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FCC PART 15.249 TEST REPORT

UNLICENSED INTENTIONAL RADIATOR

Applicant	ItCanFly
Address	14212 Abbots Wood Terrace Midlothian VA 23113 USA
FCC ID	W37CX960
Model Number	CX960
Product Description	LOW POWER RADIO
Date Sample Received	5/29/2009
Date Tested	6/01/2009
Tested By	Joe Scoglio
Approved By	Mario de Aranzeta
Report Number	792YUT9TestReport.PDF
Test Results	☒ PASS ☐ FAIL

ACCREDITED
Certificate # 0955-01

TABLE OF CONTENT

ATTESTATIONS

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025:2005 requirements.

ACCREDITED
Certificate # 0955-01

I attest that the necessary measurements were made, under my supervision, at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, Fl 32669

Authorized Signatory Name:

Mario de Aranzeta C.E.T.
Compliance Engineer/ Lab. Supervisor

Date: June 5, 2009

DUT SPECIFICATION

Applicable Standard	Part 15.249	
DUT Description	LOW POWER RADIO	
FCC ID	W37CX960	
Model Number	CX960	
Operating Frequency	TX: 904.6 ~ 927.5 MHz	RX: Same
No. of Channels	Fixed Channel	
DUT Power Source	☐ 110–120Vac/50– 60Hz	
	☐ DC Power	
	☒ Battery Operated Exclusively	
Test Item	☐ Prototype ☒ Pre-Production ☐ Production	
Type of Equipment	☐ Fixed ☐ Mobile ☒ Portable	
Antenna Connector	None internal antenna	

TEST FACILITY

Test Facility	Timco Engineering Inc. located at 849 NW State Road 45 Newberry, FL 32669 USA.
Test Conditions	Temperature: 26ºC Relative humidity: 50%
Test Exercise	The DUT was placed in continuous transmit mode of operation.
Modifications	

SUPPORTING EQUIPMENT

Supporting Device	Manufacturer	Model / FCC ID	Serial Number
N/A			

EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
Analyzer Tan Tower Spectrum Analyzer	HP	8566B Opt 462	3138A07786 3144A20661	CAL 12/7/07	12/7/09
Analyzer Tan Tower RF Preselector	HP	85685A	3221A01400	CAL 12/7/07	12/7/09
Analyzer Tan Tower Quasi-Peak Adapter	HP	85650A	3303A01690	CAL 12/8/07	12/8/09
Analyzer Tan Tower Preamplifier	HP	8449B-H02	3008A00372	CAL 12/8/07	12/8/09
Antenna: Biconnical	Electro-Metrics	BIA-25	1171	CAL 4/29/09	4/29/11
Antenna: Double-Ridged Horn	Electro-Metrics	RGA-180	2319	CAL 12/29/08	12/29/10
Termaline Wattmeter	Bird Electronic Corporation	611	16405	CAL 7/16/08	7/16/10

TEST PROCEDURES

Radiation Interference: ANSI C63.4-2003 using a spectrum analyzer, a preselector, a quasi-peak adapter, and an appropriate antenna. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100 kHz with an appropriate sweep speed and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

Formula Of Conversion Factors: The field strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBµV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the preselector was accounted for in the spectrum analyzer meter reading.

Example:			
Freq (MHz)	Meter Reading	+ ACF	+ CL = FS
33	20 dBµV	+ 10.36 dB	+ 0.5 = 30.86 dBµV/m @ 3m

Power Line Conducted Interference: The procedure used was ANSI C63.4-2003 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The spectrum was scanned from 0.15 to 30 MHz.

Occupied Bandwidth: A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to -10 dBm per division.

ANSI C63.4-2003 10.1 Measurement Procedures: The DUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The DUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. Emissions attenuated more than 20 dB below the permissible value are not reported.

RADIATION INTERFERENCE

Rules Part No.: 15.249, 15.209

Requirements:

Frequency	Limits
Part 15.209	
9 to 490 kHz	2400/F (kHz) µV/m @ 300 meters
490 to 1705 kHz	24000/F (kHz) µV/m @ 30 meters
1705 kHz to 30 MHz	29.54 dBµV/m @ 30 meters
30 – 88	40.0 dBµV/m @ 3 meters
80 – 216	43.5 dBµV/m @ 3 meters
216 – 960	46.0 dBµV/m @ 3 meters
Above 960	54.0 dBµV/m @ 3 meters
Part 15.249	
Fundamental 902 – 928 MHz	94.0 dBµV/m @ 3 meters
Fundamental 2.4 – 2.4835 MHz	94.0 dBµV/m @ 3 meters
Harmonics	54.0 dBµV/m @ 3 meters

Test Data:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Polarity H/V	Coax Loss dB	Correction Factor dB/m	Duty Cycle dB	Field Strength dBµV/m	Margin dB
904.6	904.60	56.5	V	4.73	23.24	6.2	78.27	15.73
904.6	904.60	58.0	H	4.73	24.04	6.2	80.57	13.43
904.6	1,809.20	28.0	V	1.60	30.37	6.2	53.77	0.23
904.6	1,809.20	28.1	H	1.60	30.37	6.2	53.87	0.13
904.6	2,713.80	16.5	V	1.99	32.69	6.2	44.98	9.02
904.6	2,713.80	18.0	H	1.99	32.69	6.2	46.48	7.52
904.6	3,618.50	8.6	H	2.29	33.19	6.2	37.88	16.12
904.6	3,618.50	12.3	V	2.29	33.19	6.2	41.58	12.42
904.6	4,523.10	9.0	H	2.56	33.90	6.2	39.26	14.74
904.6	4,523.10	11.1	V	2.56	33.90	6.2	41.36	12.64
915.0	915.00	52.9	V	4.35	23.60	6.2	74.65	19.36
915.0	915.00	55.0	H	4.35	24.85	6.2	78	16.01
915.0	1,830.00	26.6	V	1.62	30.54	6.2	52.56	1.44
915.0	1,830.00	27.5	H	1.62	30.54	6.2	53.46	0.54
915.0	2,745.00	14.8	V	2.00	32.70	6.2	43.3	10.7
915.0	2,745.00	15.3	H	2.00	32.70	6.2	43.8	10.2
915.0	3,660.00	8.9	H	2.30	33.23	6.2	38.23	15.77
915.0	3,660.00	9.5	V	2.30	33.23	6.2	38.83	15.17
915.0	4,575.00	6.7	V	2.57	33.92	6.2	36.99	17.01
915.0	4,575.00	7.0	H	2.57	33.92	6.2	37.29	16.71

[Continued]

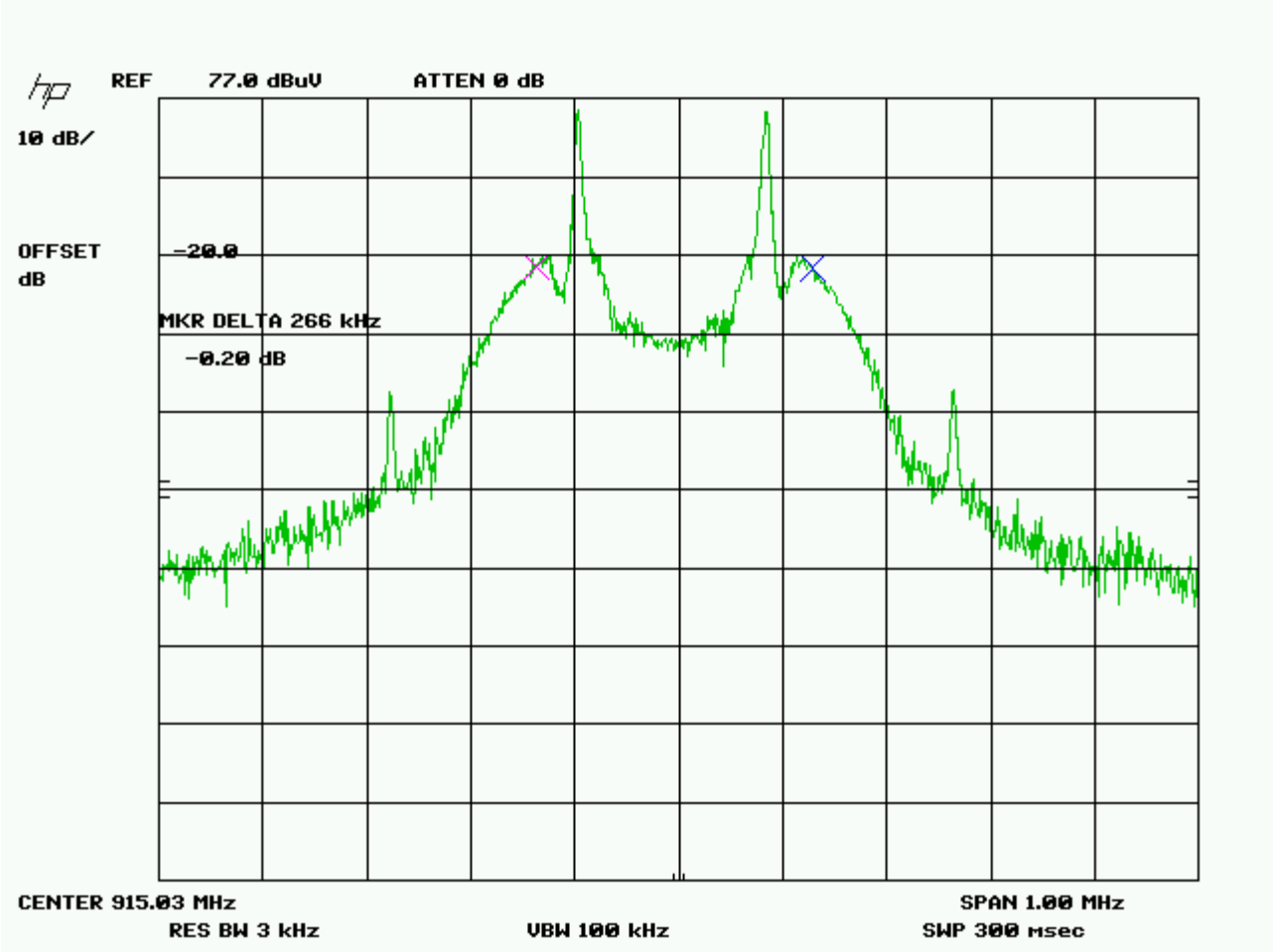
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Polarity H/V	Coax Loss dB	Correction Factor dB/m	Duty Cycle dB	Field Strength dBµV/m	Margin dB
927.5	927.50	49.3	V	3.88	25.23	6.2	72.21	21.79
927.5	927.50	51.3	H	3.88	26.63	6.2	75.61	18.39
927.5	1,855.00	27.5	V	1.63	30.74	6.2	53.67	0.33
927.5	1,855.00	27.7	H	1.63	30.74	6.2	53.87	0.13
927.5	2,782.50	11.7	V	2.01	32.71	6.2	40.22	13.78
927.5	2,782.50	15.9	H	2.01	32.71	6.2	44.42	9.58
927.5	3,710.00	8.7	H	2.31	33.27	6.2	38.08	15.92
927.5	3,710.00	9.2	V	2.31	33.27	6.2	38.58	15.42
927.5	4,637.50	8.0	V	2.59	33.93	6.2	38.32	15.68
927.5	4,637.50	8.5	H	2.59	33.93	6.2	38.82	15.18

OCCUPIED BANDWIDTH

Rules Part No.: 15.249 (d)

Requirements: The field strength of any emissions appearing outside the bandedges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

Test Data:



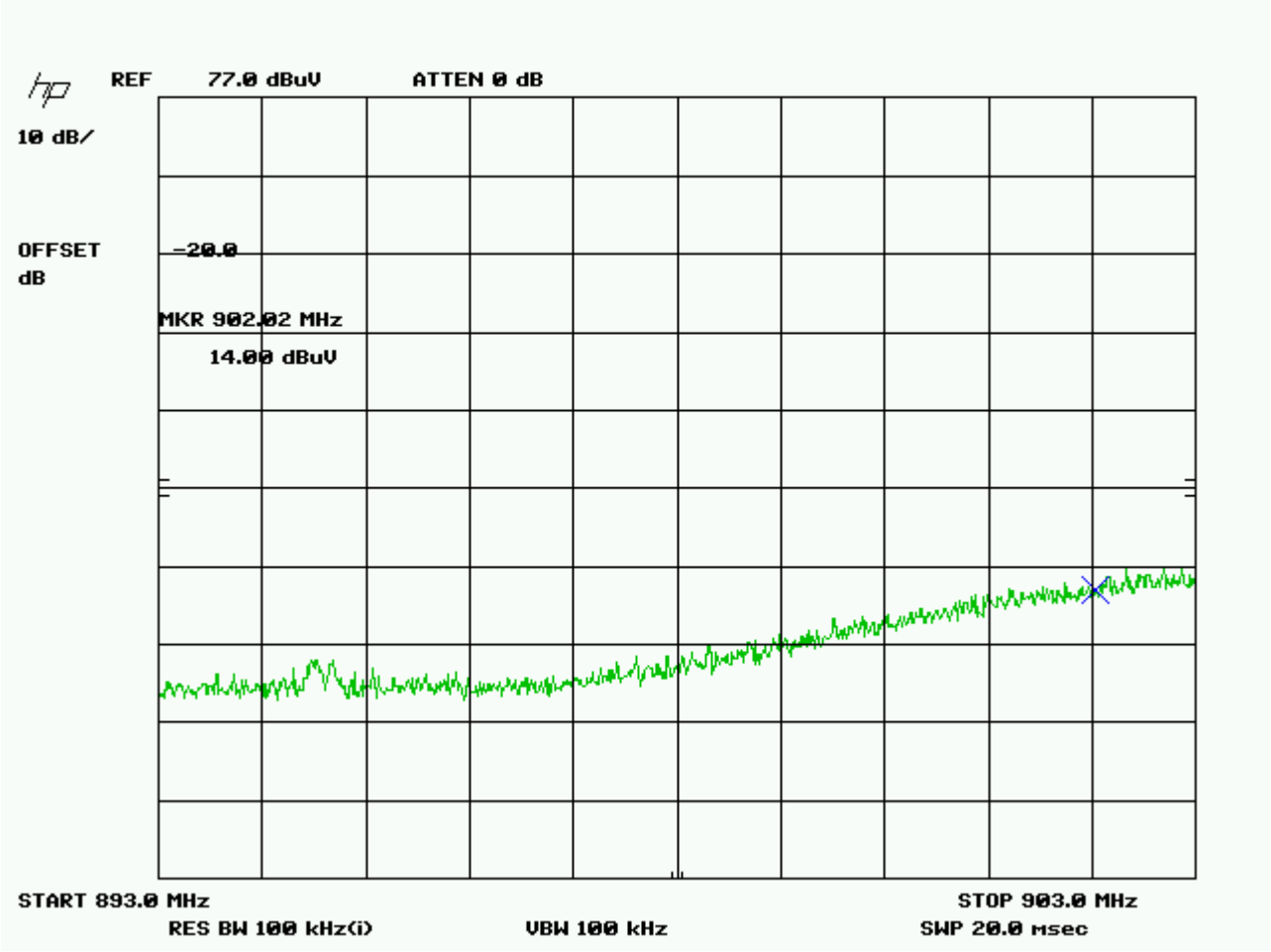
BAND EDGE COMPLIANCE

Rules Part No.: 15.249 (d)

Requirements: 40 dBc or in the case of restricted bands 54 dBµV/m.

Test Data:

Lower bandedge

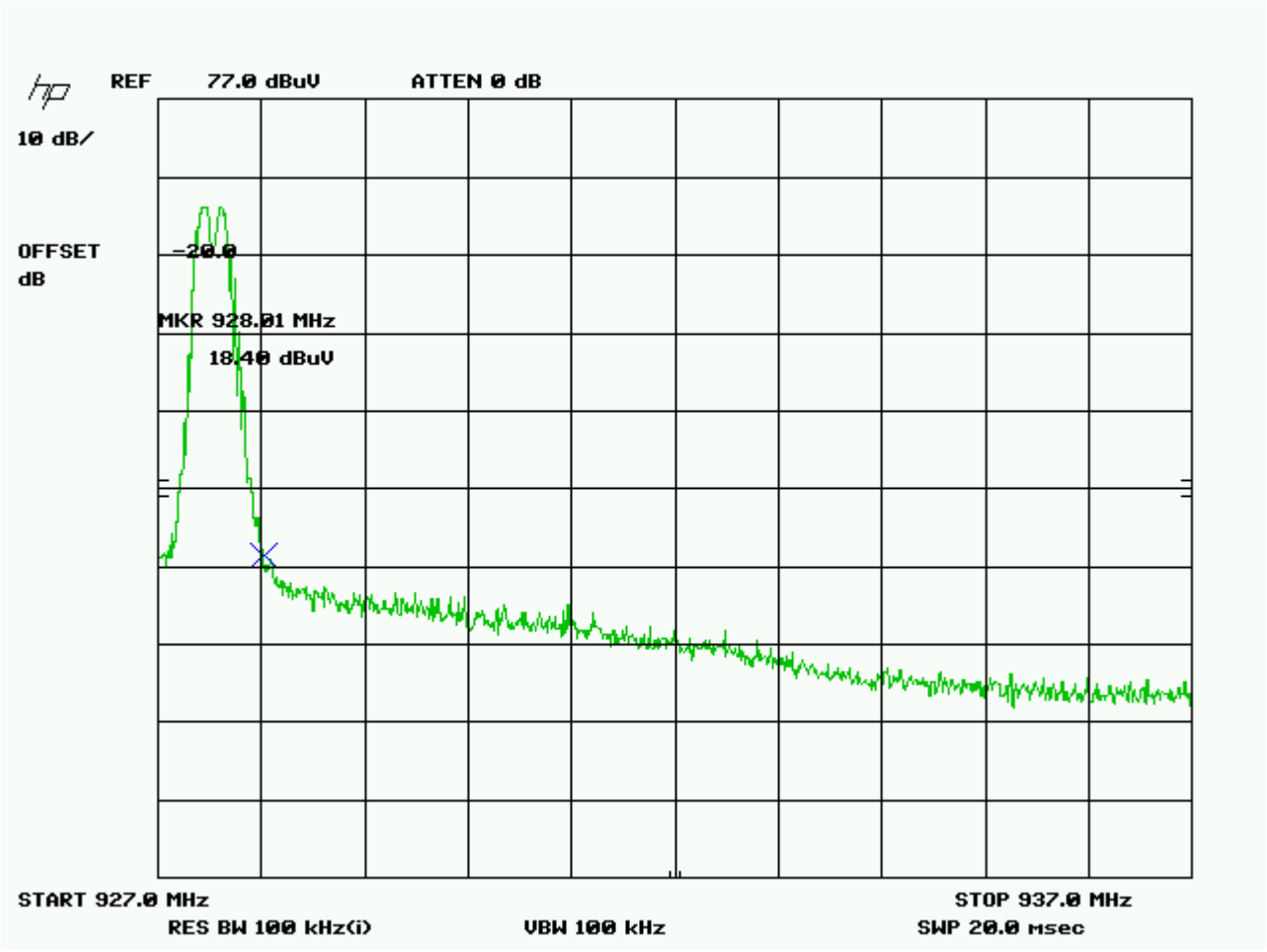


Peak Plot

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
904.6	902.00	14.0	H	1.95	23.32	39.27	6.73

Lower bandedge

Upper bandedge

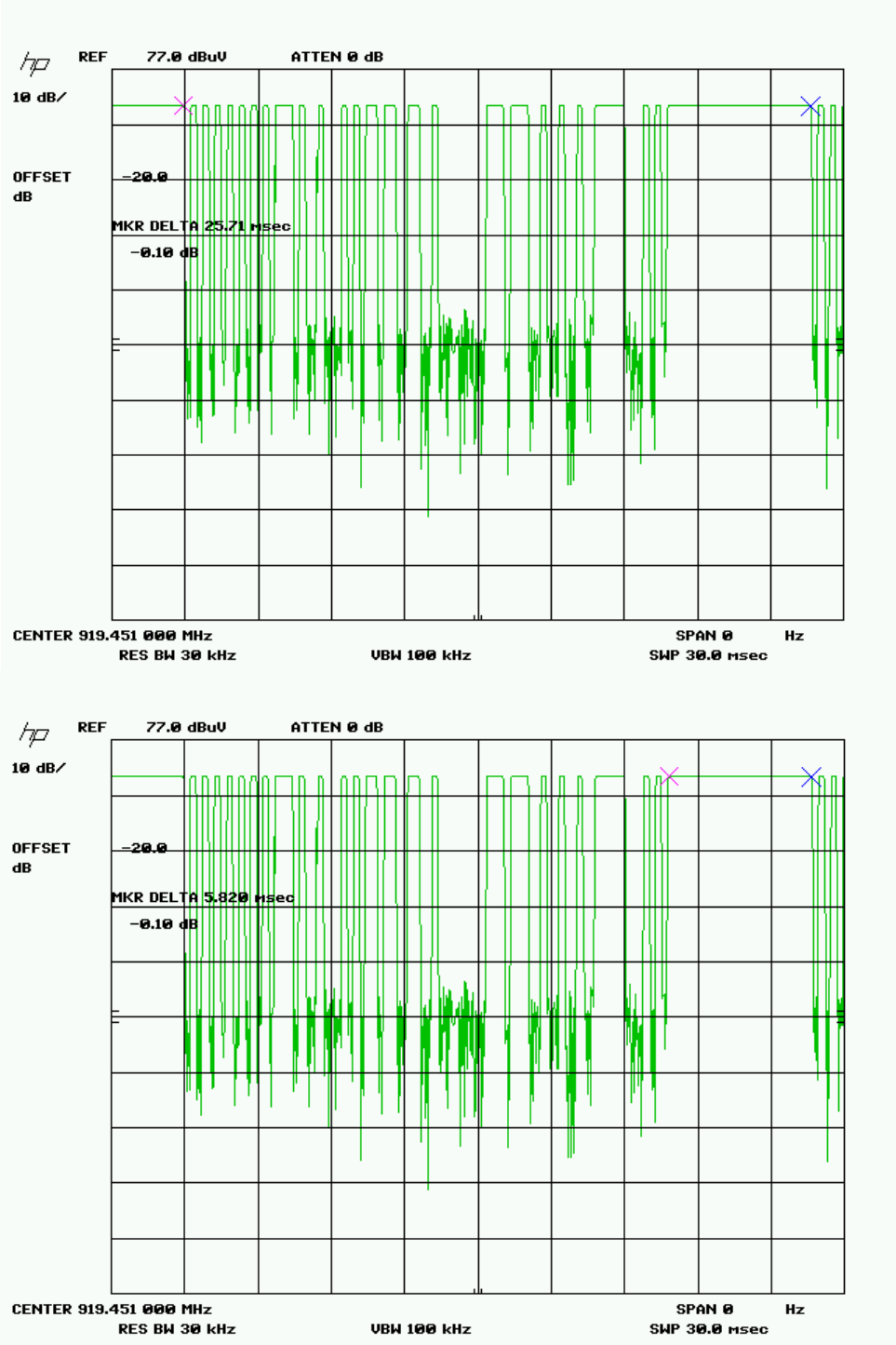


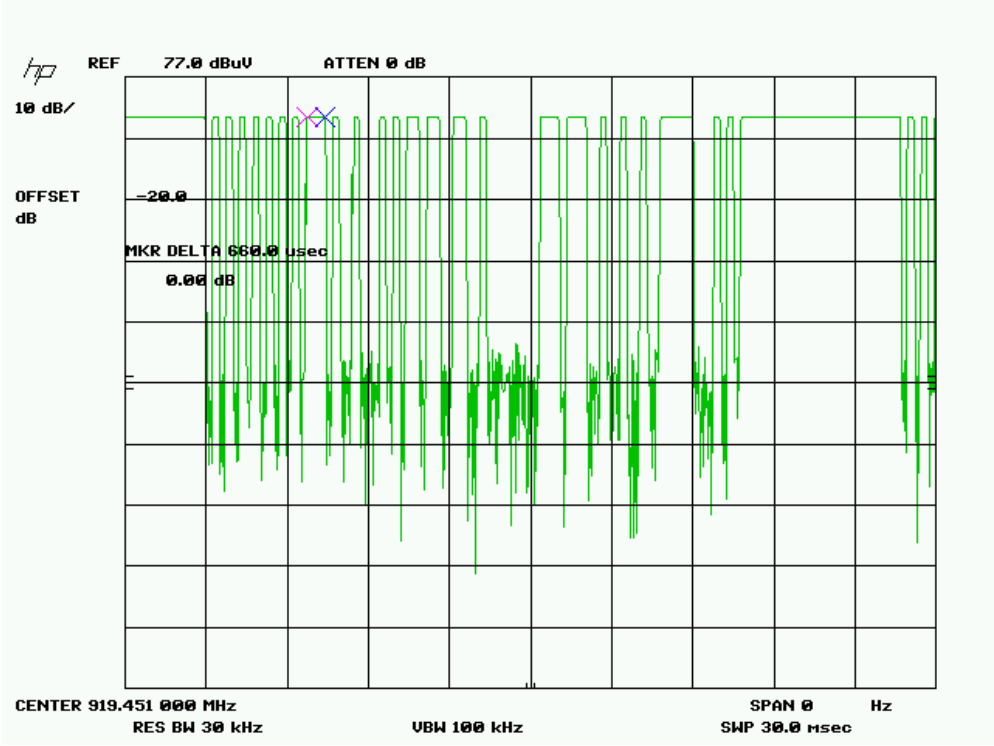
Peak Plot

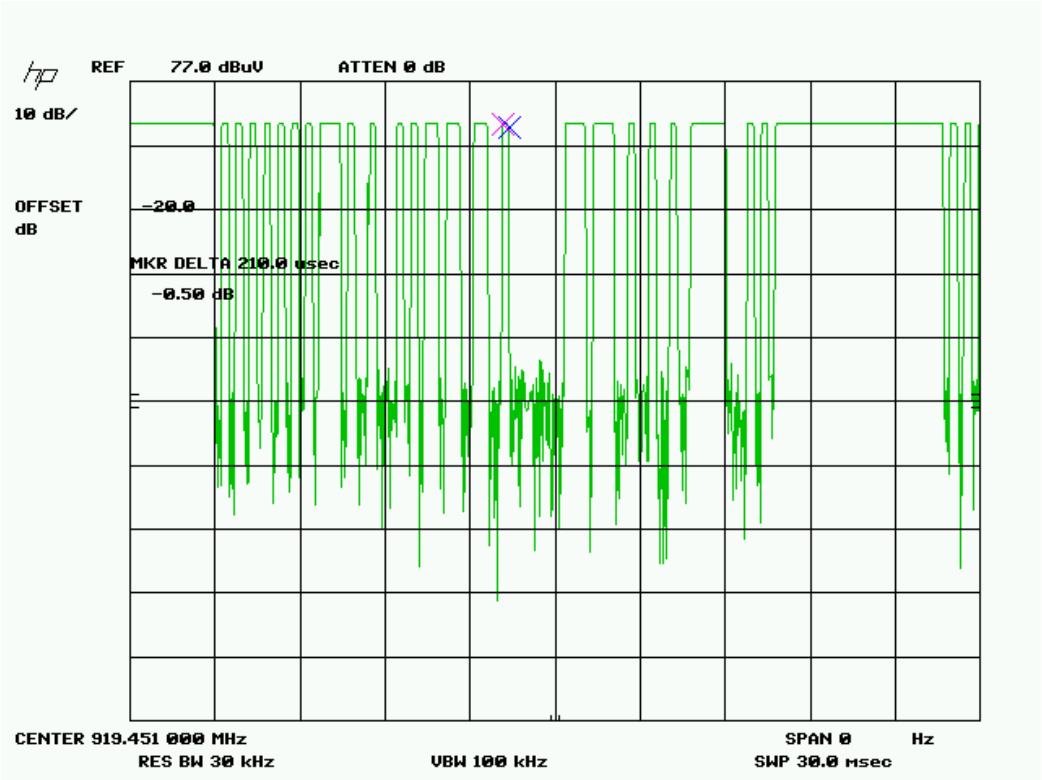
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBµV	Ant. Polarity V/H	Coax Loss dB	Correction Factor dB/m	Field Strength dBµV/m	Margin dB
927.5	928.00	18.4	H	1.99	23.46	43.85	2.15

DUTY CYCLE

Total # of pulses: 49 in 100 ms
Duration of pulse: 1.5 ms maximum duration of pulse according to manufacturer.
20*log ((49)/100)=20*log (0.49)=6.2 dB




REF 77.0 dBuV
ATTEN 0 dB
10 dB/
OFFSET
dB
-20.0
MKR DELTA 660.0 usec
0.00 dB
CENTER 919.451 000 MHz
SPAN 0 Hz
RES BW 30 kHz
VBW 100 kHz
SWP 30.0 msec


REF 77.0 dBuV
ATTEN 0 dB
10 dB/
OFFSET
dB
-20.0
MKR DELTA 210.0 usec
-0.50 dB
CENTER 919.451 000 MHz
SPAN 0 Hz
RES BW 30 kHz
VBW 100 kHz
SWP 30.0 msec

POWER LINE CONDUCTED INTERFERENCE

Rules Part No.: 15.207

Requirements:

Frequency (MHz)	Quasi Peak Limits (dBµV)	Average Limits (dBµV)
0.15 – 0.5	66 – 56	56 – 46
0.5 – 5.0	56	46
5.0 – 30	60	50

Test Data N/A. Battery or vehicle powered DUT.