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Put Us To The Test

# FCC Part 15.209, Subpart C Test Report on

#### Electromagnetic Swinghandle with Integrated RFID Reader Module and CANBus Module Model: H3-EM

Customer Name:	Southco, Inc.
Customer P.O.:	7500016855
Date of Report Rev.:	January 8, 2018
Test Report No.:	R-2612P-1, Rev. A
Test Start Date:	January 12, 2017
Test Finish Date:	January 12, 2017
Test Technician:	D. Fiore, M. Nowak
Test Engineer:	D. Rybicki
Laboratory Supervisor:	C. Reitz
Results Prepared By:	P. Harris
FCC ID:	YKRH3EM99521

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#### **Certification and Signatures**

We certify that these Test Results are true results obtained from the tests of the equipment stated, and relates only to the equipment tested. We further certify that the measurements shown in this Test Results package were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

David M. Rybicki EMC Test Engineer NVLAP Approved Signatory

Colleen T. Reitz Laboratory Supervisor NVLAP Approved Signatory

#### **Non-Warranty Provision**

The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

#### Non-Endorsement

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report may not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the U.S. Government.



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# **Revision History**

Revisions to this document are listed below; the latest revised document supersedes all previous issues of this document.

<ul> <li>Removed 13.56 MHZ from Operating frequency</li> <li>Changed Equipment Class from DXT to DCD</li> <li>Removed FCC Registered Test Site Number and Added FCC Accreditation Designation Number: US5342</li> <li>5-6:</li> <li>Changed Fundamental Frequency from 13.56 MHz to 125 kHz</li> <li>7:</li> <li>Radiated Emissions test results revised 8:</li> <li>Add note under Equipment List</li> </ul>	Revision - ADate December 11, 2017 January 8, 2018Pa Or GI4:5-07:8:	<ul> <li>Ages Affected riginal Release lobal Changes:</li> <li>Test Report R-2612P-1 changed to R- 2612P-1, Rev. A</li> <li>Removed 13.56 MHz from Operating frequency</li> <li>Changed Equipment Class from DXT to DCD</li> <li>Removed FCC Registered Test Site Number and Added FCC Accreditation Designation Number: US5342</li> <li>Changed Fundamental Frequency from 13.56 MHz to 125 kHz</li> <li>Radiated Emissions test results revised</li> <li>Add note under Equipment List</li> </ul>
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# **Test Program Summary**

Report Number:	R-2612P-1, Rev. A		
Customer:	Southco, Inc.		
Address:	210 N. Brinton Lake Road		
_	Concordville, PA 19331		
_	Electromagnetic Swinghandle with I	ntegrated RFID Rea	der Module and
Test Sample:	CANBus Module Consisting Of:	U	
_	Electromagnetic Swinghandle with		
System Components:	Integrated RFID Reader Module	CANBus Module	Door Switch Kit
Part Numbers:	H3-EM-99-521	EA-99-223	EA-99-240
Model Numbers:	H3-EM	N/A	N/A
Manufactured By:	Southco Mfg. Ltd.	Vexos EMS	Vexos EMS
Туре: _	Low Power Transceiver		
Power Requirements:	5 VDC Provided by CANBus Module	е	
Frequency of Operation:	125 kHz		
Equipment Class:	DCD		
Equipment Use:	Fixed Mount, < 20 cm		

## **Test Specification:**

FCC Rules and Regulations Part 15, Subpart C, Paragraph 15.209

Test Procedure: ANSI C63.10:2013

Test Site: ANSI C63.4:2014

# **Test Facility:**

Retlif Testing Laboratories 3131 Detwiler Road Harleysville, PA 19438

FCC Accreditation Designation Number: US5342



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# Purpose:

The purpose of this test program was to demonstrate compliance of the Electromagnetic Swinghandle with Integrated RFID Reader Module to the requirements of FCC Part 15.209.

## Test Methods:

The following table detailed the test method performed on the EUT and the corresponding test results:

Testing Date	Test Method	Test Results
January 12, 2017	15.209, Radiated Emissions (9 kHz to 1 GHz)	Complied

# Test Sample Operation:

The EUT is an Electromagnetic Swinghandle with Integrated RFID Reader Module and CANBus Module. The EUT is installed in rack panels which are used in datacenters, industrial enclosures, and secure storage.

# Test Sample/Test Program:

- 15.203 Antenna Requirements -The device uses a permanently attached internal antenna. The antenna is totally enclosed inside the case.
- 15.205 Restricted Bands No emissions were observed from the EUT
- 15.209 Radiated Emissions-Fundamental Frequency 125 kHz, Harmonic/Spurious Emissions 9 kHz to 1000 MHz
- No harmonic or spurious emissions were observed within 10 dB of the specified limit at test distances of 3 meters.
- Radiated Emissions from the EUT were measured in all three axis. The attached Radiated Emissions test data shows the maximized fundamental emission of each orientation.



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# **Determination of Field Strength Limits:**

The field strength limits shown below are derived from Section 15.209.

Fundamental Frequency: 124 kHz

Frequency (MHz)	Field Strength (µV/m)	Measurement Distance (m)
0.009 to 0.490	2400 / F(kHz)	300
0.490 to 1.705	24000 / F(kHz)	30
1.705 to 30	30	30
30 to 88	100	3
88 to 216	150	3
216 to 960	200	3
960 to 1000	500	3

## **Distance Factor:**

Testing was performed at a 3 meter distance and the field strength reading extrapolated to 300 meters for comparison to the 300 meter limit. The field strength reading was extrapolated using the extrapolation (distance) factor of 40dB/decade as specified in 15.31 (f) (2) for frequencies below 30MHz.

Distance Factor from 300 meters to 3 meters (2 decades) = -80dB



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### Test Methods:

# 15.209 Radiated Emissions

The test sample was placed on an 80cm high wooden test stand which was located 3 meters from the test antenna on an FCC listed open area test site. Emissions from the EUT were maximized by rotating the test sample and adjusting the test sample orientation and antenna polarization.

# **Test Results:**

The maximized peak field strength at 13.56 MHz was 4.02uV/M (12.10 dBµV/M) and met the limit specified in 15.209. All harmonic/spurious emissions observed at 3 meter test distances met the limit specified in 15.209. The maximized corrected peak field strength was calculated as follows:

 $R_C = M_R + C_F - D_F$ 

Where:

 $\label{eq:Rc} \begin{array}{l} \mathsf{R}_{C} = \mathsf{Corrected} \; \mathsf{Reading} \; in \; \mathsf{dB}\mu\mathsf{V}/\mathsf{M} \\ \mathsf{M}_{\mathsf{R}} = \mathsf{Uncorrected} \; \mathsf{Meter} \; \mathsf{Reading} \; in \; \mathsf{dB}\mu\mathsf{V} \\ \mathsf{C}_{\mathsf{F}} = \mathsf{Correction} \; \mathsf{Factor} \; in \; \mathsf{dB} \; (\mathsf{Antenna} \; \mathsf{Factor} + \mathsf{Cable} \; \mathsf{Loss}) \\ \mathsf{D}_{\mathsf{F}} = \mathsf{Distance} \; \mathsf{Factor} \; in \; \mathsf{dB} \end{array}$ 

 $M_R = 43.40 \text{ dB}\mu\text{V}$  $C_F = 8.70 \text{ dB}$  $D_F = 40 \text{ dB}$ 

 $R_{C} = 43.40 dBuV + 8.7 dB - 40 dB = 12.10 dB\mu V/M$ 



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# Equipment List Radiated Emissions

EN	Manufacturer	Description	Range	Model No.	Cal Date	Due Date
127A	ETS / EMCO	ANTENNA, BICONICAL	20 - 200 MHz	3104	3/24/2016	9/30/2017
8016	ETS / EMCO	ANTENNA, LOG PERIODIC	200 MHz - 1 GHz	3146	7/18/2016	1/31/2018
8079	ROHDE & SCHWARZ	RECEIVER, EMI	9 kHz - 30 MHz	ESH3	6/15/2016	6/30/2017
8080	ROHDE & SCHWARZ	RECEIVER, EMI	20 - 1300 MHz	354-3000.56ESVP	8/26/2016	8/31/2017
8300	RETLIF	OPEN AREA TEST SITE, ATTENUATION	3/10 Meter OATS	RPA	8/7/2014	8/31/2017
8300C	UNKNOWN	CABLE, COAXIAL	3/10 METER	3 METER CABLE	10/25/2016	10/31/2017
8322	ETS / EMCO	ANTENNA, LOOP	10 KHz - 30 MHz	6512	4/19/2016	4/30/2018
8411	SONOMA INSTRUMENT	PRE-AMPLIFIER	9 KHz - 1 GHz	310N	9/19/2016	9/30/2017
8644	AGILENT / HP	ANALYZER, SPECTRUM	100 Hz - 22 GHz	85662A	7/21/2016	7/31/2017
8644A	AGILENT / HP	ANALYZER, SPECTRUM	100 Hz - 22.5 GHz	8566B	7/21/2016	7/31/2017

Note: Testing was performed January 12, 2017, therefore all equipment listed above was within calibration at the time of test.



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FCC Part 15, Subpart B, Class B, Radiated Emissions, 9 kHz to 1 GHz Paragraph 15.209(a) Test Data



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Test Metho	d:	FCC P 15.209	art 15, Subpa (a)	rt B, Class I	B, Radiated I	Emissions, 9	kHz to 1 G	Hz, Paragrapi	า	
Customer:		Southco Inc					Job No.: R-2612P-1			
Test Sampl	e:	Electro	magnetic Swir	ng handle wi	th Integrated	RFID Reader	Module and	CANBUS		
Model:		H3-EM	5	0	5					
Operating N	Node:	Continu	uously Locking	g and Unlock	ing					
Technician		D.Fiore	e / M. Nowak				Date:	01/12/2017		
Notos:	Tast [	Distance	: 3 Meters via	1/D		-	[emp: 10 1 °	PH: 51	0/_	
10105.	Detec	tor: Qua	asi-Peak & Ave	erage Below	1 GHz, Peak	above 1 GHz	<u>z</u>	5 11.51	70	
	Ant	enna	EUT	Meter	Correction	Distance	Corrected	Converted	Limit	
Frequency	Pos	sition	Orientation	Readings	Factor	Correction	Reading	Reading	LITTIL	
MHz	(V/H) /	/ Meters	Degrees	dBuV	dB	dB	dBuV/m	uV/m	uV/m	
0.009	. ,		U							
0.124	Pa	rallel	202.0	58.70	11.79	-80.00	-9.51	0.334	19.35	
0.124	Perpe	ndicular	255.1	50.80	11.79	-80.00	-17.41	0.135	19.35	
			1-0-0							
*0.248	Pa	rallel	178.0	32.10		-80.00	-36.19	0.155	9.68	
^0.248	Perpe	ndicular	183.1	37.20	11./1	-80.00	-31.09	0.028	9.68	
0.372	Pa	rallal	2 12	32.00	11 30	-80.00	-36.61	0.014	6.45	
0.372	Perpe	ndicular	152.6	32.00	11.39	-80.00	-36.31	0.014	6 45	
			.0210	02.00				0.010		
*0.496	Pa	rallel	119.0	26.40	11.73	-40.00	-1.87	0.806	48.39	
*0.496	Perpe	ndicular	181.1	27.70	11.73	-40.00	-0.57	0.936	48.39	
*0.620	Pa	rallel	0.15	32.10	11.67	-40.00	3.77	1.54	38.71	
<u>°0.620</u>	Perpe	ndicular	262.0	30.00	11.67	-40.00	1.67	1.21	38.71	
*0 744	Pa	rallel	163.0	33.60	11 69	-40.00	5 29	1 84	32.25	
*0.744	Perpe	ndicular	189.0	44.40	11.69	-40.00	16.09	6.37	32.25	
*0.868	Pa	rallel	96.8	28.80	11.72	-40.00	0.52	1.06	27.65	
*0.868	Perpe	ndicular	229.0	29.80	11.72	-40.00	1.52	1.19	27.65	
			000 -	00.70	44 = 2	40.00	4.00			
^0.992	Pa	rallel	330.7	29.50	11./3	-40.00	1.23	1.15	24.19	
0.992	Perpe	nuicular	229.3	33.00	11.73	-40.00	4./3	1.72	24.19	
*1.116	Pa	rallel	185.2	26.10	11.76	-40.00	-2,14	0.781	21.50	
*1.116	Perpe	ndicular	191.1	27.60	11.76	-40.00	-0.64	0.929	21.50	
*1.240	Pa	rallel	179.1	31.10	11.75	-40.00	2.85	1.39	19.35	
*1.240	Perpe	ndicular	180.0	30.20	11.75	-40.00	1.95	1.25	19.35	
10.50		nelle l	201.0	40.40	0.70	40.00	40.40	4.00		
13.50	Parpa	ndicular	301.2	43.40	<u>8.70</u>	-40.00	12.10	4.02	30.00	
	Feihe	nuiculai	131.4	41.90	0.70	-40.00	10.00	5.58		
*27.12	Pa	rallel	180.0	1.10	5.88	-40.00	-33.02	0.022	30.00	
*27.12	Perpe	ndicular	360.0	2.40	5.88	-40.00	-31.72	0.026	30.00	
30.00									100	
40.68	V/*	1.00	181.1	9.10	13.33	0	22.43	13.23	100	



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Size         VI.00         180.0         10.7         12.40         0         20.90         11.09           *54.24         H/I.00         180.0         10.7         12.40         0         23.10         14.29           *67.80         V/I.00         180.0         9.65         0         21.45         11.82           *67.80         H/I.00         180.0         9.40         9.65         0         21.45         11.82           *67.80         H/I.00         180.0         9.40         9.65         0         17.46         7.31           *81.36         H/I.00         180.0         9.0         8.46         0         17.46         7.46           *88.00	40.68	H/1.00	180.0	2.30	13.33	0	15.63	6.05	100
33.4.4         V1.00         180.0         0.20         12.40         0         20.30         11.09           *67.80         W1.00         180.0         11.80         9.65         0         19.05         8.66           *81.36         W1.00         180.0         9.40         9.65         0         19.05         8.66           *81.36         W1.00         180.0         9.5         8.46         0         17.46         7.46           *81.36         W1.00         180.0         9.5         8.46         0         17.46         7.46           *80.0	*54.04	N//1 00	100.0	0.50	10.40	0	20.00	11.00	
91.24         P1 100         100         10.1         12.40         0         23.10         14.23           67.80         V/1.00         180.0         11.80         9.65         0         21.45         11.82           67.80         W/1.00         180.0         9.40         9.65         0         21.45         11.82           67.80         W/1.00         180.0         9.40         9.65         0         19.05         8.66           1         -         <	*54.24	V/1.00	180.0	8.50	12.40	0	20.90	11.09	
167.80       VI.00       180.0       940       9.65       0       21.45       11.82         167.80       HV1.00       180.0       9.5       8.46       0       17.96       7.91         181.86       VI1.00       180.0       9.5       8.46       0       17.96       7.91         181.86       HV1.00       180.0       9.5       8.46       0       17.46       7.46         1 <td< td=""><td>J4.24</td><td>п/ 1.00</td><td>100.0</td><td>10.7</td><td>12.40</td><td>U</td><td>23.10</td><td>14.29</td><td></td></td<>	J4.24	п/ 1.00	100.0	10.7	12.40	U	23.10	14.29	
167.80       HV1.00       180.0       9.40       9.65       0       19.05       8.86         191.36       V/1.00       180.0       9.5       8.46       0       17.66       7.91         181.36       HV1.00       180.0       9.0       8.46       0       17.46       7.46         181.36       HV1.00       180.0       9.0       8.46       0       17.46       7.46         180.0       9.0       11.78       0       21.58       11.99       1         94.92       V1.00       180.0       9.60       11.78       0       21.58       11.99         194.82       HV1.00       180.0       9.60       13.69       0       22.09       14.60         108.48       HV1.00       194.1       5.69       13.85       0       19.64       9.59         1       -       -       -       -       -       -       -       -       1.16	*67.80	V/1.00	180.0	11.80	9.65	0	21.45	11.82	
I         V1:00         180.0         9.5         8.46         0         17.96         7.91           '81.36         H/1.00         180.0         9.0         8.46         0         17.46         7.46           88.00         -         -         -         -         -         -         -           98.00         -         -         -         -         -         -         -           1         -	*67.80	H/1.00	180.0	9.40	9.65	0	19.05	8.96	Í
*81.36       V1.00       180.0       9.5       8.46       0       17.96       7.91         81.36       H/1.00       180.0       9.0       8.46       0       17.46       7.46         1       H/1.00       180.0       9.0       8.46       0       17.46       7.46         88.00       H1.00       180.0       9.80       11.78       0       21.58       11.99         794.92       V1.00       180.0       9.80       11.78       0       21.58       11.99         1       1       1       1       1.178       0       21.58       11.99         198.48       H/2.00       180.0       6.40       13.69       0       22.09       10.10         1       1       1.90       13.95       0       25.85       19.61       11.78         122.04       W1.00       263.3       11.90       13.95       0       38.25       81.75         13.65       V1.00       319.6       23.40       13.85       0       37.20       72.44         13.68       W1.00       20.42       17.80       14.80       0       31.60       38.02         143.98       W1.00									
*81.36       H/1.00       180.0       9.0       8.46       0       17.46       7.46         88.00	*81.36	V/1.00	180.0	9.5	8.46	0	17.96	7.91	ļ. ļ.
88.00         88.00         94.92         V/1.00         180.0         9.60         11.78         0         21.58         11.99           94.92         V/1.00         180.0         9.50         11.78         0         21.28         11.99           94.92         V/1.00         20.15         9.60         13.69         0         23.29         14.60           108.48         H/2.00         180.0         6.40         13.69         0         23.29         14.60           122.04         V/1.00         263.3         11.90         13.95         0         25.85         19.61           122.04         H/1.00         194.1         5.69         13.95         0         37.20         72.44           135.63         V/1.00         204.2         17.80         14.80         0         38.02         14.40           135.63         V/1.00         204.2         17.80         14.80         0         38.02         14.40           143.98         H/3.15         178.4         16.80         14.80         0         38.02         14.91           149.18         H/2.66         178.7         21.63         15.87         0         37.50         74.99 </td <td>*81.36</td> <td>H/1.00</td> <td>180.0</td> <td>9.0</td> <td>8.46</td> <td>0</td> <td>17.46</td> <td>7.46</td> <td></td>	*81.36	H/1.00	180.0	9.0	8.46	0	17.46	7.46	
88.00         VI.00         180.0         9.80         11.78         0         21.58         11.99           94.92         VI.00         180.0         9.50         11.78         0         21.58         11.99           106.48         VI.00         201.5         9.60         13.69         0         23.29         14.60           106.48         VI.00         201.5         9.60         13.69         0         20.99         10.10           1         VI.00         263.3         11.90         13.95         0         25.85         19.61           122.04         VI.00         283.3         11.90         13.85         0         33.25         81.75           135.63         VI.00         319.6         24.40         13.85         0         37.20         72.44           1         -         -         -         -         -         -         -           143.98         VI.00         204.2         17.80         14.80         0         31.60         38.02           143.98         VI.00         204.2         17.80         14.80         0         31.60         38.02           143.98         VI.100         189.6	88.00								100
I         VI 100         180.0         9.80         11.78         0         21.58         11.99           '94.92         H/1.00         180.0         9.50         11.78         0         21.28         11.99           '04.92         H/1.00         180.0         9.50         11.78         0         21.28         11.59           -1         -         -         -         -         -         -         -           108.48         H/2.00         180.0         6.40         13.69         0         23.29         14.60           108.48         H/2.00         180.0         6.40         13.85         0         25.85         19.61           122.04         H/1.00         194.1         5.59         13.95         0         19.64         9.59           1         -         -         -         -         -         -         -           135.63         H/3.63         189.6         23.35         13.85         0         37.20         72.44           143.99         H/3.15         178.4         16.80         14.80         0         31.60         38.02           1         -         -         -         -	88.00								150
94.92         VI.100         180.0         9.80         11.78         0         21.58         11.99           1									
"94.92         H/1.00         180.0         9.50         11.78         0         21.28         11.59           108.48         V/1.00         201.5         9.60         13.69         0         23.29         14.60           108.48         V/1.00         263.3         11.90         13.69         0         20.09         10.10           1         V/1.00         263.3         11.90         13.95         0         25.85         19.61           122.04         V/1.00         194.1         5.69         13.95         0         19.64         9.59           1	*94.92	V/1.00	180.0	9.80	11.78	0	21.58	11.99	
108.48         V/1.00         201.5         9.60         13.69         0         23.29         14.60           108.48         H/2.00         180.0         6.40         13.69         0         20.09         10.10           122.04         V/1.00         263.3         11.90         13.95         0         25.85         19.61           122.04         H/1.00         194.1         5.69         13.95         0         38.25         81.75           135.63         V/1.00         319.6         24.40         13.85         0         37.20         72.44           1         -         -         -         -         -         -         -           143.98         V/1.00         204.2         17.80         14.80         0         33.60         34.27         51.70           143.98         V/1.00         204.2         17.80         14.80         0         31.60         38.02           1         -	*94.92	H/1.00	180.0	9.50	11.78	0	21.28	11.59	
108.48         H/2.00         180.0         6.40         13.69         0         20.09         10.10           1         - <td< td=""><td>108 48</td><td>V/1 00</td><td>201.5</td><td>9.60</td><td>13.69</td><td>0</td><td>23 29</td><td>14 60</td><td></td></td<>	108 48	V/1 00	201.5	9.60	13.69	0	23 29	14 60	
I         VI.00         263.3         11.90         13.95         0         25.85         19.61           122.04         H/1.00         194.1         5.69         13.85         0         19.64         9.59           1	108.48	H/2.00	180.0	6.40	13.69	0	20.09	10.10	
122.04       V/1.00       263.3       11.90       13.95       0       25.85       19.61         122.04       H/1.00       194.1       5.69       13.95       0       19.64       9.59         135.63       V/1.00       319.6       24.40       13.85       0       38.25       81.75         135.63       H/3.63       189.6       23.35       13.85       0       37.20       72.44         1				-		-		-	l i
122.04       H/1.00       194.1       5.69       13.95       0       19.64       9.59         1       1       1       1       1       1       1       1       1         135.63       H/3.63       189.6       23.35       13.85       0       37.20       72.44       1         143.98       V/1.00       204.2       17.80       14.80       0       32.60       42.66         143.98       H/3.15       178.4       16.80       14.80       0       34.27       51.70         149.18       V1.04       170.7       18.40       15.87       0       34.27       51.70         149.18       H/1.15       174.5       14.40       13.70       0       31.90       39.36         203.37       V/1.00       189.6       18.20       13.70       0       31.90       39.36         216	122.04	V/1.00	263.3	11.90	13.95	0	25.85	19.61	
I         I         I         I         I         I         I         I           135.63         H/3.63         189.6         23.35         13.85         0         37.20         72.44           I <t< td=""><td>122.04</td><td>H/1.00</td><td>194.1</td><td>5.69</td><td>13.95</td><td>0</td><td>19.64</td><td>9.59</td><td></td></t<>	122.04	H/1.00	194.1	5.69	13.95	0	19.64	9.59	
135.63       V1.100       319.6       24.40       13.85       0       38.25       81.75         1       23.35       13.85       0       37.20       72.44       1         143.98       V/1.00       204.2       17.80       14.80       0       32.60       42.66         143.98       H/3.15       178.4       16.80       14.80       0       34.00       38.02       1         149.18       V/1.04       170.7       18.40       15.87       0       34.27       51.70       14.918         149.18       H/2.86       178.7       21.63       15.87       0       31.90       39.36         203.37       V/1.00       189.6       18.20       13.70       0       31.90       39.36         203.37       H/1.15       174.5       14.40       13.70       0       28.10       25.41       1         1       174.5       14.40       13.70       0       28.10       25.41       1         216       1       174.40       16.14       0       30.65       272       1       2       1       2       1       2       1       2       1       2       1       1	405.00	N//4 00	240.0	04.40	40.05		20.05	04.75	<u>                                     </u>
105.00       105.00       23.30       13.80       0       37.20       72.44         143.98       V/1.00       204.2       17.80       14.80       0       32.60       42.66         143.98       W/1.01       178.4       16.80       14.80       0       31.60       38.02         149.18       W/1.04       170.7       18.40       15.87       0       34.27       51.70         149.18       H/2.86       178.7       21.63       15.87       0       37.20       74.99         203.37       V/1.00       189.6       18.20       13.70       0       31.90       39.36         203.37       H/1.15       174.5       14.40       13.70       0       28.10       25.41         1       1       1       1       1       1       1       1       1         216       1       16.14       0       30.54       33.65       272.12       1       1         28.34       V/1.00       282.2       14.9       17.62       0       32.52       42.27       28.34       143.15       143.17       1         298.34       V/1.00       82.2       14.9       17.62       0	135.63	V/1.00	319.6	24.40	13.85	0	38.25	81.75 72.44	
13.98         V/1.00         204.2         17.80         14.80         0         32.60         42.66           143.98         H/3.15         178.4         16.80         14.80         0         31.60         38.02           1         -		50.5/Fi	109.0	23.35	13.03	U	31.20	12.44	
113.98         H3.15         178.4         1.00         1.00         0         31.60         38.02           149.18         V/1.04         170.7         18.40         15.87         0         34.27         51.70           149.18         H/2.86         178.7         21.63         15.87         0         37.50         74.99           1	143,98	V/1 00	204.2	17 80	14 80	0	32 60	42.66	
1.1000         1.10000         1.10000         1.10000         1.10000         1.10000         1.10000         1.10000         1.10000         1.10000         1.10000         1.10000         1.100000         1.10000         1.10000	143.98	H/3 15	178.4	16.80	14.80	0	31.60	38.02	
149.18       V/1.04       170.7       18.40       15.87       0       34.27       51.70         149.18       H/2.86       178.7       21.63       15.87       0       37.50       74.99         203.37       V/1.00       189.6       18.20       13.70       0       31.90       39.36         203.37       H/1.15       174.5       14.40       13.70       0       28.10       25.41         216                 216                  216		1,0.10	110.1	10.00	11.00		01.00		t i
149.18       H/2.86       178.7       21.63       15.87       0       37.50       74.99         1	149.18	V/1.04	170.7	18.40	15.87	0	34.27	51.70	
203.37         V/1.00         189.6         18.20         13.70         0         31.90         39.36           203.37         H/1.15         174.5         14.40         13.70         0         28.10         25.41         1           216         1 <td>149.18</td> <td>H/2.86</td> <td>178.7</td> <td>21.63</td> <td>15.87</td> <td>0</td> <td>37.50</td> <td>74.99</td> <td></td>	149.18	H/2.86	178.7	21.63	15.87	0	37.50	74.99	
203.37         V/1.00         189.5         18.20         13.70         0         31.90         39.36           203.37         H/1.15         174.5         14.40         13.70         0         28.10         25.41         1           216                                28.10         25.41	202.27	\//1_00	190.6	19.00	12 70	0	21.00	20.26	
200.01       111.10       114.02       10.70       0       20.10       20.10       20.11         216       1	203.37	V/1.00 H/1.15	174.5	16.20	13.70	0	28.10	39.30 25.41	
216	200.07	1/1.15	174.5	14.40	10.70	0	20.10	20.41	
216	216								150
I         VI.00         235.0         14.40         16.14         0         30.54         33.65           271.22         H/1.10         188.1         18.30         16.14         0         34.44         52.72           298.34         V/1.00         82.2         14.9         17.62         0         32.52         42.27           298.34         H/1.00         190.6         15.10         17.62         0         32.72         43.25           1	216								200
271.22         V/1.00         235.0         14.40         16.14         0         30.54         33.65           271.22         H/1.10         188.1         18.30         16.14         0         34.44         52.72           298.34         V/1.00         82.2         14.9         17.62         0         32.52         42.27           298.34         H/1.00         190.6         15.10         17.62         0         32.52         42.27           298.34         H/1.00         190.6         15.10         17.62         0         32.52         42.27           298.34         H/1.00         190.6         15.10         17.62         0         32.72         43.25           1									
271.22       H/1.10       188.1       18.30       16.14       0       34.44       52.72         1       -	271.22	V/1.00	235.0	14.40	16.14	0	30.54	33.65	
I         I <thi< th=""> <thi< th=""> <thi< th=""> <thi< th=""></thi<></thi<></thi<></thi<>	271.22	H/1.10	188.1	18.30	16.14	0	34.44	52.72	
298.34       H/1.00       190.6       15.10       17.62       0       32.72       43.25         1       -       -       -       -       -       -       -         366.10       V/1.00       74.7       18.80       18.55       0       37.35       73.71       -         366.10       H/1.00       189.6       24.60       18.55       0       43.15       143.71         1       -       -       -       -       -       -       -       -         447.51       V/1.00       153.3       16.60       20.67       0       37.27       73.03         447.51       H/1.00       188.9       19.60       20.67       0       40.27       103.16         1       -       -       -       -       -       -       -       -         474.62       V/1.00       203.9       14.50       21.91       0       36.41       66.14       -         474.62       H/1.00       213.7       18.1       21.91       0       40.01       100.11       -         960.00       -       -       -       -       -       -       -       -       -	298.34	V/1 00	82.2	14.9	17 62	0	32.52	42 27	
1       1	298.34	H/1.00	190.6	15.10	17.62	0	32.72	43.25	
366.10         V/1.00         74.7         18.80         18.55         0         37.35         73.71           366.10         H/1.00         189.6         24.60         18.55         0         43.15         143.71           447.51         V/1.00         153.3         16.60         20.67         0         37.27         73.03           447.51         V/1.00         153.3         16.60         20.67         0         36.41         66.14           447.62         V/1.00         203.9         14.50         21.91         0         36.41         66.14           474.62         V/1.00         203.9         14.50         21.91         0         40.01         100.11           Image: set the set of th						-			
366.10       H/1.00       189.6       24.60       18.55       0       43.15       143.71         447.51       V/1.00       153.3       16.60       20.67       0       37.27       73.03         447.51       H/1.00       188.9       19.60       20.67       0       40.27       103.16         447.51       H/1.00       188.9       19.60       20.67       0       40.27       103.16         474.62       V/1.00       203.9       14.50       21.91       0       36.41       66.14         474.62       H/1.00       213.7       18.1       21.91       0       40.01       100.11         960.00       960.00       1       1       1       1       1       1       1         1000.0       1	366.10	V/1.00	74.7	18.80	18.55	0	37.35	73.71	
I       I       I       I       I       I       I       I       I         447.51       V/1.00       153.3       16.60       20.67       0       37.27       73.03       I         447.51       H/1.00       188.9       19.60       20.67       0       40.27       103.16       I         I	366.10	H/1.00	189.6	24.60	18.55	0	43.15	143.71	
447.51       H/1.00       188.9       19.60       20.67       0       37.27       173.03         447.51       H/1.00       188.9       19.60       20.67       0       40.27       103.16       103.16         1	447 51	V/1 00	153.3	16.60	20.67	0	37.27	73.03	
1       100.10       100.10       100.10         474.62       V/1.00       203.9       14.50       21.91       0       36.41       66.14         474.62       H/1.00       213.7       18.1       21.91       0       40.01       100.11         960.00       960.00       1       1       1       1       1       1       1         1000.0       1	447.51	H/1.00	188.9	19.60	20.67	0	40.27	103.16	
474.62       V/1.00       203.9       14.50       21.91       0       36.41       66.14         474.62       H/1.00       213.7       18.1       21.91       0       40.01       100.11									
474.62       H/1.00       213.7       18.1       21.91       0       40.01       100.11         960.00       960.	474.62	V/1.00	203.9	14.50	21.91	0	36.41	66.14	İ
I       I	474.62	H/1.00	213.7	18.1	21.91	0	40.01	100.11	<u> </u>
300.00         Image: Constraint of the second	060.00						1		200
Image: construction     Image: construction     Image: construction     Image: construction       1000.0     Image: construction     Image: construction     Image: construction       The frequency range was scanned from 9kHz to 1 GHz.     Image: construction     Image: construction	960.00			1					200
1000.0     The frequency range was scanned from 9kHz to 1 GHz.			1	1					1
The frequency range was scanned from 9kHz to 1 GHz.	1000.0			1					500
The frequency range was scanned from 9kHz to 1 GHz.									
		The frequency ra	e frequency range was scanned from 9kHz to 1 GHz.						
The emissions observed from the EUT do not exceed the specified limits.		The emissions of	bserved from the	EUT do not exce	ed the specified	limits.			
Emissions not recorded were more than 200B under the specified limit.		Emissions not re	corded were more	e than 20dB und	er the specified li	mit.			



Retlif Testing Laboratories