard: FCC Part 15C 3M Radiated

Power Source: AC 24V/60Hz

Test item: Radiation Test

Date: 2018/10/11

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 10:54:13

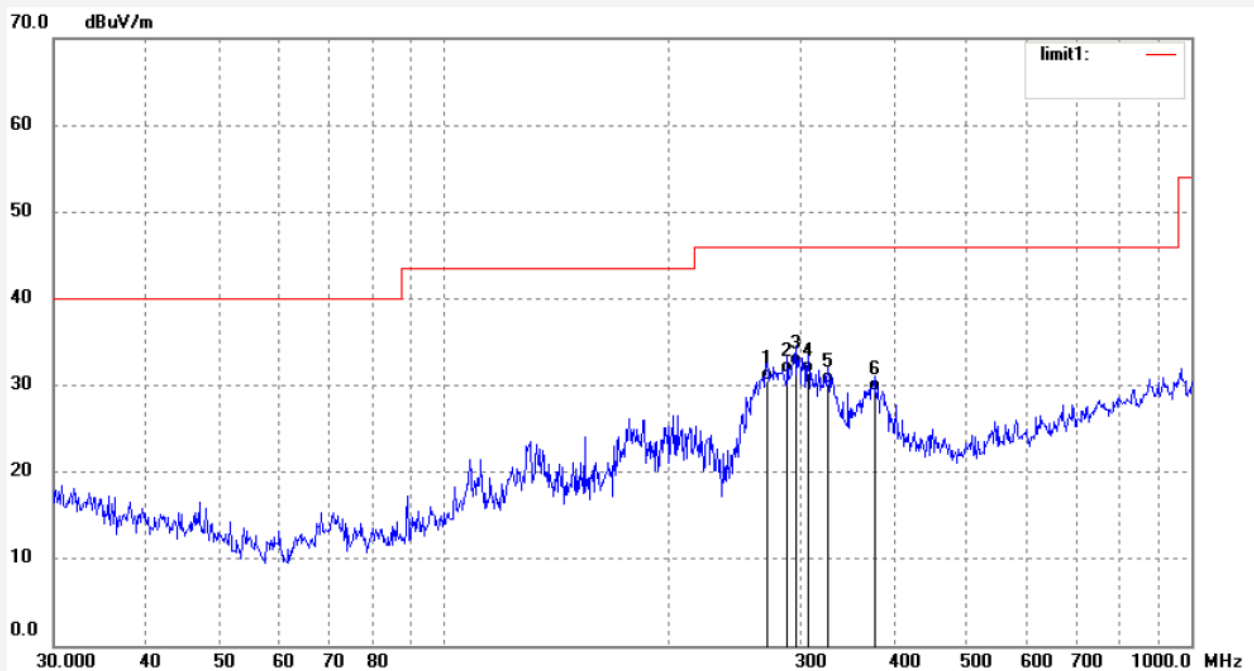
EUT: Heavy-Duty Outdoor Access Control Keypad with Proximity Reader

Mode: TX 125KHz

Model: SK-3133-PPQ

Manufacturer: SUPERIOR ELECTRONICS CORPORATION

Note: Report NO.:ATE20181750



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	270.6161	47.65	-17.11	30.54	46.00	-15.46	QP	200	52	
2	288.2839	47.86	-16.53	31.33	46.00	-14.67	QP	200	231	
3	295.4623	48.65	-16.35	32.30	46.00	-13.70	QP	200	202	
4	307.1051	47.60	-16.12	31.48	46.00	-14.52	QP	200	98	
5	326.0079	45.68	-15.55	30.13	46.00	-15.87	QP	200	102	
6	376.5227	43.45	-14.18	29.27	46.00	-16.73	QP	200	156	

Job No.: frank2018 #1813

Polarization: Vertical

Standard: FCC Part 15C 3M Radiated

Power Source: AC 24V/60Hz

Test item: Radiation Test

Date: 2018/10/11

Temp.(C)/Hum.(%) 25 C / 55 %

Time: 10:59:33

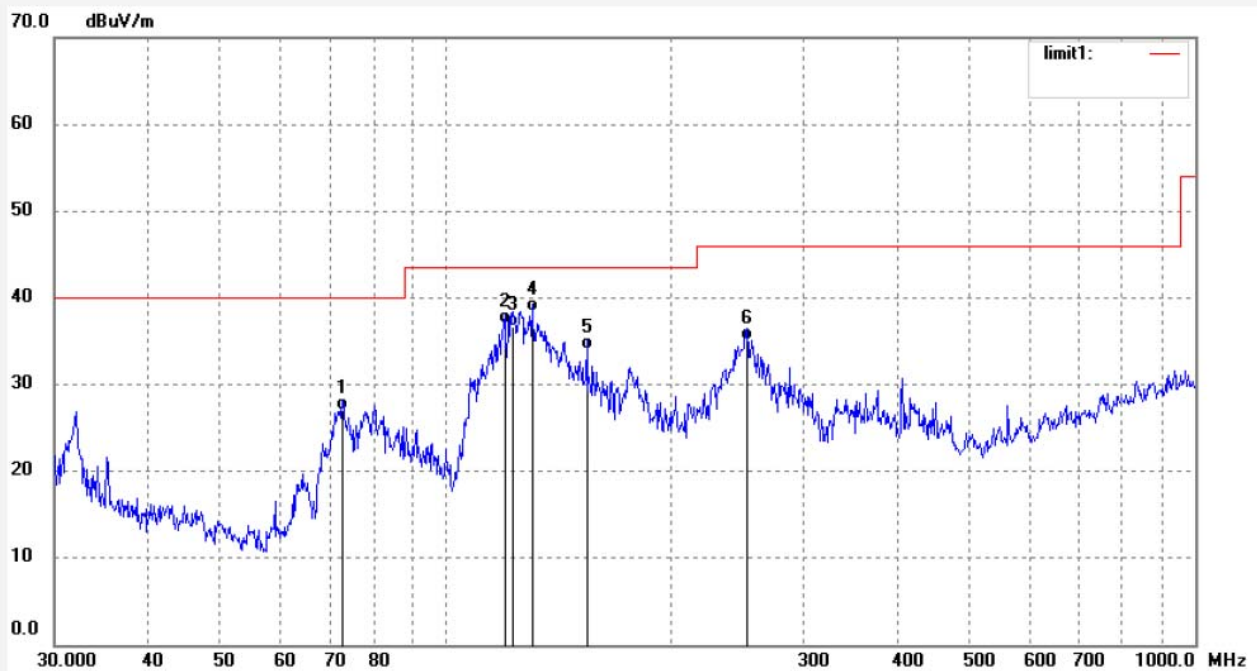
EUT: Heavy-Duty Outdoor Access Control Keypad with Proximity Reader

Mode: TX 125KHz

Model: SK-3133-PPQ

Manufacturer: SUPERRIOR ELECTRONICS CORPORATION

Note: Report NO.:ATE20181750



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	72.7202	50.12	-23.00	27.12	40.00	-12.88	QP	100	106	
2	119.7672	58.32	-21.32	37.00	43.50	-6.50	QP	100	59	
3	122.7493	58.16	-21.45	36.71	43.50	-6.79	QP	100	210	
4	130.3048	60.12	-21.74	38.38	43.50	-5.12	QP	100	322	
5	154.2427	56.01	-21.95	34.06	43.50	-9.44	QP	100	156	
6	252.2522	53.12	-18.05	35.07	46.00	-10.93	QP	100	13	

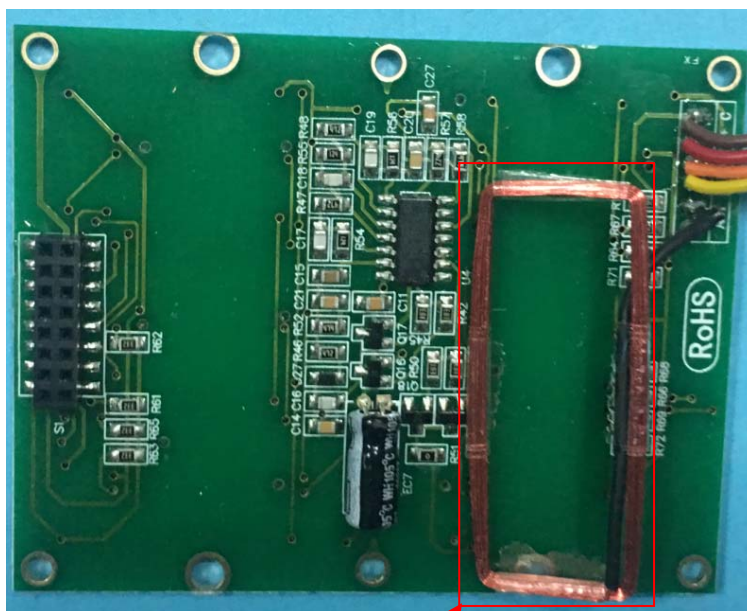
6. ANTENNA REQUIREMENT

6.1.The Requirement

According to 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.

6.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The max Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna

***** End of Test Report *****