



Test Report No. 8712310821

For Cadent Ltd

Equipment Under Test:

Cart transceiver

Model: MA14730-A

FCC ID: UZ2MA14730

***From The Standards Institution
Of Israel***

Industry Division

Electronics & Telematics Laboratory

EMC Section



**Test Report No.:** 8712310821**Page 1 of 36 pages****Title:** Test on Cart transceiver**FCC ID:** UZ2MA14730**Model:** MA14730-A

Order placed by:	Cadent Ltd
Address:	17 Ha'Taaasiya Street, POB 1018, Or Yehuda, Israel
Sample for test selected by:	The customer
The date of test:	February 2007

Description of Equipment**Under Test (EUT):** Cart transceiver.**Model:** MA14730-A**Manufactured by:** Cadent Ltd**Reference Documents:**

- ❖ CFR 47 FCC: Rules and Regulations; Part 15. "Radio frequency devices";
Subpart B: "Unintentional radiators" (2006)
Subpart C: "Intentional radiators" (2006),
Section 15.205. "Restricted bands of operations",
Section 15.209. "Radiated emission limits, general requirements".
"Radiated Emission Limits, Additional Provisions";
Section 15.249. "Operation within the bands 902 - 928 MHz,
2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz".

Test Results: The EUT meets the following requirements of CFR 47 FCC
Part 15:

Subpart B Section 15.109 (a)
Subpart C Section 15.249 (a),
Section 15.209,
Section 15.205.

This Test Report contains 36 pages
and may be used only in full.

This Test Report applies only to the specimen tested and may not
be applied to other specimens of the same product.



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1. EUT Description and operation

1.1. General description:

* Note: the customer supplied all information in clause below.

The EUT is transceiver located in cart units and is working with foot pedal for activating the scanning sequence and responding to screen questions.

Tested model has 4 carrier frequencies 915.1, 919.2, 923.5, 927.6 MHz and intended for use in 915 – 928 MHz frequency range. EUT based on frequency diversity mechanism. Activated transmitter respond on requested frequency.

The EUT transceiver based on single-ship TRF6901.

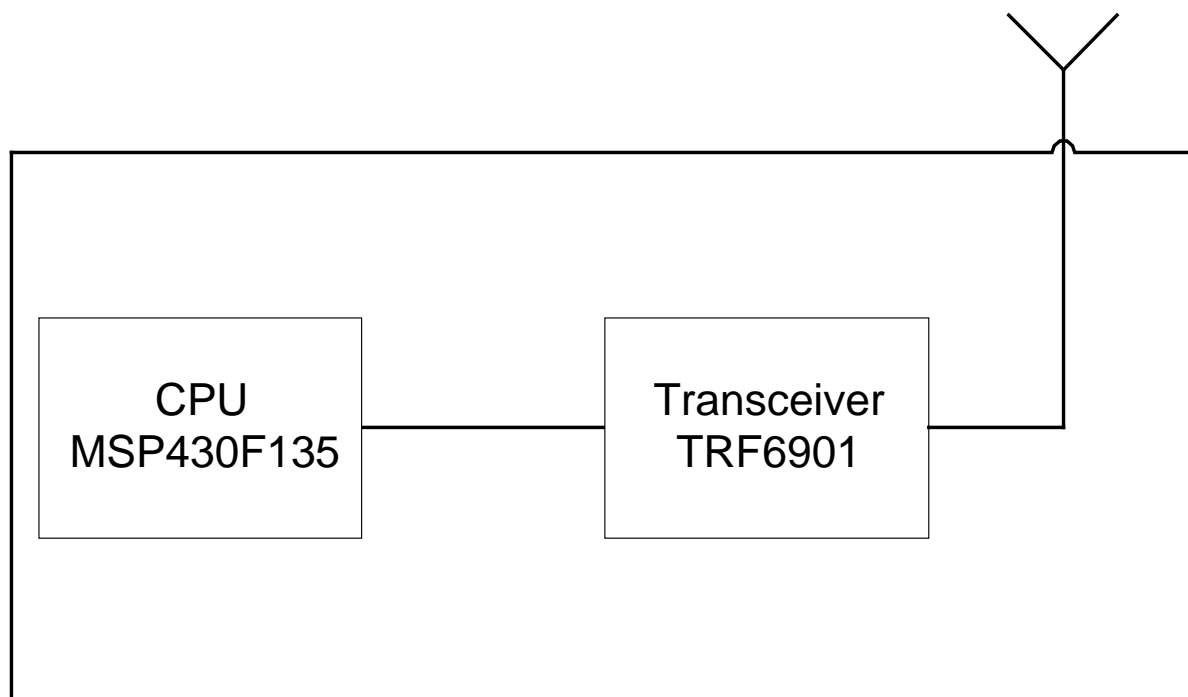
Declare output transmission power:	-1 dBm
Type of modulation:	FSK
Antenna type:	Integrated (wire 4 cm long soldered to PCB)

The PCB's dimensions: 54 mm x 28 mm .

The EUT power source: P.S. 12VDC inside cart.

The EUT's block diagram is shown in Figures 1

The EUT external and internal views are presented in Photos #1 and #2.

Test Report No.: 8712310821**Page 4 of 36 pages****Title:** Test on Cart transceiver**FCC ID:** UZ2MA14730**Model:** MA14730-A**Figure 1. EUT's block diagram**

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Title: Test on Car transceiver

FCC ID: UZ2MA14730

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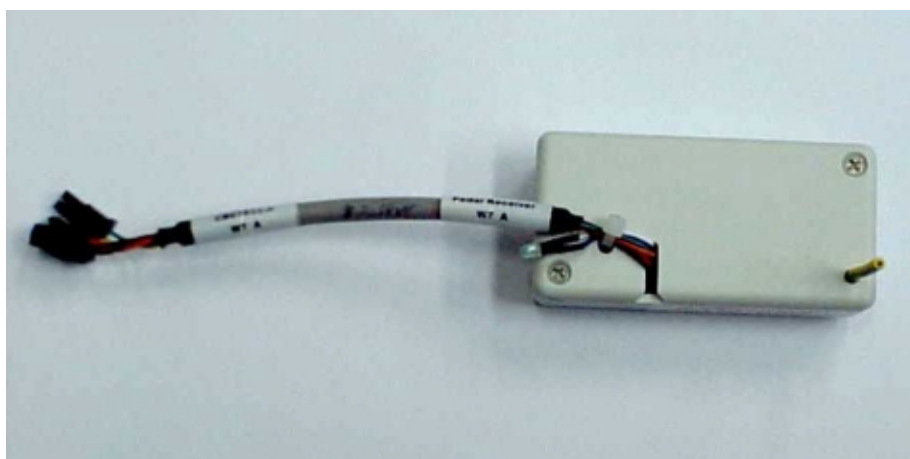


Photo 1. EUT's external view

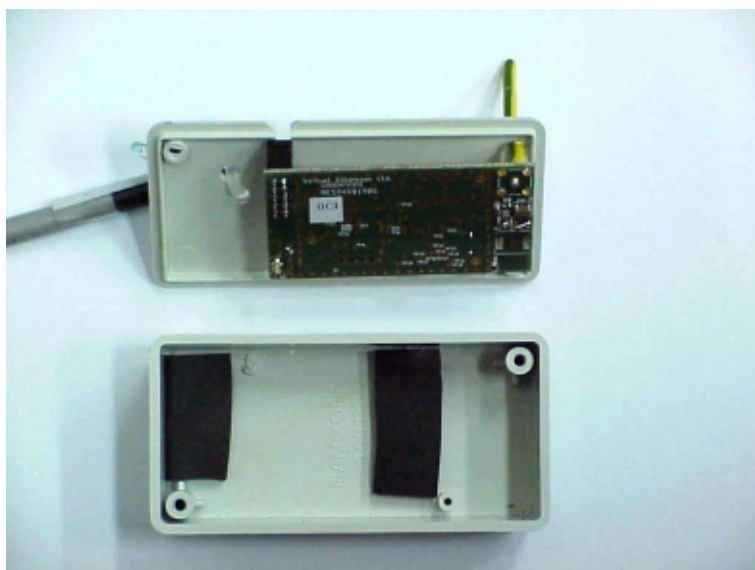


Photo 2. EUT's internal view

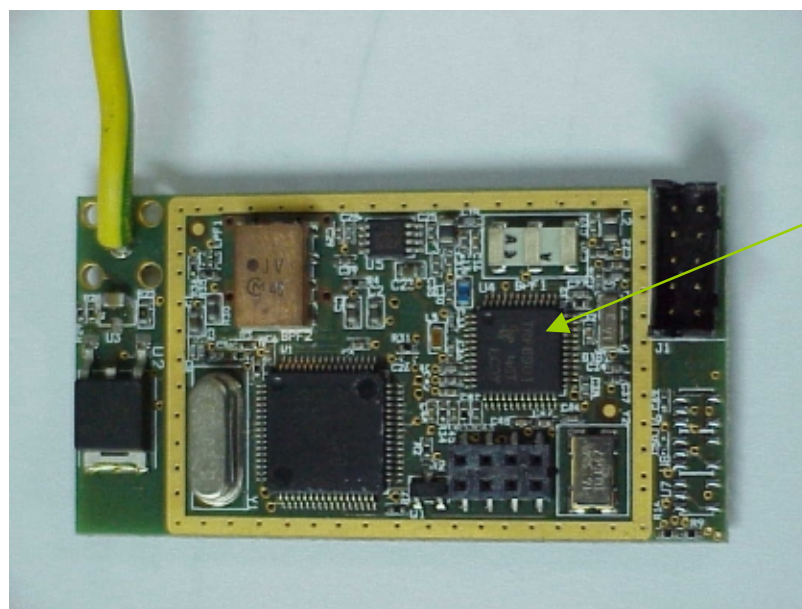
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TRF
6901

Photo 3. PCB view. Component side

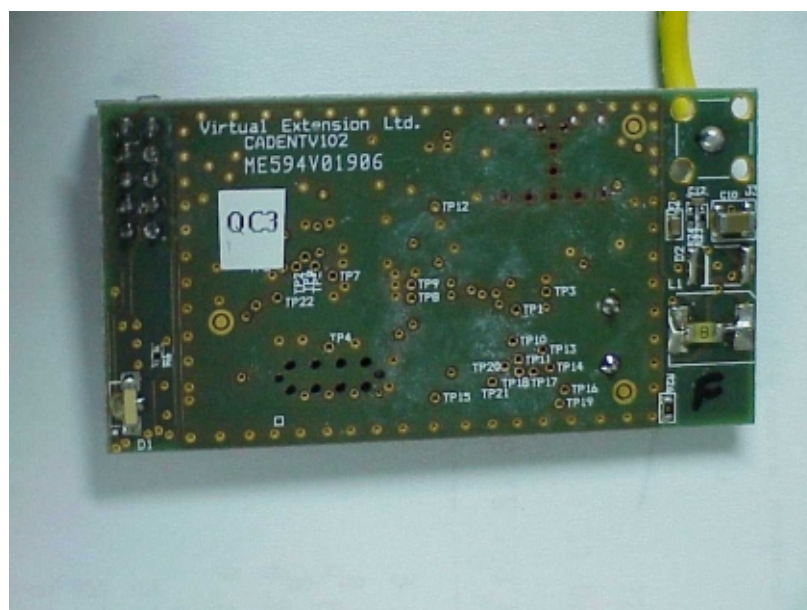


Photo 4. PCB view. Backside

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Photo 5. Spurious emissions test setup.



Photo 6. Spurious emissions test setup.

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The potential emission sources are detailed in Table 1.

Table 1. Potential emission sources

Frequency	Location
5.0 MHz crystal	PCB
16.384 MHz crystal	PCB
914 - 928 MHz RF signal	Base unit

1.3. EUT setup and operation:

Measurements of transmitter according to 15.31(m) were performed in 3 carrier frequencies in continue transmittion mode. Respective tests were performed in Transmission (Tx) and Receiving (Rx) modes.

2. Measurements, examinations and derived results**2.1. Location of the Test Site:**

Preliminary radiated test was conducted at the EMC laboratory of the Standards Institution of Israel in Tel-Aviv.

All other tests were conducted in an Open Area Test Site located at Kibbutz Native Halamed Hai in Emek HaEla, Israel.

2.2. Test condition:

Temperature: 22 °C. Humidity: 56 %. Atmospheric pressure: 1006 mbar.

2.3. Initial visual check and functional test:

Initial visual check and brief built-in test of the EUT was performed before testing.

- No external damages were found.
- The test on the EUT passed successfully.

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2.4. Conducted emission test according to 15.207:

2.4.1. Test configuration:

The EUT was placed on a non-metallic table in a shielded chamber at a height of 80 cm from the floor and 40 cm from the vertical ground plane. Transmitter was connected to main via auxiliary power supply. Lines subjected to the tests: 120 VAC mains.

2.4.2. Test procedure:

The EUT was operated to transmitting through the customer software. First, initial scans were performed. Final measurements were performed at the frequencies where emission exceeded the tolerance limit.

Test equipment (EMI receiver) setup was as follow:

Initial scan:

Detector type	Peak
Mode	Max hold
Bandwidth	9 kHz
Step size	Continuous sweep
Sweep time	>100 msec

Measurements:

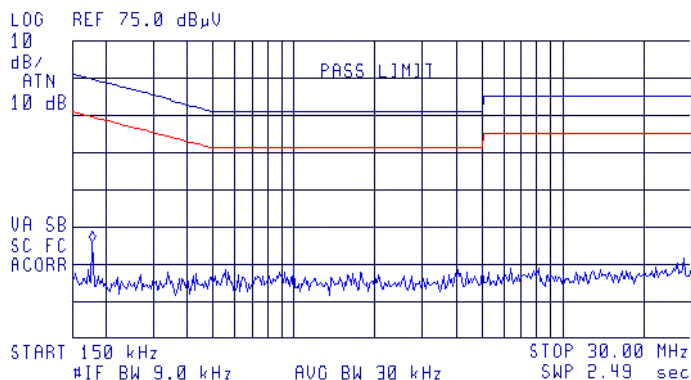
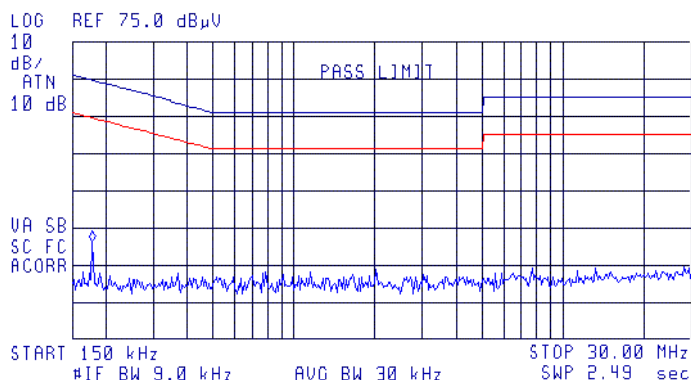
Detector type	Quasi-peak (CISPR)
Bandwidth	9 kHz
Observation	>15 seconds

2.4.3. Test results:

All received conducted emissions were found below the following limits:

1. Tested line: 120 VAC mains.

The worst result is measured on AC lines with peak detector and was found at least 20 dB below of FCC Part 15.207 AVG limit (see Plots #1 - #2).

**Test Report No.: 8712310821****Page 10 of 36 pages****Title: Test on Cart transceiver****FCC ID: UZ2MA14730****Model: MA14730-A**09:48:44 FEB 12, 2007 Line PH
Cadent EUT-MA14730-AACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 180 kHz
20.95 dBμV**Plot#1. Conducted emissions test, line Phase**09:50:41 FEB 12, 2007 Line N
Cadent EUT-MA14730-AACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 180 kHz
21.36 dBμV**Plot#2. Conducted emissions test, line Neutral**

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2.5. Radiated emission test:

2.6. General:

Per FCC Part 15 Subpart B Section 15.109 and subpart C Section 15.249, 15.209, 15.205

- * Initial scans were made using a peak detector but still using the appropriate ANSI IF bandwidth.
- * A tolerance limit was set 10 dB below the specification limit. Levels above the tolerance limit were retested using the Peak or QP detector.

2.6.1. Preliminary radiated emission tests:

Preliminary investigation measurements were performed in a semi-anechoic chamber at distances 1 and 3 meters. The EUT was setup in its typical configuration and operated in its various modes. For each mode of operation the frequency spectrum was monitored. EUT configuration, cable configuration and mode of operation, which produced the maximum level of emission, were documented. A list of frequencies to be tested was prepared.

2.6.2. Final measurements:

The final radiated emission measurements were performed at the Open Area Test Site at the same (1 and 3 m.) distances. The EUT was operated as described in clause 1.5. The EUT was installed on a turn - table. Biconilog and Double Ridged Guide antennas were used. The measurements were performed at each frequency that founded previously at which the signal was 10 dB below the limit or less. The levels were maximized by rotating turntable through 360° and changing antenna-to-EUT polarization from vertical to horizontal. The worse case result was noted in tables.

2.6.3. Radiated emission test results:

All received emissions from the EUT were found below FCC Part 15 Subpart B Section 15.109 and Subpart C Section 15. 209. 15.249 specified limit is presented in section 2.6.2. Preliminary test results are presented in plots below. Final result measurements in tables section 2.6.5.

**Test Report No.:** 8712310821**Page 12 of 36 pages****Title:** Test on Cart transceiver**FCC ID:** UZ2MA14730**Model:** MA14730-A**2.7. Test of field strength emission from intentional radiator****2.7.1. General:**

Per FCC Part 15 Subpart C Clauses 15.249 (a)(d)

2.7.2. Requirements:

The EUT's operation frequencies are within 902 – 928 MHz band.

The field strength emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (mV/m)	Calculated Field Strength of Fundamental dB (μV/m)	Field Strength of Harmonics (μV/m)	Calculated Field Strength of Harmonics dB (μV/m)
902 – 928 MHz	50	94	500	54

Note: Peak field strength of Harmonics shall not exceed the maximum permitted specified limit above by more than 20 dB.
Field strength limits are specified at a distance of 3 meters.

2.7.3. Test procedure:

The test was conducted according to clause 15.249.

2.7.4. Test summary:

The tested unit meets the standard requirement.

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Carrier frequency MHz	Peak Amplitude dB (μV/m)	Limit@ 3m dB (μV/m)
915.1	81.0	94.0
919.2	80.1	94.0
927.6	81.1	94.0

For recorded Fundamental frequencies result see plots #1-3.
 All received spurious emissions were found below the specified limit.
 Founded spurious emissions results presented in tables below.

Frequency carrier 915.1 MHz

Freq. MHz	Peak Ampl dB (μV/m)	Peak limit dB (μV/m)	Margin dB	*Ampl dB (μV/m)	Specified @3m limit, dB (μV/m)	Margin dB	Reference Plot
1830.1	51.0	74.0	23.0	34.2	54.0	19.8	Plot #6
2745.4	49.1	74.0	24.9	32.3	54.0	21.7	Plot #7

Frequency carrier 919.2 MHz

Freq. MHz	Peak Ampl dB (μV/m)	Peak limit dB (μV/m)	Margin dB	*Ampl dB (μV/m)	Specified @3m limit, dB (μV/m)	Margin dB	Reference Plot
1838.5	51.5	74.0	22.5	34.7	54.0	19.3	Plot #14
2757.7	48.0	74.0	26.0	31.2	54.0	22.8	Plot #15

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Freq. MHz	Peak Ampl dB (μV/m)	Peak limit dB (μV/m)	Margin dB	QP Ampl dB (μV/m)	Specified @3m limit, dB (μV/m)	Margin dB	Reference plot
928.01	42.6	66.0	23.4	28.2	46.0	17.8	Plot #22

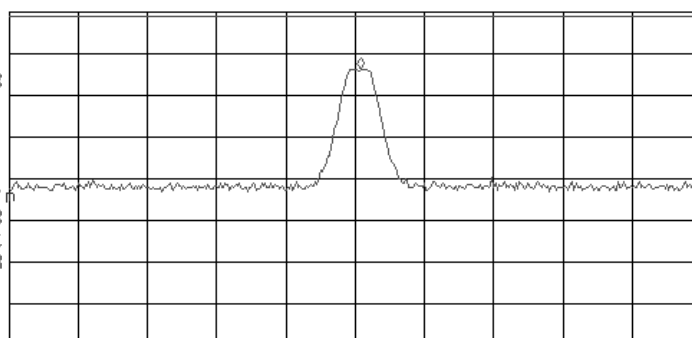
Freq. MHz	Peak Ampl dB (μV/m)	Peak limit dB (μV/m)	Margin dB	*Ampl dB (μV/m)	Specified @3m limit, dB (μV/m)	Margin dB	Reference plot
1855.3	55.6	74.0	18.4	38.8	54.0	15.2	Plot #23
2783.1	53.0	74.0	21.0	36.2	54.0	17.8	Plot #24

*Amplitude result was calculated from measured Peak value – Average factor.

Average factor = $20 \log \text{Tx on}/100 \text{ msec} = 20 \log [(6.4+8.0 \text{ ms})/100] = -16.8 \text{ dB}$

For transmitter average factor calculation see plots # 32, 33.

Test results are presented in tables above and plots # 4-28 for Tx mode and plots #29-31 for Rx mode.

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Cadent EUT-MA14730-AACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 915.094 MHz
81.03 dB μ V/mLOG REF 95.0 dB μ V/m10
dB/
ATN
20 dBDL
94.0
dB μ V/m
MA SB
SC FC
ACORR

CENTER 915.056 MHz

IF BW 120 kHz

AVG BW 300 kHz

SPAN 5.000 MHz

SWP 20.0 msec

MEA
AT

AD

C
WRJ

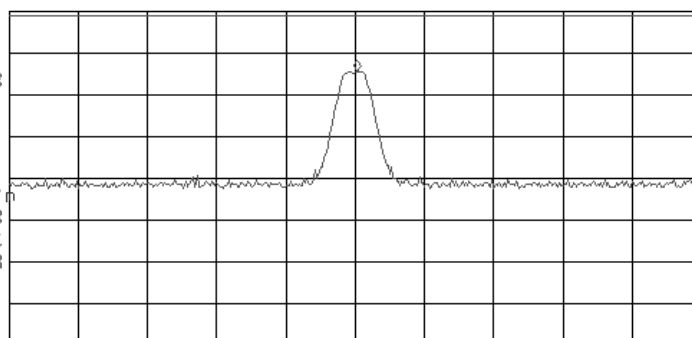
H0

VJ

BLA

T
A

1

Plot # 1. Field strength of Fundamental frequency 915.1 MHz. Test distance =3m11:35:51 FEB 11, 2007
Cadent EUT-MA14730-AACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 919.200 MHz
80.14 dB μ V/mLOG REF 95.0 dB μ V/m10
dB/
ATN
20 dBDL
94.0
dB μ V/m
MA SB
SC FC
ACORR

CENTER 919.188 MHz

IF BW 120 kHz

AVG BW 300 kHz

SPAN 5.000 MHz

SWP 20.0 msec

MEA
AT

AD

C
WRJ

H0

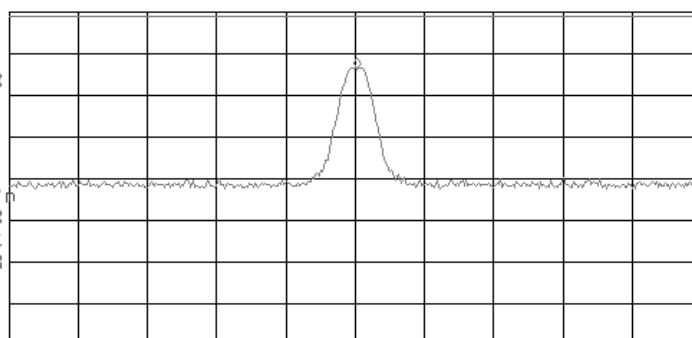
VJ

BLA

T
A

1

Plot # 2. Field strength of Fundamental frequency 919.2 MHz. Test distance =3m

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Cadent EUT-MA14730-AACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 927.638 MHz
B1.10 dB μ V/mLOG REF 95.0 dB μ V/m10
dB/
ATN
20 dBDL
94.0
dB μ V/m
MA SB
SC FC
ACORR

CENTER 927.625 MHz

IF BW 120 kHz

AVG BW 300 kHz

SPAN 5.000 MHz

SWP 20.0 msec

MEA
AT

AD

C
WRJ

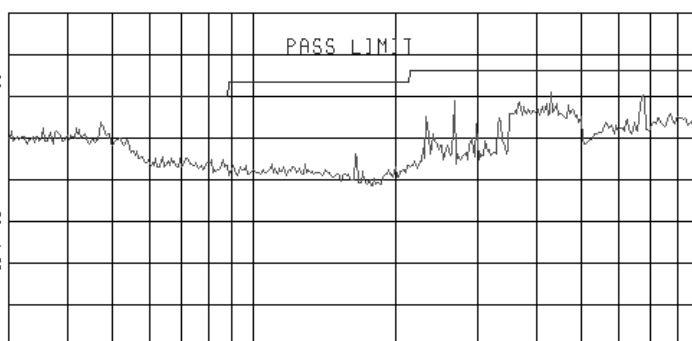
H0

VJ

BLA

T
A

1

Plot # 3. Field strength of Fundamental frequency 927.6 MHz. Test distance =3m12:18:10 FEB 11, 2007 Tx mode Fc-915.1 MHz
Cadent EUT-MA14730-AACTV DET: PEAK
MEAS DET: PEAK QP AVGLOG REF 60.0 dB μ V/m10
dB/
ATN
10 dBVA SB
SC FC
ACORR

START 30.0 MHz

IF BW 120 kHz

AVG BW 300 kHz

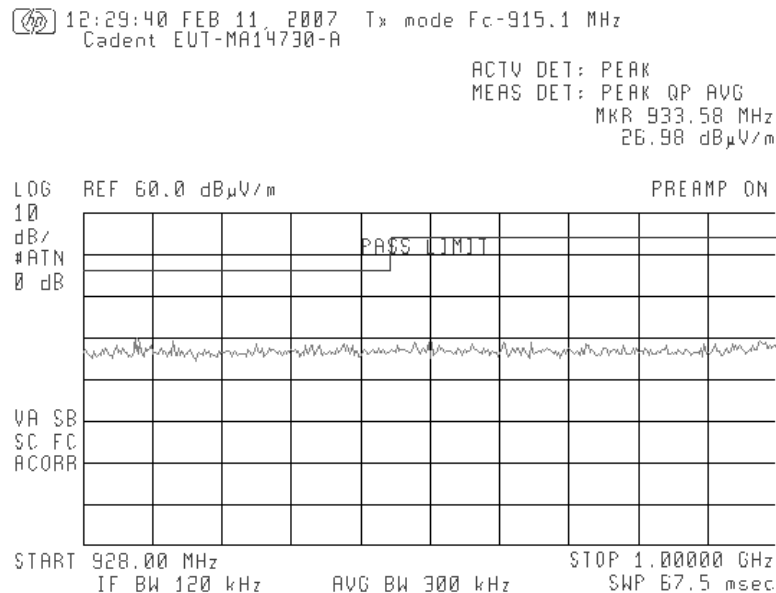
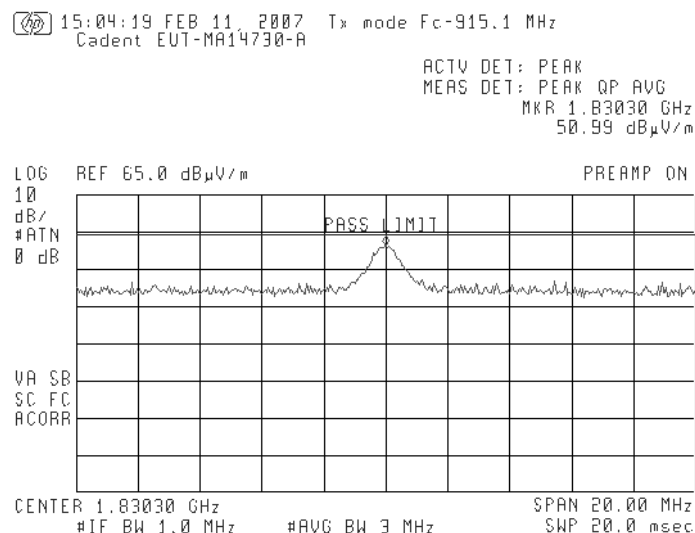
STOP 902.0 MHz

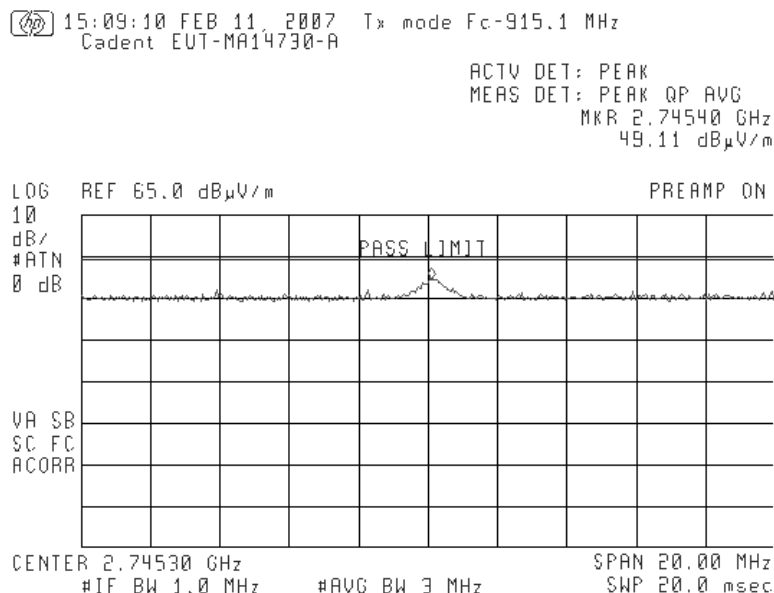
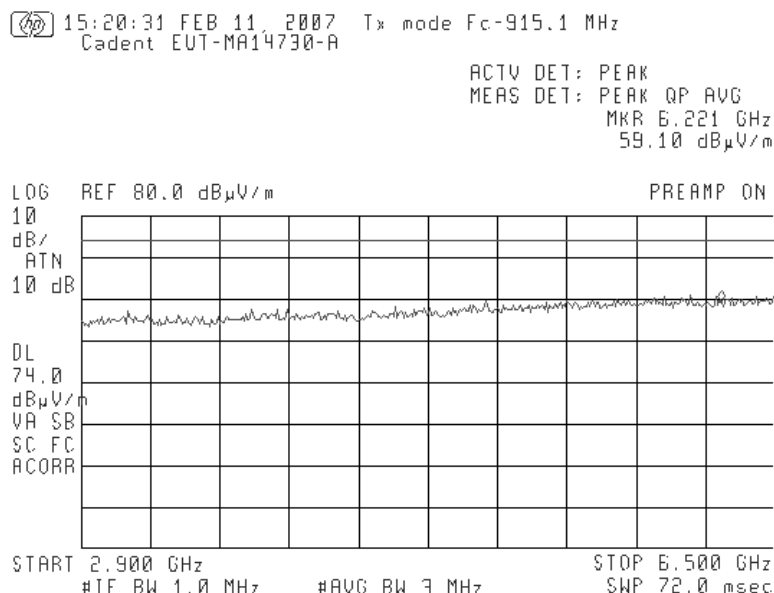
SWP 817 msec

PREAMP ON

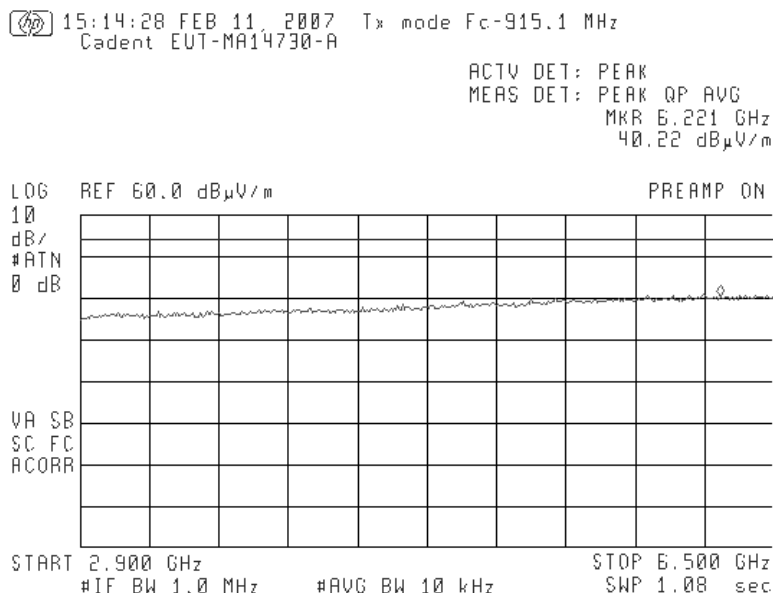
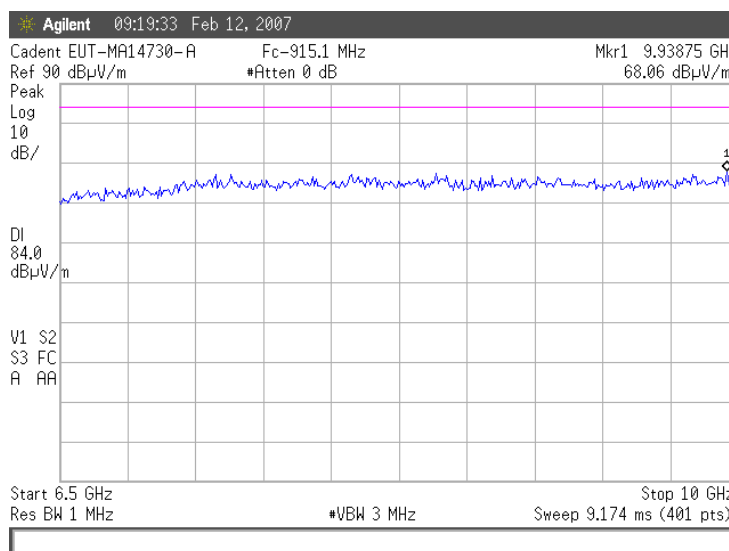
PASS LIMIT

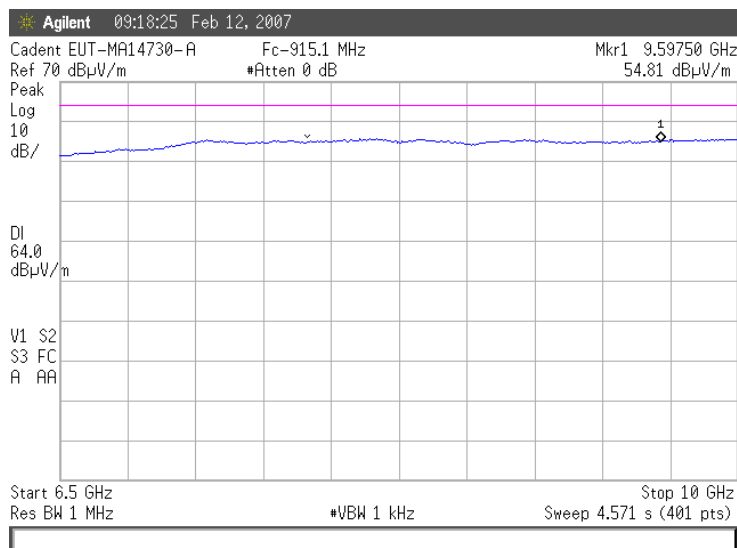
Plot # 4. Tx mode. Spurious emissions. Fcarrier - 915.1 MHz. Test distance =3m

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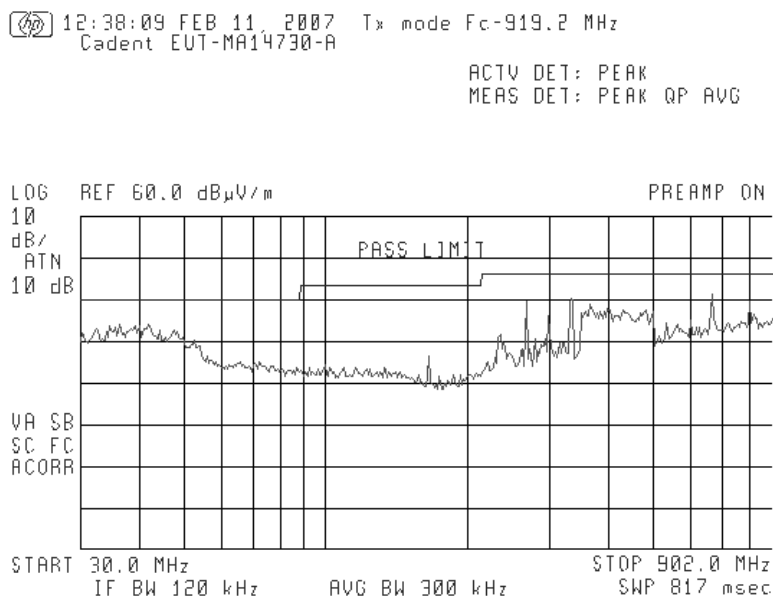
**Test Report No.: 8712310821****Page 18 of 36 pages****Title: Test on Cart transceiver****FCC ID: UZ2MA14730****Model: MA14730-A****Plot # 7. Tx mode. Fcarrier - 915.1 MHz. Test distance =3m.**

Plot # 8. Tx mode. Fcarrier - 915.1 MHz.
Preliminary scan of spurious emissions (For information only)
Limit line: Peak, Detector Peak. Test distance =3m

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Plot # 11. Tx mode. Preliminary scan of spurious emissions (For information only)
Frequency range from 6.5 GHz to 10 GHz Carrier frequency 915.1 MHz. D = 1m.
Limit line: Average, Detector: Average.

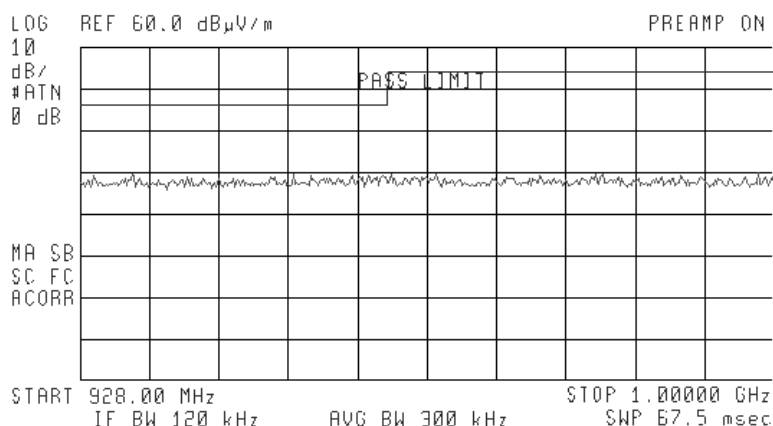


Plot # 12. Tx mode. Fcarrier - 919.2 MHz. Test distance =3m

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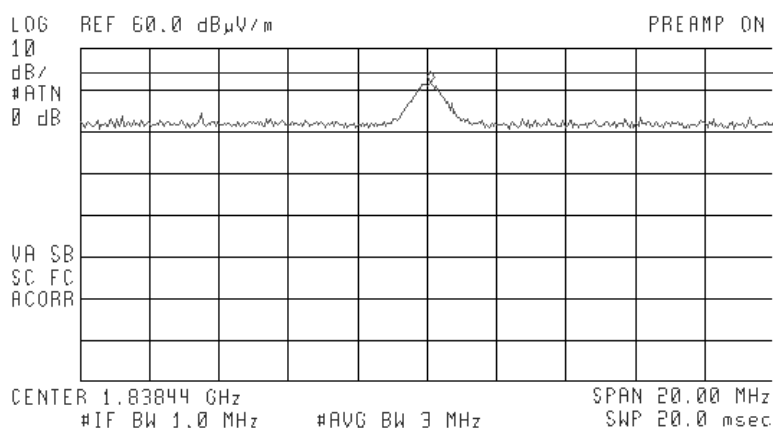
12:39:44 FEB 11, 2007 Tx mode Fc-919.2 MHz
Cadent EUT-MA14730-A

ACTV DET: PEAK
MEAS DET: PEAK QP AVG

**Plot # 13. Tx mode. Fcarrier - 919.2 MHz. Test distance =3m**

15:31:17 FEB 11, 2007 Tx mode Fc-919.2 MHz
Cadent EUT-MA14730-A

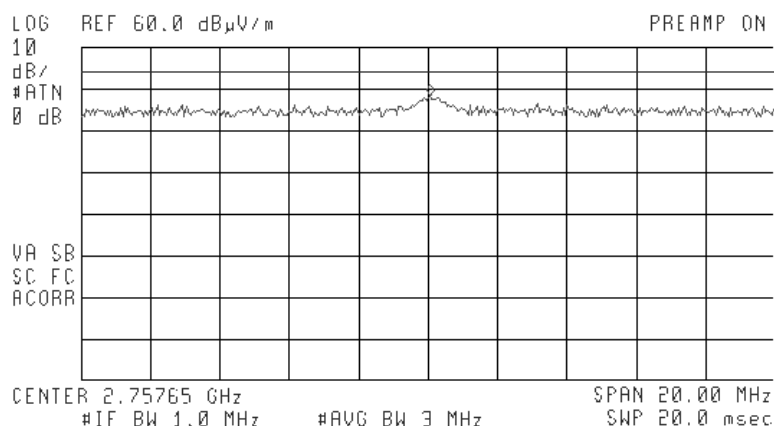
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 1.83854 GHz
51.53 dB μ V/m

**Plot # 14. Tx mode.. Fcarrier - 919.2 MHz. Test distance =3m**

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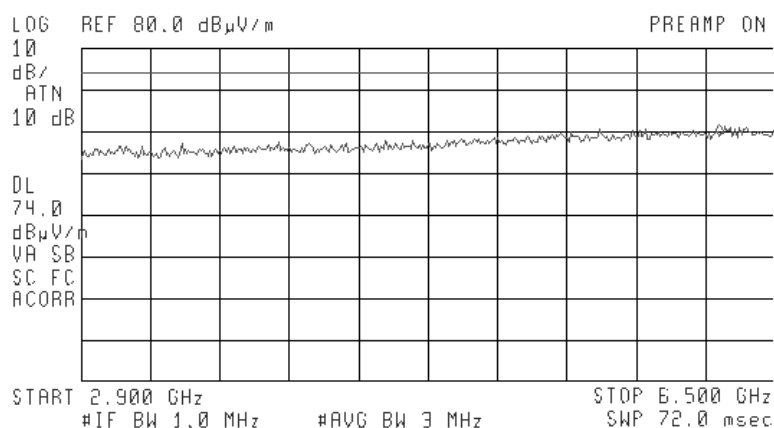
15:37:05 FEB 11, 2007 Tx mode Fc-919.2 MHz
Cadent EUT-MA14730-A

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.75770 GHz
47.97 dB μ V/m

**Plot # 15. Tx mode.. Fcarrier - 919.2 MHz. Test distance =3m**

15:24:41 FEB 11, 2007 Tx mode Fc-919.2 MHz
Cadent EUT-MA14730-A

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 6.212 GHz
58.95 dB μ V/m

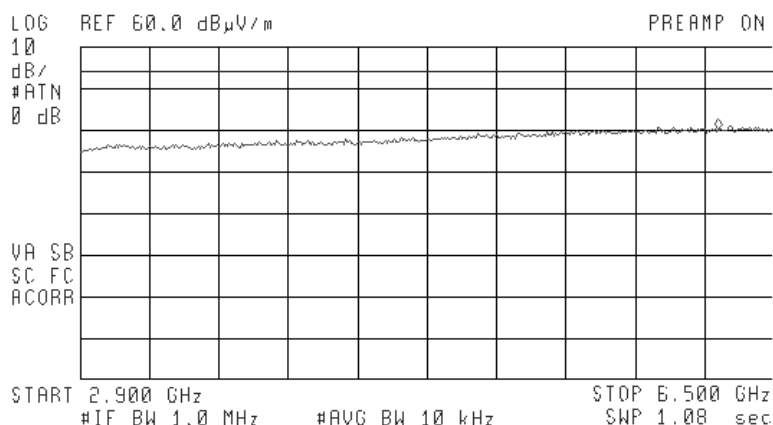
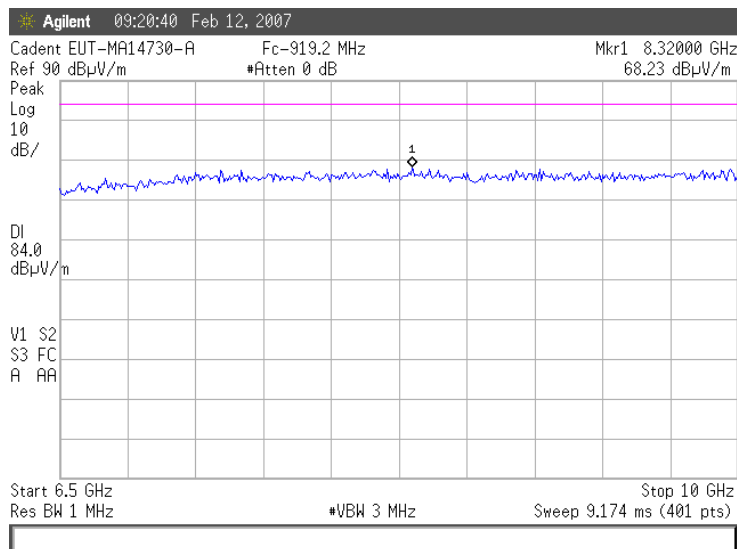


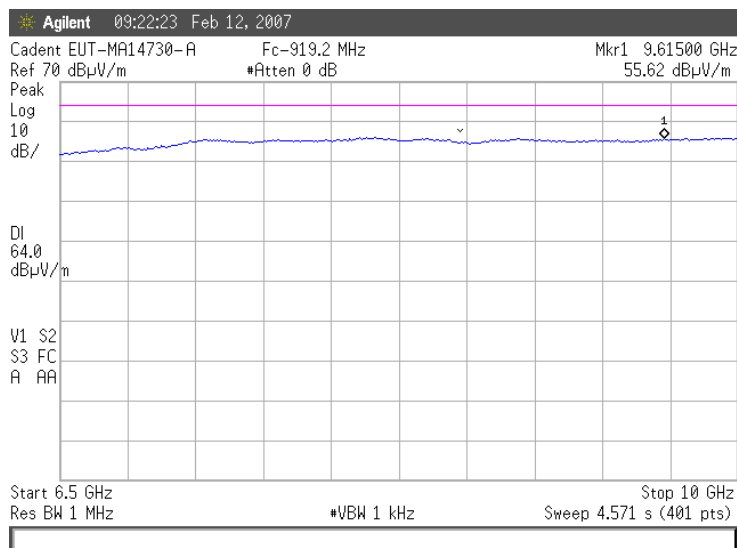
Plot # 16. Tx mode.. Fcarrier - 919.2 MHz.
Preliminary scan of spurious emissions (For information only)
Limit line: Peak, Detector: Peak. Test distance =3m

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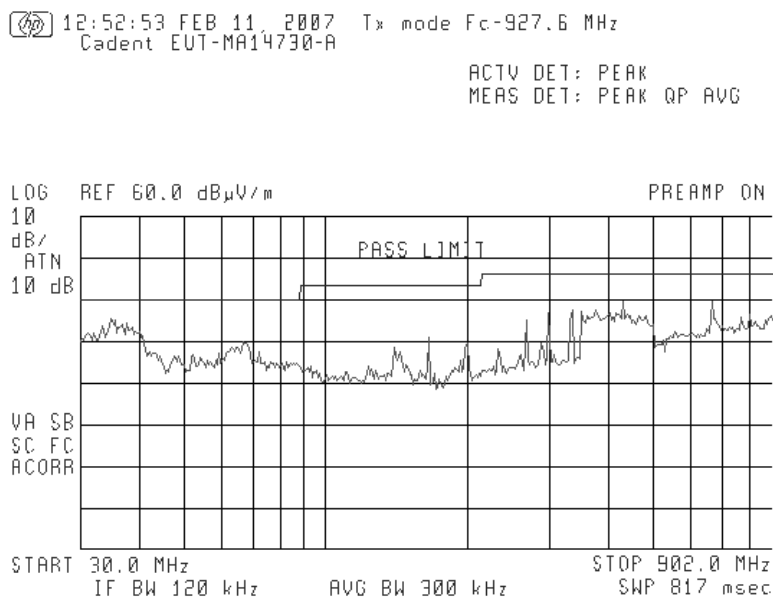
15:26:16 FEB 11, 2007 Tx mode Fc-919.2 MHz
Cadent EUT-MA14730-A

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 6.212 GHz
40.10 dB μ V/m

**Plot # 17. Tx mode.. Fcarrier - 919.2 MHz.****Preliminary scan of spurious emissions (For information only)****Limit line: Average, Detector Average. Test distance =3m.****Plot # 18. Tx mode. Preliminary scan of spurious emissions (For information only)****Freq. range from 6.5 GHz to 10 GHz Carrier frequency 919.2 MHz. D = 1m.****Limit line: Peak, Detector: Peak.**

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Plot # 19. Tx mode. Preliminary scan of spurious emissions (For information only)
Freq. range from 6.5 GHz to 10 GHz Carrier frequency 919.2 MHz. D = 1m.
Limit line: Average, Detector: Average.

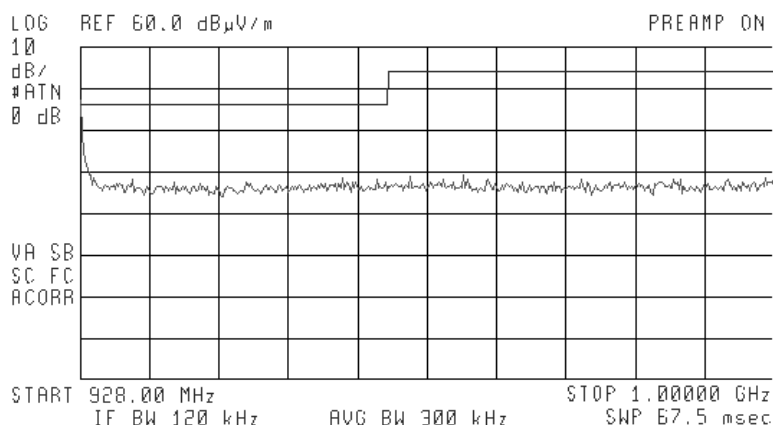


Plot # 20. Tx mode. Fcarrier – 927.6 MHz. Test distance =3m

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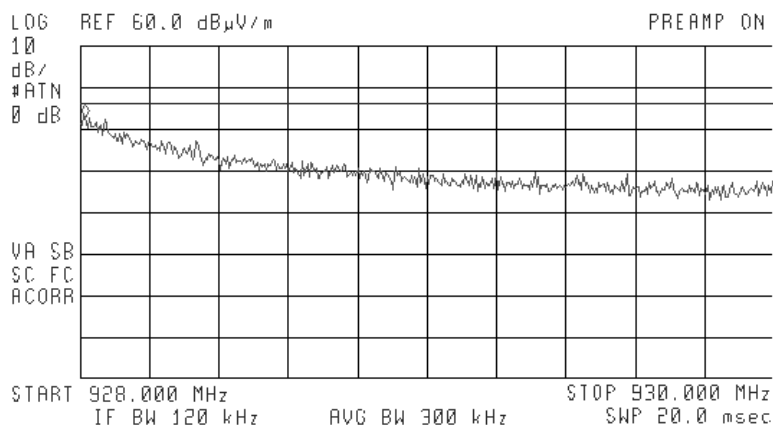
12:55:24 FEB 11, 2007 Tx mode Fc-927.6 MHz
Cadent EUT-MA14730-A

ACTV DET: PEAK
MEAS DET: PEAK QP AVG

**Plot # 21. Tx mode. Fcarrier – 927.6 MHz. Test distance =3m**

12:57:28 FEB 11, 2007 Tx mode Fc-927.6 MHz
Cadent EUT-MA14730-A

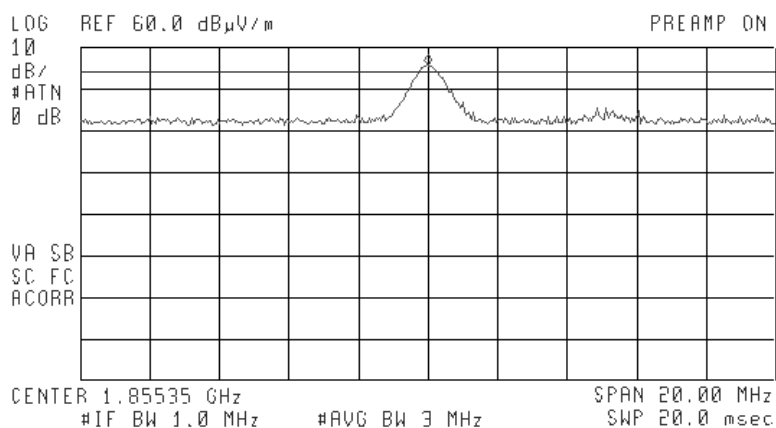
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 928.015 MHz
42.64 dB μ V/m

**Plot # 22. Tx mode. Fcarrier – 927.6 MHz. Test distance =3m**

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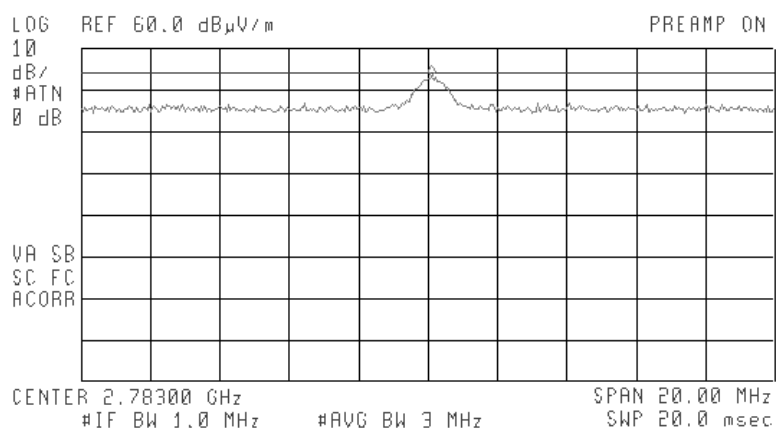
15:43:37 FEB 11, 2007 Tx mode Fc=927.6 MHz
Cadent EUT-MA14730-A

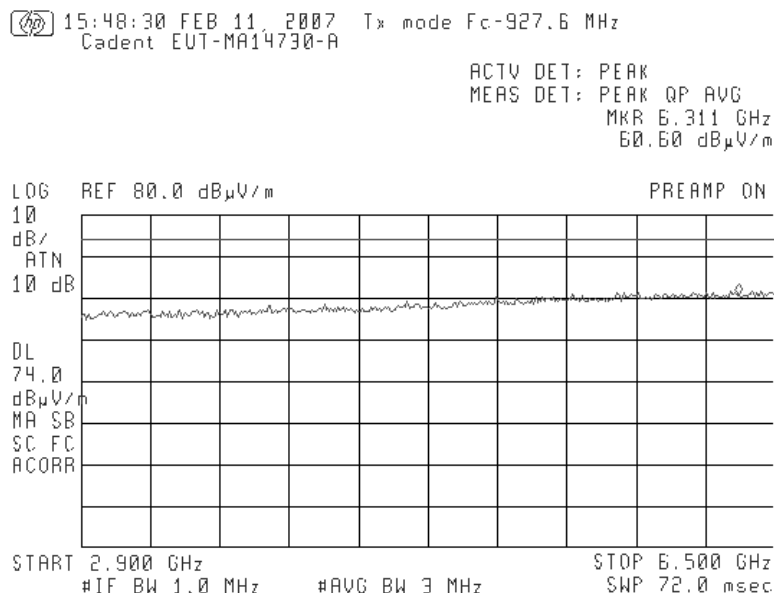
ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 1.85535 GHz
55.59 dB μ V/m

**Plot # 23. Tx mode. Fcarrier – 927.6 MHz. Test distance =3m**

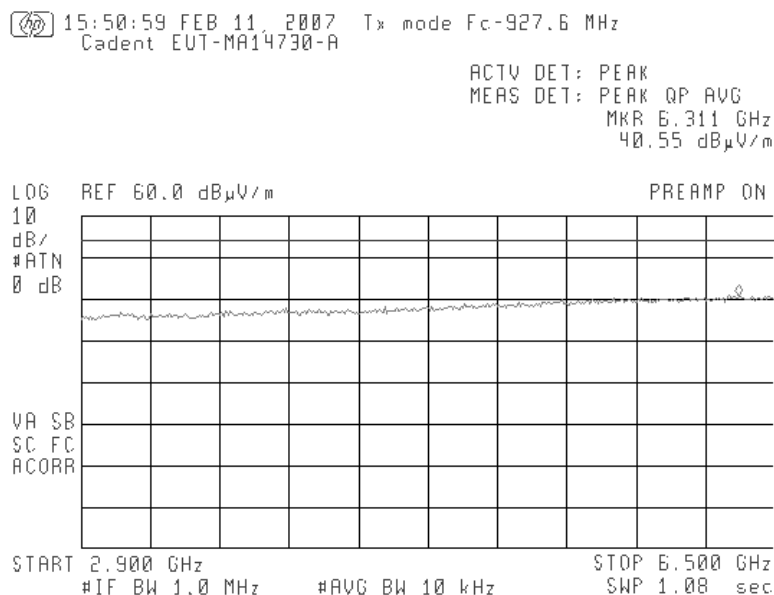
15:46:29 FEB 11, 2007 Tx mode Fc=927.6 MHz
Cadent EUT-MA14730-A

ACTV DET: PEAK
MEAS DET: PEAK QP AVG
MKR 2.78310 GHz
53.01 dB μ V/m

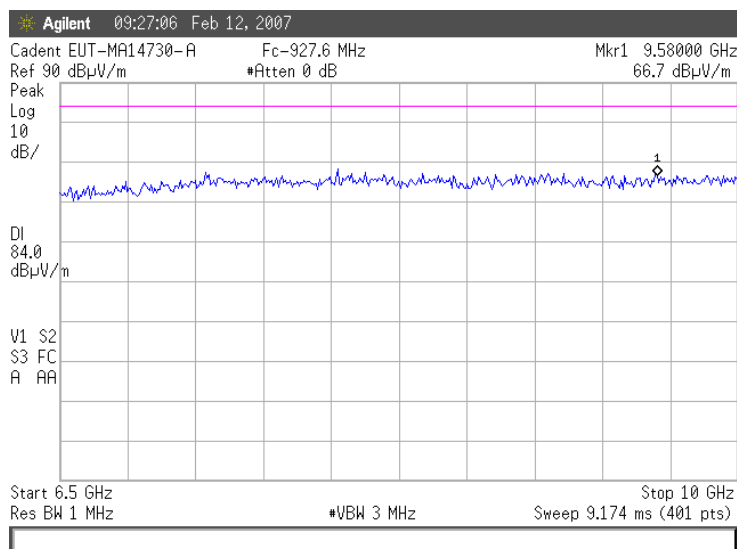
**Plot # 24. Tx mode. Fcarrier – 927.6 MHz. Test distance =3m**

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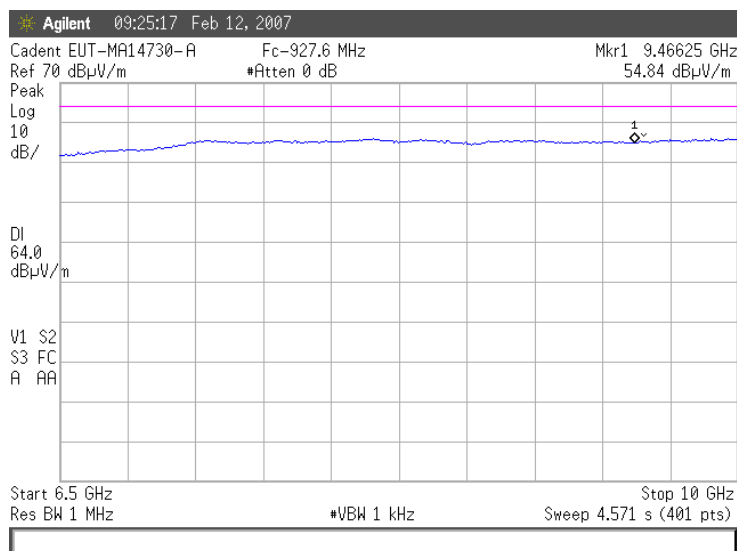
Plot # 25. Tx mode. Fcarrier – 927.6 MHz.
Preliminary scan of spurious emissions (For information only)
Limit line: Peak. Detector: Peak. Test distance =3m



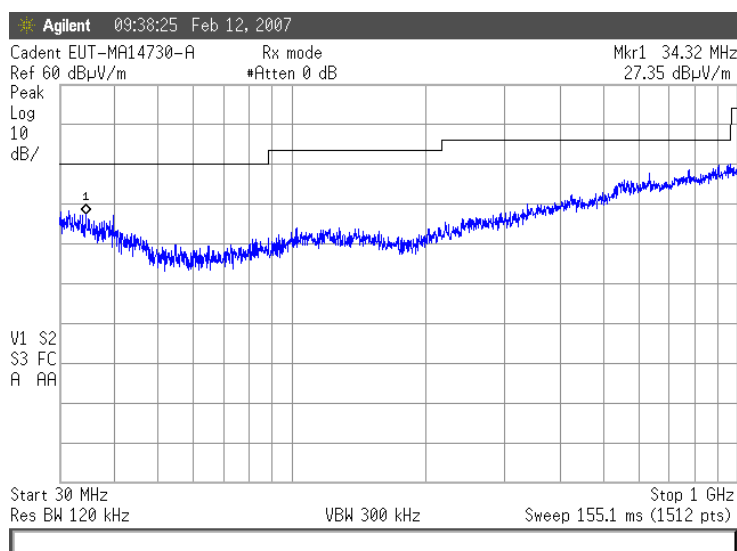
Plot # 26. Tx mode. Fcarrier – 927.6 MHz.
Preliminary scan of spurious emissions (For information only)
Limit line: Average, Detector: Average. Test distance =3m.

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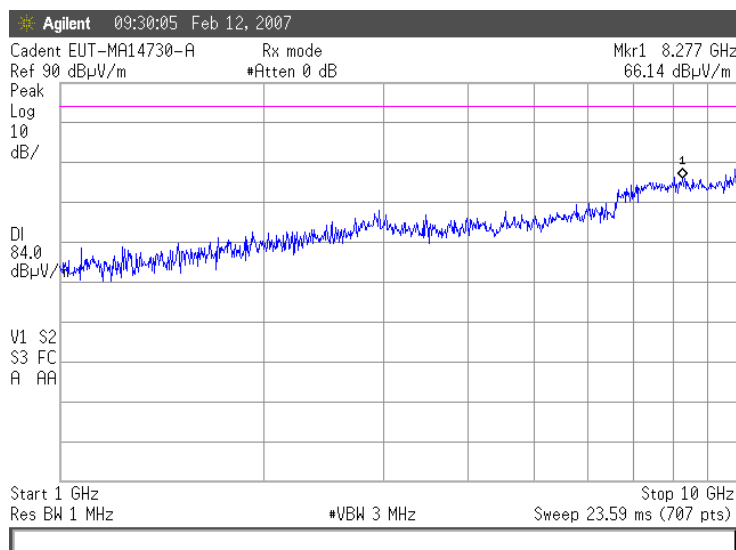
Plot # 27. Tx mode. Fcarrier – 927.6 MHz.
Preliminary scan of spurious emissions (For information only)
Limit line: Peak. Detector: Peak. Test distance =1m



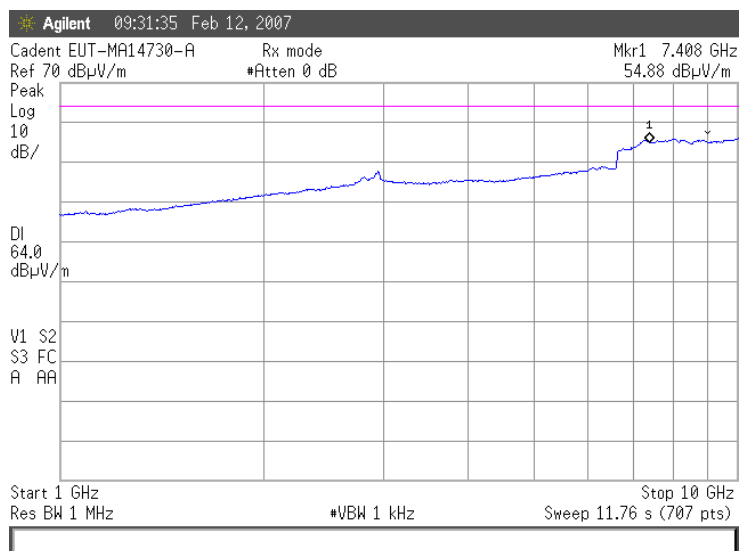
Plot # 28. Tx mode. Preliminary scan of spurious emissions (For information only)
Freq. range from 6.5 GHz to 10 GHz Carrier frequency 927.6 MHz. D = 1m.
Limit line: Average, Detector: Average.

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Plot # 29. Rx mode. Spurious emissions
Frequency range from 30 MHz to 1000 MHz. Test distance =3m.



Plot # 30. Rx mode. Preliminary scan of spurious emissions (For information only)
Frequency range from 1 GHz to 10 GHz. Test distance =1m
Limit line: Peak, Detector: Peak.

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Plot # 31. Rx mode. Preliminary scan of spurious emissions (For information only)
Frequency range from 1 GHz to 10 GHz. Test distance = 1m.
Limit line: Average, Detector: Average.



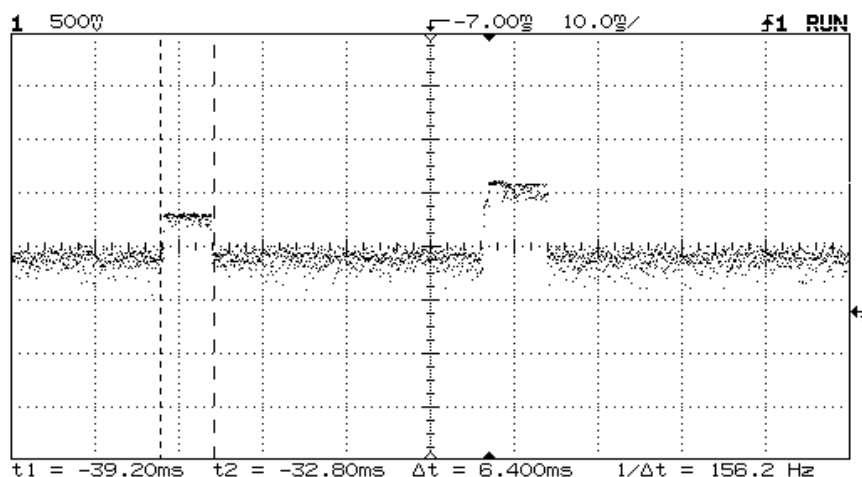
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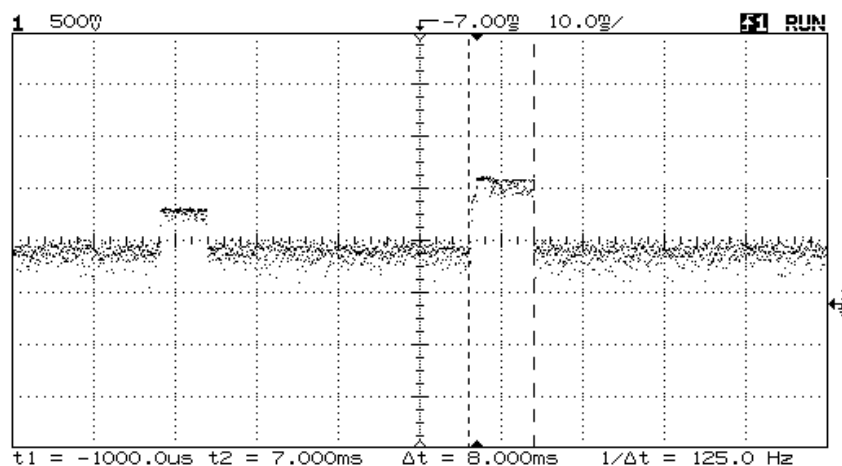
Title: Test on Cart transceiver

FCC ID: UZ2MA14730

Model: MA14730-A



Plot # 32. Transmission during 100 msec



Plot # 33. Transmission during 100 msec

AVG factor was calculated as $20 \text{ Log (Tx on/100 msec)} = 20 \text{ Log } [(6.4+8.0 \text{ ms})/100] = -16.8 \text{ dB}$

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3. Test summary

Parameter	FCC Part 15 Reference paragraph	Comply/not comply with the requirements
Radiated emission test.	Subpart B Section 15.109 Subpart C Section 15.209	Comply
Conducted emissions test	Subpart C Section 15.207	Comply
Test of field strength of emission from intentional radiators	"Radiated Emission Limits, Additional Provisions"; Section 15.249 (a).	Comply
Radiated emission from intentional radiators in restricted bands	Subpart C Section 15.205	Comply

Name: Eng. Yuri Rozenberg
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February 2007

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Position: Test Technician

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4. Appendix 1. Test equipment used

All measurements equipment is on SII calibration schedule with a recalibration interval not exceeding one year.

Instrument	MFR	Model	Serial No.	Due calibration date
EMI Receiver 9 kHz – 6.5 GHz	HP	8546A+85460 A	SII 4068	March 2007
Antenna Biconilog 30 – 2000 MHz	Schaffner- Chase	CBL6112B	S/N 2714	March 2007
EMI Analyser 9 kHz - 26.5 GHz	HP	E7405A	SII 4944	Feb 2008
Antenna Double Ridged Guide, 1-18 GHz	EMCO	3115	SII4873	March 2007
Oscilloscope	HP	54610B	US37340682	May 2007
RF cable, 3m	Sucoflex	104PE	21328/4PE	Oct 2007
Antenna Mast	R&S	HCM	100002	N/A
Metallic turntable	R&S	HCT12	100001	N/A
Positioning controller	R&S	HCC	100002	N/A

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5. Appendix 2: Antenna Factor and Cable Loss

Cable Loss (10m cable + Mast)

Point	Frequency (MHz)	Cable Loss (dB)	Point	Frequency (MHz)	Cable Loss (dB)
1	30	0.53	21	1000	3.68
2	50	0.75	22	1100	3.82
3	100	1.08	23	1200	4.07
4	150	1.39	24	1300	4.24
5	200	1.61	25	1400	4.43
6	250	1.752	26	1500	4.6
7	300	2.00	27	1600	4.7
8	350	2.15	28	1700	4.85
9	400	2.26	29	1800	4.98
10	450	2.383	30	1900	5.19
11	500	2.52	31	2000	5.34
12	550	2.606	32	2100	5.51
13	600	2.75	33	2200	5.69
14	650	2.856	34	2300	5.89
15	700	3.06	35	2400	6.07
16	750	3.20	36	2500	6.22
17	800	3.27	37	2600	6.28
18	850	3.38	38	2700	6.41
19	900	3.46	39	2800	6.53
20	950	3.55	40	2900	6.84

**Test Report No.:** 8712310821**Page** 35 of 36 pages**Title:** Test on Cart transceiver**FCC ID:** UZ2MA14730**Model:** MA14730-A**Table 2. Antenna Factor****Biconilog Antenna, Model Number: CBL-6112B, S/N: 2531
3 m calibration**

Frequency (MHz)	Antenna Factor (dB/m)	Frequency (MHz)	Antenna Factor (dB/m)	Frequency (MHz)	Antenna Factor (dB/m)	Frequency (MHz)	Antenna Factor (dB/m)
Vertical Polarization				Horizontal Polarization			
26.00	20.77	625.00	19.10	26.00	20.39	625.00	19.08
28.00	19.77	650.00	19.20	28.00	19.15	650.00	19.26
30.00	18.72	675.00	19.05	30.00	18.29	675.00	19.12
40.00	14.76	700.00	19.26	40.00	12.64	700.00	19.11
50.00	8.32	725.00	19.73	50.00	7.99	725.00	19.49
60.00	6.15	750.00	20.11	60.00	5.95	750.00	19.94
70.00	6.49	775.00	20.41	70.00	6.04	775.00	20.07
80.00	7.26	800.00	20.50	80.00	7.60	800.00	20.18
90.00	8.83	825.00	20.57	90.00	9.07	825.00	20.36
100.00	10.55	850.00	20.73	100.00	10.34	850.00	20.57
110.00	11.38	875.00	20.92	110.00	11.12	875.00	20.83
120.00	11.71	900.00	20.79	120.00	11.46	900.00	20.74
130.00	11.57	925.00	21.02	130.00	11.47	925.00	21.17
140.00	11.09	950.00	21.32	140.00	11.15	950.00	21.11
150.00	10.46	975.00	21.76	150.00	10.50	975.00	21.52
160.00	9.82	1,000.00	21.97	160.00	9.86	1,000.00	21.64
170.00	9.52	1,050.00	22.55	170.00	9.58	1,050.00	22.02
180.00	9.18	1,100.00	22.47	180.00	9.28	1,100.00	22.16
190.00	8.90	1,150.00	22.78	190.00	9.54	1,150.00	22.44
200.00	9.11	1,200.00	22.77	200.00	9.82	1,200.00	22.86
225.00	9.70	1,250.00	23.36	225.00	10.42	1,250.00	23.37
250.00	12.41	1,300.00	23.90	250.00	12.43	1,300.00	23.86
275.00	12.81	1,350.00	24.19	275.00	13.19	1,350.00	24.02
300.00	13.37	1,400.00	24.42	300.00	13.48	1,400.00	24.42
325.00	13.70	1,450.00	24.83	325.00	13.73	1,450.00	24.61
350.00	14.45	1,500.00	24.88	350.00	14.61	1,500.00	25.02
375.00	14.90	1,550.00	24.85	375.00	15.15	1,550.00	25.27
400.00	15.63	1,600.00	25.06	400.00	15.74	1,600.00	25.27
425.00	16.38	1,650.00	25.55	425.00	16.52	1,650.00	25.50
450.00	16.43	1,700.00	26.20	450.00	16.54	1,700.00	25.48
475.00	17.28	1,750.00	26.45	475.00	17.28	1,750.00	26.35
500.00	17.41	1,800.00	26.58	500.00	17.47	1,800.00	26.51
525.00	17.35	1,850.00	27.30	525.00	17.31	1,850.00	26.63
550.00	18.97	1,900.00	27.96	550.00	18.64	1,900.00	27.04
575.00	18.87	1,950.00	27.80	575.00	18.60	1,950.00	27.13
600.00	18.82	2,000.00	27.73	600.00	19.04	2,000.00	27.20

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Point	Frequency (MHz)	Antenna Factor (dB/m)
1	1000	23.9
2	2000	28.3
3	3000	31.0
4	4000	33.1
5	4500	32.5
6	5000	32.4
7	6000	53.7
8	6500	35.6
9	7000	36.4
10	7500	36.9
11	8000	37.0
12	8500	38.0
13	9000	38.6
14	9500	38.4
15	10000	38.4
16	10500	38.4
17	11000	38.9
18	11500	39.6
19	12000	39.4
20	12500	39.2
21	13000	40.3
22	13500	41.0
23	14000	41.2
24	14500	41.3
25	15000	40.0
26	15500	38.0
27	16000	38.1
28	16500	40.3
29	17000	42.2
30	17500	44.6
31	18000	46.2

Cable Loss**Type: Sucoflex 104PE; Ser.No.21328/4PE; 3 m length**

Point	Frequency (GHz)	Cable Loss (dB)
0	0.0-1.8	1.67
1	1.8 – 3.6	2.39
2	3.6 – 5.4	3.04
3	5.4-7.2	3.58
4	7.2-9.0	4.06
5	9.0-10.8	4.49
6	10.8-12.6	4.91
7	12.6-14.4	5.31
8	14.4-16.2	5.66
9	16.2-18.00	6.01