

RADIATED EMISSIONS TEST REPORT

ACCORDING TO: FCC 47CFR part 27

FOR:

Megger Grid Analytics Ltd.

Smart grid sensor

Models: MS5X00-GS-915

Models variant: MS5000-GS-915

MS5000-GS-915-D, MS5200-GS-915

MS5200-GS-915-D, MS5900-GS-915

MS5900-GS-915-D, MS5900-GS-915-V

MS5000-SU-915L, MS5200-SU-915L

MS5900-SU-915L, MS-5900-SU-915L-V

FCC ID: 2AG7U5XGS

IC: 31339-5XGS

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1 Applicant information

Client name: Megger Grid Analytics Ltd.
Address: Galgalei Haplada 20, Hertzeliya 4672220, Israel
Telephone: +972 (0)52-7030000
E-mail: Sanny.raviv@megger.com
Contact name: Mr. Sanny Raviv

2 Equipment under test attributes

Product name: Smart grid sensor
Product type: Transceiver
Model(s): MS5X00-GS-915*
Trade Mark: **Megger**
Serial number: 001B C505 3022 0883
Hardware version: Rev11
Software release: 4.1.0
Receipt date 18-Jul-23

*According to manufacturer's declaration provided in Appendix G of the test report models MS5X00-GS-915 (Super Set product). All others model variants have an identical enclosure and the identical electronic card and differ only in components that are removed from the electronic card compared to the corresponding superset product. The components that are removed are not changing the radio functions. All the Radio section remains the same. The reason for removing these components is to save the price for functions that are not required for certain applications. Model MS5X00-GS-915 (Super Set) was tested as a representative for the worst-case scenario.

3 Manufacturer information

Manufacturer name: Megger Grid Analytics Ltd.
Address: Galgalei Haplada 20, Hertzeliya 4672220, Israel
Telephone: +972 (0)52-7030000
E-Mail: Sanny.raviv@megger.com
Contact name: Mr. Sanny Raviv

4 Test details

Project ID: 50693
Location: Hermon Laboratories Ltd. P.O. Box 23, Binyamina 3055001, Israel
Test conducted: 16-Aug-23
Test specification(s): FCC 47CFR part 27




5 Tests summary

Test	Status
Transmitter characteristics	
Section 27.53(m)(2), Radiated out of band emission	Pass*

The relevant test was done to support operation of LTE radio module approved by FCC under FCC ID: 2AJYU-8PYA008 simultaneously transmitting with MS5X00-GS-915 radio and submit Application for certification MS5X00-GS-915 under FCC ID: 2AG7U5XGS.

Testing was completed against all relevant requirements of the test standard. The results obtained indicate that the product under test complies in full with the requirements tested.

The test results relate only to the items tested. Pass/ fail decision was based on nominal values.

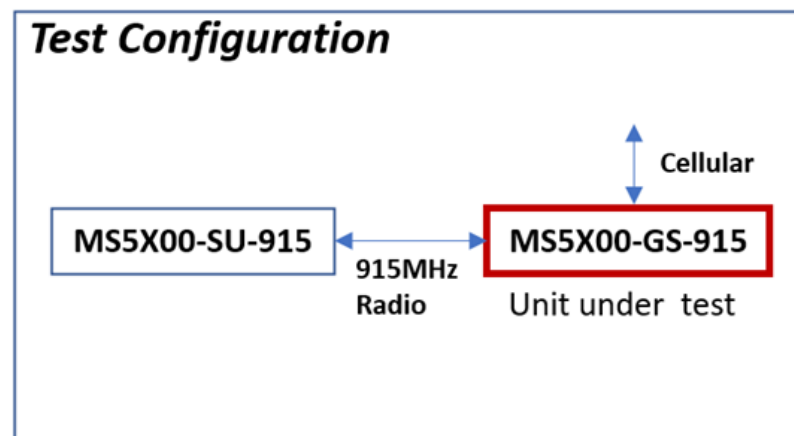
	Name and Title	Date	Signature
Tested by:	Mrs. E. Pitt, test engineer, EMC & Radio	16-Aug-23	
Reviewed by:	Mrs. S. Peysahov Sheynin, certification specialist, EMC & Radio	17-Sep-23	
Approved by:	Mr. M. Nikishin, group leader, EMC & Radio	09-Oct-23	

6 EUT description

6.1 General information

The EUT is a MS5X00-GS-915 is a smart grid sensor which is deployed on medium and high voltage lines. The sensor continuously measures the voltage and current of the power line and predicts and detects faults in the electric network. MS5X00-GS-915 communicates with MS5X00-SU-915 using 915MHz radio and with a server via cellular communications.

6.2 Test configuration



6.3 Changes made in the EUT

No changes were implemented in the EUT during testing.

6.4 Transmitter characteristics

Type of equipment							
V	Stand-alone (Equipment with or without its own control provisions)						
	Combined equipment (Equipment where the radio part is fully integrated within another type of equipment)						
	Plug-in card (Equipment intended for a variety of host systems)						
Intended use		Condition of use					
	fixed	Always at a distance more than 2 m from all people					
V	mobile	Always at a distance more than 20 cm from all people					
	portable	May operate at a distance closer than 20 cm to human body					
Assigned frequency range		902 – 928 MHz 1710 – 1755 MHz* 777 – 787 MHz* 2496 – 2690 MHz*					
Operating frequency (full bands)		921.2 – 927.81 MHz 1712.5 – 1752.5 MHz * 779.5 – 784.5 MHz* 2498.5 – 2687.5 MHz*					
Maximum rated output power		At transmitter 50 Ω RF output connector (per port)			15.09 dBm 23.0 dBm 21.0 dBm 21.0 dBm		
Is transmitter output power variable?		No					
		V	Yes	continuous variable			
				V	stepped variable with step size		dB
				minimum RF power		dBm	
				maximum RF power at antenna connector		dBm	
Antenna connection							
unique coupling		standard connector		V	Integral	with temporary RF connector	
					V	without temporary RF connector	
Antenna/s technical characteristics							
Type		Manufacturer		Model number		Gain	
Intergrated		Pulse Larsen Antennas		W3100C		0.5dBi	
Transmitter aggregate data rate/s				44kbps			
Type of modulation				GFSK			
Modulating test signal (baseband)				PRBS			
Transmitter power source							
X	Battery	Nominal rated voltage		4 VDC	Battery type	Lithium ION battery	
	DC	Nominal rated voltage					
	AC mains	Nominal rated voltage			Frequency		

*The simultaneous operation was performed for 3 groups of LTE band under one worst case condition out of the above ones:

- Group 1 of LTE bands using similar frequency bands: LTE Band 66:1710~1780MHz
LTE Band 25:1850~1915MHz
LTE Band 2:1850~1910MHz
LTE Band 4:1710~1755MHz
- Group 2 of LTE bands using similar frequency bands: LTE Band 5:824~849MHz
LTE Band 12:699~716MHz
LTE Band 13:777~787MHz
LTE Band 26:814~849MHz
- Group 3 of LTE bands using similar frequency bands: LTE Band 41:2496~2690MHz



Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

7 Transmitter tests according to 47CFR part 27

7.1 Radiated out of band emission measurements at MS5X00-GS-915 and LTE module simultaneous transmitting mode

7.1.1 General

This test was performed to measure radiated spurious emissions from the EUT. Specification test limits are given in Table 7.1.1.

Table 7.1.1 Radiated spurious emission test limits

Frequency, MHz	Attenuation below carrier, dBc	ERP of spurious, dBm	Equivalent field strength limit @ 3m, dB(μV/m)***
0.009 – 10 th harmonic*	43+10logP**	-13	84.4

* - Excluding the band emission

** - P is transmitter output power in Watts

*** - Equivalent field strength limit was calculated from maximum allowed ERP of spurious as follows:

$$E = \sqrt{30 \times P \times 1.64} / r,$$

where P is ERP in Watts, 1.64 is numeric gain of ideal dipole and r is antenna to EUT distance in meters

7.1.2 Test procedure for spurious emission field strength measurements in 9 kHz to 30 MHz band

7.1.2.1 The EUT was set up as shown in Figure 7.1.1, energized and the performance check was conducted.

7.1.2.2 The specified frequency range was investigated with antenna connected to spectrum analyzer. To find maximum radiation the turntable was rotated 360° and the measuring antenna was rotated around its vertical axis.

7.1.2.3 The worst test results (the lowest margins) were recorded in Table 7.1.2 and shown in the associated plots.

7.1.3 Test procedure for spurious emission field strength measurements above 30 MHz

7.1.3.1 The EUT was set up as shown in Figure 7.1.2, energized and the performance check was conducted.

7.1.3.2 The specified frequency range was investigated with antenna connected to spectrum analyzer. To find maximum radiation the turntable was rotated 360° and the measuring antenna height was swept from 1 to 4 m in both, vertical and horizontal, polarizations.

7.1.3.3 The worst test results (the lowest margins) were recorded in Table 7.1.2 and shown in the associated plots.



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Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

Figure 7.1.1 Setup for spurious emission field strength measurements in 9 kHz to 30 MHz band

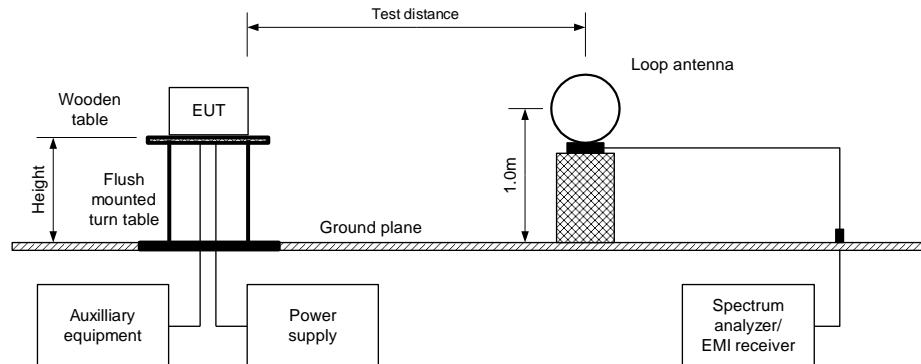
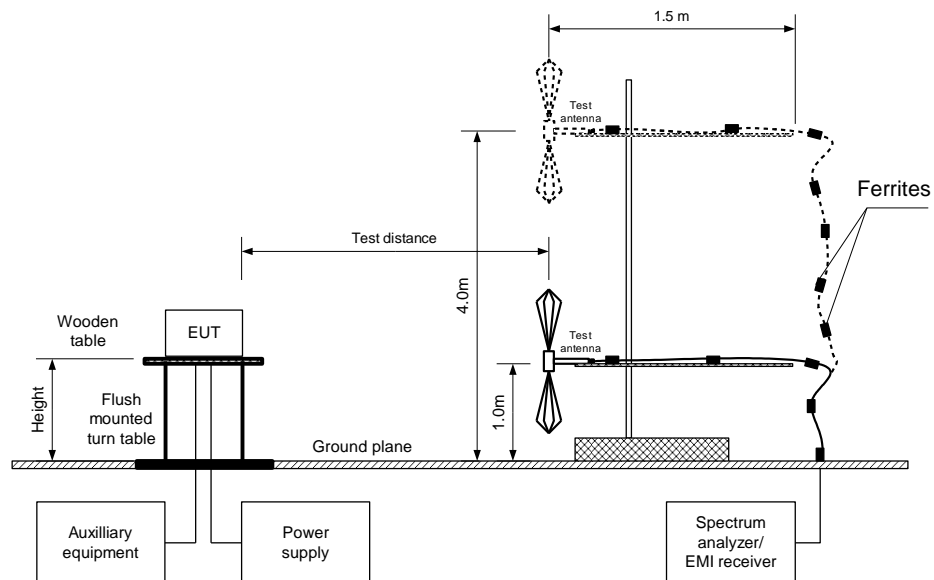


Figure 7.1.2 Setup for spurious emission field strength measurements above 30 MHz

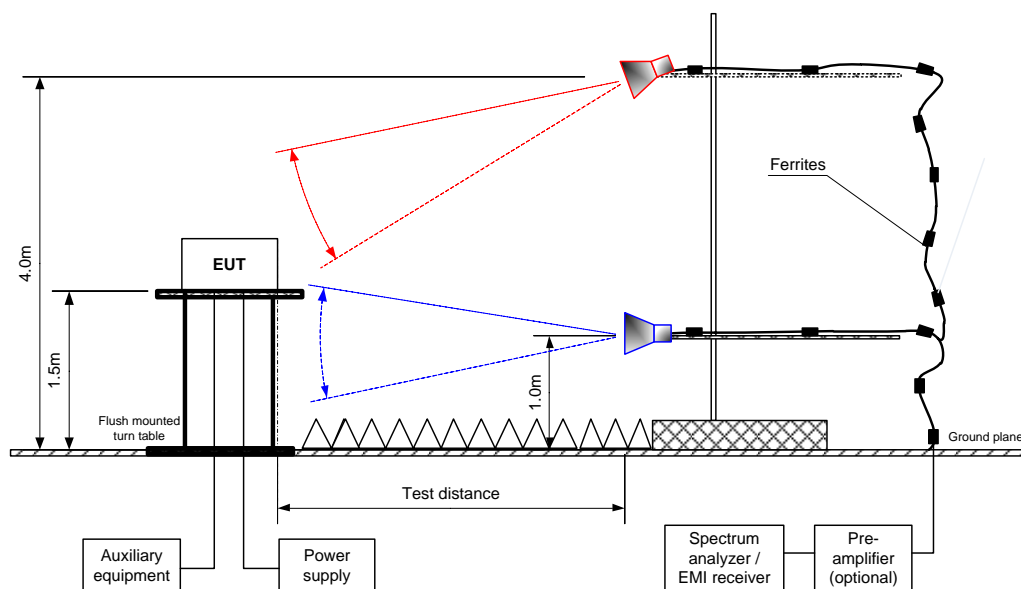




HERMON LABORATORIES

Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

Figure 7.1.3 Setup for spurious emission field strength measurements above 1000 MHz

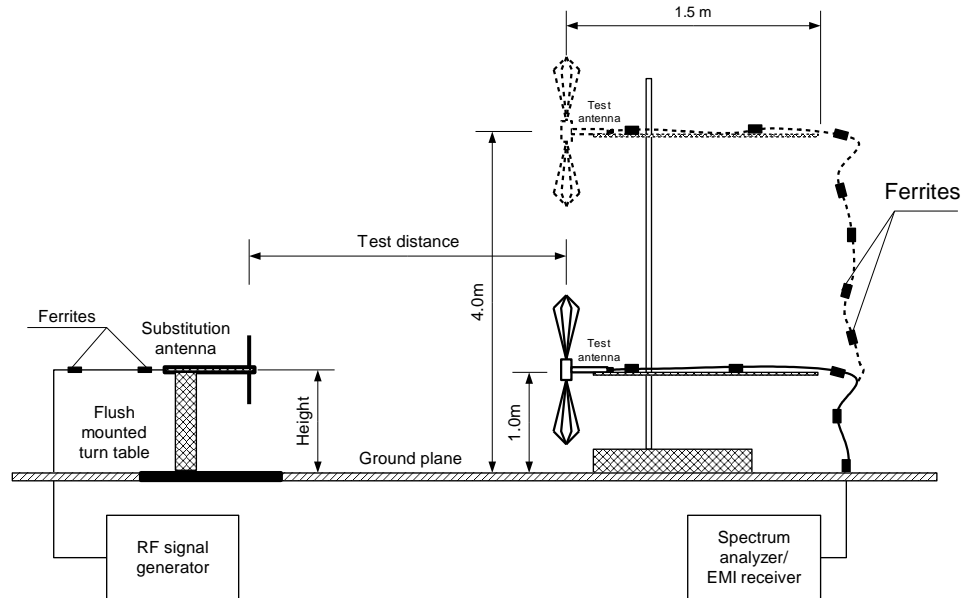




HERMON LABORATORIES

Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

Figure 7.1.4 Setup for substitution ERP measurements of spurious





HERMON LABORATORIES

Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

Table 7.1.2 Spurious emission field strength test results

ASSIGNED FREQUENCY RANGE: 1710 – 1755 MHz (LTE module, band 4)
777 – 787 MHz (LTE module, band 13)
2496 – 2690 MHz (LTE module, band 41)
902 – 928 MHz (MS5X00-GS-915)

TEST DISTANCE: 3 m

TEST SITE: Semi anechoic chamber

INVESTIGATED FREQUENCY RANGE: 0.009 – 27000 MHz

DETECTOR USED: Peak

VIDEO BANDWIDTH: > Resolution bandwidth

TEST ANTENNA TYPE: Active loop (9 kHz – 30 MHz)
Biconilog (30 MHz – 1000 MHz)
Double ridged guide (above 1000 MHz)

MODULATION: GFSK

DUTY CYCLE: 100 %

TRANSMITTER OUTPUT POWER SETTINGS: Maximum

Frequency, MHz	Field strength, dB(μV/m)	Limit, dB(μV/m)	Margin, dB*	RBW, kHz	Antenna polarization	Antenna height, m	Turn-table position**, degrees
All spurious emission at least 20 dB bellow limit							

*- Margin = Field strength of spurious – calculated field strength limit.

** - EUT front panel refers to 0 degrees position of turntable.

Reference numbers of test equipment used

HL 5288	HL 0446	HL 4114	HL 3903	HL 5902	HL 7802	HL 5112	HL 4933
HL 3348	HL 4956						

Full description is given in Appendix A.

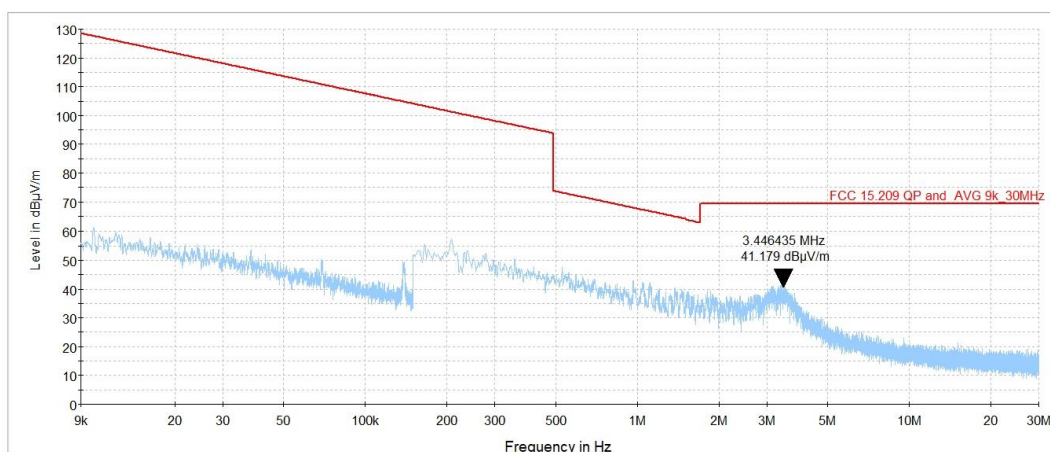


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Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

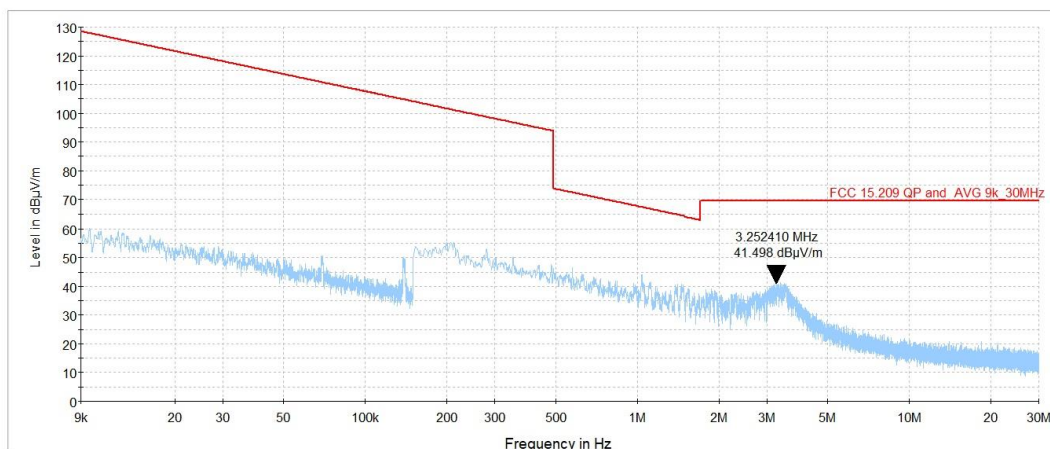
Plot 7.1.1 Radiated emission measurements from 9 kHz to 30 MHz with LTE band 4

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical



Plot 7.1.2 Radiated emission measurements from 9 kHz to 30 MHz with LTE band 13

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical



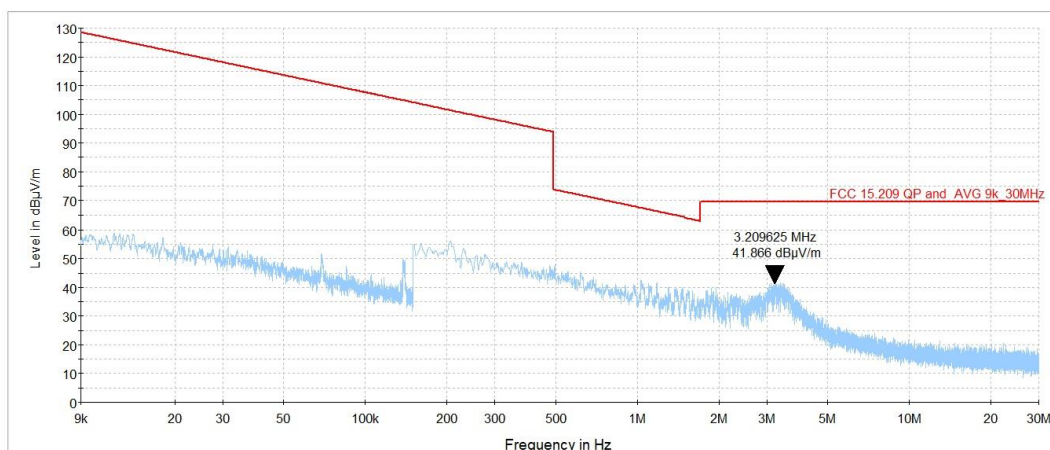


HERMON LABORATORIES

Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

Plot 7.1.3 Radiated emission measurements from 9 kHz to 30 MHz with LTE band 41

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical



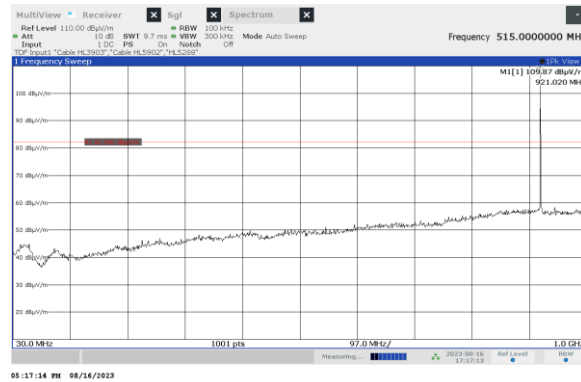


HERMON LABORATORIES

Test specification:		Section 27.53, Radiated spurious emissions	
Test procedure:		47 CFR, Section 2.1053	
Test mode:		Verdict: PASS	
Date(s):			
30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

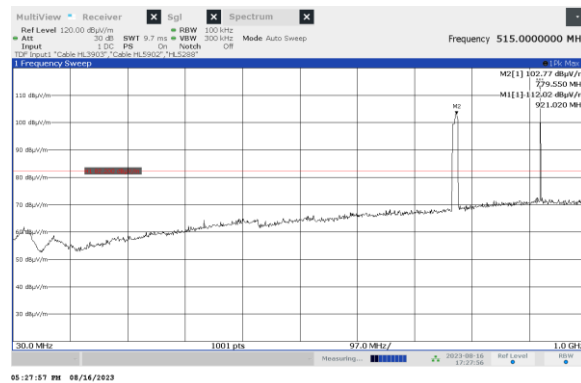
Plot 7.1.4 Radiated emission measurements from 30 to 1000 MHz with LTE band 4

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



*will be applied limit of 84.4 dB(μV/m)

Plot 7.1.5 Radiated emission measurements from 30 to 1000 MHz with LTE band 13



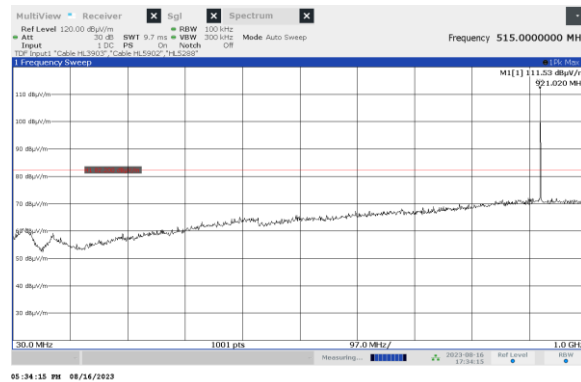
*will be applied limit of 84.4 dB(μV/m)



HERMON LABORATORIES

Test specification: Section 27.53, Radiated spurious emissions			
Test procedure: 47 CFR, Section 2.1053			
Test mode: Compliance		Verdict: PASS	
Date(s): 30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

Plot 7.1.6 Radiated emission measurements from 30 to 1000 MHz with LTE band 41



*will be applied limit of 84.4 dB(μV/m)

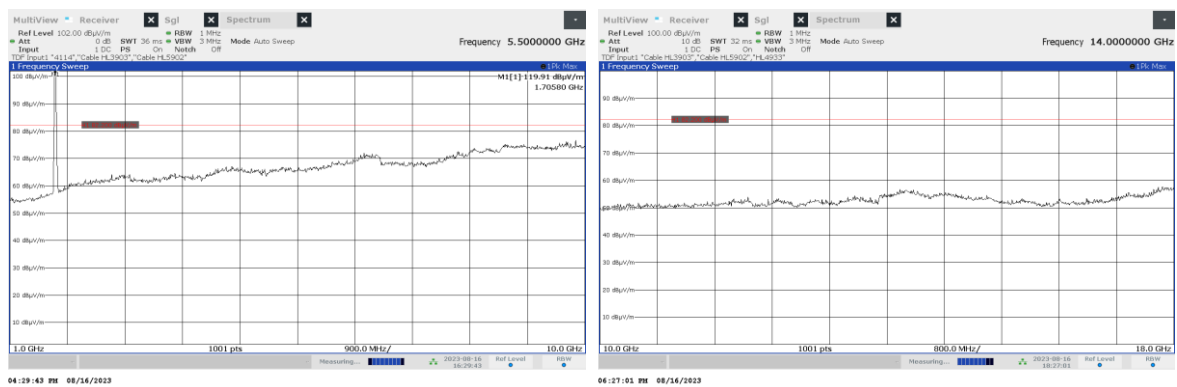


HERMON LABORATORIES

Test specification:		Section 27.53, Radiated spurious emissions	
Test procedure:		47 CFR, Section 2.1053	
Test mode:		Verdict: PASS	
Date(s):			
30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

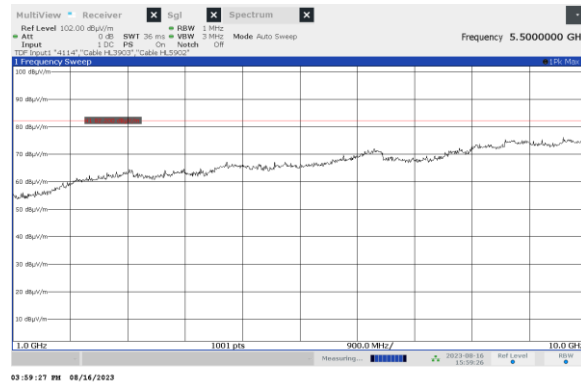
Plot 7.1.7 Radiated emission measurements from 1000 to 18000 MHz with LTE band 4

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



*will be applied limit of 84.4 dB(μV/m)

Plot 7.1.8 Radiated emission measurements from 1000 to 10000 MHz with LTE band 13



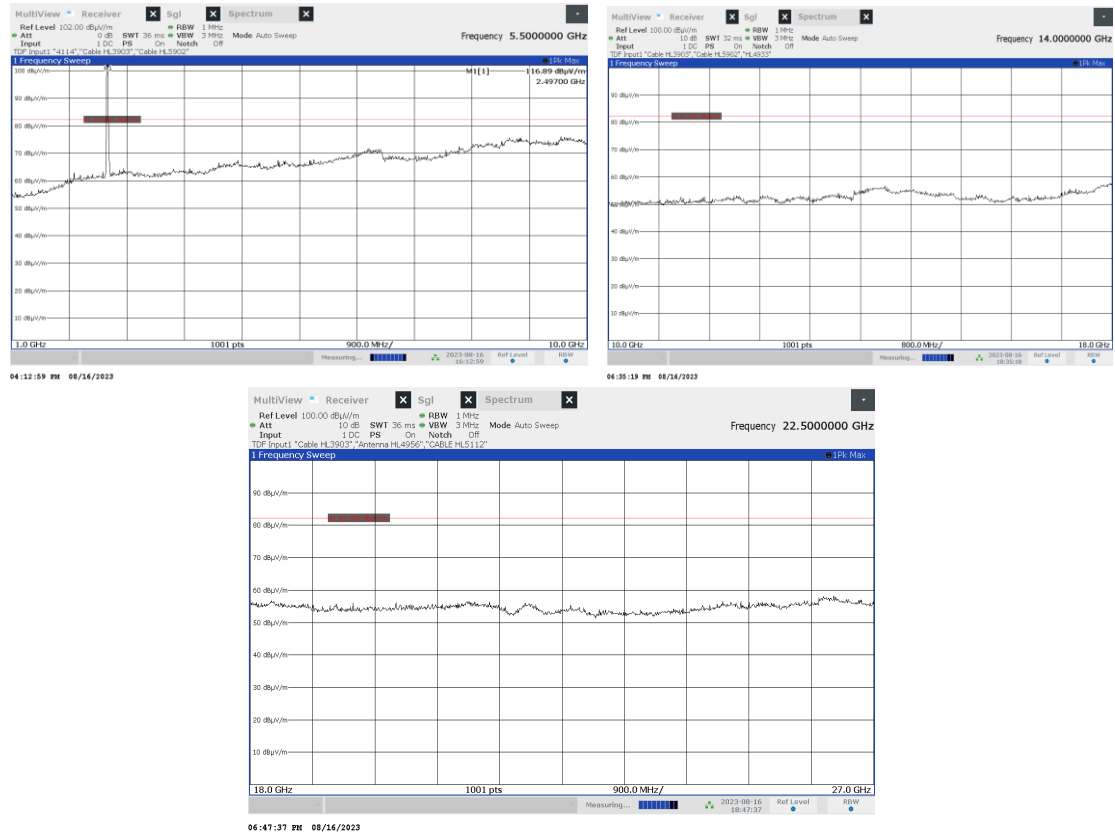
*will be applied limit of 84.4 dB(μV/m)



HERMON LABORATORIES

Test specification:		Section 27.53, Radiated spurious emissions	
Test procedure:		47 CFR, Section 2.1053	
Test mode:		Verdict: PASS	
Date(s):			
30-Jul-23			
Temperature: 24 °C	Relative Humidity: 48 %	Air Pressure: 1012 hPa	Power: 4 VDC
Remarks:			

Plot 7.1.9 Radiated emission measurements from 1000 to 27000 MHz with LTE band 41



*will be applied limit of 84.4 dB(μV/m)

8 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
0446	Antenna, Loop, Active, 10 (9) kHz - 30 MHz	EMCO	6502	2857	28-Feb-23	28-Feb-24
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFLE X 102A	1226/2A	16-Apr-23	16-Apr-23
4355	Signal and Spectrum Analyzer, 9 kHz to 7 GHz	Rohde & Schwarz	FSV 7	101630	11-Oct-22	11-Oct-23
4366	Directional coupler, 1 GHz to 18 GHz, 10 dB, SMA Female	Tiger Micro-Electronics Institute	TGD-A1101-10	01e-JSDE805-007	29-May-22	29-May-24
4933	Active Horn Antenna, 1 GHz to 18 GHz	COM-POWER CORPORATION	AHA-118	701046	19-Jan-23	19-Jan-24
4956	Active horn antenna, 18 to 40 GHz	COM-POWER CORPORATION	AHA-840	105004	08-Mar-23	08-Mar-24
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX-8000E	00809	24-Mar-22	24-Mar-25
5902	RF cable, 18 GHz, 6.0m, N-type	Huber-Suhner	SF126EA/11N/11N/6000	NA	08-Dec-22	08-Dec-23

9 APPENDIX B Measurement uncertainties

Expanded uncertainty at 95% confidence in Hermon Labs EMC measurements

Test description	Expanded uncertainty
Transmitter tests	
Spurious emissions radiated 30 MHz – 40 GHz (substitution method)	± 4.5 dB

Hermon Laboratories is accredited by A2LA for calibration according to present requirements of ISO/IEC 17025 and NCSL Z540-1. The accreditation is granted to perform calibration of parameters that are listed in the Scope of Hermon Laboratories Accreditation.

Hermon Laboratories calibrates its reference and transfer standards by calibration laboratories accredited to ISO/IEC 17025 by a mutually recognized Accreditation Body or by a recognized national metrology institute. All reference and transfer standards used in the calibration system are traceable to national or international standards.

In-house calibration of all test and measurement equipment is performed on a regular basis according to Hermon Laboratories calibration procedures, manufacturer calibration/verification procedures or procedures defined in the relevant standards. The Hermon Laboratories test and measurement equipment is calibrated within the tolerances specified by the manufacturers and/or by the relevant standards.

10 APPENDIX C Test laboratory description

Tests were performed at Hermon Laboratories Ltd., which is a fully independent, private, EMC, Radio, Safety, Environmental and Telecommunication testing facility.

Hermon Laboratories is recognized and accredited by the Federal Communications Commission (USA) for relevant parts of Code of Federal Regulations 47 (CFR 47), Test Firm Registration Number is 927748, Designation Number is IL1001; Recognized by Innovation, Science and Economic Development Canada for wireless and terminal testing (ISED), ISED #2186A, CAB identifier is IL1001; Certified by VCCI, Japan (the registration numbers are R-10808 for OATS, R-1082 for anechoic chamber, G-10869 for RE measurements above 1 GHz, C-10845 for conducted emissions site and T-11606 for conducted emissions at telecommunication ports).

The laboratory is accredited by American Association for Laboratory Accreditation (USA) according to ISO/IEC 17025 for electromagnetic compatibility, product safety, telecommunications testing, environmental simulation and calibration (for exact scope please refer to Certificate No. 839.01, 839.03 and 839.04).

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Person for contact: Mr. Michael Nikishin, EMC&Radio group manager

11 APPENDIX D Specification references

47CFR part 27: 2020	Private land mobile radio services
47CFR part 2: 2021	Frequency allocations and radio treaty matters; general rules and regulations
ANSI/TIA/EIA-603-E:2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards

12 APPENDIX E Test equipment correction factors

Antenna factor
Active loop antenna
Model 6502, S/N 2857, HL 0446

Frequency, MHz	Magnetic antenna factor, dB	Electric antenna factor, dB
0.009	-32.8	18.7
0.010	-33.8	17.7
0.020	-38.3	13.2
0.050	-41.1	10.4
0.075	-41.3	10.2
0.100	-41.6	9.9
0.150	-41.7	9.8
0.250	-41.6	9.9
0.500	-41.8	9.8
0.750	-41.9	9.7
1.000	-41.4	10.1
2.000	-41.5	10.0
3.000	-41.4	10.2
4.000	-41.4	10.1
5.000	-41.5	10.1
10.000	-41.9	9.6
15.000	-41.9	9.6
20.000	-42.2	9.3
25.000	-42.8	8.7
30.000	-44.0	7.5

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field strength in dB(μ V/m).

Antenna factor
Trilog antenna
Model ALX-8000E, Frankonia, S/N 00809, HL 5288, 30-1000 MHz

Frequency, MHz	Antenna factor, dB/m
30	14.96
35	15.33
40	16.37
45	17.56
50	17.95
60	16.87
70	13.22
80	10.56
90	13.61
100	15.46
120	14.03
140	12.23
160	12.67
180	13.34
200	15.40
250	16.42
300	17.28
400	19.98
500	21.11
600	22.90
700	24.13
800	25.25
900	26.35
1000	27.18

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.

Antenna factor
Active Horn Antenna,
Com-Power Corporation, model: AHA-118, s/n 701046, HL 4933

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
1000	-16.1
1500	-15.1
2000	-10.9
2500	-11.9
3000	-11.1
3500	-10.6
4000	-8.6
4500	-8.3
5000	-5.9
5500	-5.7
6000	-3.3
6500	-4.0
7000	-2.2
7500	-1.7
8000	1.1
8500	-0.8
9000	-1.5
9500	-0.2

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
10000	1.8
10500	1.0
11000	0.3
11500	-0.5
12000	3.1
12500	1.4
13000	-0.3
13500	-0.4
14000	2.5
14500	2.2
15000	1.9
15500	0.5
16000	2.1
16500	1.2
17000	0.6
17500	3.1
18000	4.2

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.

Antenna factor
Active Horn Antenna,
Com-Power Corporation, model: AHA-840, s/n 105004, HL 4956

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
18000	2.5
18500	0.5
19000	-1.0
19500	-2.4
20000	-2.5
20500	-2.2
21000	-2.0
21500	-2.7
22000	-3.7
22500	-3.8
23000	-3.7
23500	-5.0
24000	-4.5
24500	-5.0
25000	-4.7
25500	-4.4
26000	-4.3
26500	-5.6
27000	-4.3
27500	-4.9
28000	-5.2
28500	-4.4

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
29000	-2.7
29500	-2.6
30000	-1.4
30500	-1.5
31000	-1.0
31500	-2.6
32000	-3.3
32500	-3.3
33000	-5.1
33500	-5.2
34000	-1.5
34500	-5.4
35000	-3.3
35500	-4.2
36000	-2.8
36500	-2.6
37000	-1.0
38000	1.8
38500	2.8
39000	1.3
39500	1.3
40000	0.3

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.

13 APPENDIX F Abbreviations and acronyms

A	ampere
AC	alternating current
A/m	ampere per meter
AM	amplitude modulation
AVRG	average (detector)
BB	broad band
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(μ V)	decibel referred to one microvolt
dB(μ V/m)	decibel referred to one microvolt per meter
dB(μ A)	decibel referred to one microampere
dB Ω	decibel referred to one Ohm
DC	direct current
EIRP	equivalent isotropically radiated power
ERP	effective radiated power
EUT	equipment under test
F	frequency
GHz	gigahertz
GND	ground
H	height
HL	Hermon laboratories
Hz	hertz
ITE	information technology equipment
k	kilo
kHz	kilohertz
LISN	line impedance stabilization network
LO	local oscillator
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μ s	microsecond
NA	not applicable
NB	narrow band
NT	not tested
OATS	open area test site
Ω	Ohm
QP	quasi-peak
PM	pulse modulation
PS	power supply
RE	radiated emission
RF	radio frequency
rms	root mean square
Rx	receive
s	second
T	temperature
Tx	transmit
V	volt
VA	volt-ampere

14 APPENDIX G Manufacturer's declaration

Note: The following data in this clause is provided by the customer and represents his sole responsibility.

Megger[®]

Declaration of Identity

We, the undersigned,

Company: Megger Grid Analytics Ltd.
Address: 20 Galgalei Haplada St., Herzliya
Country: Israel
Telephone number: +972-97792050
Fax number: +972-98623852

declare under our sole responsibility that the following equipment:

Brand/Item	Type/Model	Short Product description
Megger Grid Analytics Ltd.	MS5X00-GS-915	Gateway-Sensor (GS) ("GS") superset product including 100mW 915 MHz radio & cellular module, with high sampling rate and direct DNP3 capabilities

is a Superset to the following equipment (including Software/Hardware version(s)):

Brand/Item	Type/Model	Short Product description
Megger Grid Analytics Ltd.	MS5000-GS-915	Gateway-Sensor (GS) with 100mW 915 MHz radio & cellular module
Megger Grid Analytics Ltd.	MS5000-GS-915-D	Gateway-Sensor (GS) with 100mW 915 MHz radio & cellular module with direct DNP3 software functions

Megger Grid Analytics Ltd.	MS5200-GS-915	Gateway-Sensor (GS) with 100mW 915 MHz radio & cellular module with voltage reference
Megger Grid Analytics Ltd.	MS5200-GS-915-D	Gateway-Sensor (GS) with 100mW 915 MHz radio & cellular module with voltage reference and direct DNP3
Megger Grid Analytics Ltd.	MS5900-GS-915	Gateway-Sensor (GS) with 100mW 915 MHz radio and cellular module with high sampling rate capability
Megger Grid Analytics Ltd.	MS5900-GS-915-D	Gateway-Sensor (GS) with 100mW 915 MHz radio and cellular module, with high sampling rate and direct DNP3 capabilities
Megger Grid Analytics Ltd.	MS5900-GS-915-V	Gateway-Sensor (GS) with 100mW 915 MHz radio and cellular module, with high sampling rate and direct DNP3 capabilities with voltage reference
Megger Grid Analytics Ltd.	MS5000-SU-915L	Sensor-Unit (SU) with 100mW 915 MHz radio
Megger Grid Analytics Ltd.	MS5200-SU-915L	Sensor-Unit (SU) with 100mW 915 MHz radio with voltage reference
Megger Grid Analytics Ltd.	MS5900-SU-915L	Sensor-Unit (SU) with 100mW 915 MHz radio with high sampling rate
Megger Grid Analytics Ltd.	MS5900-SU-915L-V	Sensor-Unit (SU) with 100mW 915 MHz radio with high sampling rate and voltage reference



The reason the different names:

These are subset products of the product MS5X00-GS-915. For each of these products some components were removed because they are not required for the functionality of their specific application. Please relate to Appendix A for further details.

September 19th, 2023.

.....
(date)



.....
(signature)

Megger Grid Analytics Ltd
Reg No: 514198530
.....

(Company stamp)

Liron frenkel

.....
(Printed name)

CEO

.....
(position)

END OF DOCUMENT