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DATE: 23 December 2019

I.T.L. (PRODUCT TESTING) LTD.

FCC/IC Radio Test Report

For

Orpak Systems Ltd.

Equipment under test:

Tag Reader

TR500
(125kHz transmitter)

Tested by: _____
M. Zohar

Approved by: _____
D. Shidlowsky

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Measurement/Technical Report for

Orpak Systems Ltd.

Tag Reader

TR500

FCC ID: W8F800927160

IC: 8264A-800927160

This report concerns:	Original Grant:	X
	Class I Change:	
	Class II Change:	

Equipment type:	FCC: DCD - Part 15 Low Power Transmitter Below 1705 kHz IC: Low Power Transmitter General Field Limits (9kHz-30MHz)
Limits used:	47CFR15 Section 15.209 RSS-Gen, Issue 5, November 2018

Measurement procedure used ANSI C.63.10 2013

Application for Certification prepared by:

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1. General Information

1.1 Administrative Information

Manufacturer:	Orpak Systems Ltd.
Manufacturer's Address:	31 Lechi St. P.O.B. 1461 Bnei-Brak, 51114 Israel Tel: +972-3-577-6868 Fax: +972-3-579-6310
Manufacturer's Representative:	Yair Elul
Equipment Under Test (E.U.T):	Tag Reader
Product Marketing Name (PMN):	TR500
Equipment Part No.:	Not designated
HVIN:	C
Date of Receipt of E.U.T:	November 05, 2019
Start of Test:	November 05, 2019
End of Test:	November 10, 2019
Test Laboratory Location:	I.T.L (Product Testing) Ltd. 1 Bat Sheva St., LOD 7120101 ISRAEL
Test Specifications:	FCC Part 15, Subpart C, Section 15.209 RSS-Gen, Issue 5, April 2018

1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), FCC Designation No. IL1005.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. Department of Innovation, Science and Economic Development (ISED) Canada, CAB identifier: IL1002

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

The TR500 is a compact standalone reader unit for tags intended for vehicle or driver tag identification in gas stations and other applications. The TR500 includes a Security Application Module (SAM) used to handle encrypted tags. The TR500 is installed within easy reach for customers wishing to refuel, and it transmits information to the station automation system over an Ethernet or RS-485 cable. The tag reader supports authorization via contactless MiFare cards & tags as well as 125kHz tags.

Working voltage	15VDC
Mode of operation	Transmitter
Modulation	CW
Operation Frequency Range	125kHz
Modulation BW	N/A

1.4 Test Methodology

Radiated testing was performed according to the procedures in ANSI C63.10: 2013 and RSS Gen Issue 5, April 2018. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

Emissions tests were performed at I.T.L.'s testing facility in Lod, Israel. I.T.L.'s EMC Laboratory is accredited by A2LA, certificate No. 1152.01 and its FCC Designation No. IL1005.

1.6 Measurement Uncertainty

Conducted Emission

Conducted Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4)
0.15 – 30 MHz:
Expanded Uncertainty (95% Confidence, K=2):
± 3.44 dB

Radiated Emission

Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) for open site:
30-1000MHz:
Expanded Uncertainty (95% Confidence, K=2):
± 4.96 dB

1 GHz to 6 GHz
Expanded Uncertainty (95% Confidence, K=2):
±5.19 dB

>6 GHz
Expanded Uncertainty (95% Confidence, K=2):
±5.51 dB

2. System Test Configuration

2.1 Justification

1. The E.U.T contains an LF 125 kHz and HF 13.56MHz transmitters.
2. The evaluation was performed with the E.U.T in wall mounted installation position.
3. Evaluation was performed with a typical AC/DC power supply.
4. Conducted Emission from AC Line test was performed with both transmitters transmitting continuously as the “worst case”.

2.2 EUT Exercise Software

No special exercise software was used.

2.3 Special Accessories

AC/DC power supply details:
Manufacturer: Touch Electronics
Model: SA06-24S12R-U
S/N: R0008130037

Laptop details:
Manufacturer: Lenovo
Model: X1 Carbon
S/N: N/A

2.4 Equipment Modifications

No equipment modifications were required to achieve compliance.

2.5 Configuration of Tested System

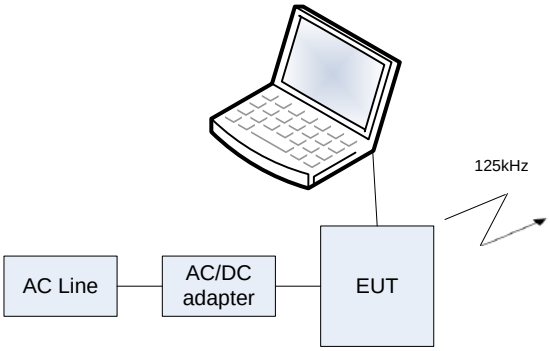

Figure 1. Configuration of Tested System

Note: Laptop used to provide network link only. No network connection during the tests.

3. Conducted & Radiated Measurement Test Setup Photos

Figure 2. Conducted Emission from AC Mains

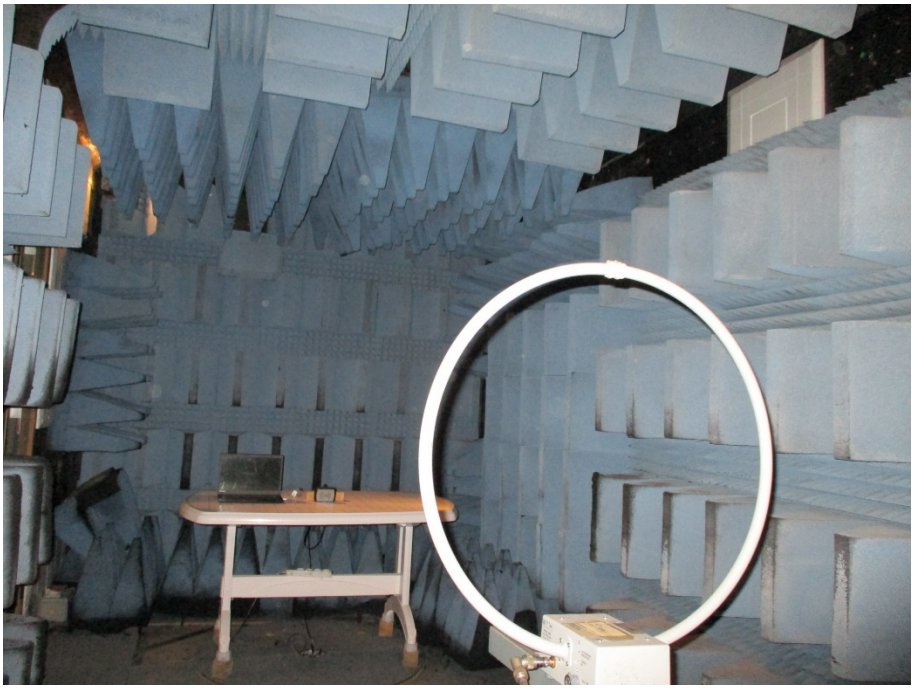

Figure 3. Radiated Emission Test Setup, 0.009-30MHz

4. Conducted Emission From AC Mains

4.1 Test Specification

FCC Part 15, Subpart C, Section 15.207

RSS-Gen, Issue 5: 2018, Section 8.8

4.2 Test Procedure

(Temperature (20°C)/ Humidity (57%RH))

The E.U.T operation mode and test setup are as described in Section 2 of this report. In order to minimize background noise interference, the conducted emission testing was performed inside a shielded room, with the E.U.T placed on a 0.8 meter high wooden table, 0.4 meter from the room's vertical wall. In the case of a floor-standing E.U.T., it was placed on the horizontal ground plane.

The E.U.T was powered from 115 V AC / 60 Hz via 50 Ohm / 50 µHn Line Impedance Stabilization Network (LISN) on the phase and neutral lines. The LISN's were grounded to the shielded room ground plane (floor), and were kept at least 0.8 meters from the nearest boundary of the E.U.T.

The center of the E.U.T.'s AC cable was folded back and forth, in order to form a bundle less than 0.40 meters and a total cable length of 1 meter.

The effect of varying the position of the cables was investigated to find the configuration that produces maximum emission.

The emission voltages at the LISN's outputs were measured using a computerized receiver, complying with CISPR 16 requirements. The specification limits are loaded to the receiver and are displayed on the receiver's spectrum display.

A frequency scan between 0.15 and 30 MHz was performed at 9 kHz I.F. band width, using peak detection.

The spectral components having the highest level on each line were measured using a quasi-peak and average detector.

4.3 Test Limit

Frequency of Emission (MHz)	**Conducted Limit (dBµV)**	
	Quasi-peak	Average
0.15-0.5	66.0 to 56.0*	56.0 to 46.0*
0.5-5.0	56.0	46.0
5.0-30.0	60.0	50.0

* Decreases with the logarithm of the frequency.

4.4 Test Results

JUDGEMENT: Passed by 2.54 dB

The margin between the emission levels and the specification limit is, in the worst case, 2.54dB for the phase line at 7.158 MHz and 2.59dB at 21.478 MHz for the neutral line.

The EUT met the F.C.C. Part 15, Subpart C and RSS-Gen, Issue 5: 2018, Section 8.8 specification requirements.

The details of the highest emissions are given in *Figure 4* to *Figure 7.*

Conducted Emission

Specification:	FCC Part 15, Subpart C, Section 15.207
	RSS-Gen, Issue 5: 2018, Section 8.8
Lead:	Phase
Detectors: :	Quasi-peak, Average
Voltage supply type:	AC/DC

EDIT PEAK LIST (Final Measurement Results)

Trace1: CE22BQP
Trace2: CE22BAP
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	206 kHz	41.55	-21.80
2	Average	206 kHz	35.53	-17.83
2	Average	414 kHz	36.31	-11.25
1	Quasi Peak	422 kHz	42.16	-15.24
1	Quasi Peak	446 kHz	40.95	-15.99
2	Average	454 kHz	40.24	-6.55
2	Average	1.178 MHz	26.60	-19.39
1	Quasi Peak	1.242 MHz	35.27	-20.72
1	Quasi Peak	1.286 MHz	35.14	-20.85
2	Average	2.074 MHz	25.82	-20.17
2	Average	2.13 MHz	19.65	-26.34
1	Quasi Peak	2.158 MHz	34.55	-21.44
1	Quasi Peak	3.834 MHz	32.37	-23.62
2	Average	3.95 MHz	23.23	-22.76
1	Quasi Peak	7.158 MHz	50.15	-9.84
2	Average	7.158 MHz	47.45	-2.54
1	Quasi Peak	13.562 MHz	74.71	14.71
2	Average	13.562 MHz	72.70	22.70
1	Quasi Peak	21.478 MHz	47.36	-12.63
2	Average	21.478 MHz	47.24	-2.75

Date: 7.OCT.2019 13:39:27

Figure 4. Detectors: Peak, Quasi-peak, Average

Note: QP Delta/Av Delta refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Conducted Emission

Specification:	FCC Part 15, Subpart C, Section 15.207
	RSS-Gen, Issue 5: 2018, Section 8.8
Lead:	Phase
Detectors:	Peak, Average
Voltage supply type:	AC/DC

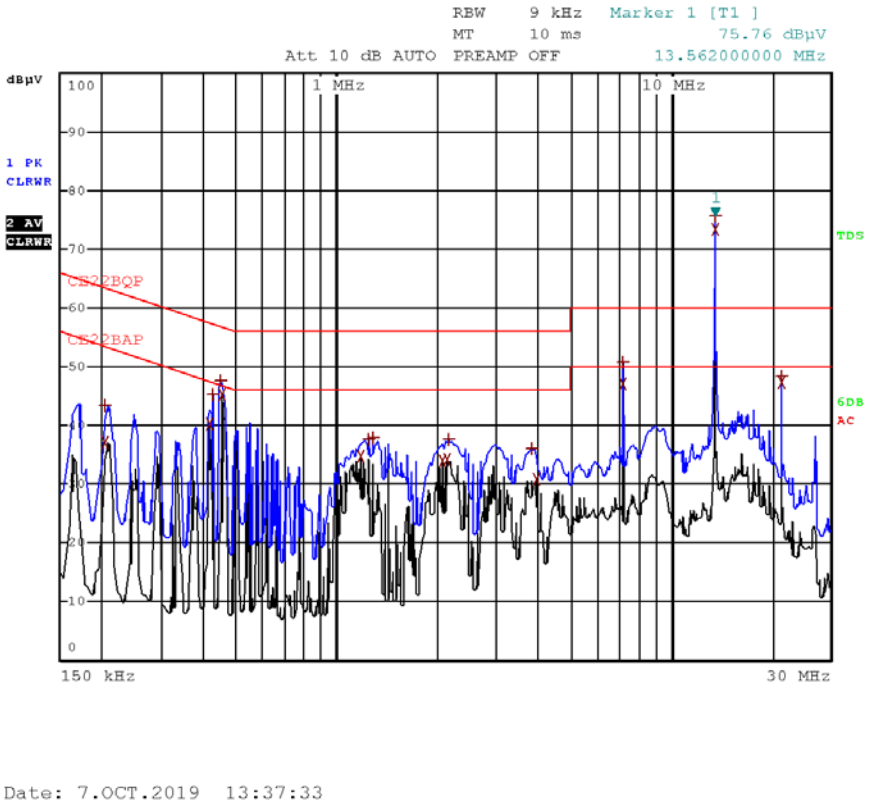

Figure 5. Detectors: Peak, Quasi-peak, Average

Conducted Emission

Specification:	FCC Part 15, Subpart C, Section 15.207
	RSS-Gen, Issue 5: 2018, Section 8.8
Lead:	Neutral
Detectors:	Quasi-peak, Average
Voltage supply type:	AC/DC

EDIT PEAK LIST (Final Measurement Results)

Trace1: CE22BQP
Trace2: CE22BAP
Trace3: ---

	TRACE	FREQUENCY	LEVEL dBµV	DELTA LIMIT dB
1	Quasi Peak	250 kHz	37.96	-23.79
2	Average	250 kHz	32.04	-19.70
2	Average	410 kHz	31.83	-15.81
1	Quasi Peak	418 kHz	40.71	-16.77
1	Quasi Peak	446 kHz	39.06	-17.88
2	Average	450 kHz	34.96	-11.91
2	Average	1.222 MHz	26.38	-19.61
1	Quasi Peak	1.242 MHz	35.27	-20.72
2	Average	1.27 MHz	26.53	-19.46
1	Quasi Peak	1.286 MHz	35.26	-20.73
1	Quasi Peak	2.158 MHz	34.75	-21.24
2	Average	2.158 MHz	27.54	-18.45
2	Average	3.738 MHz	25.81	-20.18
1	Quasi Peak	3.754 MHz	31.05	-24.94
1	Quasi Peak	7.158 MHz	48.50	-11.49
2	Average	7.158 MHz	46.28	-3.71
1	Quasi Peak	13.562 MHz	74.88	14.88
2	Average	13.562 MHz	73.06	23.06
1	Quasi Peak	21.478 MHz	47.43	-12.56
2	Average	21.478 MHz	47.40	-2.59

Date: 7.OCT.2019 13:54:32

Figure 6. Detectors: Peak, Quasi-peak, Average

Note: QP Delta/Av Delta refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Conducted Emission

Specification:	FCC Part 15, Subpart C, Section 15.207
	RSS-Gen, Issue 5: 2018, Section 8.8
Lead:	Neutral
Detectors:	Peak, Average
Voltage supply type:	AC/DC

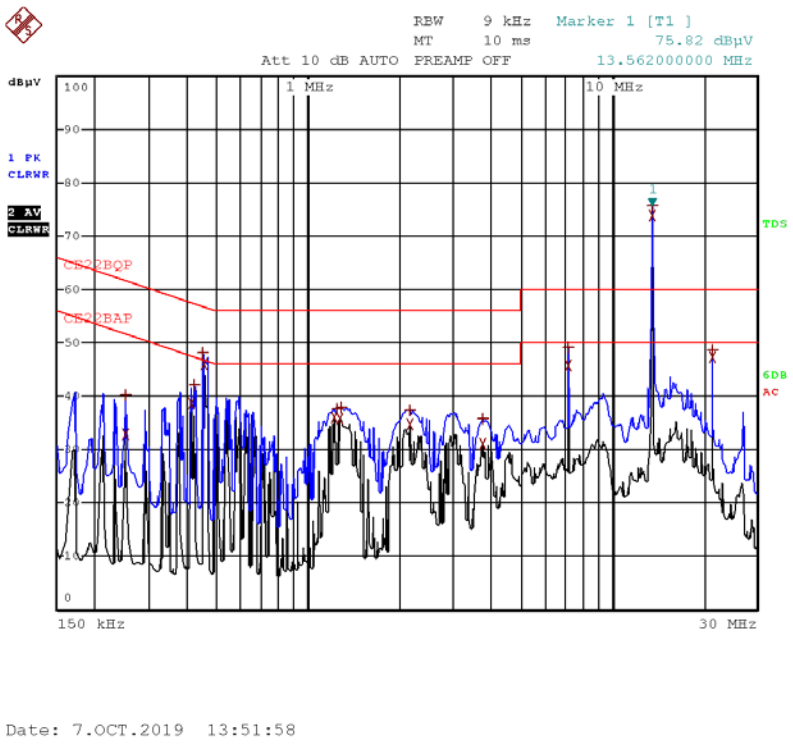

Figure 7 Detectors: Peak, Quasi-peak, Average

**note: the peak that exceed the limit in 13.56MHz is the HF fundamental transmission*

4.5 Test Equipment Used; Conducted Emission from AC Mains

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
LISN	Fischer	FCC-LISN-25A	127	September 8, 2019	September 30, 2020
Transient Limiter	HP	11947A	3107A01308	September 16, 2019	September 30, 2020
EMI Receiver	Rohde & Schwarz	ESCI7	100724	February 27, 2019	February 28, 2020
Cable CE Chamber 3M + 3M	Testline 18 + RJ214	11556	-	March 31, 2019	March 31, 2020

Figure 8 Test Equipment Used

5. Field Strength of Fundamental

5.1 Test Specification

Part 15, Subpart C, Section 15.209(a)

RSS-Gen, Issue 5: 2018, Section 8.9

5.2 Test Procedure

(Temperature (20°C)/ Humidity (58%RH))

The E.U.T. operation mode and test set-up are as described in Section 2 of this report. The E.U.T. was placed in the chamber on a non-conductive table, 0.8 meters above the ground.

The distance between the E.U.T. and test antenna was 3 meters.

The turntable and antenna polarity were adjusted for maximum level reading on the EMI receiver.

The EMI receiver was set to the E.U.T. Fundamental Frequency and Peak Detection.

5.3 FCC Test Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field strength (dBµV/m)	Field strength* (dBµV/m)@3m
0.009-0.490	2400/F(kHz)	300	48.5-13.8	128.5-73.8
0.490-1.705	24000/F(kHz)	30	33.8-23.0	73.8-63.0
1.705-30.0	30	30	29.5	69.5
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

5.4 IC Test Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Magnetic Field strength (microampere/meter)	Measurement distance (meters)	Magnetic Field strength (dBµA/m)	Magnetic Field strength* (dBµA/m)@3m
0.009-0.490	6.37/F(kHz)	300	-3.0-(-37.7)	77.0-42.2
0.490-1.705	63.7/F(kHz)	30	-17.7-(-28.5)	22.3-11.4
1.705-30.0	0.08	30	-21.9	18.0
Frequency (MHz)	**Field strength (microvolts/meter)**	**Measurement distance (meters)**	**Field strength (dBµV/m)**	**Field strength* (dBµV/m)@3m**
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

5.5 Test Results

Frequency (kHz)	Pol (V/H)	Peak Reading (dBµV/m)	Avg. Limit (dBµV/m)	Margin (dB)
125.0	V	71.1	105.7	-34.6
125.0	H	68.7	105.7	-37.0

Figure 9. Field Strength of Fundamental Test Results

Frequency (kHz)	Pol (V/H)	Peak Reading* (dBµA/m)	Avg. Limit** (dBµA/m)	Margin (dB)
125.0	V	19.6	54.1	-34.5
125.0	H	17.2	54.1	-36.9

Figure 10. Magnetic Field Strength of Fundamental Test Results

***Note 1**: (magnetic field strength from electric field strength formula):*
dBµA/m = dBµV/m -51.5 dB
****Note 2**: (limit calculation for 125kHz):*
*20*log(6.37/125)=-25.8 dBµA/m@300m=-25.8+ 40*log(300/3)=54.1 dBµA/m@3m*

JUDGEMENT: Passed by 34.5 dB

The EUT met the FCC Part 15, Subpart C, Section 15.209 and RSS-Gen, Issue 5: 2018, Section 8.9 requirements.

The details of the highest emissions are given in *Figure 11* to *Figure 12*.

Field Strength of Fundamental

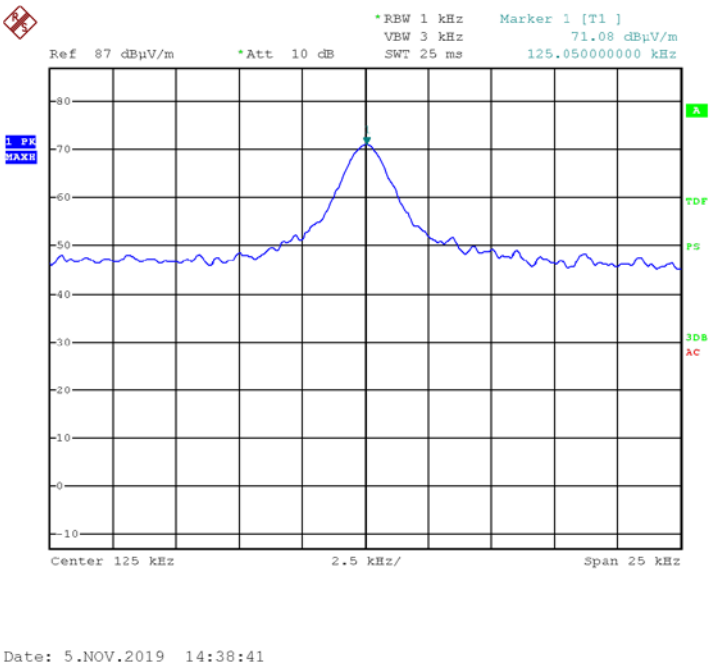

Figure 11. Field Strength of Fundamental, Vertical

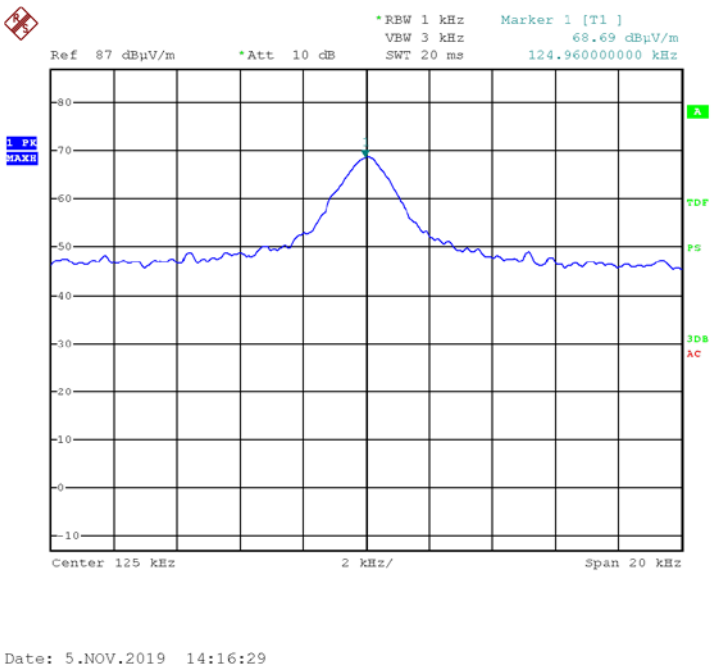

Figure 12. Field Strength of Fundamental, Horizontal

5.6 Test Instrumentation Used; Field Strength of Fundamental

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Receiver	R&S	ESCI7	100724	February 27, 2019	February 28, 2020
Loop Antenna	EMCO	6502	9506- 2950	February 5, 2019	February 28, 2021
RF Cable	Commscope ORS (Serge)	0623 WBC-400	G020132	December 24, 2018	December 31, 2019
Semi Anechoic Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 13. Test Equipment Used

6. Radiated Emission, 9 kHz – 30 MHz

6.1 Test Specification

FCC, Part 15, Subpart C, Section 209(c)

RSS-Gen, Issue 5: 2018, Section 8.9

6.2 Test Procedure

(Temperature (20°C)/ Humidity (56%RH))

The E.U.T. operation mode and test set-up are as described in Section 2 of this report. The E.U.T. was placed in the chamber on a non-conductive table, 0.8 meters above the ground.

The distance between the E.U.T. and test antenna was 3 meters.

The turntable and antenna polarity were adjusted for maximum level reading on the EMI receiver.

The EMI receiver was set to the E.U.T. Fundamental Frequency and Peak Detection.

The frequency range 9 kHz-30 MHz was scanned.

6.3 FCC Test Limit

The level of any unwanted emissions from an intentional radiator shall not exceed the level of the fundamental emission .in addition the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)	Field strength (dBµV/m)	Field strength* (dBµV/m)@3m
0.009-0.490	2400/F(kHz)	300	48.5-13.8	128.5-73.8
0.490-1.705	24000/F(kHz)	30	33.8-23.0	73.8-63.0
1.705-30.0	30	30	29.5	69.5
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

6.4 IC Test Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Magnetic Field strength (microampere/meter)	Measurement distance (meters)	Magnetic Field strength (dBµA/m)	Magnetic Field strength* (dBµA/m)@3m
0.009-0.490	6.37/F(kHz)	300	-3.0-(-37.7)	77.0-42.2
0.490-1.705	63.7/F(kHz)	30	-17.7-(-28.5)	22.3-11.4
1.705-30.0	0.08	30	-21.9	18.0
Frequency (MHz)	**Field strength (microvolts/meter)**	**Measurement distance (meters)**	**Field strength (dBµV/m)**	**Field strength* (dBµV/m)@3m**
30-88	100	3	40.0	40.0
88-216	150	3	43.5	43.5
216-960	200	3	46.0	46.0
Above 960	500	3	54.0	54.0

*The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. For average radiated emission measurements above 1000 MHz, there is also a limit corresponding to 20 dB above the indicated values in the table is specified when measuring with peak detector function.

6.5 Test Results

JUDGEMENT: Passed by 31.9 dB

The EUT met the requirements of the F.C.C. Part 15, Subpart C, Section 209 and RSS-Gen, Issue 5: 2018, Section 8.9 specification.

See additional information in *Figure 14*.

Radiated Emission 9 kHz – 30 MHz

Specifications: FCC, Part 15, Subpart C, RSS-Gen, Issue 4: 2014, Section 8.9

Antenna Polarization: Horizontal/Vertical
Frequency range: 9 kHz to 30.0 MHz
Test Distance: 3 meters
Detector: Peak
Operation Frequency: 125kHz

Frequency (kHz)	Polarity (V/H)	Peak Reading (dBµV/m)	Limit (dBµV/m)	Margin (dB)
250.0	V	40.0	99.6	-59.6
	H	40.8	99.6	-58.8
375.0	V	46.9	96.1	-49.2
	H	47.6	96.1	-48.5
875.0	V	36.8	68.7	-31.9
	H	34.3	68.7	-34.4

Figure 14. Radiated Emission, FCC Limit

Frequency (kHz)	Polarity (V/H)	Peak Reading (dBµA/m)	Limit (dBµA/m)	Margin (dB)
250.0	V	-11.5	48.1	-59.6
	H	-10.7	48.1	-58.8
375.0	V	-4.6	44.6	-49.2
	H	-3.9	44.6	-48.5
875.0	V	-14.7	17.2	-31.9
	H	-17.2	17.2	-34.4

Figure 15. Radiated Emission, IC Limit

✓ *Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.*

6.6 Test Instrumentation Used; Radiated Emission

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Receiver	R&S	ESCI7	100724	February 27, 2019	February 28, 2020
Loop Antenna	EMCO	6502	9506-2950	February 5, 2019	February 28, 2021
RF Cable	Commscope ORS (Serge)	0623 WBC-400	G020132	December 24, 2018	December 31, 2019
Semi Anechoic Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 16. Test Equipment Used

6.7 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$FS = RA + AF + CF$$

FS: Field Strength [dBμv/m]

RA: Receiver Amplitude [dBμv]

AF: Receiving Antenna Correction Factor [dB/m]

CF: Cable Attenuation Factor [dB]

Example: FS = 30.7 dBμV (RA) + 14.0 dB/m (AF) + 0.9 dB (CF) = 45.6 dBμV

No external pre-amplifiers are used.

7. Occupied Bandwidth

7.1 Test Specification

FCC, Part 2, Sub part J, Section 2.1049

RSS-Gen, Issue 5: 2018, Section 6.6

7.2 Test Procedure

(Temperature (20°C)/ Humidity (56%RH))

The E.U.T. operation mode and test set-up are as described in Section 2 of this report. The E.U.T. was placed in the chamber on a non-conductive table, 0.8 meters above the ground.

The distance between the E.U.T. and test antenna was 3 meters.
The transmitter unit was operated with normal modulation. The RBW set to the range of 1% to 5% of the OBW. The span was set to ~ 3 times the OBW.
99% occupied bandwidth function was set on.

7.3 Test Limit

N/A

7.4 Test Results

Frequency	Result
(kHz)	(kHz)
125.0	7.2

Figure 17. Bandwidth Test Results

JUDGEMENT: N/A

See additional information in

Figure 18.

Occupied Bandwidth

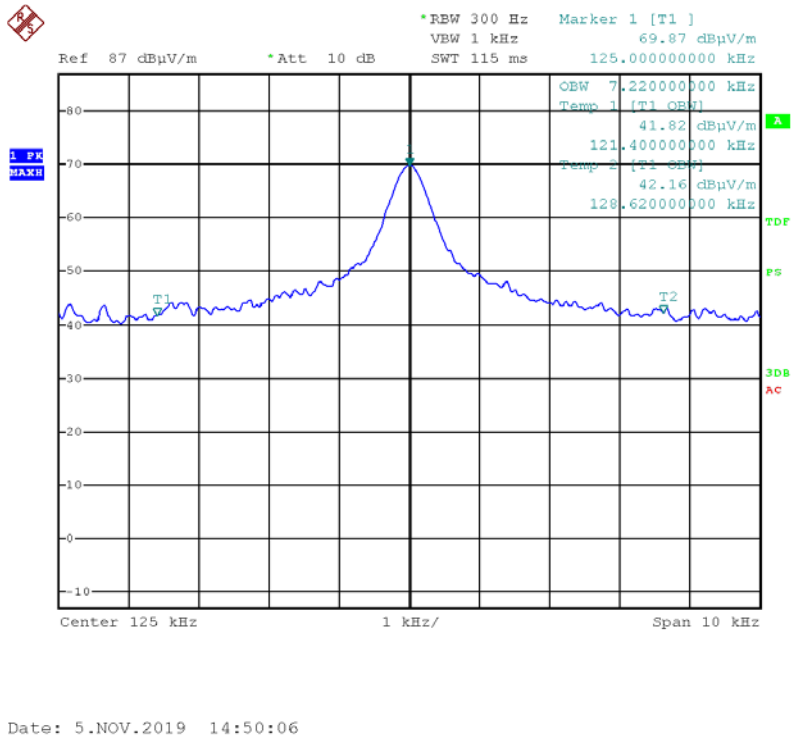

Figure 18 Bandwidth Test Results

7.5 Test Equipment Used; Occupied Bandwidth

Instrument	Manufacturer	Model	Serial No.	Last Calibration Date	Next Calibration Due
EMI Receiver	R&S	ESCI7	100724	February 27, 2019	February 28, 2020
Loop Antenna	EMCO	6502	9506- 2950	February 5, 2019	February 28, 2021
RF Cable	Commscope ORS (Serge)	0623 WBC-400	G020132	December 24, 2018	December 31, 2019
Semi Anechoic Chamber	ETS	S81	SL 11643	NCR	NCR

Figure 19 Test Equipment Used

8. APPENDIX A - CORRECTION FACTORS

8.1 Correction factors for for RF OATS Cable

Frequency (MHz)	loss (dB)
30.0	1.3
50.0	1.7
100.0	2.6
200.0	3.7
300.0	4.7
400.0	5.5
500.0	6.3
600.0	7.0
700.0	7.6
800.0	8.4
900.0	9.0
1000.0	9.6

8.2 Correction factors for RF CABLE for Anechoic Chamber

FREQ (MHz)	LOSS (dB)
1000.0	1.5
2000.0	2.1
3000.0	2.7
4000.0	3.1
5000.0	3.5
6000.0	4.1
7000.0	4.6
8000.0	4.9
9000.0	5.7
10000.0	5.7
11000.0	6.1
12000.0	6.1
13000.0	6.2
14000.0	6.7
15000.0	7.4
16000.0	7.5
17000.0	7.9
18000.0	8.1
19000.0	8.8
20000.0	9.1

8.3 Correction factors for ACTIVE LOOP ANTENNA

F(MHz)	AF(dB/m)
0.01	18.4
0.02	14.3
0.03	13.3
0.05	11.7
0.1	11.4
0.2	11.2
0.3	11.2
0.5	11.2
0.7	11.2
1	11.4
2	11.5
3	11.5
4	11.4
5	11.3
6	11.1
7	11.1
8	11.1
9	11
10	11
20	10
30	8

8.4 Correction factors for Log Periodic Antenna

Frequency [MHz]	AF [dB/m]
200	11.58
250	12.04
300	14.76
400	15.55
500	17.85
600	18.66
700	20.87
800	21.15
900	22.32
1000	24.22

8.5 Correction factors for Biconical Antenna

Frequency [MHz]	AF [dB/m]
30	13.00
35	10.89
40	10.59
45	10.63
50	10.12
60	9.26
70	7.74
80	6.63
90	8.23
100	11.12
120	13.16
140	13.07
160	14.80
180	16.95
200	17.17