HERMON LABORATORIES

ELECTRICAL TESTING
0839.01

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TEST REPORT

ACCORDING TO:

FCC 47CFR part 15: 2015, subpart B, Class B

ICES-003: 2012 Issue 5, Class B

FOR:

Pointer Telocation Inc.

Vehicle Tracking Equipment with 3G modem

CR300B 3G NA

Part numbers:

CT7801200-000, CT7801210-000

CR300 3G NA

Part number:

CT7801203-000

Vehicle Tracking Equipment with 2G modem

CR300B 2G

Part numbers:

CT7801201-000, CT7801211-000

CR300 2G

Part number:

CT7801205-000

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1 Applicant information

Client name:	Pointer Telocation Inc.
Address:	7715 NW 48th Street, Suite 395, Doral FL 33166
Telephone:	001 (305) 903-6634
Contact name:	Mr. Jay Pico

2 Equipment under test attributes

Product name:	Vehicle Tracking Equipment with 3G modem
Brand:	CR300B 3G NA
Part number:	CT7801200-000
Hardware version:	B
Software release:	43
Product name:	Vehicle Tracking Equipment with 2G modem
Brand:	CR300B 2G
Part number:	CT7801201-000
Hardware version:	B
Software release:	43
Receipt date:	30-Sep-15

Note: according to manufacturer's declaration of identity provided in Appendix G of the test report, the EUT part numbers CT7801200-000 & CT7801210-000 as well as CT7801201-000 & CT7801211-000 are electronically / electrically / mechanically identical and the reason of the change is marketing purposes; the EUT part number CT7801203-000 is the same as CT7801210-000 but without internal battery; the EUT part number CT7801205-000 is the same as CT7801211-000 but without internal battery. That is why the EUT part numbers CT7801200-000 and CT7801201-000 only were tested.

3 Manufacturer information

Manufacturer name:	Pointer Telocation Ltd.
E-mail:	itamarg@pointer.com
Contact name:	Mr. Itamar Gohary

4 Test details

Project ID:	27317
Location:	Hermon Laboratories Ltd. Harakevet Industrial Zone, Binyamina 30500, Israel
Test started:	30-Sep-15
Test completed:	28-Jan-16
Test specifications:	FCC 47CFR part 15: 2015, subpart B, Class B
	ICES-003: 2012 Issue 5, Class B

5 Tests summary

Test	Status
FCC 47 CFR part 15, subpart B	
FCC 47 CFR, Section 15.107, Class B, AC power lines conducted emissions	Not required Note1
FCC 47 CFR, Section 15.109, Class B, Radiated emissions	Pass
FCC 47 CFR, Section 15.111, Spurious emissions at RF antenna connector	Not required
FCC 47 CFR, Section 15.115 (b(2)), Conducted emissions at RF output terminals of TV interface	Not required
ICES-003	
ICES-003, Section 6.1, Class B, AC power lines conducted emissions	Not required Note1
ICES-003, Section 6.2, Class B, Radiated emissions	Pass
RSS-210, Section 2.3, Conducted emission at receiver antenna port	Not required

Note 1: The EUT is intended for use in the vehicular environment and is exempt from the testing according to FCC 47CFR part 15.103(a) requirements as a digital device utilized exclusively in any transportation vehicle including motor vehicles and aircraft.

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	January 28, 2016	
Reviewed by:	Ms. N. Averin, certification engineer	March 3, 2016	
Approved by:	Mr. M. Nikishin, EMC and radio group leader	March 16, 2016	

6 EUT description

6.1 General information

The EUTs are the following products:

1) Vehicle Tracking Equipment with 3G modem, brand CR300B 3G NA, part number CT7801200-000;

2) Vehicle Tracking Equipment with 2G modem, brand CR300B 2G, part number CT7801201-000.

The CR300B 2G incorporates 2G modem (Telit GE910 QUAD V3) including GPS receiver operating at 1500 MHz and GPRS transceiver operating at 850 MHz and 1900 MHz.

The CR300B 3G NA, part number CT7801200-000 incorporates 3G modem (Telit UE910-NAD) including GPS receiver operating at 1500 MHz and GPRS transceiver operating at 850 MHz.

Each EUT is powered from 12 VDC.

6.2 Ports and lines

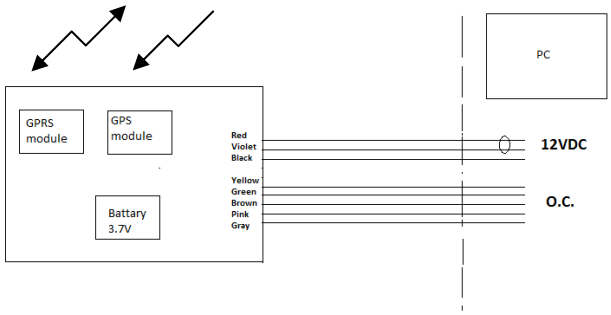
Port type	Port description	Connected from	Connected to	Qty.	Cable type	Cable length	Indoor / outdoor
Power	DC power	EUT	Power supply	1	Unshielded	2.8 m Note 1	Outdoor
Signal	Data	EUT	Open circuit	5	Unshielded	2.8 m Note 1	Outdoor

Note 1: always less that 3 m.

6.3 Auxiliary equipment

Description	Manufacturer	Model number	Serial number
PC	Lenovo	2518-4PG	25184PG

6.4 Test configuration



Wire Name	FROM	TO	Function
W7 Cable	P1(7)	P2(2)	--
	P1(8)	P2(3)	--
W1 (RED)	P1(1)	Free	Main Power
W2 (BLACK)	P1(6)	W7(P2(1)+Shield)+Free +W9(Black)	GND
W3 (VIOLET)	P1(4)	Free	Ignition
W4 (YELLOW)	P1(9)	Free	UNLOCK2\SHOCK
W5 (GREEN)	P1(2)	Free	LED
W6 (BROWN)	P1(3)	Free	GLOBAL OUTPUT
W8 (PINK)	P1(5)	Free	DOOR
W9 (GRAY)	P1(10)	Free	DALLAS

Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	30-Sep-15 - 22-Oct-15		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 48 %	Power Supply: 12 VDC
Remarks: CR300B 3G NA, part number CT7801200-000 The GPRS carrier is 850 MHz; the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-4500MHz range.			

7 Emissions tests according to FCC 47CFR part 15 subpart B and ICES-003 requirements

7.1 Radiated emission measurements, CR300B 3G NA, part number CT7801200-000

7.1.1 General

This test was performed to measure radiated emissions from the EUT enclosure. The specification test limits are given in Table 7.1.1.

Table 7.1.1 Radiated emission test limits

Frequency, MHz	Class B limit, dB(μV/m)		Class A limit, dB(μV/m)	
	10 m distance	3 m distance	10 m distance	3 m distance
30 - 88	29.5*	40.0	39.0	49.5*
88 - 216	33.0*	43.5	43.5	54.0*
216 - 960	35.5*	46.0	46.4	56.9*
Above 960	43.5*	54.0	49.5	60.0*

* - The limit for a test distance other than specified was calculated using the inverse linear distance extrapolation factor as follows: $Lim_{S2} = Lim_{S1} + 20 \log (S_1/S_2)$,
where S_1 and S_2 – the standard defined and the test distance respectively in meters.

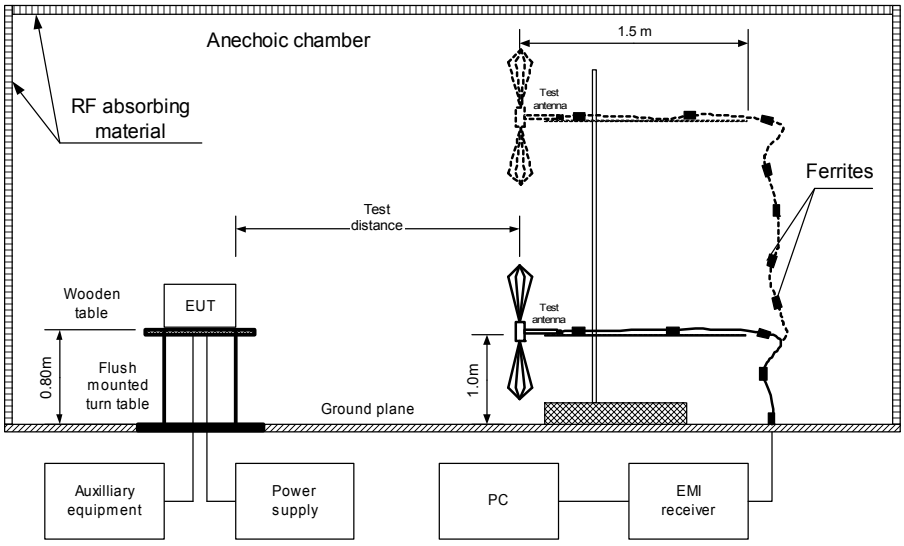
7.1.2 Test procedure

7.1.2.1 The EUT was set up as shown in Figure 7.1.1 and the associated photographs, energized and the EUT performance was checked.

7.1.2.2 The measurements were performed in the anechoic chamber at 3 m test distance. The specified frequency range was investigated with the antenna connected to the EMI receiver. To find the highest emission the turntable was rotated 360^0 and the measuring antenna height was swept from 1 to 1.8 m in both, vertical and horizontal polarizations. The EUT cables position was varied to maximize emission.

7.1.2.3 The worst test results with respect to the limits were recorded in Table 7.1.2 and shown in the associated plots.

Figure 7.1.1 Setup for radiated emission measurements in anechoic chamber, table-top EUT



Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	30-Sep-15 - 22-Oct-15		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 48 %	Power Supply: 12 VDC
Remarks: CR300B 3G NA, part number CT7801200-000 The GPRS carrier is 850 MHz; the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-4500MHz range.			

Photograph 7.1.1 Setup for radiated emission measurements, general view, CR300B 3G NA, part number CT7801200-000

Photograph 7.1.2 Setup for radiated emission measurements, EUT cabling, CR300B 3G NA, part number CT7801200-000

Test specification:	**FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions**		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	30-Sep-15 - 22-Oct-15		
Temperature: 23 ºC	**Air Pressure:** 1012 hPa	**Relative Humidity:** 48 %	**Power Supply:** 12 VDC
Remarks: CR300B 3G NA, part number CT7801200-000 The GPRS carrier is 850 MHz; the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-4500MHz range.			

Table 7.1.2 Radiated emission test results, CR300B 3G NA, part number CT7801200-000

EUT SET UP: TABLE-TOP
TEST SITE: ANECHOIC CHAMBER
TEST DISTANCE: 10 m
FREQUENCY RANGE: 30 MHz – 1000 MHz
DETECTORS USED: PEAK / QUASI-PEAK
RESOLUTION BANDWIDTH: 120 kHz

Frequency, MHz	**Peak emission, dB(μV/m)**	**Quasi-peak**			**Antenna polarization**	**Antenna height, m**	**Turn-table position**, degrees**	**Verdict**
		Measured emission, dB(μV/m)	**Limit, dB(μV/m)**	**Margin, dB***				
No unintentional emissions were found.								Pass

FREQUENCY RANGE: 1000 MHz – 4500 MHz
DETECTORS USED: PEAK / AVERAGE
RESOLUTION BANDWIDTH: 1000 kHz

Frequency, MHz	**Peak**			**Average**			**Antenna polarization**	**Antenna height, m**	**Turn-table position**, degrees**	**Verdict**
	Measured emission, dB(μV/m)	**Limit, dB(μV/m)**	**Margin, dB***	**Measured emission, dB(μV/m)**	**Limit, dB(μV/m)**	**Margin, dB***				
No unintentional emissions were found.										Pass

***- Margin = Measured emission - specification limit.
****- EUT front panel refers to 0 degrees position of turntable.

Reference numbers of test equipment used

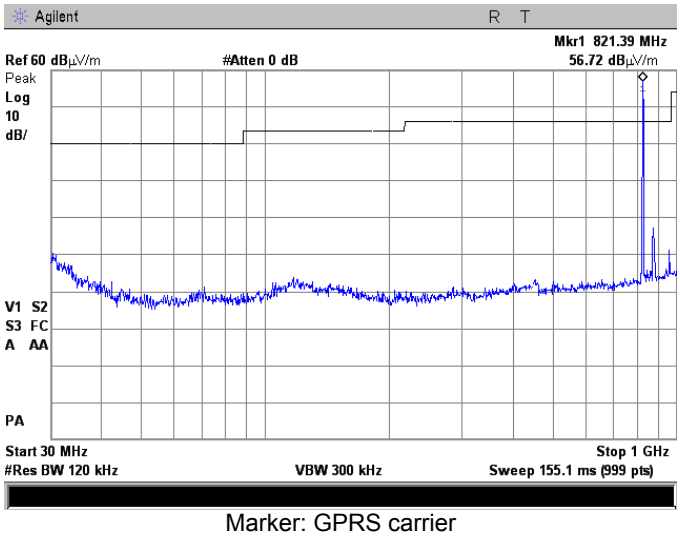
HL 2432	HL 2697	HL 2780	HL 4347	HL 4721	HL 4932		

Full description is given in Appendix A.

Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	30-Sep-15 - 22-Oct-15		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 48 %	Power Supply: 12 VDC
Remarks: CR300B 3G NA, part number CT7801200-000 The GPRS carrier is 850 MHz; the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-4500MHz range.			

Plot 7.1.1 Radiated emission measurements in 30 - 1000 MHz range, vertical & horizontal antenna polarization, CR300B 3G NA, part number CT7801200-000

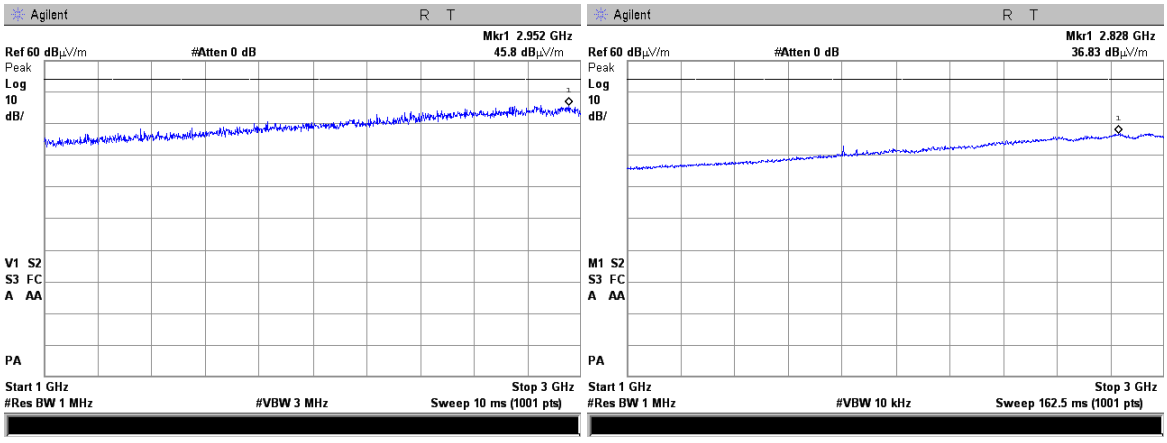
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m



Marker: GPRS carrier

Plot 7.1.2 Radiated emission measurements in 1000 – 3000 MHz range, vertical & horizontal antenna polarization, CR300B 3G NA, part number CT7801200-000

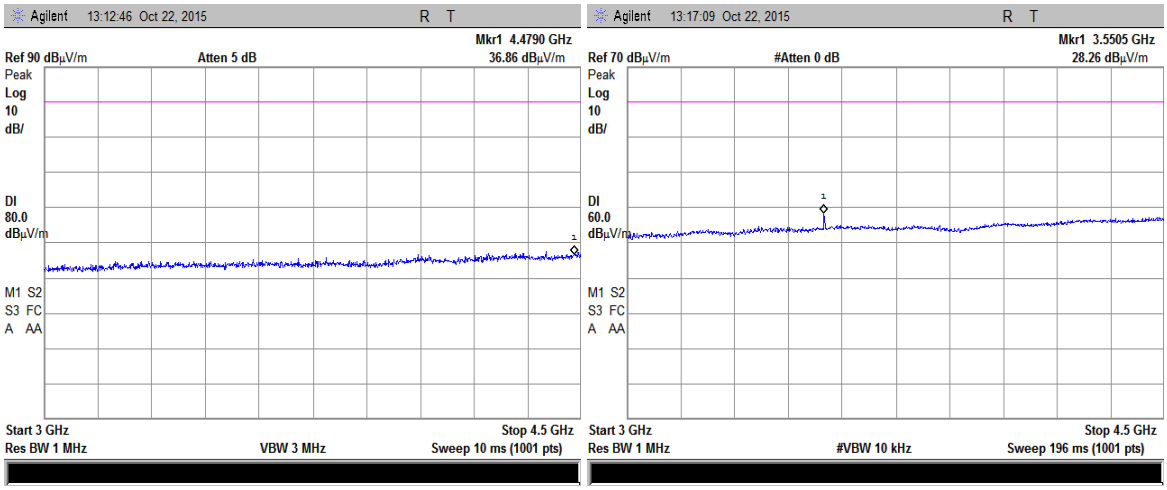
TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m



Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	30-Sep-15 - 22-Oct-15		
Temperature: 23 ºC	Air Pressure: 1012 hPa	Relative Humidity: 48 %	Power Supply: 12 VDC
Remarks: CR300B 3G NA, part number CT7801200-000 The GPRS carrier is 850 MHz; the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-4500MHz range.			

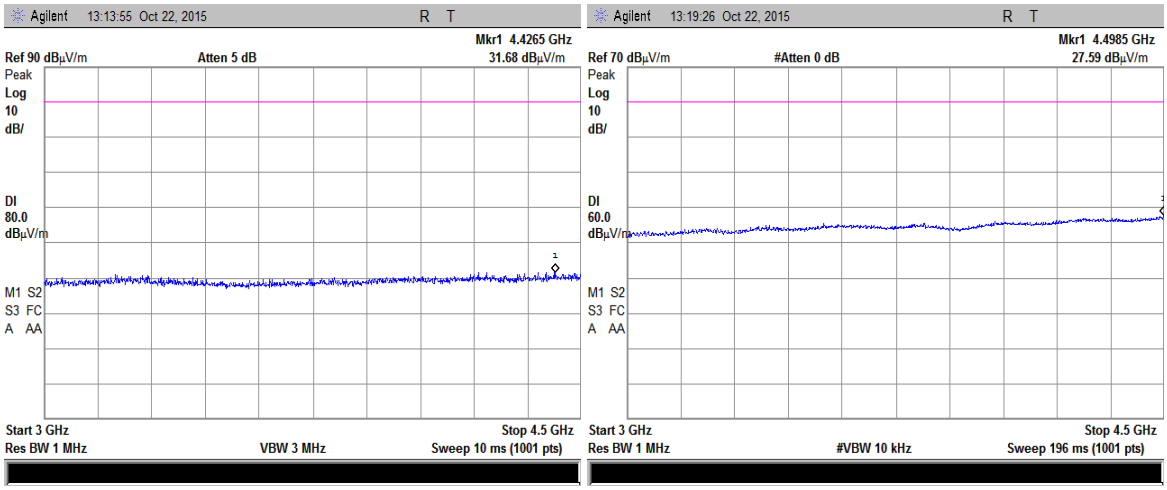
Plot 7.1.3 Radiated emission measurements in 3000 - 4500 MHz range, vertical antenna polarization, CR300B 3G NA, part number CT7801200-000

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m



Plot 7.1.4 Radiated emission measurements 3000 - 4500 MHz range, horizontal antenna polarization, CR300B 3G NA, part number CT7801200-000

TEST SITE: Anechoic chamber
TEST DISTANCE: 3 m



Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	Air Pressure: 1028 hPa	Relative Humidity: 45 %	Power Supply: 12 VDC
Remarks: CR300B 2G NA, part number CT7801201-000 The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.			

7.2 Radiated emission measurements, CR300B 2G NA, part number CT7801201-000

7.2.1 General

This test was performed to measure radiated emissions from the EUT enclosure. The specification test limits are given in Table 7.2.1.

Table 7.2.1 Radiated emission test limits

Frequency, MHz	Class B limit, dB(μV/m)		Class A limit, dB(μV/m)	
	10 m distance	3 m distance	10 m distance	3 m distance
30 - 88	29.5*	40.0	39.0	49.5*
88 - 216	33.0*	43.5	43.5	54.0*
216 - 960	35.5*	46.0	46.4	56.9*
Above 960	43.5*	54.0	49.5	60.0*

* - The limit for a test distance other than specified was calculated using the inverse linear distance extrapolation factor as follows: $Lim_{S2} = Lim_{S1} + 20 \log (S_1/S_2)$,
where S_1 and S_2 – the standard defined and the test distance respectively in meters.

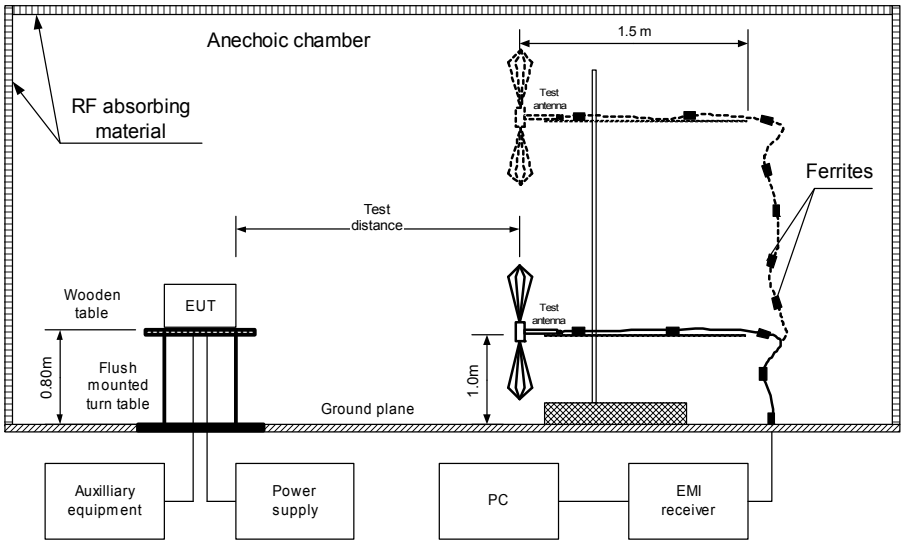
7.2.2 Test procedure for

7.2.2.1 The EUT was set up as shown in Figure 7.2.1 and the associated photographs, energized and the EUT performance was checked.

7.2.2.2 The measurements were performed in the semi anechoic chamber at 3 m test distance. The specified frequency range was investigated with the antenna connected to the EMI receiver. To find the highest emission the turntable was rotated 360^0 and the measuring antenna height was swept from 1 to 4 m in both, vertical and horizontal polarizations. The EUT cables position was varied to maximize emission.

7.2.2.3 The worst test results with respect to the limits were recorded in Table 7.2.2 and shown in the associated plots.

Figure 7.2.1 Setup for radiated emission measurements in semi anechoic chamber, table-top EUT



Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	Air Pressure: 1028 hPa	Relative Humidity: 45 %	Power Supply: 12 VDC
Remarks: CR300B 2G NA, part number CT7801201-000 The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.			

Photograph 7.2.1 Setup for radiated emission measurements, general view, CR300B 2G NA, part number CT7801201-000

Photograph 7.2.2 Setup for final radiated emission measurements, EUT cabling, CR300B 2G NA, part number CT7801201-000

Test specification:	**FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions**		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	**Verdict:**	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	**Air Pressure:** 1028 hPa	**Relative Humidity:** 45 %	**Power Supply:** 12 VDC
Remarks: CR300B 2G NA, part number CT7801201-000 The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.			

Table 7.2.2 Radiated emission test results, CR300B 2G NA, part number CT7801201-000

EUT SET UP: TABLE-TOP
TEST SITE: SEMI ANECHOIC CHAMBER
TEST DISTANCE: 3 m
FREQUENCY RANGE: 30 MHz – 1000 MHz
DETECTORS USED: PEAK / QUASI-PEAK
RESOLUTION BANDWIDTH: 120 kHz

Frequency, MHz	**Peak emission, dB(μV/m)**	**Quasi-peak**			**Antenna polarization**	**Antenna height, m**	**Turn-table position**, degrees**	**Verdict**
		Measured emission, dB(μV/m)	**Limit, dB(μV/m)**	**Margin, dB***				
No unintentional emissions were found.								Pass

FREQUENCY RANGE: 1000 MHz – 10000 MHz
DETECTORS USED: PEAK / AVERAGE
RESOLUTION BANDWIDTH: 1000 kHz

Frequency, MHz	**Peak**			**Average**			**Antenna polarization**	**Antenna height, m**	**Turn-table position**, degrees**	**Verdict**
	Measured emission, dB(μV/m)	**Limit, dB(μV/m)**	**Margin, dB***	**Measured emission, dB(μV/m)**	**Limit, dB(μV/m)**	**Margin, dB***				
No unintentional emissions were found.										Pass

*- Margin = Measured emission - specification limit.
**- EUT front panel refers to 0 degrees position of turntable.

Reference numbers of test equipment used

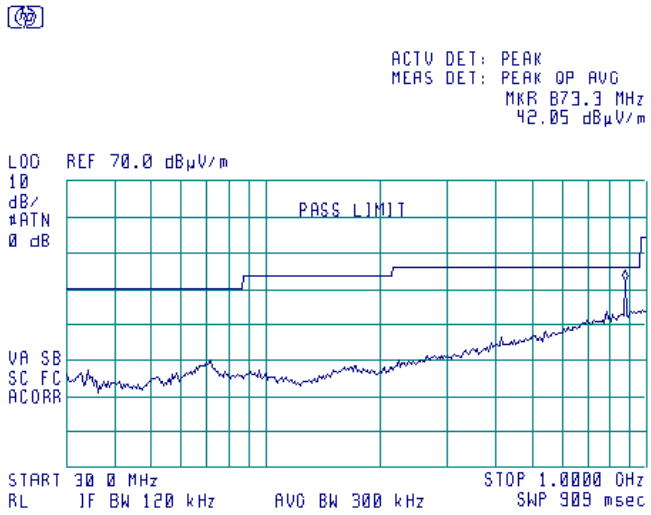
HL 0521	HL 0604	HL 2780	HL 4353	HL 4278	HL 4294	HL 4778	HL 4933

Full description is given in Appendix A.

Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	Air Pressure: 1028 hPa	Relative Humidity: 45 %	Power Supply: 12 VDC
Remarks: CR300B 2G NA, part number CT7801201-000 The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.			

Plot 7.2.1 Radiated emission measurements in 30 - 1000 MHz range, vertical antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 850 MHz

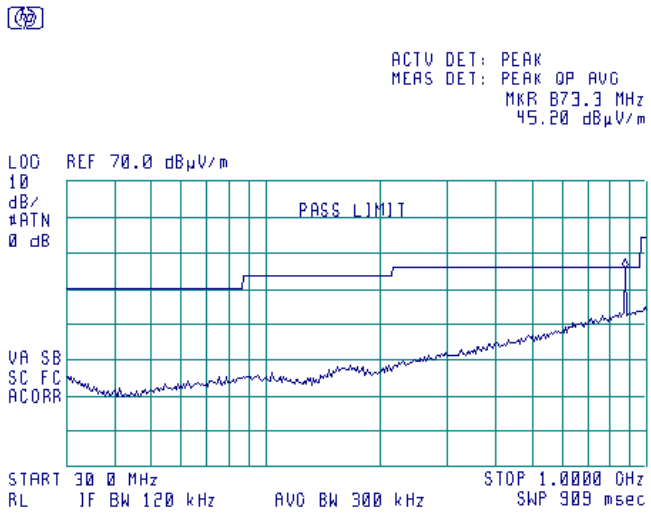
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



873.2 MHz – CF of base station simulator

Plot 7.2.2 Radiated emission measurements in 30 - 1000 MHz range, horizontal antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 850 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



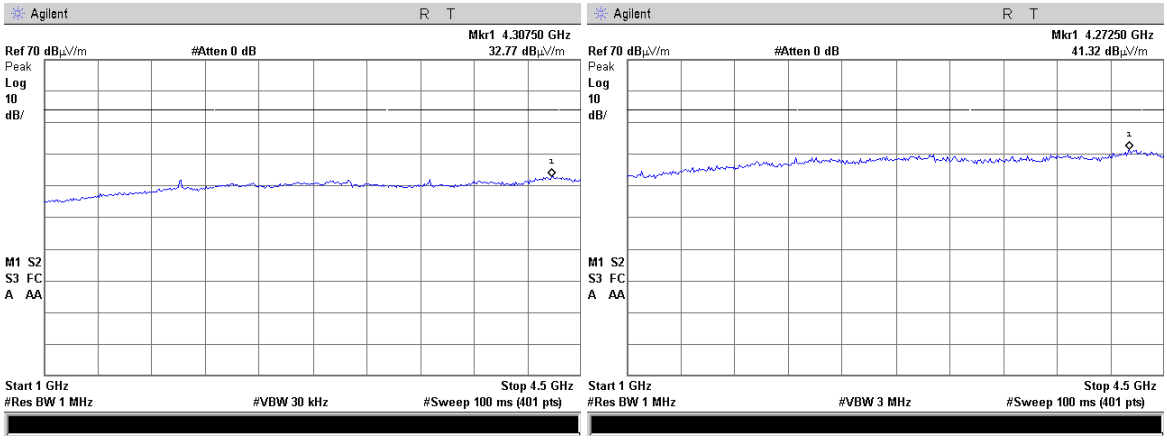
873.2 MHz – carrier frequency of base station simulator

Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	Air Pressure: 1028 hPa	Relative Humidity: 45 %	Power Supply: 12 VDC

Remarks: CR300B 2G NA, part number CT7801201-000
The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.

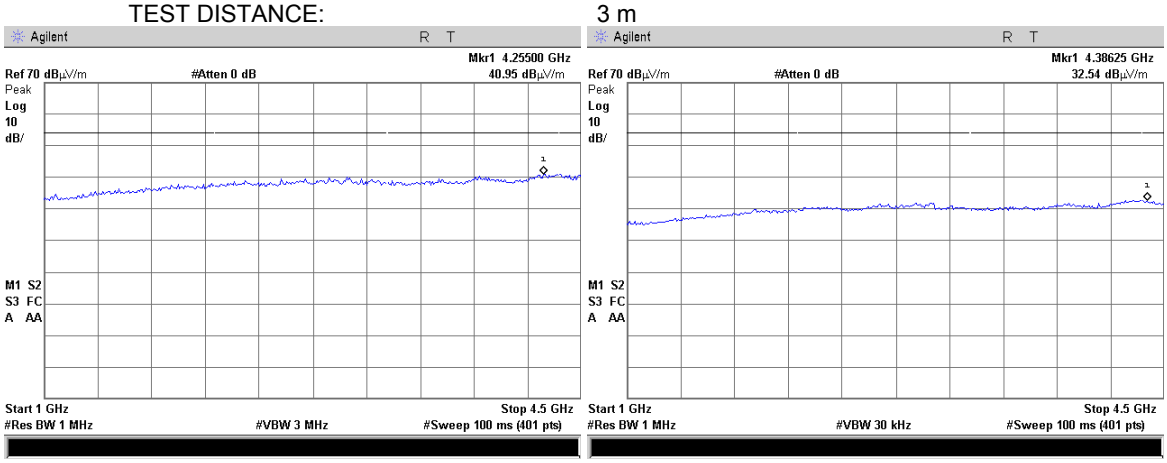
Plot 7.2.3 Radiated emission measurements in 1000 - 4500 MHz, vertical antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 850 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



Plot 7.2.4 Radiated emission measurements in 1000 – 4500 MHz, horizontal antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 850 MHz

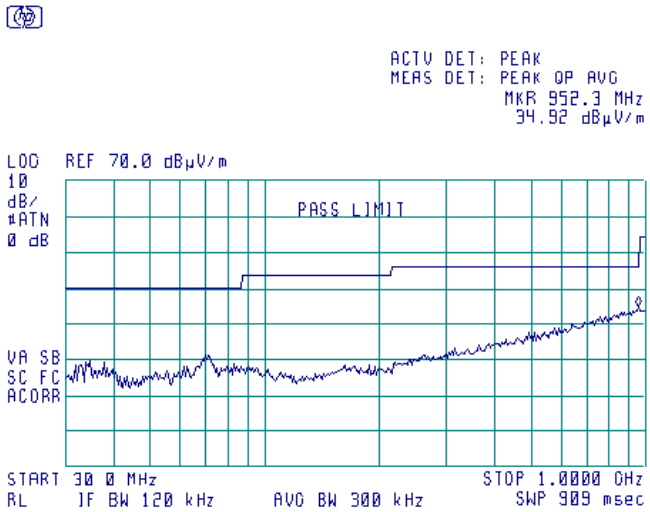
TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	Air Pressure: 1028 hPa	Relative Humidity: 45 %	Power Supply: 12 VDC
Remarks: CR300B 2G NA, part number CT7801201-000 The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.			

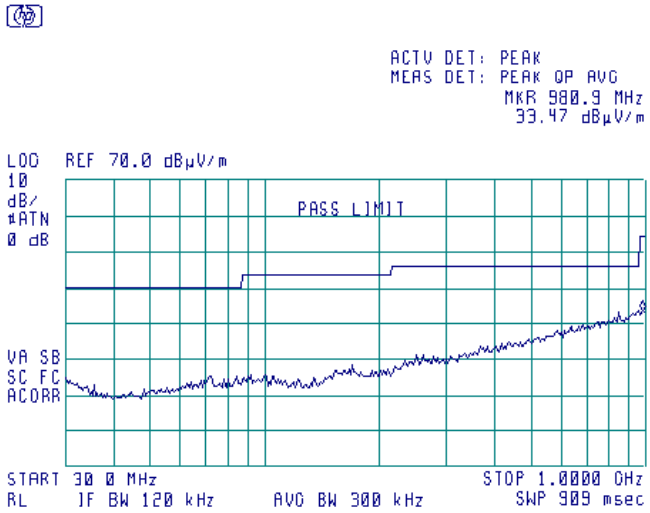
Plot 7.2.5 Radiated emission measurements in 30 - 1000 MHz range, vertical antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 1900 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



Plot 7.2.6 Radiated emission measurements in 30 - 1000 MHz range, horizontal antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 1900 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

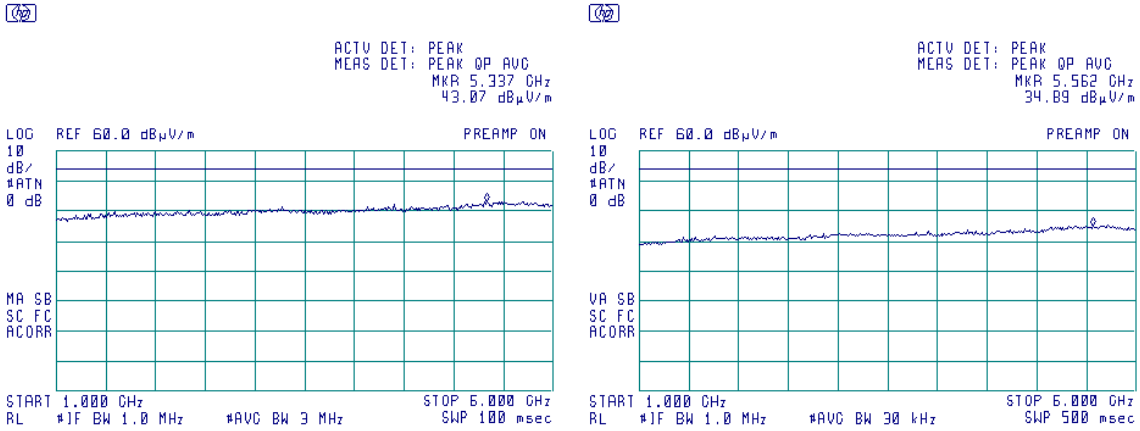


Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	Air Pressure: 1028 hPa	Relative Humidity: 45 %	Power Supply: 12 VDC

Remarks: CR300B 2G NA, part number CT7801201-000
The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.

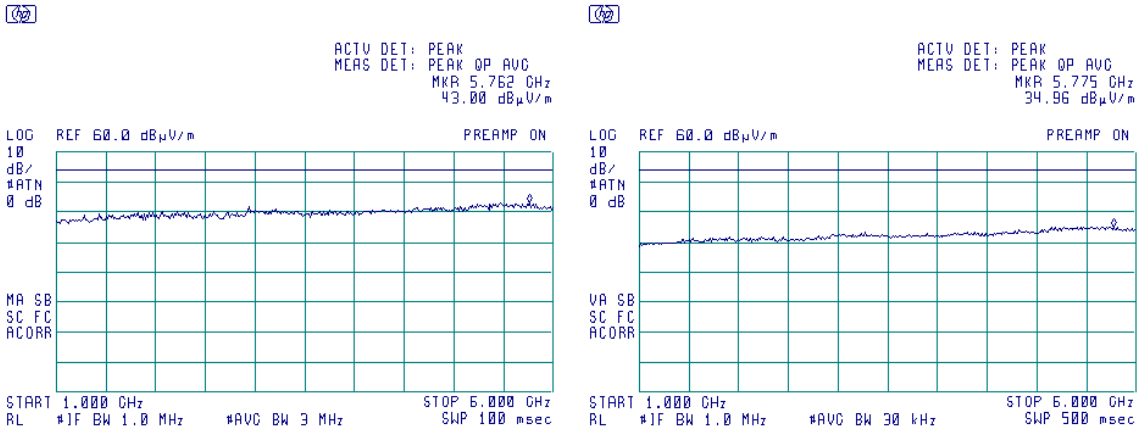
Plot 7.2.7 Radiated emission measurements in 1000 - 6000 MHz range, vertical antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 1900 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



Plot 7.2.8 Radiated emission measurements in 1000 - 6000 MHz range, horizontal antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 1900 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m

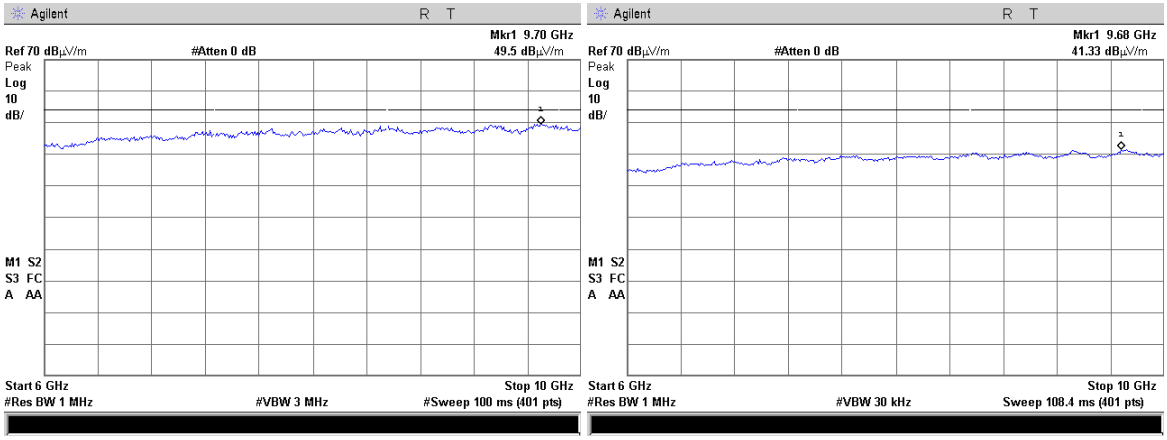


Test specification:	FCC 47 CFR, Section 15.109 / ICES-003, Section 6.2, Class B, Radiated emissions		
Test procedure:	ANSI C63.4, Section 8.3		
Test mode:	Compliance	Verdict:	PASS
Date(s):	28-Jan-16		
Temperature: 22 ºC	Air Pressure: 1028 hPa	Relative Humidity: 45 %	Power Supply: 12 VDC

Remarks: CR300B 2G NA, part number CT7801201-000
The GPRS carriers are 850 MHz (low) and 1900 MHz (high); the GPS Rx frequency is 1500 MHz; therefore the test was performed in 30-10000 MHz range.

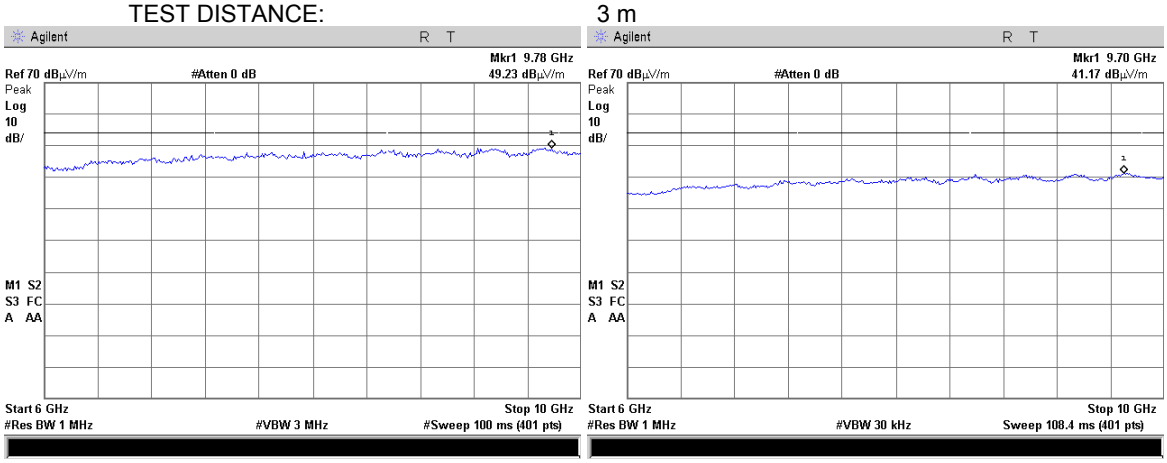
Plot 7.2.9 Radiated emission measurements in 6000 - 10000 MHz range, vertical antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 1900 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



Plot 7.2.10 Radiated emission measurements in 6000 - 10000 MHz range, horizontal antenna polarization, CR300B 2G NA, part number CT7801201-000, GPRS carrier 1900 MHz

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m



8 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./Check	Due Cal./Check
0521	EMI Receiver (Spectrum Analyzer) with RF filter section 9 kHz-6.5 GHz	Hewlett Packard	8546A	3617A 00319, 3448A00253	27-Oct-15	27-Oct-16
0604	Antenna BiconiLog Log-Periodic/T Bow-TIE, 26 - 2000 MHz	EMCO	3141	9611-1011	15-May-15	15-May-16
2432	Antenna, Double-Ridged Waveguide Horn 1 to 18 GHz	EMC Test Systems	3115	00027177	17-Apr-15	17-Apr-16
2697	Antenna, 30 MHz - 3.0 GHz	Sunol Sciences. Corp.	JB3	A022805	15-May-15	15-May-16
2780	EMC analyzer, 100 Hz to 26.5 GHz	Agilent Technologies	E7405A	MY45102462	08-Sep-15	08-Sep-16
4278	Test Cable , DC-18 GHz, 4.6 m, N/M - N/M	Mini-Circuits	APC-15FT-NMNM+	0755A	22-Nov-15	22-Nov-16
4294	Microwave Cable Assembly, 18.0 GHz, 3.4 m, SMA/SMA	Huber-Suhner	Sucoflex P103	NA	07-Dec-15	07-Dec-16
4347	Low Loss Armored Test Cable, DC - 18 GHz, 2.0 m, N type-M/N type-M	MegaPhase	NC29-N1N1-79	12025103 001	08-Jan-16	08-Jan-17
4353	Low Loss Armored Test Cable, DC - 18 GHz, 6.2 m, N type-M/N type-M	MegaPhase	NC29-N1N1-244	12025101 003	15-Mar-15	15-Mar-16
4721	Low Loss Armored Test Cable, DC - 18 GHz, 4.5 m, N type-M/N type-M	MegaPhase	NC29-N1N1-177	51300101 001	12-Jul-15	12-Jul-16
4778	EMI Receiver, 9 kHz - 2.9 GHz, System: HL1431, HL4777	Hewlett Packard	8542E	30807A00262, 3427A00123	05-Nov-15	05-Nov-16
4932	Microwave preamplifier, 500 MHz to 18 GHz, 40 dB Gain	COM-POWER CORPORATION	PAM-118A	551029	19-Nov-15	19-Nov-16
4933	Active Horn Antenna, 1 GHz to 18 GHz	COM-POWER CORPORATION	AHA-118	701046	04-Sep-15	04-Sep-16

9 APPENDIX B Test laboratory description

Tests were performed at Hermon Laboratories Ltd., which is a fully independent, private, EMC, safety, environmental and telecommunication testing facility.
Hermon Laboratories is listed by the Federal Communications Commission (USA) for all parts of Code of Federal Regulations 47 (CFR 47), Registration Numbers 90624 for OATS and 90623 for the anechoic chamber; by Industry Canada for electromagnetic emissions (file numbers IC 2186A-1 for OATS, IC 2186A-2 for anechoic chamber, IC 2186A-3 for full-anechoic chamber for RE measurements above 1 GHz), certified by VCCI, Japan (the registration numbers are R-808 for OATS, R-1082 for anechoic chamber, G-27 for full-anechoic chamber for RE measurements above 1 GHz, C-845 for conducted emissions site, T-1606 for conducted emissions at telecommunication ports), has a status of a Telefication - Listed Testing Laboratory, Certificate No. L138/00. The laboratory is accredited by American Association for Laboratory Accreditation (USA) according to ISO/IEC 17025 for electromagnetic compatibility, product safety, telecommunications testing and environmental simulation (for exact scope please refer to Certificate No. 839.01). The FCC Designation Number is US1003.

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website: www.hermonlabs.com

Person for contact: Mr. Alex Usoskin, CEO.

10 APPENDIX C Abbreviations and acronyms

A	ampere
AC	alternating current
A/m	ampere per meter
AVRG	average (detector)
BB	broad band
cm	centimeter
CDN	coupling/ decoupling network
dB	decibel
dBm	decibel referred to one milliwatt
dB(μV)	decibel referred to one microvolt
dB(μV/m)	decibel referred to one microvolt per meter
dB(μA)	decibel referred to one microampere
dBΩ	decibel referred to one Ohm
DC	direct current
EMC	electromagnetic compatibility
EMI	electromagnetic interference
EUT	equipment under test
GHz	gigahertz
GND	ground
H	height
HL	Hermon laboratories
Hz	hertz
k	kilo
kHz	kilohertz
kV	kilovolt
L	length
LISN	line impedance stabilization network
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μs	microsecond
NA	not applicable
NB	narrow band
NP	normal performance
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
s	second
V	volt
VA	volt-ampere
W	width

11 APPENDIX D Test equipment correction factors

Antenna calibration
Sunol Sciences Inc., model JB3, serial number A022805

Frequency, MHz	Antenna factor, dB(1/m)
30	22.7
35	18.4
40	14.5
45	10.9
50	8.3
60	7.9
70	9.0
80	9.3
90	9.7
100	11.2
120	14.4
140	13.7
160	13.8
180	11.8
200	12.8
250	12.3
300	13.4
400	16.0
500	17.7
600	18.1
700	20.7
800	21.1
900	22.2
1000	23.1
1100	24.2
1200	25.1
1300	25.1
1400	25.8
1500	26.3
1600	27.6
1700	28.1
1800	27.9
1900	28.1
2000	28.3
2500	31.9
3000	34.0

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μV) to obtain field strength in dB(μV/m).

Antenna Factor
Biconilog Antenna EMCO Model 3141, Ser.No.1011

Frequency, MHz	Antenna Factor, dB(1/m)	Frequency, MHz	Antenna Factor, dB(1/m)
26	7.8	940	24.0
28	7.8	960	24.1
30	7.8	980	24.5
40	7.2	1000	24.9
60	7.1	1020	25.0
70	8.5	1040	25.2
80	9.4	1060	25.4
90	9.8	1080	25.6
100	9.7	1100	25.7
110	9.3	1120	26.0
120	8.8	1140	26.4
130	8.7	1160	27.0
140	9.2	1180	27.0
150	9.8	1200	26.7
160	10.2	1220	26.5
170	10.4	1240	26.5
180	10.4	1260	26.5
190	10.3	1280	26.6
200	10.6	1300	27.0
220	11.6	1320	27.8
240	12.4	1340	28.3
260	12.8	1360	28.2
280	13.7	1380	27.9
300	14.7	1400	27.9
320	15.2	1420	27.9
340	15.4	1440	27.8
360	16.1	1460	27.8
380	16.4	1480	28.0
400	16.6	1500	28.5
420	16.7	1520	28.9
440	17.0	1540	29.6
460	17.7	1560	29.8
480	18.1	1580	29.6
500	18.5	1600	29.5
520	19.1	1620	29.3
540	19.5	1640	29.2
560	19.8	1660	29.4
580	20.6	1680	29.6
600	21.3	1700	29.8
620	21.5	1720	30.3
640	21.2	1740	30.8
660	21.4	1760	31.1
680	21.9	1780	31.0
700	22.2	1800	30.9
720	22.2	1820	30.7
740	22.1	1840	30.6
760	22.3	1860	30.6
780	22.6	1880	30.6
800	22.7	1900	30.6
820	22.9	1920	30.7
840	23.1	1940	30.9
860	23.4	1960	31.2
880	23.8	1980	31.6
900	24.1	2000	32.0
920	24.1		

Antenna factor is to be added to receiver meter reading in dB(μV) to convert to field intensity in dB(μV/meter).

Antenna factor
Double-ridged waveguide horn antenna
EMC Test Systems, model 3115, serial number: 00027177

Frequency, MHz	Measured antenna factor, dB/m
1000	23.8
1500	24.7
2000	27.0
2500	28.7
3000	30.2
3500	31.4
4000	32.9
4500	32.4
5000	33.3
5500	34.2
6000	34.5
6500	34.4
7000	35.3
7500	36.6
8000	36.7
8500	37.4
9000	37.8
9500	37.5
10000	38.1
10500	37.9
11000	38.2
11500	38.8
12000	39.4
12500	38.9
13000	39.5
13500	40.4
14000	41.0
14500	42.7
15000	41.4
15500	39.0
16000	37.6
16500	38.5
17000	40.4
17500	44.2
18000	48.7

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

Horn antenna factor
COM-POWER CORPORATION, Model ANA-118
Serial number701046

Frequency (GHz)	Preamplifier Gain (dB)	Antenna Factor with pre-amp (dB/m)	Frequency (GHz)	Preamplifier Gain (dB)	Antenna Factor with pre-amp (dB/m)
1	40.96	-16.47	10	40.94	-1.97
1.5	41.21	-14.53	10.5	40.63	-1.06
2	41.44	-13.30	11	40.74	-1.50
2.5	41.71	-12.87	11.5	40.65	-0.52
3	41.96	-12.26	12	40.76	-0.15
3.5	42.14	-11.77	12.5	41.03	-0.85
4	42.13	-10.91	13	41.37	-0.81
4.5	41.79	-9.41	13.5	41.18	0.05
5	41.44	-7.54	14	40.98	0.36
5.5	40.91	-6.47	14.5	40.81	1.26
6	40.69	-5.48	15	40.65	0.25
6.5	40.64	-5.53	15.5	40.93	-1.05
7	40.76	-4.12	16	41.31	-1.44
7.5	40.94	-3.12	16.5	40.96	-0.80
8	40.68	-1.69	17	40.64	-0.02
8.5	40.08	-1.71	17.5	40.57	1.81
9	40.41	-1.86	18	40.08	3.63
9.5	41.21	-2.73			

Antenna factor is to be added to receiver meter reading in dB(μV) to convert it into field intensity in dB(μV/m).

12 APPENDIX E Measurement uncertainties

Expanded uncertainty at 95% confidence in Hermon Labs EMC measurements

Test description	Expanded uncertainty
Conducted emissions at mains port with LISN and HP 8542E or HP 8546A receiver	9 kHz to 150 kHz: ± 3.9 dB 150 kHz to 30 MHz: ± 3.8 dB
Radiated emissions at 10 m measuring distance Horizontal polarization Vertical polarization	 Biconilog antenna: ± 5.0 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.1 dB Double ridged horn antenna: ± 5.3 dB Biconilog antenna: ± 5.5 dB Biconical antenna: ± 5.5 dB Log periodic antenna: ± 5.6 dB Double ridged horn antenna: ± 5.8 dB
Radiated emissions at 3 m measuring distance Horizontal polarization Vertical polarization	 Biconilog antenna: ± 5.3 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.3 dB Double ridged horn antenna: ± 5.3 dB Biconilog antenna: ± 6.0 dB Biconical antenna: ± 5.7 dB Log periodic antenna: ± 6.0 dB Double ridged horn antenna: ± 6.0 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.

13 APPENDIX F Specification references

FCC 47CFR part 15: 2015 subpart B	Radio Frequency Devices
ANSI C63.2: 1996	American National Standard for Instrumentation-Electromagnetic Noise and Field Strength, 10 kHz to 40 GHz-Specifications.
ANSI C63.4-2009	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
ICES-003: 2012, Issue 5	Spectrum Management and Telecommunications Policy. Interference-Causing Equipment Standard. Information Technology Equipment (ITE) – Limits and methods of measurement
RSS-210: 2010	Licence-exempt Radio Apparatus (All Frequency Bands): Category I Equipment
CISPR 16-1-1: 2010	Specification for radio disturbance and immunity measuring apparatus and methods. Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus

END OF TEST REPORT

14 APPENDIX G Manufacturer's declaration of identity

POINTER

Declaration of Identity

We, the undersigned,

Company: Pointer Telocation Inc
Address: 7715 NW 48th Street, Suite 395
Country: Doral, FL 33166
Telephone number: (305) 903-6634

declare under our sole responsibility that the following equipment:

Brand/Item	Type/Model	Short Product description
CR300B 3G NA	CT7801200-000	Vehicle Tracking equipment with 3G modem
CR300B 2G	CT7801201-000	Vehicle Tracking equipment with 2G modem

is electronically/electrically/mechanically identical to the following equipment (including Software/Hardware version(s)):

Brand/Item	Type/Model	Short Product description
CR300B 3G NA	CT7801210-000	Same as above with Different enclosure shape
CR300B 2G	CT7801211-000	Same as above with Different enclosure shape
CR300 3G NA	CT7801203-000	Same product as above Without internal Battery
CR300 2G	CT7801205-000	

The reason for name change is: Marketing purposes

..... (date)

..... (signature)

IGOR ROGOV
09-03-2016
VP R&D

..... (printed name)

..... (position)

..... (company stamp)

END OF DOCUMENT