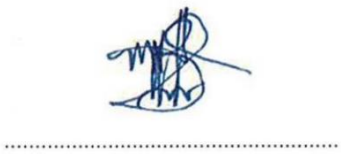
RADIO REPORT

FCC 47 CFR Part 15C
ISED Canada RSS-210

Operation within the 13.110 – 14.010 MHz band

Report Reference No	G0M-2302-1931-TFC225RI-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	DAkkS - Registration number : D-PL-12092-01-03 (ISED) ISED Testing Laboratory site: 3470A DAkkS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	Access Ltd
Address	18-19 Suttons Business Park Earley Reading RG6 1AZ Reading UNITED KINGDOM
Test Specification	47 CFR Part 15C RSS-210, Issue 10, 2020-04 RSS-Gen, Issue 5, Amendment 2, 2021-02
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model(s)	OCR640-E-NCRCO02-01
Additional Model(s)	None
Brand Name(s)	None
Hardware Version(s)	Rev.3
Software Version(s)	Version.0039
FCC ID	ZEROCR640E
Test Result	**PASSED**

Possible test case verdicts:		
Required by standard but not tested	N/T	
Not required by standard	N/R	
Not applicable to EUT	N/A	
Test object does meet the requirement	P(PASS)	
Test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 °C - 30 °C	
Test Lab Humidity	25 % - 55 %	
Date of receipt of test item	2023-06-28 and 2024-03-18	
Report:		
Compiled by	Wilfried Treffke	
Tested by (+ signature) (Responsible for Test)	Godson Offorji	
Approved by (+ signature) (Senior Test Lab Technician)	Wilfried Treffke	
Date of Issue	2024-07-26	
Total number of pages	42	
General Remarks:		
The test results presented in this report relate only to the object tested. **The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.** This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		
None		

ADDITIONAL VARIANTS

Additional Variants (not tested and not evaluated variants)		
Not-tested Variant	**Description**	
1	Product Type Description	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
	Model name	OCR640-E-DESKTOP
	Brand name	None
	Hardware Version	Rev.5
	Software Version	Version.0039
2	Product Type Description	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
	Model name	OCR640-E
	Brand name	None
	Hardware Version	Rev.5
	Software Version	Version.0039
Comment: Those named additional variants above have not been tested. Those additional variants of the series have been declared by the manufacturer. The test report explicitly states that those variants were neither tested nor assessed nor evaluated.		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2024-07-26	Initial Release	--

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
EUT	Equipment Under Test
FCC	Federal Communications Commission
ISED	Innovation, Science and Economic Development Canada
RBW	Resolution bandwidth
RFID	Radio Frequency Identification
RMS	Root mean square
VBW	Video bandwidth
V_{NOM}	Nominal supply voltage

REPORT INDEX

1 Equipment (Test Item) Under Test

Description	Full-Page Document Imager & MRTD Reader with Contactless Capabilities	
Model	OCR640-E-NCRCO02-01	
Additional Model(s)	None	
Brand Name(s)	None	
Serial Number(s)	1852243171 1852243172	
Test Sample Id(s)	48084 44667	
Hardware Version(s)	Rev.3	
Software Version(s)	Version.0039	
FCC ID	ZEROCR640E	
Equipment type	End Product	
Radio type	Transceiver	
Assigned frequency bands	13.110 - 14.010 MHz	
Radio technology	RFID	
Modulation	ASK / OOK	
Antenna 1	Type	Integrated
	Model	Loop antenna
	Manufacturer	Access-IS
	Gain	unspecified
Antenna 2	Type	Integrated
	Model	Loop antenna
	Manufacturer	Access-IS
	Gain	unspecified
Supply Voltage	V_{NOM}	120 VAC
Operating Temperature	T_{NOM}	25 °C
	T_{MAX}	60° C
	T_{MIN}	0 °C
AC/DC-Adaptor	Model	GSM25B24
	Manufacturer	Meanwell
	Input voltage[V]	100-240VAC
	Output voltage[V]	24V
	Output current[A]	1.04A
Manufacturer	Access Ltd 18-19 Suttons Business Park Earley Reading RG6 1AZ Reading UNITED KINGDOM	

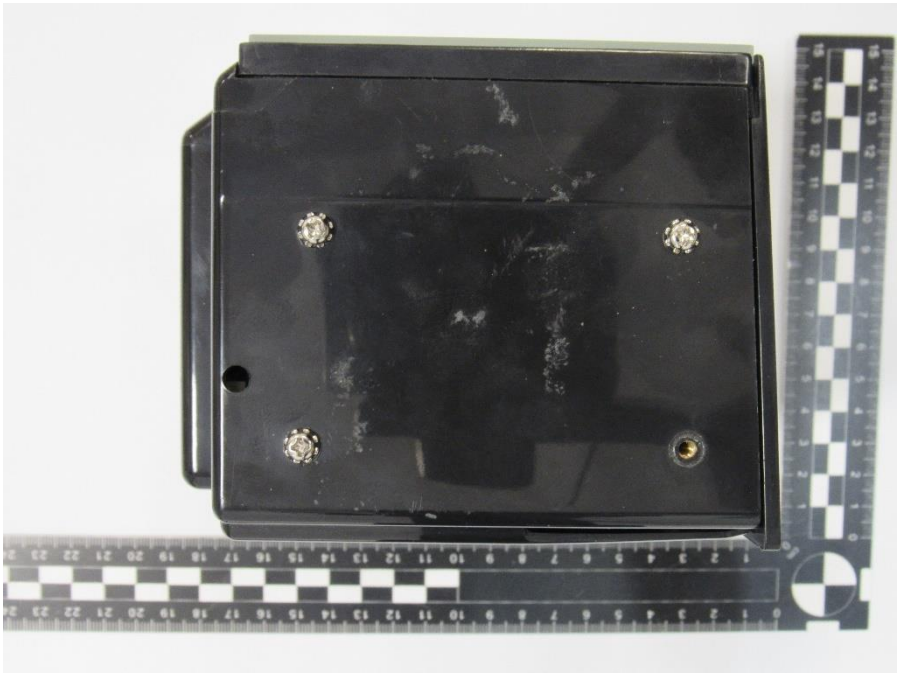
1.1 Photos – Equipment External

EUT Top view

EUT Bottom view

EUT Front view

EUT Back view

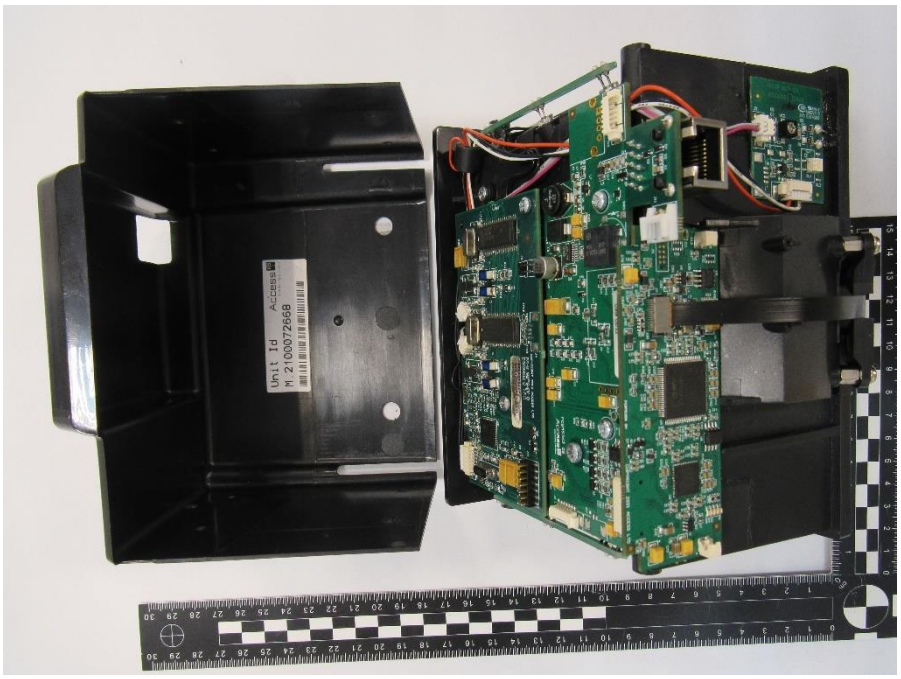
EUT Left view


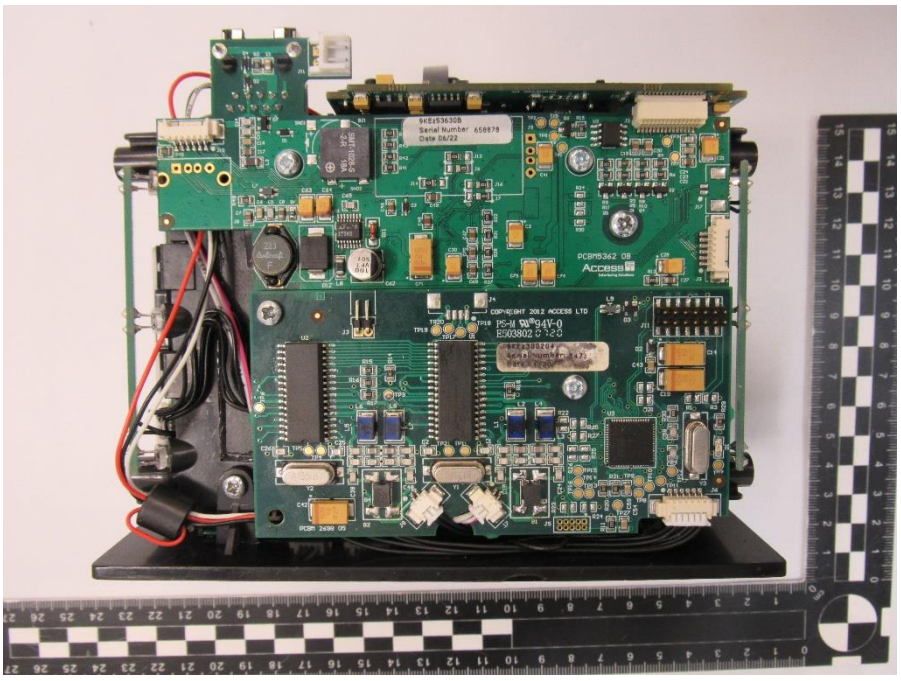
EUT Right View


Support equipment

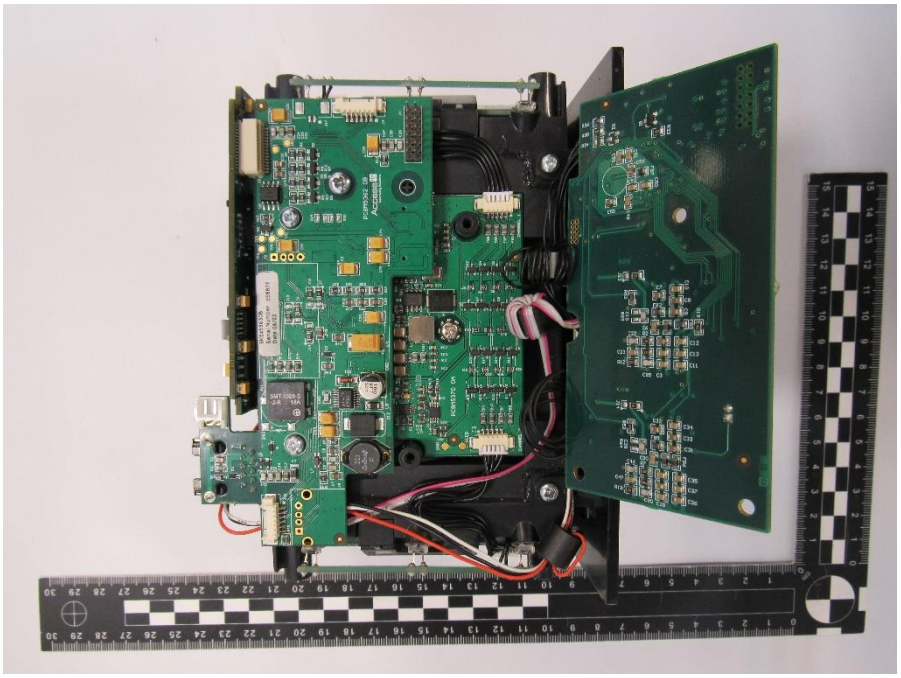

AC/DC Adapter


1.2 Photos – Equipment Internal

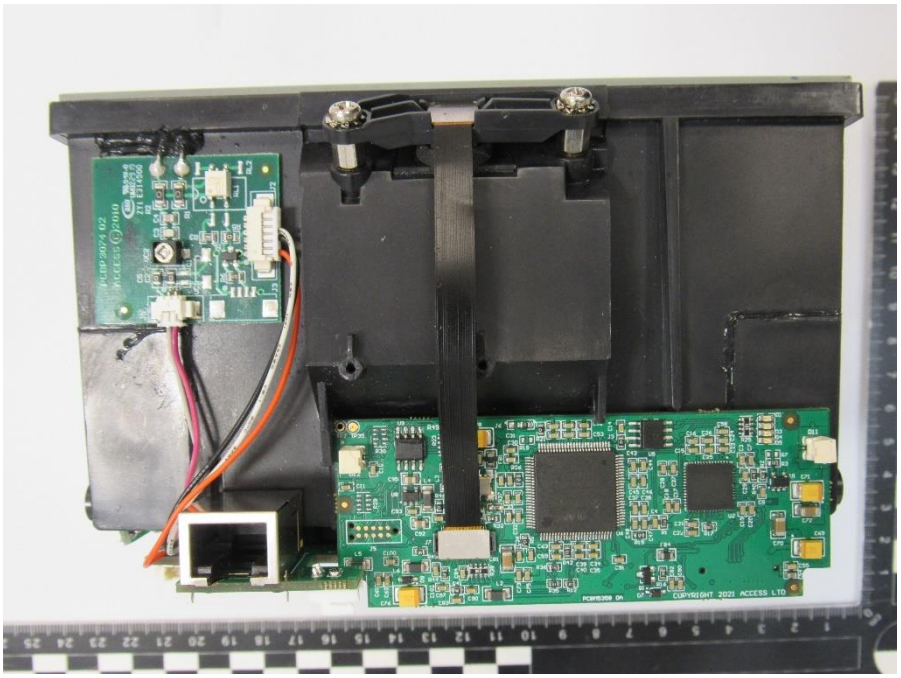
EUT Open


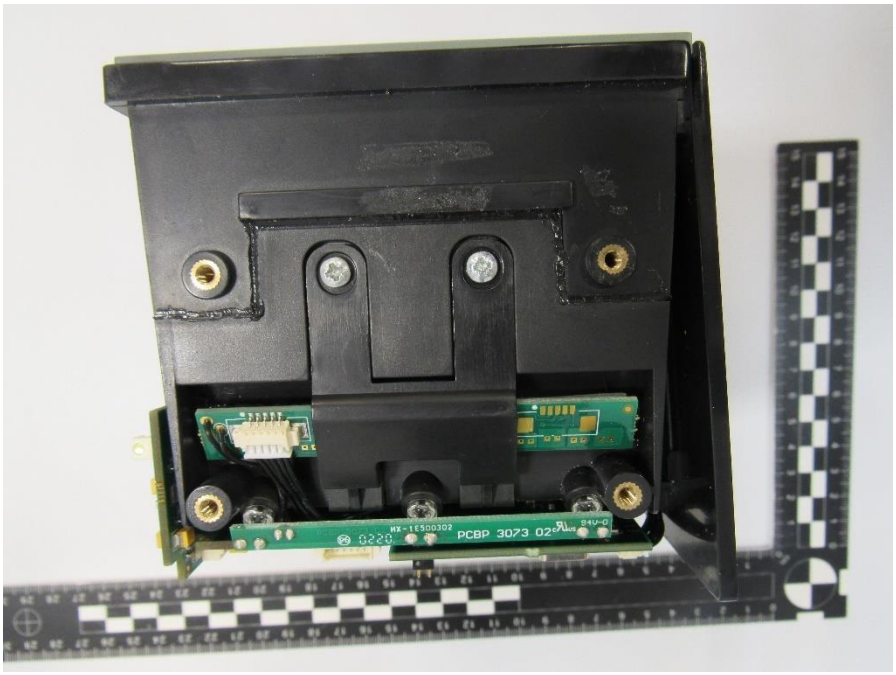
PCB Top view


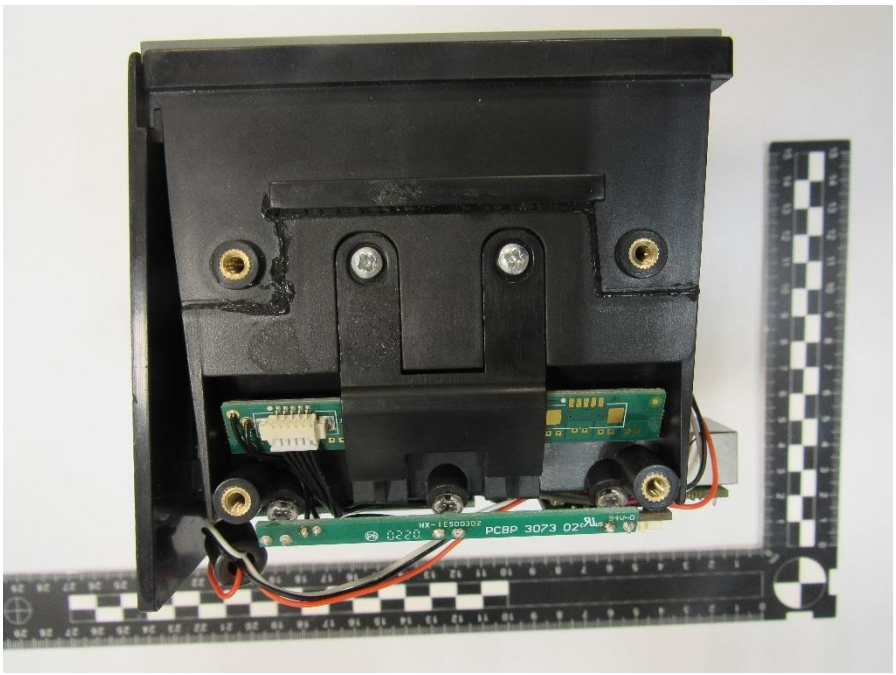
PCB Internal.view



EUT Internal back view

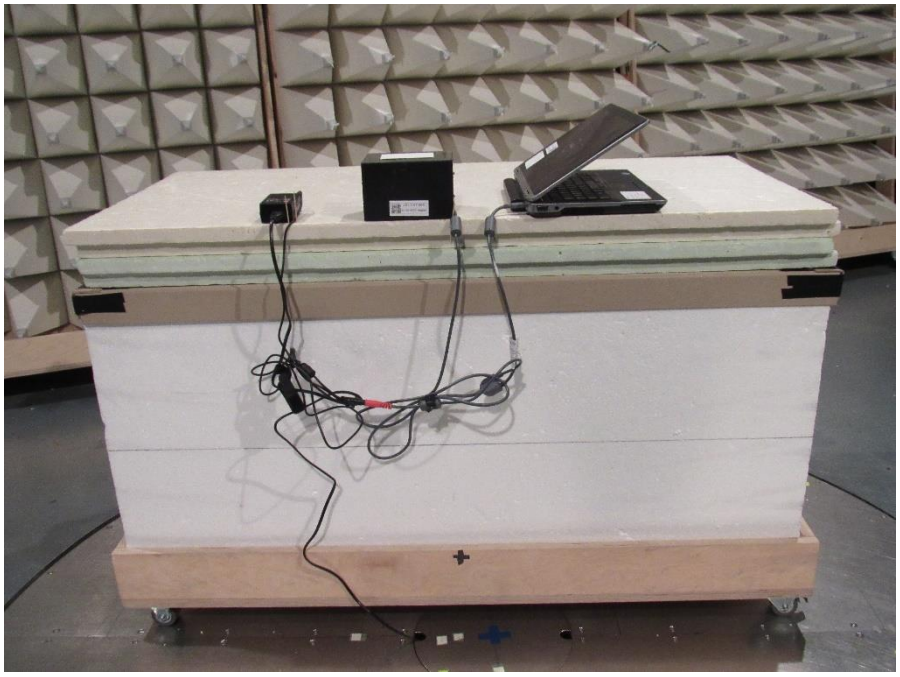


EUT Internal left view


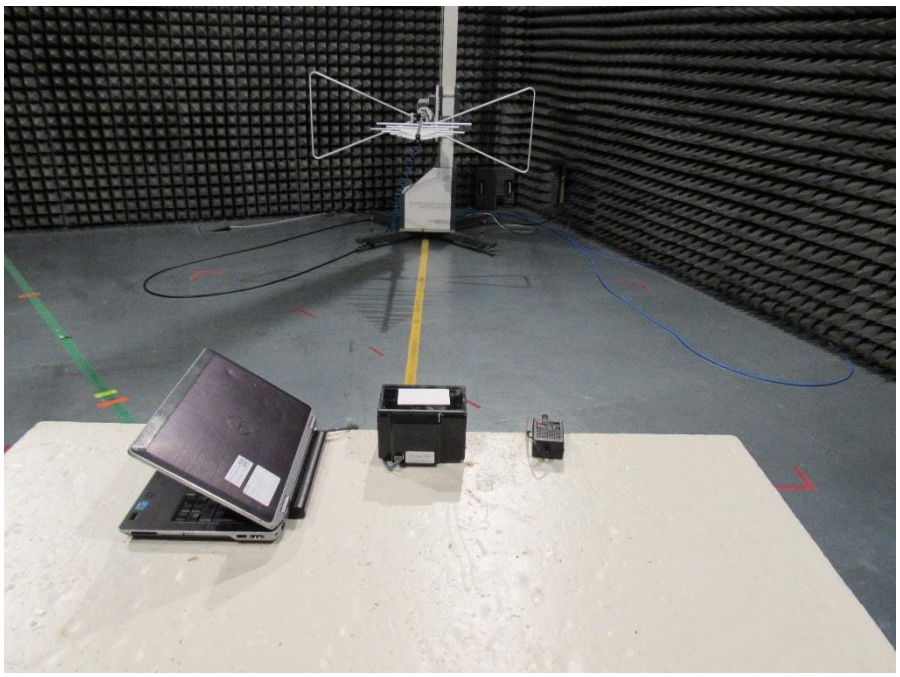
EUT Internal Right view


1.3 Photos – Test Setup

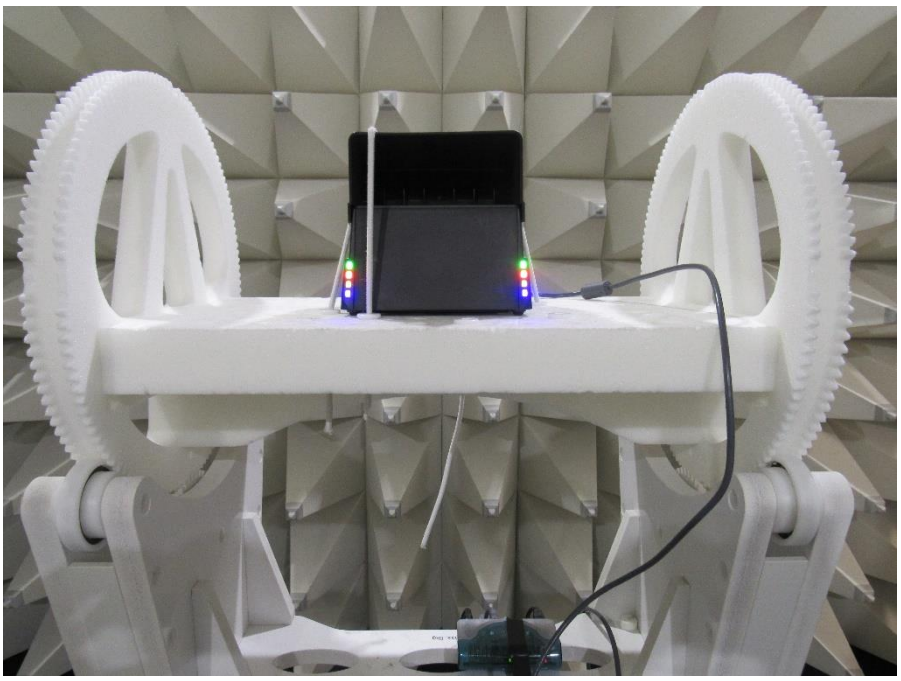
Setup Above 30 MHz, View 1



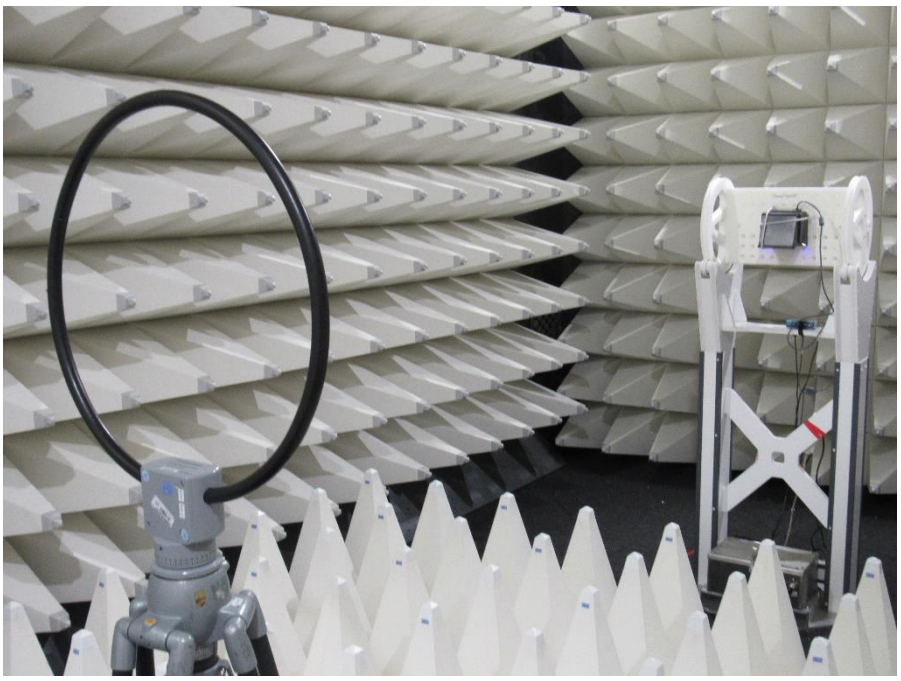
Setup Above 30 MHz, View 2



Setup Below 30 MHz, View 1



Setup Below 30 MHz, View 2



AC Powerline Setup front view


AC Powerline Setup back view


1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
AE	Laptop	DELL	---	Windows laptop, Win 7 or later
SFT	Reader Software	unspecified	Scanner Demo	Activate test mode
Description:				
AE	Auxiliary Equipment			
SIM	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment: --				

1.5 Test Modes

Mode	Description
Transmit	Mode = Transmit Modulation = ASK / OOK Duty cycle = 100 %
Comment: --	

1.6 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Tx	0	13.56

1.7 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dBµV. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

Reading on Analyzer (dBµV) + A.F. (dB/m) = Net field strength (dBµV/m)

Net:

This is the net field strength measurement (as shown above).

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Field strength limit:

This is the FCC Class B radiated emission limit (in units of dBµV/m). The FCC limits are given in units of µV/m. The following formula is used to convert the units of µV/m to dBµV/m:

Field strength limit (dBµV/m) = 20 · log (µV/m)

Example only for radiated field strength:

Reading + AF	= Net Reading	:	Net reading	- Field strength limit	= Margin
+21.5 dBµV	+ 26 dB/m	:	47.5 dBµV/m	- 57.0 dBµV/m	= -9.5

2 Result Summary

FCC 47 CFR Part 15C, ISED RSS-210				
Product Standard Reference	**Requirement**	**Reference Method**	**Result**	**Remarks**
ISED RSS-210 5 ISED RSS-Gen 6.7	Occupied Bandwidth	ANSI C63.10-2013	N/R	Informational only
FCC 15.225(a-c) ISED RSS-210 B.6(a)	Fundamental in-band field strength emissions	ANSI C63.10-2013	PASS	--
FCC 15.225(d) FCC 15.209 ISED RSS-210 B.6(a)	Emission radiated outside the specified frequency band	ANSI C63.10-2013	PASS	--
FCC 15.225(e) ISED RSS-210 B.6	Frequency stability	ANSI C63.10-2013	PASS	--
ISED RSS-210 5 ISED RSS-Gen 7.3	Receiver radiated spurious emissions	ANSI C63.10-2013	N/A	Permanently co-located transmitter
47 CFR 15.207 ISED RSS-210 5 RSS-Gen 7.2	AC power line conducted emissions	ANSI C63.10-2013	PASS	--
Comment: The Decision Rule is applied on the basis of ETSI TR 102 273 and ETSI TR 100 028. These standards provide guidance on how to calculate and apply measurement uncertainty whilst providing maximum uncertainties allowance. In all cases due consideration will be given to ILAC-G8:09/2019. Where a result is considered conditional in respect of its proximity to the limit line, the customer would be made aware of situation so that they can make an informed decision on how to proceed.				

Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

3 Test Conditions and Results

3.1 Test Conditions and Results - Occupied bandwidth

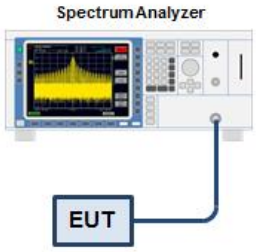
3.1.1 Information

Test Information	
Product Standard Reference	ISED RSS-210 5, ISED RSS-Gen 6.7
Measurement Method	Conducted
Measurement Uncertainty	± 1.26 %

3.1.2 Limits

Limits
None (Informational only)

3.1.3 Setup

Test Setup


3.1.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2022-07	2023-07
Cable	Gigalane	CAABH	EF00779	2023-03	2024-03

3.1.5 Procedure

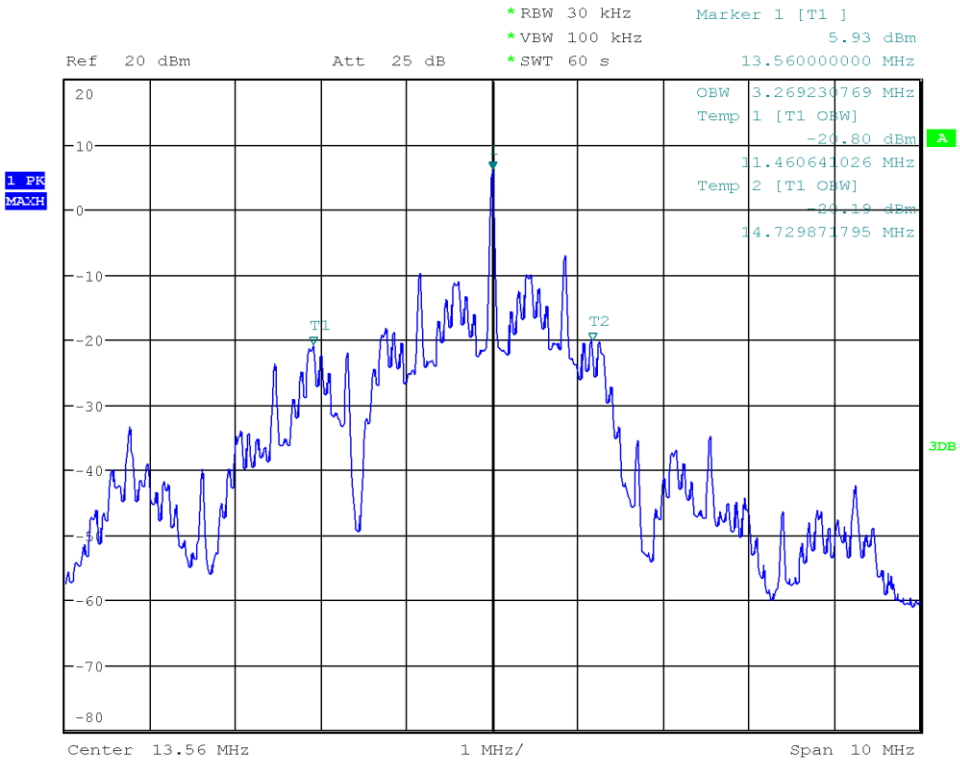
Test Procedure
1. EUT set to test mode (Communication tester is used if needed) 2. Span set to at least twice the emission spectrum 3. Resolution bandwidth set between 1 % to 5 % of OBW 4. Occupied Bandwidth (99 %) measurement with spectrum analyzer built in measurement function

3.1.6 Results

Test Results	
Channel [MHz]	Bandwidth [kHz]
13.56	3269

Occupied Bandwidth

Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	44667
Reference Standards:	FCC 15.225, RSS-210
Reference Method:	ANSI C63.10:2013, Section 6.9.3
Operational Mode:	ASK / OOK, Channel: 13.56 MHz
Operating Conditions:	Tnom/Vnom
Operator:	Wilfried Treffke
Test Site:	Eurofins Product Service GmbH
Test Date:	2023-07-20
Occupied Bandwidth [MHz]:	3.269



Date: 20.JUL.2023 14:26:37

3.2 Test Conditions and Results - Fundamental in-band field strength emissions

3.2.1 Information

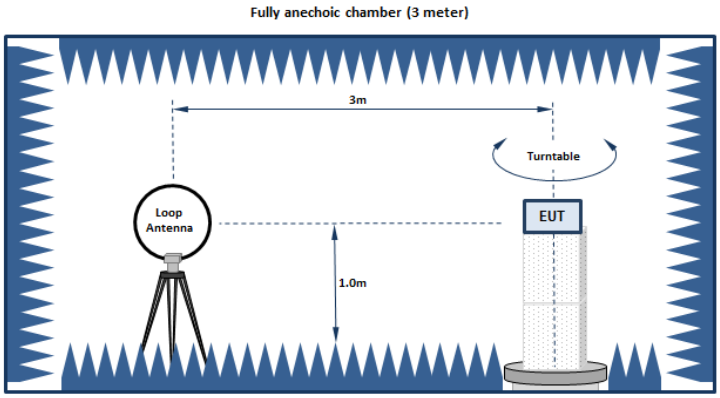
Test Information	
Product Standard Reference	FCC 15.225(a-c) / ISED RSS-210 B.6(a)
Measurement Method	Radiated
Measurement Uncertainty	± 5.95 dB

3.2.2 Limits

Limits			
Frequency ragne [MHz]	Limit [µV/m]	Limit [dBµV/m]	Limit Distance [m]
13.553 - 13.567	15848	84	30
13.410 - 13.553 13.567 - 13.710	334	50.5	30
13.110 - 13.410 13.710 - 14.010	106	40.5	30

3.2.3 Setup

Test Setup < 30 MHz



3.2.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-Anechoic Chamber	Frankonia	AC2	EF01616	2022-10	2023-10
Spectrum Analyzer	R&S	FSW 43	EF00896	2022-08	2023-08
Antenna	R&S	HFH2-Z2	EF00184	2021-01	2024-01

3.2.5 Procedure

Test Procedure
1. EUT set to test mode 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector 4. Below 30MHz an extrapolation according ANSI 63.10; 6.4.4.2 is used.

3.2.6 Results

Test Results					
Channel [MHz]	Emission [MHz]	FCC 15.225 Measured Level @ 30m [dBµV/m]	Detector	Limit @ 30m [dBµV/m]	Verdict
13.56	13.553	42.30	qpk	50.50	PASS
13.56	13.559	57.50	pk	84.00	PASS
13.56	13.769	09.90	qpk	40.50	PASS

3.3 Test Conditions and Results - Emissions radiated outside the specified frequency band

3.3.1 Information

Test Information	
Product Standard Reference	FCC 15.225(d) / ISED RSS-210 B.6(a)
Measurement Method	Radiated
Measurement Uncertainty	± 5.95 dB

3.3.2 Limits

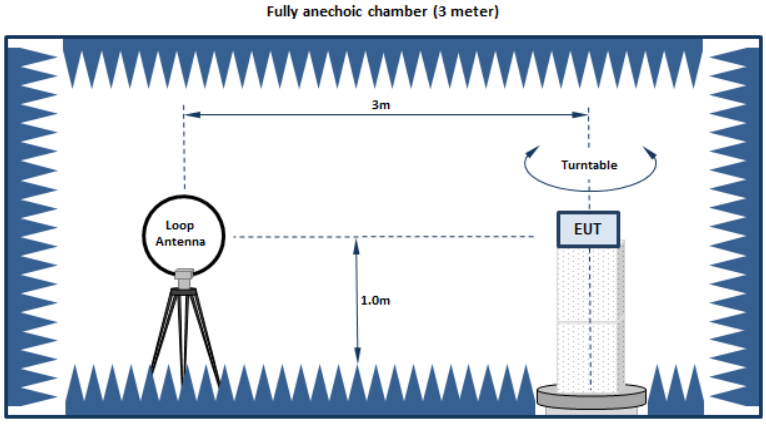
Limits blow 30 MHz according to 47 CFR Part 15.225				
Frequency range [MHz]	Detector	Limit [µV/m]	Limit [dBµV/m]	Limit Distance [m]
0.009 - 0.090	Average	2400/F[kHz]	48.5 to 28.5	300
0.090 - 0.110	Quasi-Peak	2400/F[kHz]	28.5 to 26.8	300
0.110 - 0.490	Average	2400/F[kHz]	26.8 to 13.8	300
0.490 - 1.705	Quasi-Peak	24000/F[kHz]	33.8 to 23.0	30
1.705 - 30	Quasi-Peak	30	29.5	30

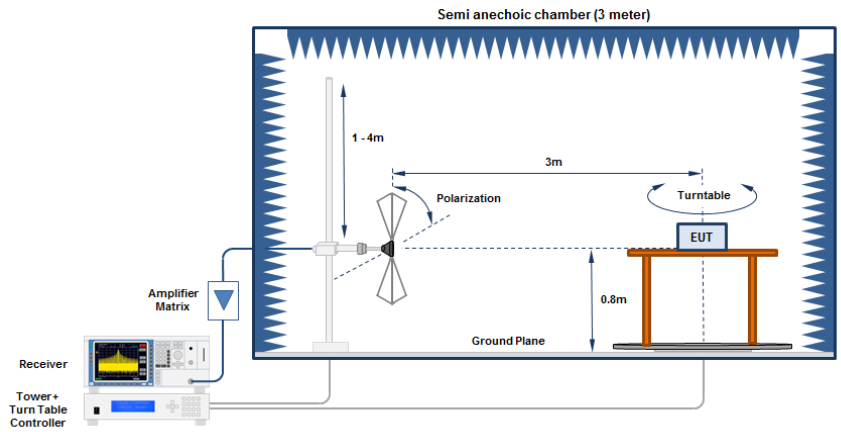
Limits blow 30 MHz according to RSS-Gen				
Frequency range [MHz]	Detector	Limit [µA/m]	Limit [dBµA/m]	Limit Distance [m]
0.009 - 0.090	Average	6.37/F[kHz]	-3.0 to -23.0	300
0.090 - 0.110	Quasi-Peak	6.37/F[kHz]	-23.0 to -24.7	300
0.110 - 0.490	Average	6.37/F[kHz]	-24.7 to -37.7	300
0.490 - 1.705	Quasi-Peak	63.7/F[kHz]	-17.7 to -28.6	30
1.705 - 30	Quasi-Peak	0.08	-21.9	30

Limits above 30 MHz				
Frequency range [MHz]	Detector	Limit [µV/m]	Limit [dBµV/m]	Limit Distance [m]
30 - 88	Quasi-Peak	100	40	3
88 - 216	Quasi-Peak	150	43.5	3

3.3.3 Setup

Test Setup < 30 MHz



Test Setup 30 - 216 MHz


3.3.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment < 30 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Semi-Anechoic Chamber	Frankonia	AC2	EF01616	2022-10	2023-10
Spectrum Analyzer	R&S	FSW 43	EF00896	2022-08	2023-08
Antenna	R&S	HFH2-Z2	EF00184	2021-01	2024-01

Test Equipment 30 - 216 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2022-11	2025-11
Measurement Receiver	R&S	N9038A-526/WXP	EF01070	2023-02	2024-02
Antenna	Schwarzbeck	VULB9168	EF01824	2022-10	2023-10

3.3.5 Procedure

Test Procedure
1. EUT set to test mode 2. Span it set according to measurement range 3. Resolution bandwidth below 1 GHz is set according to CISPR 16 with peak/quasi-peak detector and RBW of 1 MHz with peak/average detector is used above 1 GHz 4. Below 30MHz an extrapolation according ANSI 63.10; 6.4.4.2 is used. 5. Markers are set to maximum emission levels

3.3.6 Results

Test Results below 30 MHz according to 47 CFR Part 15.225						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Detector	Polarization	Limit [dBµV/m]	Margin [dB]
13.56	13.553	42.30	qpk	ver	50.50	-08.18
13.56	13.559	57.50	pk	ver	84.00	-26.52
13.56	13.769	09.90	qpk	ver	40.50	-30.56

Test Results above 30 MHz						
Channel [MHz]	Emission [MHz]	Level [dBµV/m]	Detector	Polarization	Limit [dBµV/m]	Margin [dB]
13.56	14.06	04.30	qpk	ver	29.50	-25.15
13.56	40.681	33.56	qpk	ver	40.00	-06.44
13.56	54.237	29.20	qpk	ver	40.00	-10.80
13.56	67.803	28.77	pk	ver	40.00	-11.23
13.56	108.492	27.91	pk	ver	43.50	-15.59
13.56	135.596	30.37	pk	ver	43.50	-13.13

3.4 Test Conditions and Results - Frequency stability

3.4.1 Information

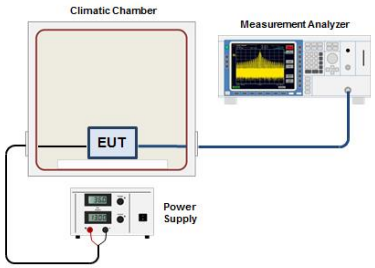
Test Information	
Product Standard Reference	FCC 15.225(e) / ISED RSS-210 B.6(b)
Measurement Method	Conducted
Measurement Uncertainty	± 0.66 PPM

3.4.2 Limits

Limits
Frequency error limit
±0.01% (±100ppm)

3.4.3 Setup

Test Setup



3.4.4 Equipment

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Spectrum Analyzer	R&S	FSU 26	EF01003	2022-07	2023-07
Cable	Gigalane	CAABH	EF00779	2023-03	2024-03

3.4.5 Procedure

Test Procedure

1. EUT set to test mode
2. The ambient temperature and supply voltage is set according to measurement conditions
3. Span is set to capture fundamental emission
4. Frequency error is measured with frequency counter measurement function

3.4.6 Results

Test Results				
Channel [MHz]	Temperatur [°C]	Voltage [V]	Measured Frequency [MHz]	Error [ppm]
13.56	25	120	13.559862	-10.15
13.56	25	102	13.559858	-10.46
13.56	25	138	13.559850	-11.06
13.56	-20	120	13.559911	-6.56
13.56	-10	120	13.559936	-4.73
13.56	0	120	13.559933	-4.91
13.56	10	120	13.559911	-6.56
13.56	20	120	13.559875	-9.23
13.56	30	120	13.559836	-12.11
13.56	40	120	13.559790	-15.45
13.56	50	120	13.559764	-17.41

Test Results - Variation of ambient temperature					
Nominal Frequency [MHz]	Voltage [V]	Temperature [°C]	Time after activation	Frequency [MHz]	Deviation [ppm]
13.56	120	50	0	13.559772	-16.81
13.56	120	50	2	13.559780	-16.22
13.56	120	50	5	13.559776	-16.52
13.56	120	50	10	13.559778	-16.37
13.56	120	40	0	13.559830	-12.54
13.56	120	40	2	13.559840	-11.80
13.56	120	40	5	13.559845	-11.43
13.56	120	40	10	13.559841	-11.73
13.56	120	30	0	13.559833	-12.32
13.56	120	30	2	13.559839	-11.87
13.56	120	30	5	13.559841	-11.73
13.56	120	30	10	13.559849	-11.14
13.56	120	20	0	13.559843	-11.58
13.56	120	20	2	13.559850	-11.06
13.56	120	20	5	13.559848	-11.21
13.56	120	20	10	13.559852	-10.91
13.56	102	20	0	13.559839	-11.87
13.56	102	20	2	13.559842	-11.65
13.56	102	20	5	13.559850	-11.06
13.56	102	20	10	13.559846	-11.36
13.56	138	20	0	13.559840	-11.80
13.56	138	20	2	13.559848	-11.21
13.56	138	20	5	13.559856	-10.62
13.56	138	20	10	13.559847	-11.28
13.56	120	10	0	13.559994	-00.44
13.56	120	10	2	13.560010	00.74
13.56	120	10	5	13.560017	01.25
13.56	120	10	10	13.560020	01.47
13.56	120	0	0	13.560037	02.73
13.56	120	0	2	13.560040	02.95

13.56	120	0	5	13.560042	03.10
13.56	120	0	10	13.560050	03.69
13.56	120	-10	0	13.560075	05.53
13.56	120	-10	2	13.560081	05.97
13.56	120	-10	5	13.560084	06.19
13.56	120	-10	10	13.560086	06.34
13.56	120	-20	0	13.560099	07.30
13.56	120	-20	2	13.560105	07.74
13.56	120	-20	5	13.560107	07.89
13.56	120	-20	10	13.560109	08.04
Comment	Limit check: Pass				

3.5 Test Conditions and Results - AC powerline conducted emissions

3.5.1 Information

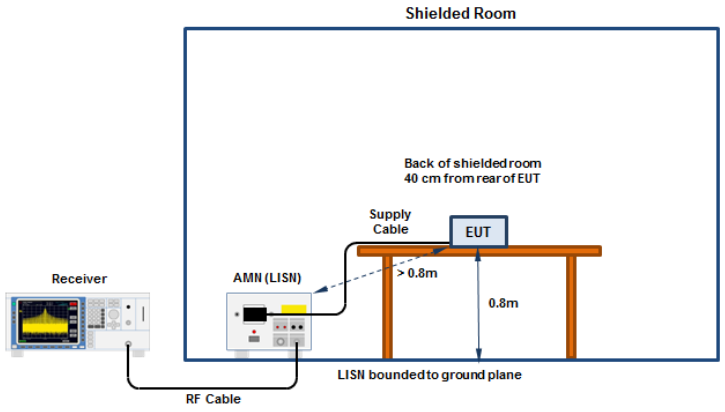
Test Information	
Reference	FCC 15.207; ISED RSS-Gen 7.2
Measurement Method	ANSI C63.10 6.2
Measurement Uncertainty	± 3.82 dB
Operator	Mr Offorji
Date	2024-04-09

3.5.2 Limits

Limits		
Frequency [MHz]	Quasi-Peak [dBµV]	Average [dBµV]
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50
* Limit decreases linearly with the logarithm of the frequency		

3.5.3 Setup

Test Setup



3.5.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2020.1.8

Test Equipment					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
EMI Test Receiver	R&S	ESCS 30	EF00297	2023-08	2024-08
Pulse Limiter	R&S	ESH3-Z2	EF01222	2023-08	2025-08
LISN	Schwarzbeck	NSLK 8127 RC	EF01592	2023-06	2024-06

Conducted emissions at the mains power port
according to FCC Part C 15.207

Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	48084
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Offorji
Test Date:	2024-04-09
Operating Conditions:	ambient temperature: 23 °Celsius power input: 120AAC / 24 VDC
LISN:	Schwarzbeck NSLK 8127
Operational Mode:	RFID; OOK / ASK; 13.56 MHz
EUT Configuration:	
Applied to Port:	Power (dedicated AC/DC-adapter)
Note 1:	--

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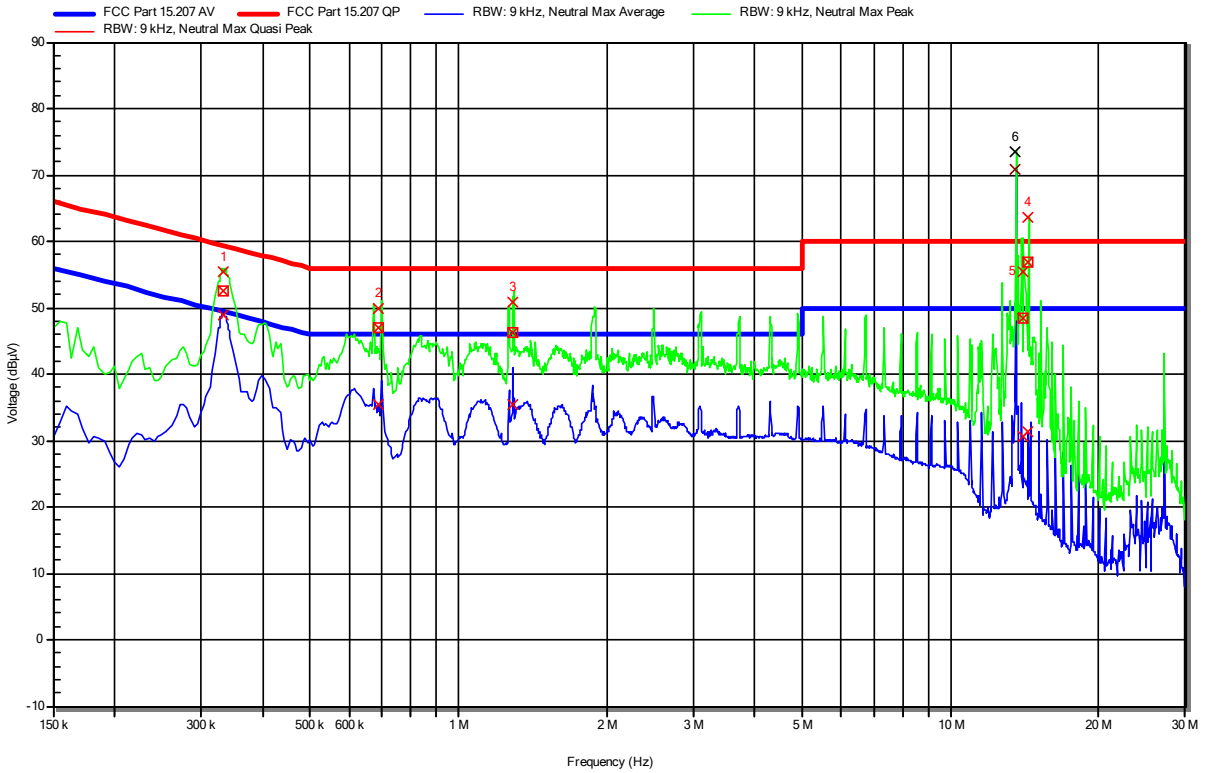
RadiMation



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	332.25 kHz	52.48 dBµV	59.39 dBµV	-6.92 dB	Pass	Neutral
2	685.5 kHz	46.87 dBµV	56 dBµV	-9.13 dB	Pass	Neutral
3	1.291 MHz	46.25 dBµV	56 dBµV	-9.75 dB	Pass	Neutral
4	14.408 MHz	56.99 dBµV	60 dBµV	-3.01 dB	Pass	Neutral
5	14.004 MHz	48.36 dBµV	60 dBµV	-11.64 dB	Pass	Neutral

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	332.25 kHz	48.9 dBµV	49.39 dBµV	-0.5 dB	Pass	Neutral
2	685.5 kHz	35.44 dBµV	46 dBµV	-10.56 dB	Pass	Neutral
3	1.291 MHz	35.36 dBµV	46 dBµV	-10.64 dB	Pass	Neutral
4	14.408 MHz	31.21 dBµV	50 dBµV	-18.79 dB	Pass	Neutral
5	14.004 MHz	30.53 dBµV	50 dBµV	-19.47 dB	Pass	Neutral
6	13.56 MHz	--	--	--	Carrier	Neutral

Conducted emissions at the mains power port
according to FCC Part C 15.207

Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	48084
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Offorji
Test Date:	2024-04-09
Operating Conditions:	ambient temperature: 23 °Celsius power input: 120AAC / 24 VDC
LISN:	Schwarzbeck NSLK 8127
Operational Mode:	RFID; OOK / ASK; 13.56 MHz
EUT Configuration:	
Applied to Port:	Power (dedicated AC/DC-adapter)
Note 1:	--

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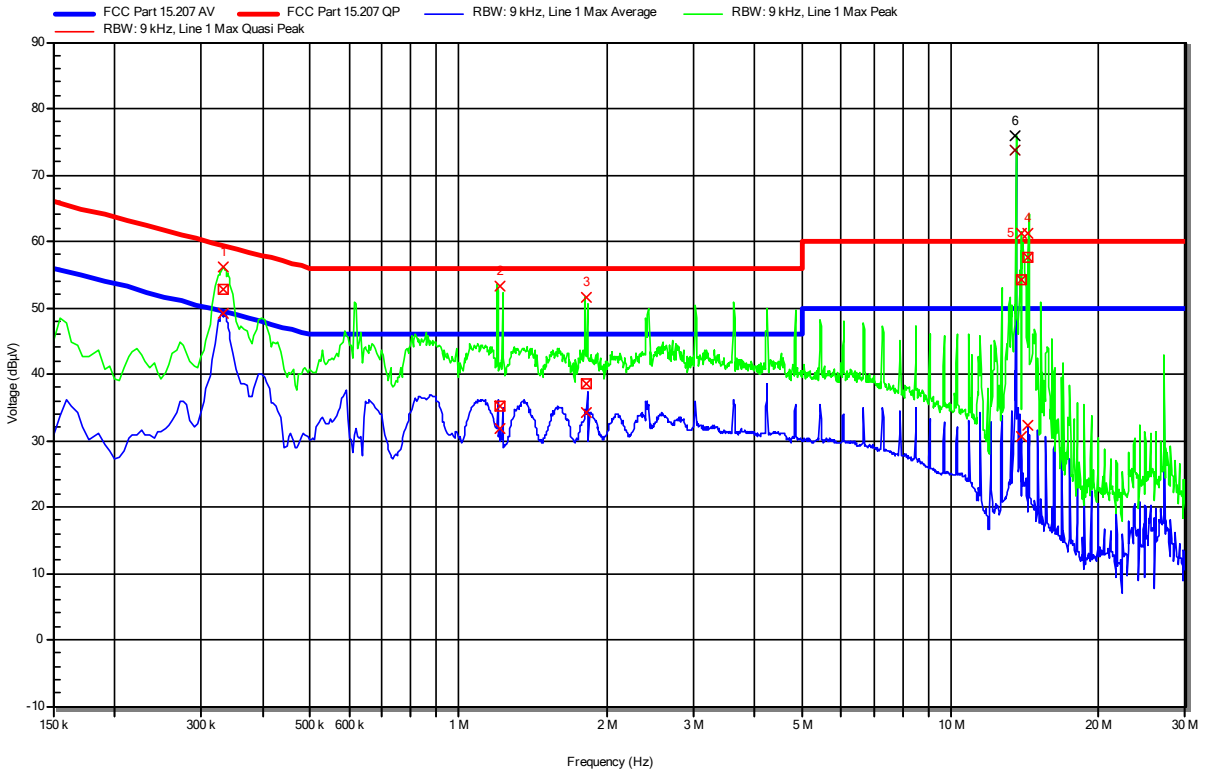
RadiMation



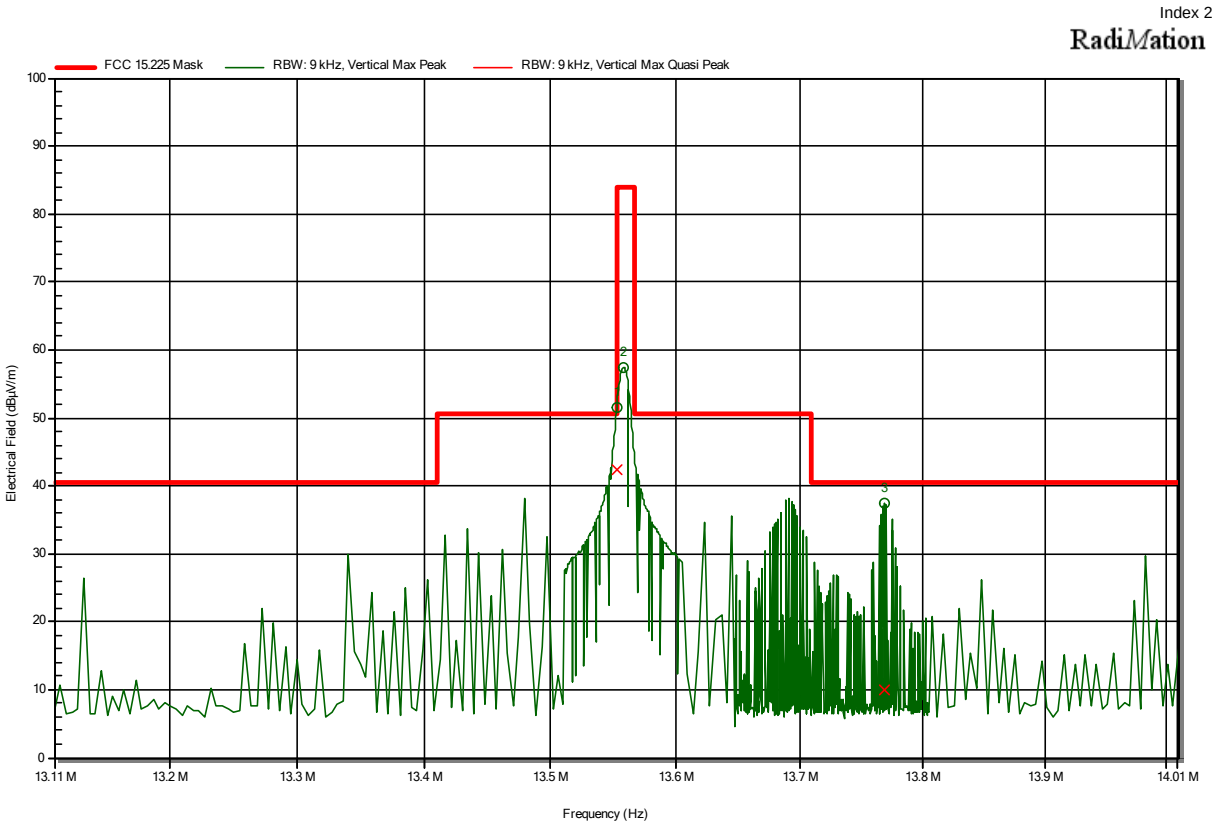
Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	LISN
1	332.7 kHz	52.66 dBµV	59.38 dBµV	-6.72 dB	Pass	Line 1
2	1.216 MHz	35.17 dBµV	56 dBµV	-20.83 dB	Pass	Line 1
3	1.815 MHz	38.54 dBµV	56 dBµV	-17.46 dB	Pass	Line 1
4	14.405 MHz	57.61 dBµV	60 dBµV	-2.39 dB	Pass	Line 1
5	13.955 MHz	54.26 dBµV	60 dBµV	-5.74 dB	Pass	Line 1

Peak Number	Frequency	Average	Average Limit	Average Difference	Average Status	LISN
1	332.7 kHz	49.19 dBµV	49.38 dBµV	-0.19 dB	Pass	Line 1
2	1.216 MHz	31.74 dBµV	46 dBµV	-14.26 dB	Pass	Line 1
3	1.815 MHz	34.26 dBµV	46 dBµV	-11.74 dB	Pass	Line 1
4	14.405 MHz	32.18 dBµV	50 dBµV	-17.82 dB	Pass	Line 1
5	13.955 MHz	30.69 dBµV	50 dBµV	-19.31 dB	Pass	Line 1
6	13.56 MHz	--	--	--	Carrier	Line 1

ANNEX A Transmitter in-band emissions

Radiated carrier according to FCC 15.225

Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	44667
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120AAC / 24 VDC
Antenna:	Rohde & Schwarz HFH2-Z2, Vertical
Measurement distance:	3 m, converted to 30 m
Mode:	Tx; RFID; OOK / ASK; 13.56 MHz
Test Date:	2023-04-20



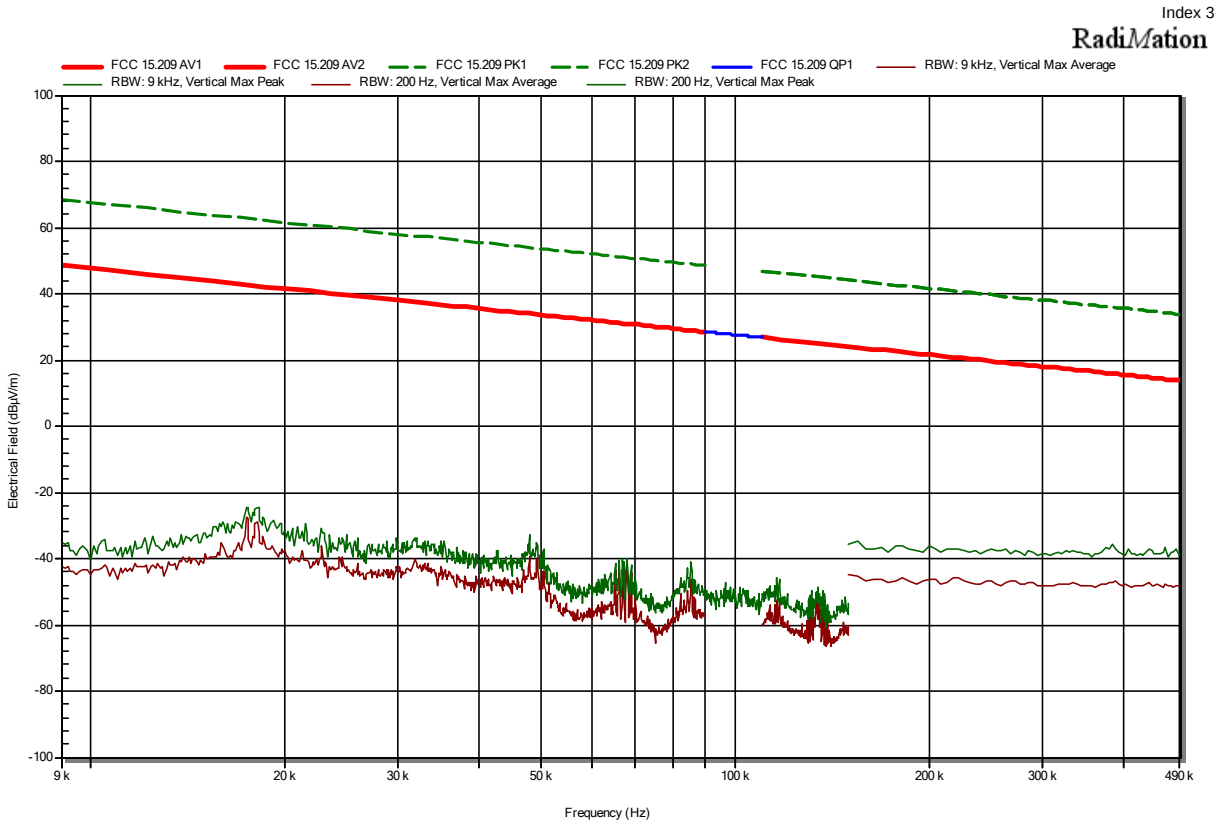
Frequency	Peak	Peak Limit	Peak Difference	Peak Status
13.559 MHz	57.5 dBµV/m	84 dBµV/m	-26.52 dB	Pass

Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
13.553 MHz	42.3 dBµV/m	50.5 dBµV/m	-8.18 dB	Pass
13.769 MHz	9.9 dBµV/m	40.5 dBµV/m	-30.56 dB	Pass

ANNEX B Transmitter radiated spurious emissions

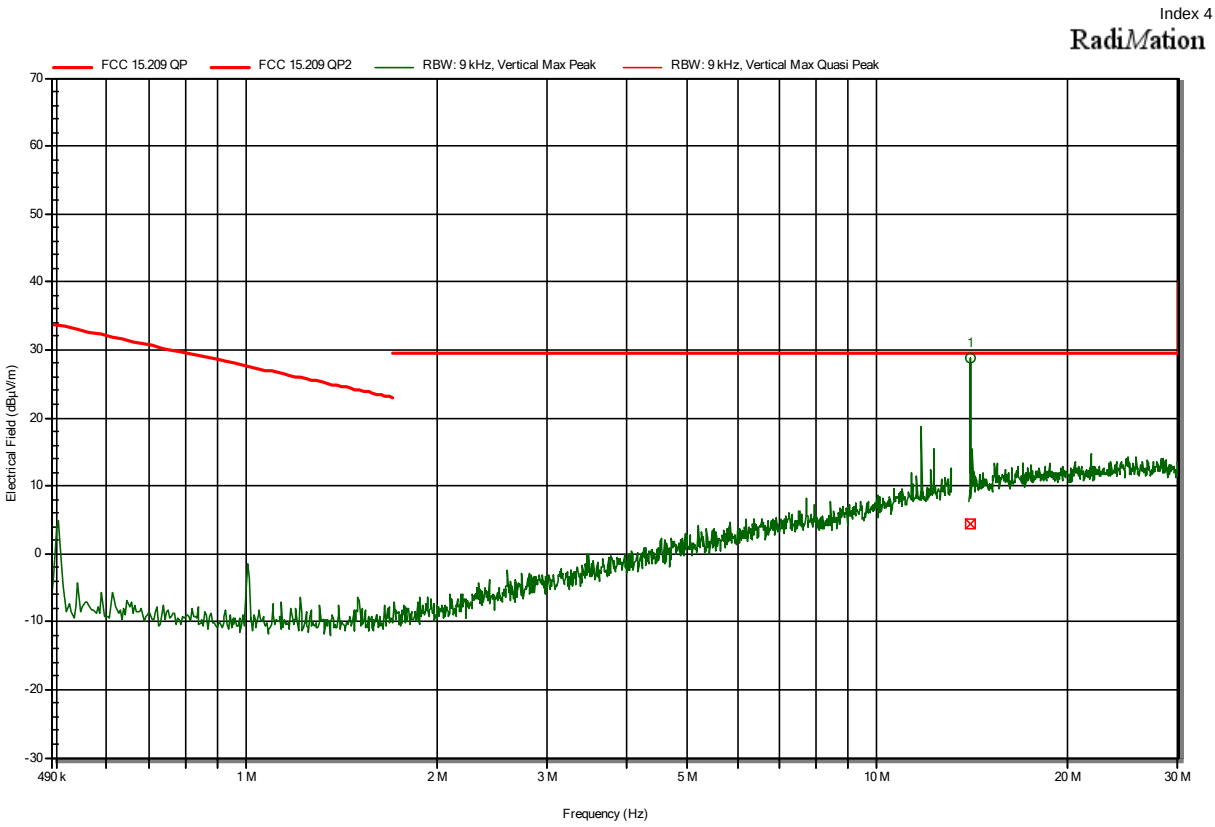
Radiated Spurious Emissions according to FCC 15.225

Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	44667
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120AAC / 24 VDC
Antenna:	Rohde & Schwarz HFH2-Z2, Vertical
Measurement distance:	3 m, converted to 300 m
Mode:	Tx; RFID; OOK / ASK; 13.56 MHz
Test Date:	2023-04-20
Note:	Polarization Coaxial



Radiated Spurious Emissions according to FCC 15.225

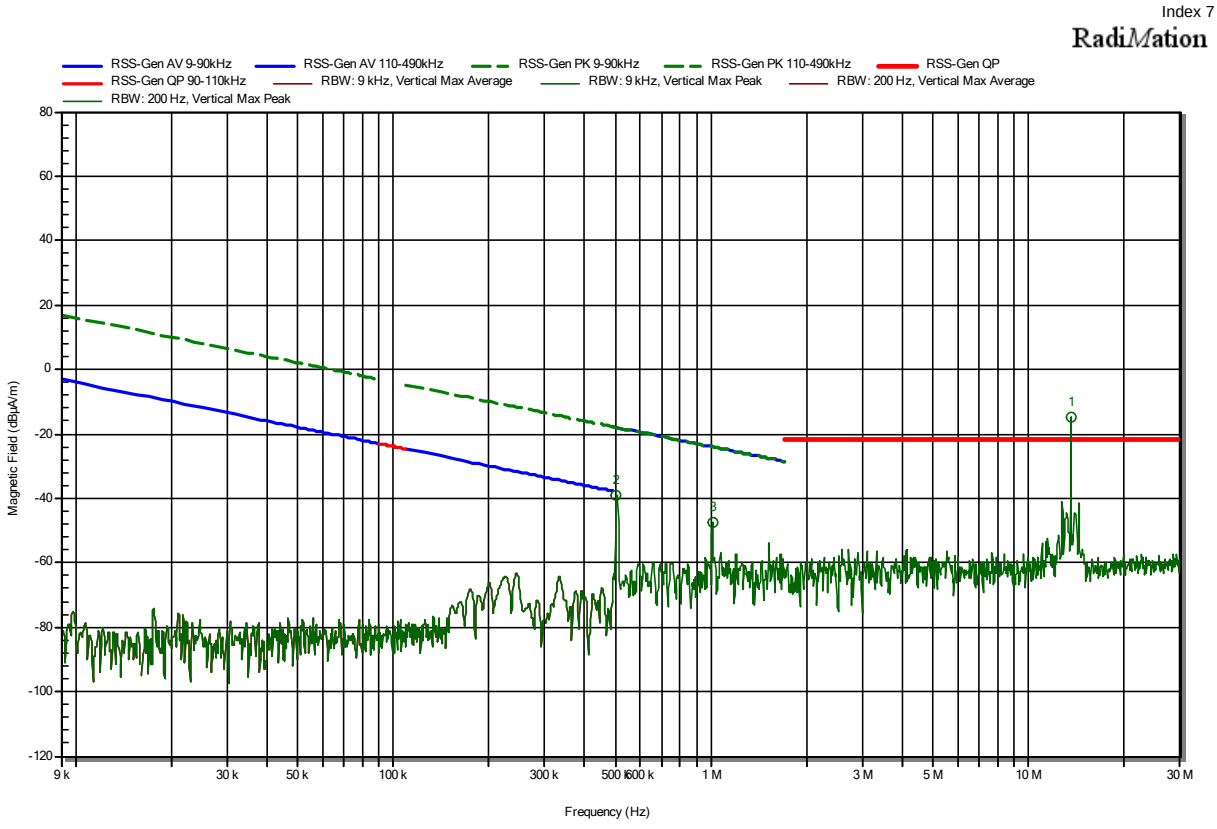
Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	44667
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120AAC / 24 VDC
Antenna:	Rohde & Schwarz HFH2-Z2, Vertical
Measurement distance:	3 m, converted to 30 m
Mode:	Tx; RFID; OOK / ASK; 13.56 MHz
Test Date:	2023-04-20



Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status
14.06 MHz	4.3 dBµV/m	29.5 dBµV/m	-25.15 dB	Pass

Radiated Spurious Emissions according to RSS-Gen, Issue 5

Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	44667
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Treffke
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120AAC / 24 VDC
Antenna:	Rohde & Schwarz HFH2-Z2, Vertical
Measurement distance:	3 m, converted to 10 m
Mode:	Tx; RFID; OOK / ASK; 13.56 MHz
Test Date:	2023-07-26



Frequency	Peak	Peak Limit	Peak Difference	Peak Status
504.755 kHz	-39.3 dBµA/m	-18 dBµA/m	-21.31 dB	Pass
1.01 MHz	-47.2 dBµA/m	-24 dBµA/m	-23.24 dB	Pass
13.56 MHz	----	---	---	Carrier 13.56 MHz

Radiated Spurious Emissions according to FCC 15.225, RSS-Gen, Issue 5

Project Number:	G0M-2302-1931
Applicant:	Access Ltd
Model Description:	Full-Page Document Imager & MRTD Reader with Contactless Capabilities
Model:	OCR640-E-NCRCO02-01
Test Sample ID:	44667
Test Site:	Eurofins Product Service GmbH
Operator:	Mr. Offorji
Measurement software:	RadiMation, version 2020.1.8
Test Conditions:	Tnom: 23 °Celsius, Vnom: 120AAC / 24 VDC
Antenna:	Schwarzbeck VULB 9168
Measurement distance:	3 m
Mode:	Tx; RFID; OOK / ASK; 13.56 MHz
Test Date:	2024-04-09

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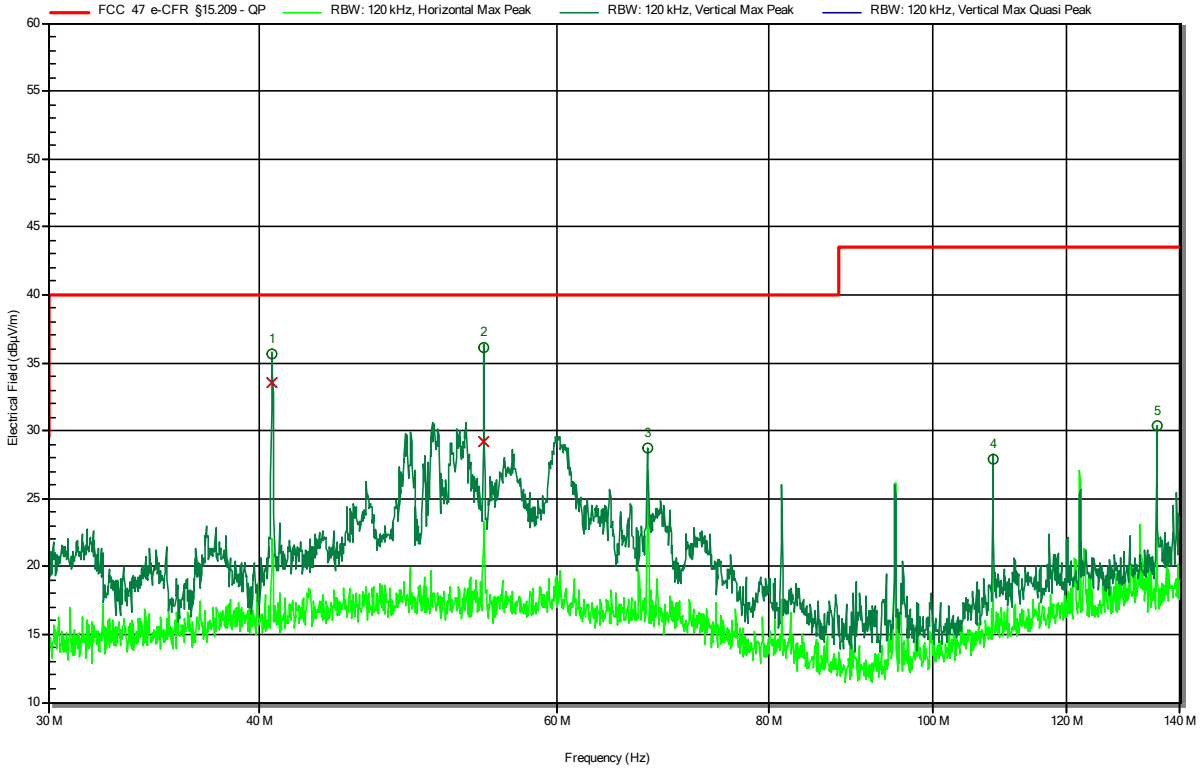

Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Polarization
67.803 MHz	28.77 dBµV/m	40 dBµV/m	-11.23 dB	Pass	Vertical
108.492 MHz	27.91 dBµV/m	43.5 dBµV/m	-15.59 dB	Pass	Vertical
135.596 MHz	30.37 dBµV/m	43.5 dBµV/m	-13.13 dB	Pass	Vertical

Frequency	Quasi-Peak	Quasi-Peak Limit	Quasi-Peak Difference	Quasi-Peak Status	Polarization
40.681 MHz	33.56 dBµV/m	40 dBµV/m	-6.44 dB	Pass	Vertical
54.237 MHz	29.2 dBµV/m	40 dBµV/m	-10.8 dB	Pass	Vertical

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