

DATE: 16 April 2006


I.T.L. (PRODUCT TESTING) LTD.

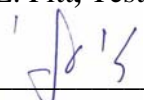
FCC Test Report
for
Galcon Galil Control

Equipment under test:
DC Radio Programmer Rev. B
(For Transmitter Section)

10,000

Written by: 
D. Shidlow, Documentation

Approved by: 
E. Pitt, Test Engineer

Approved by: 
I. Raz, EMC Laboratory Manager

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This report relates only to items tested.

Measurement/Technical Report for Galcon Galil Control

Equipment under test:
DC Radio Programmer Rev. B
(For Transmitter Section)

FCC ID: SZ810000

DATE: 16 April 2006

This report concerns:	Original Grant:	Class II change: X
Class B verification:	Class A verification:	Class I change:

Equipment type: Radio Telemetry Transmitter
Request Issue of Grant:
X Immediately upon completion of review

Limits used:
CISPR 22: Part 15: X

Measurement procedure used is ANSI C63.4-2003.

Application for Certification
prepared by:
Ishaiahou Raz
ITL (Product Testing) Ltd.
POB 211
Or Yehuda 60251
Israel
Tel: +972-3-533-9022
Fax: +972-3-533-9019
Email: sraz@itl.co.il

Applicant for this device:
(different from "prepared by")
Shay Shtekelmacher
Galcon Galil Control
Kibbutz Kfar Blum
D.N. 12150
Israel
Tel: +972-4-690-0222
Fax: +972-4-690-2727
Email: shaysc@galcon.co.il

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1. General Information

1.1 Administrative Information

Manufacturer:	Galcon Galil Control
Manufacturer's Address:	Kibbutz Kfar Blum Upper Galilee D.N. 12150 Israel Tel: +972-4-690-0222 Fax: +972-4-690-2727
Manufacturer's Representative:	Shay Shtekelmacher Eitain Gabay
Equipment Under Test (E.U.T):	DC Radio Programmer Rev. B
Equipment Model No.:	10,000
Equipment Serial No.:	Z0000273
Date of Receipt of E.U.T:	13.02.06
Start of Test:	13.02.06
End of Test:	13.02.06
Test Laboratory Location:	I.T.L (Product Testing) Ltd. Kfar Bin Nun, ISRAEL 99780
Test Specifications:	FCC Part 15, Sub-part C

1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), Registration No. 90715.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) (Japan), Registration Numbers: C-1350, R-1285.
5. Industry Canada (Canada), File No. IC 4025.
6. TUV Product Services, England, ASLLAS No. 97201.
7. Nemko (Norway), Authorization No. ELA 207.

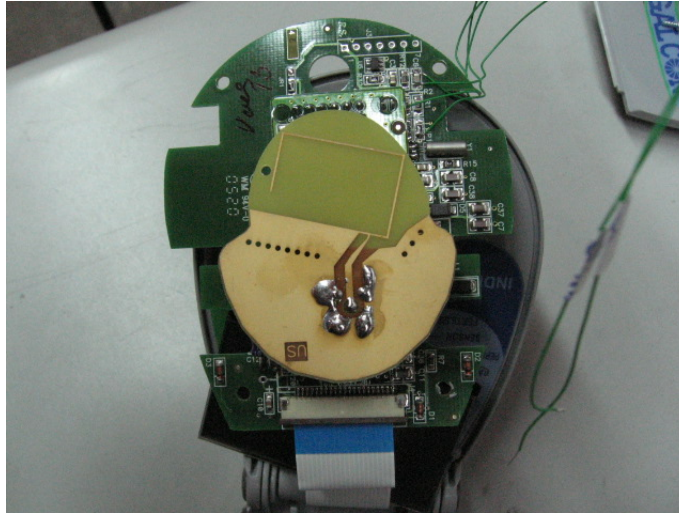
I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

See details in ITL test report no. E58571.00

Description of change:

The antenna was changed from the original antenna to a new one (see photograph of the new antenna below).



1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4: 2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The radiated emissions tests were performed at I.T.L.'s testing facility at Kfar Bin-Nun, Israel. This site is a FCC listed test laboratory (FCC Registration No. 90715, date of listing December 12, 2003).

I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 Measurement Uncertainty

Radiated Emission

The Open Site complies with the ± 4 dB Normalized Site Attenuation requirements of ANSI C63.4-2003. In accordance with Paragraph 5.4.6.1 of this standard, this tolerance includes instrumentation calibration errors, measurement technique errors, and errors due to site anomalies.

2. Product Labeling



Figure 1. FCC Label

3. System Test Configuration

3.1 *Justification*

See ITL test report no. E58571.00.
Spurious radiated emissions re-testing and band edge testing were performed according to correspondence with Timco dated 26 September 2005. See Appendix B Correspondence.

3.2 *EUT Exercise Software*

See ITL test report no. E58571.00.

3.3 *Special Accessories*

See ITL test report no. E58571.00.

3.4 *Equipment Modifications*

See ITL test report no. E58571.00.

3.5 *Configuration of Tested System*

The configuration of the tested system is described below.

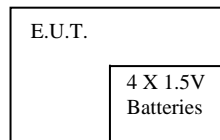


Figure 2. Configuration of Tested System

4. Block Diagram

4.1 Schematic Block/Connection Diagram

Intentionally Blank for Reasons of Confidentiality

4.2 Theory of Operation

See ITL test report no. E58571.00.

5. Radiated Measurement Photo



Figure 3. Radiated Emission Test

6. Field Strength of Fundamental

6.1 Test Specification

F.C.C., Part 15, Subpart C, Section 15.249(a)

6.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 3.

The E.U.T. was placed on a non-conductive table, 0.8 meters above the O.A.T.S. ground plane.

The EMI receiver was set to the E.U.T. Fundamental Frequency (916.00MHz) and Peak Detection.

The turntable and antenna mast were adjusted for maximum level reading on the EMI receiver.

The measurement was performed for vertical and horizontal polarizations of the test antenna.

The final average result is:

Peak Level(dB μ V/m) + E.U.T. Duty Cycle Factor, in 100msec time window (dB) which shall not exceed the limit in Section 15.249(a).

The Peak field strength shall not exceed the average limit by more than 20 dB.

6.3 Measured Data

JUDGEMENT: Passed by 10.5 dB

The EUT met the FCC Part 15, Subpart C, Section 15.249(a) specification requirements.

The details of the highest emissions are given in Figure 4 to Figure 5.

TEST PERSONNEL:

Tester Signature: E. Pitt Date: 20.04.06

Typed/Printed Name: E. Pitt

Field Strength of Fundamental

E.U.T Description DC Radio Programmer Rev. B
 Model Number 10,000
 Serial Number: Z0000273

Specification: F.C.C., Part 15, Subpart C 15.249(a)

Antenna Polarization:
 Horizontal/Vertical

Test Distance: 3 meters

Detector: Peak

Freq.	Pol.	Peak Reading	Peak Specification	Margin
(MHz)	V/H	(dB μ V/m)	(3) (dB μ V/m)	(dB)
916.00	H	85.89	114.0	-28.11
916.00	V	89.52	114.0	-24.48

Figure 4. Field Strength of Fundamental. Antenna Polarization: HORIZONTAL/VERTICAL. Detector: Peak

Note: Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

“Peak Reading” includes “Correction Factors.

“Correction factors” = Antenna Correction Factor + Cable Loss

Field Strength of Fundamental

E.U.T Description DC Radio Programmer Rev. B
 Model Number 10,000
 Serial Number: Z0000273

Specification: F.C.C., Part 15, Subpart C 15.249(a)

Antenna Polarization:
 Horizontal/Vertical

Test Distance: 3 meters

Detector: Peak

Freq.	Pol.	Peak Reading (1)	D.C.F. (2)	Final Result (3)	AVG. Specification	Margin
(MHz)	V/H	(dB μ V/m)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)
916.00	H	85.89	-6.0	79.89	94.0	-14.11
916.00	V	89.52	-6.0	83.52	94.0	-10.48

**Figure 5. Field Strength of Fundamental. Antenna Polarization: HORIZONTAL/VERTICAL.
 Detector: Peak**

Note: Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

(1) "Peak Amp." includes "Correction Factors."
 "Correction Factors" = Antenna Correction Factor + Cable Loss.

(2) "Duty Cycle Factor (D.C.F.) = $20\log\frac{50}{100} = -6.0dB$

(See Section 4.2 of ITL test report no. E58751.00).

(3) "Final Result" = "Peak Reading" + D.C.F. (dB).

6.4 *Test Instrumentation Used, Field Strength of Fundamental*

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3411A00102	February 22, 2006	1 year
RF Section	HP	85420E	3427A00103	February 22, 2006	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	October 17, 2005	1 year
Antenna Mast	ARA	AAM-4A	1001	N/A	N/A
Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A
Printer	HP	ThinkJet 2225	2738508357.0	N/A	N/A

7. Spurious Radiated Emission Data Below 1 GHz

7.1 Spurious Radiated Emission 9kHz-1000 MHz,

The E.U.T. operation mode and test set-up are as described in Section 3.

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 2.

The frequency range 9kHz-1000 MHz was scanned, and the list of the highest emissions was verified and updated accordingly.

The emissions were measured using a computerized EMI receiver complying to CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 9 kHz-30 MHz, the loop antenna was rotated on its vertical axis. The antenna height (center of loop) was 1 meter.

In the frequency range 30-1000 MHz, the readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization.

Verification of the E.U.T emissions was based on the following methods:

- Turning the E.U.T on and off.

- Using a frequency span less than 10 MHz.

- Observation of the signal level during turntable rotation. Background noise is not affected by the rotation of the E.U.T.

During this test the E.U.T. was operated in continuous transmission to enable better detection of signals.

7.2 **Measured Data**

JUDGEMENT: Passed by 12.3 dB

The signals in the band 9 kHz – 30 MHz were 20dB below the specification limit.

The margin between the emission level and the specification limit is 12.3 dB in the worst case at the frequency of 545.59 MHz, horizontal polarization.

The EUT met the requirements of the F.C.C. Part 15, Subpart C, Section 15.249 specification.

The details of the highest emissions are given in Figure 6 to Figure 9.

TEST PERSONNEL:

Tester Signature: 

Date: 20.04.06

Typed/Printed Name: E. Pitt

Radiated Emission

E.U.T Description DC Radio Programmer Rev. B
 Model Number 10,000
 Serial Number: Z0000273

Specification: F.C.C., Part 15, Subpart C: Section 15.249

Antenna Polarization: Horizontal Frequency range: 30 to 1000 MHz
 Test Distance: 3 meters Detector: Peak, Quasi-peak

Frequency (MHz)	Peak Amp (dB μ V/m)	QP Amp (dB μ V/m)	Correction (dB)	Specification (dB μ V/m)	Margin (dB)
147.46	32.6	26.1	14.5	43.5	-17.4
162.20	31.9	26.0	14.9	43.5	-17.5
235.93	35.5	30.9	19.0	46.0	-15.1
309.66	33.3	27.3	15.9	46.0	-18.7
339.15	32.9	28.3	17.0	46.0	-17.7
545.59	39.0	33.7	22.0	46.0	-12.3

**Figure 6. Spurious Radiated Emission. Antenna Polarization: HORIZONTAL.
 Detector: Peak, Quasi-peak**

Note: Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Radiated Emission

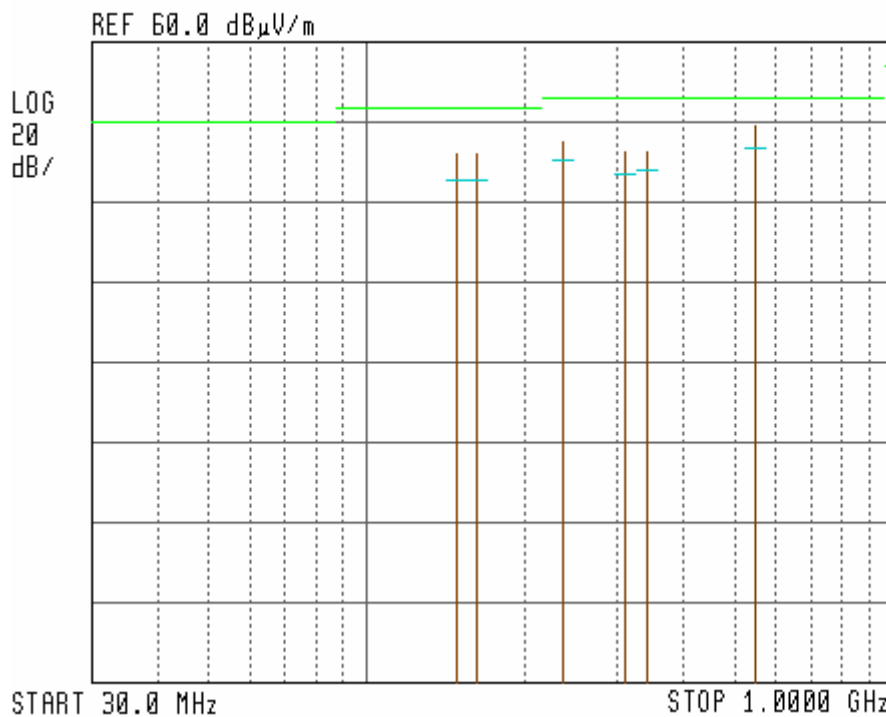
E.U.T Description DC Radio Programmer Rev. B
 Model Number 10,000
 Serial Number: Z0000273

Specification: F.C.C., Part 15, Subpart C: Section 15.249

Antenna Polarization: Horizontal
 Test Distance: 3 meters

Frequency range: 30 to 1000 MHz
 Detector: Peak, Quasi-peak

16:16:04 FEB 13, 2006



**Figure 7. Radiated Emission. Antenna Polarization: HORIZONTAL
 Detectors: Peak, Quasi-peak**

Note:

1. Horizontal axis shows logarithmic frequency scale.
2. The vertical axis shows amplitude (in dB μ V/m).
3. Peak detection is designated by the top of each vertical line.
4. Quasi-peak detection is designated by the first dash mark (from the top) of each vertical line.

Radiated Emission

E.U.T Description DC Radio Programmer Rev. B
 Type 10,000
 Serial Number: Z0000273

Specification: F.C.C., Part 15, Subpart C: Section 15.249

Antenna Polarization: Vertical
 Test Distance: 3 meters

Frequency range: 30 to 1000 MHz
 Detector: Peak, Quasi-peak

Frequency (MHz)	Peak Amp (dB μ V/m)	QP Amp (dB μ V/m)	Correction (dB)	Specification (dB μ V/m)	Margin (dB)
132.71	34.2	25.0	13.7	43.5	-18.5
147.46	30.9	24.8	14.5	43.5	-18.7
235.93	35.7	30.4	19.0	46.0	-15.6
309.66	32.2	27.2	15.9	46.0	-18.8
339.15	33.6	28.3	17.0	46.0	-17.7
412.88	36.5	30.9	19.3	46.0	-15.1

**Figure 8. Spurious Radiated Emission. Antenna Polarization: VERTICAL.
 Detector: Peak, Quasi-peak**

Note: Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

Radiated Emission

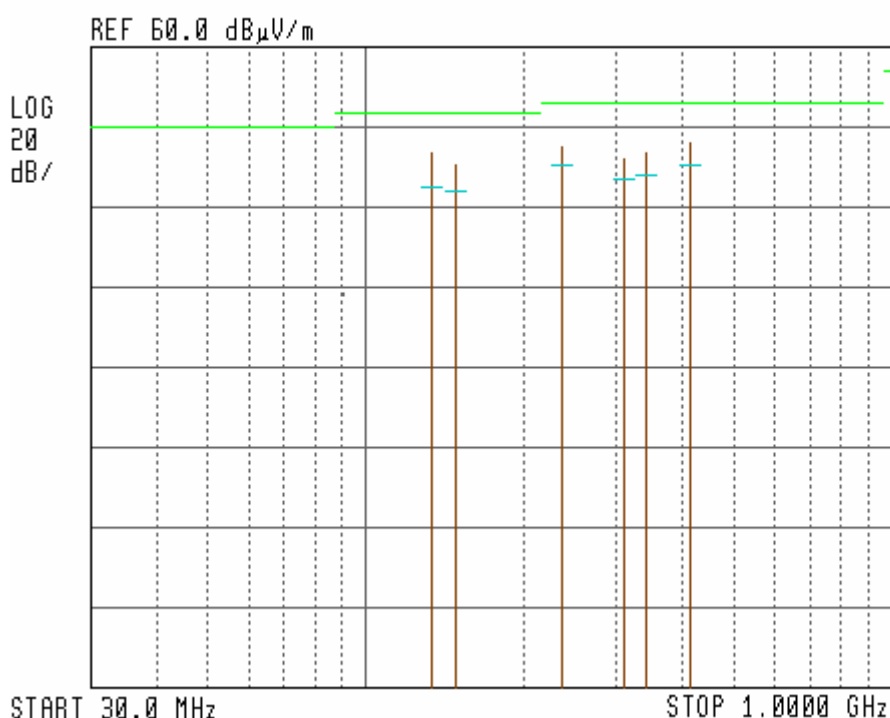
E.U.T Description DC Radio Programmer Rev. B
 Model Number 10,000
 Serial Number: Z0000273

Specification: F.C.C., Part 15, Subpart C: Section 15.249

Antenna Polarization: Vertical
 Test Distance: 3 meters

Frequency range: 30 to 1000 MHz
 Detector: Peak, Quasi-peak

15:45:14 FEB 13, 2006



**Figure 9. Radiated Emission. Antenna Polarization: VERTICAL
 Detectors: Peak, Quasi-peak**

Note:

1. Horizontal axis shows logarithmic frequency scale.
2. The vertical axis shows amplitude (in dB μV/m).
3. Peak detection is designated by the top of each vertical line.
4. Quasi-peak detection is designated by the first dash mark (from the top) of each vertical line.

7.3 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3411A00102	February 22, 2006	1 year
RF Section	HP	85420E	3427A00103	February 22, 2006	1 year
Antenna Bioconical	ARA	BCD 235/B	1041	March 14, 2005	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	October 17, 2005	1 year
Active Loop Antenna	EMCO	6502	9506-2950	October 17, 2005	1 year
Antenna Mast	ARA	AAM-4A	1001	N/A	N/A
Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A
Printer	HP	ThinkJet 2225	2738508357.0	N/A	N/A

7.4 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$[\text{dB}\mu\text{v/m}] \text{ FS} = \text{RA} + \text{AF} + \text{CF}$$

FS:	Field Strength [dB μ v/m]
RA:	Receiver Amplitude [dB μ v]
AF:	Receiving Antenna Correction Factor [dB/m]
CF:	Cable Attenuation Factor [dB]

8. Spurious Radiated Emission Above 1 GHz

8.1 Spurious Radiated Emission Above 1 GHz

The E.U.T operation mode and test set-up are as described in Section 3.

A preliminary measurement to characterize the E.U.T was performed inside the shielded room, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground.

The emission levels were compared to the requirement of Section 15.249.

In the frequency range 1-2.9 GHz, a computerized EMI receiver complying to CISPR 16 requirements and a High Pass Filter were used. The test distance was 3 meters.

In the frequency range 2.9-9.5 GHz, a spectrum analyzer including a low noise amplifier was used. The test distance was 3 meters. During peak measurements, the I.F. bandwidth was 1 MHz, and video bandwidth 3 MHz. During average measurements, the I.F. bandwidth was 1 MHz and video bandwidth was 100 Hz.

The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization.

The configuration tested is shown in Figure 2.

8.2 Test Data

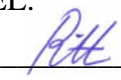
JUDGEMENT: Passed by 3.4 dB

The margin between the emission level and the specification limit is 3.4 dB in the worst case at the frequency of 2748.00 MHz, horizontal polarization.

The EUT met the requirements of the F.C.C. Part 15, Subpart C Section 15.249, specification.

The details of the highest emissions are given in Figure 10 to Figure 11.

TEST PERSONNEL:

Tester Signature: 

Date: 20.04.06

Typed/Printed Name: E. Pitt

8.3 *Test Instrumentation Used, Spurious Radiated Measurements Above 1 GHz*

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
Receiver	HP	85422E	3411A00102	February 22, 2006	1 year
RF Section	HP	85420E	3427A00103	February 22, 2006	1 year
Antenna Mast	ARA	AAM-4A	1001	N/A	N/A
Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A
Printer	HP	ThinkJet2225	2738508357	N/A	N/A
Antenna-Log Periodic	A.H.System	SAS-200/511	253	January 24, 2005	2 year
Low Noise Amplifier	DBS MICROWAVE	LNA-DBS-0411N313	013	October 16, 2005	1 year
Spectrum Analyzer	HP	8592L	3926A01204	February 6, 2006	1 year

9. Band Edge Spectrum

[In Accordance with section 15.249]

9.1 Test procedure

The E.U.T operation mode and test set-up are as described in Section 3.

The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 3.

The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization.

During measurements, the IF BW was 120 kHz and VBW was 300 kHz.

9.2 Results table

E.U.T. Description: DC Radio Programmer Rev. B

Model No.: 10,000

Serial Number: Z0000273


Specification: FCC Part 15, Subpart C (15.249)

Operation Frequency (MHz)	Band Edge Frequency (MHz)	Spectrum Level (dBμV/m)	Specification (dBμV/m)	Margin (dB)
916.0	902.0	34.0	46.0	-12.0
916.0	928.0	35.7	46.0	-10.3

Figure 12 Band Edge Spectrum

JUDGEMENT: Passed by 10.3 dB

TEST PERSONNEL:

Tester Signature: 

Date: 20.04.06

Typed/Printed Name: E. Pitt

9.3 Test Equipment Used.

Band edge Spectrum

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
Receiver	HP	85422E	3411A00102	February 22, 2006	1 year
RF Section	HP	85420E	3427A00103	February 22, 2006	1 year
Antenna Log Periodic	ARA	LPD-2010/a	1038	October 17, 2005	1 year
Antenna Mast	ARA	AAM-4A	1001	N/A	N/A
Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A
Printer	HP	ThinkJet2225	2738508357	N/A	N/A

Figure 13 Test Equipment Used

10. APPENDIX A - CORRECTION FACTORS

10.1 Correction factors for CABLE

from EMI receiver
to test antenna
at 3 meter range.

FREQUENCY (MHz)	CORRECTION FACTOR (dB)	FREQUENCY (MHz)	CORRECTION FACTOR (dB)
10.0	0.3	1200.0	7.3
20.0	0.6	1400.0	7.8
30.0	0.8	1600.0	8.4
40.0	0.9	1800.0	9.1
50.0	1.1	2000.0	9.9
60.0	1.2	2300.0	11.2
70.0	1.3	2600.0	12.2
80.0	1.4	2900.0	13.0
90.0	1.6		
100.0	1.7		
150.0	2.0		
200.0	2.3		
250.0	2.7		
300.0	3.1		
350.0	3.4		
400.0	3.7		
450.0	4.0		
500.0	4.3		
600.0	4.7		
700.0	5.3		
800.0	5.9		
900.0	6.3		
1000.0	6.7		

NOTES:

1. The cable type is RG-214.
2. The overall length of the cable is 27 meters.
3. The above data is located in file 27MO3MO.CBL on the disk marked "Radiated Emission Tests EMI Receiver".

10.2 Correction factors for

CABLE

from spectrum analyzer
to test antenna
at 3 meter range.

FREQUENCY (GHz)	CORRECTION FACTOR (dB)
1.0	1.2
2.0	1.6
3.0	2.0
4.0	2.4
5.0	3.0
6.0	3.4
7.0	3.8
8.0	4.2
9.0	4.6
10.0	5.0
12.0	5.8

NOTES:

1. The cable type is RG-8.
2. The overall length of the cable is 10 meters.

10.3 Correction factors for

CABLE

from EMI receiver
to test antenna

FREQUENCY (MHz)	CORRECTION FACTOR (dB)	FREQUENCY (MHz)	CORRECTION FACTOR (dB)
10.0	0.2	1200.0	1.6
20.0	0.2	1400.0	1.8
30.0	0.2	1600.0	2.1
40.0	0.2	1800.0	2.2
50.0	0.3	2000.0	2.3
60.0	0.4	2300.0	2.8
70.0	0.4	2600.0	2.7
80.0	0.4	2900.0	3.1
90.0	0.5		
100.0	0.5		
150.0	0.6		
200.0	0.6		
250.0	0.7		
300.0	0.8		
350.0	0.9		
400.0	1.0		
450.0	1.1		
500.0	1.2		
600.0	1.3		
700.0	1.4		
800.0	4.4		
900.0	1.5		
1000.0	1.5		

NOTES:

1. The cable type is RG-214.
2. The overall length of the cable is 5.5 meters.

10.4 Correction factors for CABLE

from spectrum analyzer
to test antenna above 2.9 GHz

FREQUENCY (GHz)	CORRECTION FACTOR (dB)	FREQUENCY (GHz)	CORRECTION FACTOR (dB)
1.0	1.9	14.0	9.1
2.0	2.7	15.0	9.5
3.0	3.5	16.0	9.9
4.0	4.2	17.0	10.2
5.0	4.9	18.0	10.4
6.0	5.5	19.0	10.7
7.0	6.0	20.0	10.9
8.0	6.5	21.0	11.2
9.0	7.0	22.0	11.6
10.0	7.5	23.0	11.9
11.0	7.9	24.0	12.3
12.0	8.3	25.0	12.6
13.0	8.7	26.0	13.0

NOTES:

1. The cable type is SUCOFLEX 104 E manufactured by SUHNER.
2. The cable is used for measurements above 2.9 GHz.
3. The overall length of the cable is 10 meters.

10.5 Correction factors for CABLE

from EMI receiver
to test antenna
at 10 meter range.

FREQUENCY (MHz)	CORRECTION FACTOR (dB)	FREQUENCY (MHz)	CORRECTION FACTOR (dB)
10.0	0.3	1200.0	9.8
20.0	0.8	1400.0	10.0
30.0	0.9	1600.0	11.3
40.0	1.2	1800.0	12.2
50.0	1.4	2000.0	13.1
60.0	1.6	2300.0	14.5
70.0	1.8	2600.0	15.9
80.0	1.9	2900.0	16.4
90.0	2.0		
100.0	2.1		
150.0	2.6		
200.0	3.2		
250.0	3.8		
300.0	4.2		
350.0	4.6		
400.0	5.1		
450.0	5.3		
500.0	5.6		
600.0	6.3		
700.0	7.0		
800.0	7.6		
900.0	8.0		
1000.0	8.7		

NOTES:

1. The cable type is RG-214.
2. The overall length of the cable is 34 meters.
3. The above data is located in file 34M10MO.CBL on the disk marked "Radiated Emissions Tests EMI Receiver".

10.6 Correction factors for

LOG PERIODIC ANTENNA

Type LPD 2010/A

at 3 and 10 meter ranges.

Distance of 3 meters

FREQUENCY (MHz)	AFE (dB/m)
200.0	9.1
250.0	10.2
300.0	11.4
400.0	14.5
500.0	15.2
600.0	17.3
700.0	19.0
850.0	20.1
1000.0	22.2

Distance of 10 meters

FREQUENCY (MHz)	AFE (dB/m)
200.0	9.0
250.0	10.1
300.0	11.2
400.0	14.4
500.0	15.2
600.0	17.2
700.0	19.0
850.0	20.1
1000.0	22.1

NOTES:

1. Antenna serial number is 1038.
2. The above lists are located in file number 38M30.ANT for a 3 meter range, and file number 38M100.ANT for a 10 meter range.
3. The files mentioned above are located on the disk marked "Radiated Emission Test EMI Receiver".

10.7 Correction factors for

BICONICAL ANTENNA

**Type BCD-235/B,
at 3 meter range**

FREQUENCY (MHz)	AFE (dB/m)
20.0	19.4
30.0	14.8
40.0	11.9
50.0	10.2
60.0	9.1
70.0	8.5
80.0	8.9
90.0	9.6
100.0	10.3
110.0	11.0
120.0	11.5
130.0	11.7
140.0	12.1
150.0	12.6
160.0	12.8
170.0	13.0
180.0	13.5
190.0	14.0
200.0	14.8
210.0	15.3
220.0	15.8
230.0	16.2
240.0	16.6
250.0	17.6
260.0	18.2
270.0	18.4
280.0	18.7
290.0	19.2
300.0	19.9
310	20.7
320	21.9
330	23.4
340	25.1
350	27.0

NOTES:

1. Antenna serial number is 1041.
2. The above list is located in file 19BC10M1.ANT on the disk marked "Radiated Emissions Tests EMI Receiver".

10.8 Correction factors for ACTIVE LOOP ANTENNA

Model 6502

S/N 9506-2950

FREQUENCY	Magnetic Antenna Factor	Electric Antenna Factor
(MHz)	(dB)	(dB)
.009	-35.1	16.4
.010	-35.7	15.8
.020	-38.5	13.0
.050	-39.6	11.9
.075	-39.8	11.8
.100	-40.0	11.6
.150	-40.0	11.5
.250	-40.0	11.6
.500	-40.0	11.5
.750	-40.1	11.5
1.000	-39.9	11.7
2.000	-39.5	12.0
3.000	-39.4	12.1
4.000	-39.7	11.9
5.000	-39.7	11.8
10.000	40.2	11.3
15.000	-40.7	10.8
20.000	-40.5	11.0
25.000	-41.3	10.2
30.000	42.3	9.2

10.9 Correction factors for LOG PERIODIC ANTENNA

**Type SAS-200/511
at 3 meter range.**

FREQUENCY (GHz)	ANTENNA FACTOR (dB)
1.0	24.9
1.5	27.8
2.0	29.9
2.5	31.2
3.0	32.8
3.5	33.6
4.0	34.3
4.5	35.2
5.0	36.2
5.5	36.7
6.0	37.2
6.5	38.1

FREQUENCY (GHz)	ANTENNA FACTOR (dB)
7.0	38.6
7.5	39.2
8.0	39.9
8.5	40.4
9.0	40.8
9.5	41.1
10.0	41.7
10.5	42.4
11.0	42.5
11.5	43.1
12.0	43.4
12.5	44.4
13.0	44.6

NOTES:

1. Antenna serial number is 253.
2. The above lists are located in file number SAS3M0.ANT for a 3 meter range.
3. The files mentioned above are located on the disk marked "Antenna Factors".

10.10 Correction factors for BICONICAL ANTENNA
Type 3109,
1.0 meter range

FREQUENCY (MHz)	AFE (dB/m)
20.0	11.1
30.0	12.0
40.0	12.0
50.0	11.4
60.0	10.3
70.0	10.7
80.0	8.3
90.0	9.0
100.0	10.0
110.0	11.6
120.0	13.6
130.0	14.2
140.0	13.5
150.0	12.7
160.0	12.7
170.0	13.6
180.0	15.3
190.0	14.6
200.0	14.7
210.0	15.3
220.0	15.8
230.0	17.0
240.0	18.0
250.0	18.1
260.0	18.0
270.0	17.5
280.0	18.2
290.0	19.7
300.0	21.8

NOTES:

1. Antenna serial number is 3244.
2. The above list is located in file 44BIC10M1.ANT on the disk marked "Radiated Emissions Tests EMI Receiver"

10.11 Correction factors for **BICONICAL ANTENNA**

Type 3109, 3 meter range

FREQUENCY (MHz)	AFE (dB/m)
20.0	18.4
30.0	14.0
40.0	12.3
50.0	10.6
60.0	8.3
70.0	8.7
80.0	7.2
90.0	8.6
100.0	10.1
110.0	11.2
120.0	11.8
130.0	12.3
140.0	12.7
150.0	12.5
160.0	12.4
170.0	12.1
180.0	12.2
190.0	12.8
200.0	13.7
210.0	14.5
220.0	15.4
230.0	15.9
240.0	16.3
250.0	16.7
260.0	17.1
270.0	17.2
280.0	17.5
290.0	18.1
300.0	18.9

NOTES:

1. Antenna serial number is 3244.
2. The above list is located in file 44BIC3M1.ANT on the disk marked "Radiated Emissions Tests EMI Receiver"

11. APPENDIX B - CORRESPONDENCE

Date: 26/09/2005

From: Sid Sanders

To: EMC

Subject: RE: Permissive Change for Galcon DC Radio Controller and DC Radio Programmer

26 September 2005

David,

This is a Class II change and you must re-test the radiated emissions and the band edge requirements.

Regards,

Sid

-----Original Message-----

From: Emc [mailto:emc@itl.co.il]

Sent: Monday, September 26, 2005 11:02 AM

To: Sid Sanders (E-mail)

Subject: Permissive Change for Galcon DC Radio Controller and DC Radio Programmer

Importance: High

Hi Sid,

1. We hope that Timco has survived the last hurricane and all staff and their families are OK.
2. We were informed by Galcon Galil Control that they are interested in changing the antennas of two of their products that were authorized by TIMCO for FCC ID.
3. The products are:
 1. DC Radio Controller FCC ID: SZ810001
 2. DC Radio Programmer FCC ID: SZ810000
4. Questions:
 1. Is this a Permissive Change Class II?
 2. If so, which tests need to be repeated?
 3. If this is only a Permissive Change Class I, what tests need to be performed?
5. Shaike (EMC Laboratory Manager) is on vacation for the next two weeks so I have to submit the questions.

Thank you for your assistance

Regards

David Shidlowsky

Technical Writer

EMC Laboratory

ITL (Product Testing) Ltd.

Kfar Bin Nun

Israel

Tel: +972-8-9797799

Fax: +972-8-9797702

Email: davids@itl.co.il/emc@itl.co.il

<http://www.itl.co.il>

<http://www.i-spec.com>

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