Digital Control, Inc.

F Series Extended Range Transmitter (FXL)

EMC Test Report

Report No. DIGC0050

Report Prepared By

NORTHWEST EMC

www.nwemc.com
1-888-EMI-CERT

NORTHWEST EMC

22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test

Last Date of Test: February 19, 2009

Digital Control, Inc.

Model: F Series Extended Range Transmitter (FXL)

Emissions			
Test Description	**Specification**	**Test Method**	**Pass/Fail**
Radiated Emissions of Digital Portion	FCC 15.209:2009	ANSI C63.4:2003	**Pass**
Field Strength of Fundamental	FCC 15.209:2009	ANSI C63.4:2003	**Pass**
Field Strength of Spurious Emissions	FCC 15.209:2009	ANSI C63.4:2003	**Pass**

Modifications made to the product
See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 97124

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834D-1).

Approved By:

Don Facteau, IS Manager

NVLAP Lab Code: 200630-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

Revision Number	Description	Date	Page Number
00	None		

FCC: Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.

NVLAP: Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.

NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0

Industry Canada: Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2)*

CAB: Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.

NEMKO: Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).

Australia/New Zealand: The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).

VCCI: Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. *(Registration Numbers. - Hillsboro: C-1071, R-1025, C-2687, T-289, and R-2318, Irvine: R-1943, C-2766, and T-298, Sultan: R-871, C-1784, and T-294).*

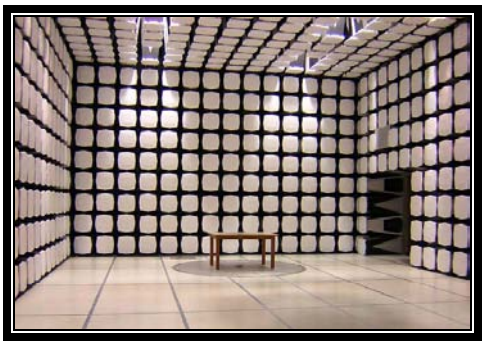
BSMI: Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.

GOST: Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification

KCC: Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (*Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)*

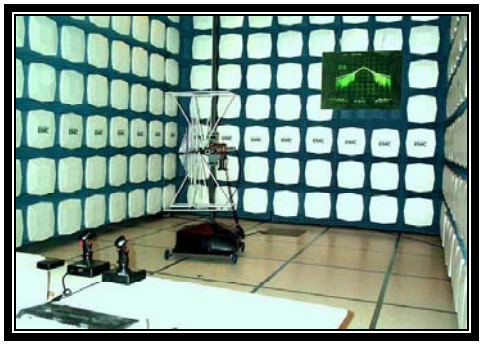
SCOPE

For details on the Scopes of our Accreditations, please visit:
http://www.nwemc.com/accreditations/



California – Orange County Facility
Labs OC01 – OC13

41 Tesla Ave. Irvine, CA 92618
(888) 364-2378 Fax: (503) 844-3826



Oregon – Evergreen Facility
Labs EV01 – EV11

22975 NW Evergreen Pkwy. Suite 400 Hillsboro, OR 97124
(503) 844-4066 Fax: (503) 844-3826

Washington – Sultan Facility
Labs SU01 – SU07

14128 339th Ave. SE Sultan, WA 98294
(888) 364-2378

Party Requesting the Test

Company Name:	Digital Control, Inc.
Address:	19625 62nd Avenue South, Suite B103
City, State, Zip:	Kent, WA 98032
Test Requested By:	Rudy Zeller
Model:	F Series Extended Range Transmitter (FXL)
First Date of Test:	February 16, 2009
Last Date of Test:	February 19, 2009
Receipt Date of Samples:	February 16, 2009
Equipment Design Stage:	Production
Equipment Condition:	No Damage

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):
DigiTrak F2 Locating System is comprised of a handheld receiver, remote display system, kHz transmitter in the Drill Head, and battery charger.

Testing Objective:
Seeking TCB authorization of the kHz transmitter in the Drill Head.

EUT Photo

CONFIGURATION 1 DIGC0050

EUT			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Transmitter	Digital Control, Inc.	F Series Extended Range Transmitter (FXL)	1026646

Peripherals in test setup boundary			
Description	**Manufacturer**	**Model/Part Number**	**Serial Number**
Drill Head	None	None	None

Equipment modifications					
Item	Date	Test	Modification	Note	Disposition of EUT
1	2/16/2009	Field Strength of Fundamental	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
2	2/17/2009	Radiated Emissions of Digital Portion	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Northwest EMC following the test.
3	2/19/2009	Field Strength of Spurious Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

RADIATED EMISSIONS OF DIGTIAL PORTION

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Typical, Tx

POWER SETTINGS INVESTIGATED

Battery

CONFIGURATIONS INVESTIGATED

DIGC0050 - 1

FREQUENCY RANGE INVESTIGATED

Start Frequency	30 MHz	Stop Frequency	1000 MHz

CLOCKS AND OSCILLATORS

11.976kHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4443A	AAS	12/12/2008	13 mo
EV11 Cables		10m Test Distance Cables	EVL	5/24/2008	13 mo
Pre-Amplifier	Miteq	AM-1551	AOY	5/22/2008	13 mo
Antenna, Biconilog	EMCO	3142	AXB	1/15/2008	24 mo

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

Using the mode of operation and configuration noted within this report, a final radiated emissions test was performed. The frequency range investigated (scanned), is also noted in this report. Radiated emissions measurements were made at the EUT azimuth and antenna height such that the maximum radiated emissions level will be detected. This requires the use of a turntable and an antenna positioner. The preferred method of a continuous azimuth search is utilized for frequency scans of the EUT field strength with both polarities of the measuring antenna. A calibrated, linearly polarized antenna was positioned at the specified distance from the periphery of the EUT.

Tests were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna was varied in height above the conducting ground plane to obtain the maximum signal strength. Though specified in the report, the measurement distance shall be 3 meters or 10 meters. At any measurement distance, the antenna height was varied from 1 meter to 4 meters. These height scans apply for both horizontal and vertical polarization, except that for vertical polarization the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the antenna clears the ground surface by at least 25 cm.

NORTHWEST

EMC

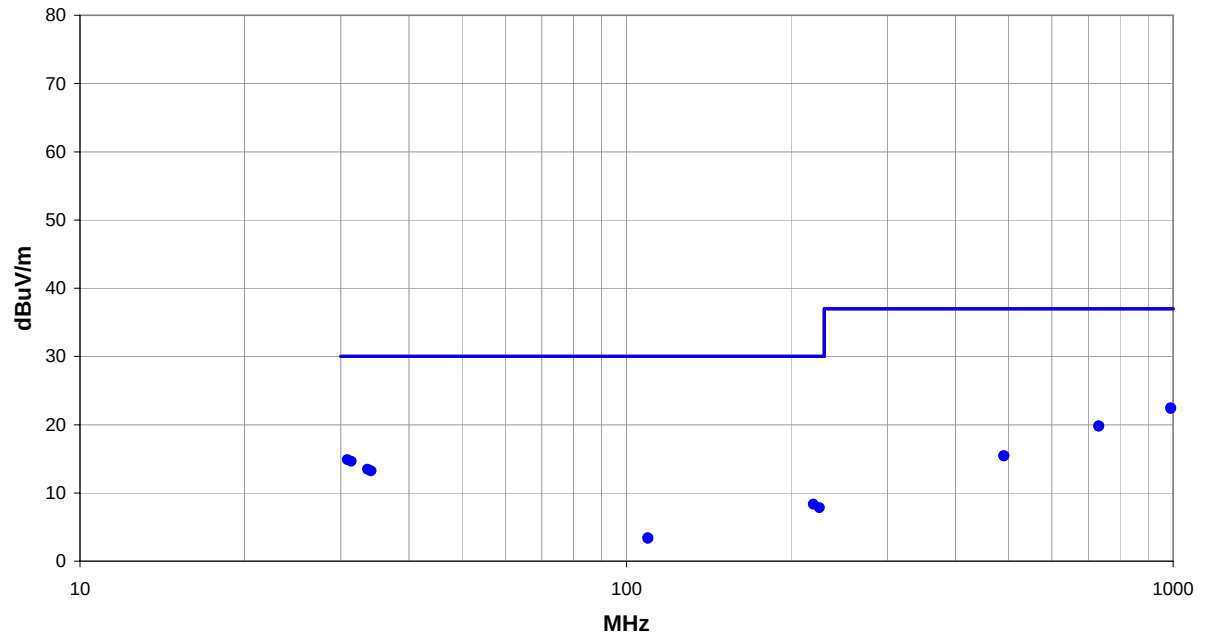
RADIATED EMISSIONS OF DIGTIAL PORTION

PSA-ESCI 2008.12.10
Version 2008.3.31

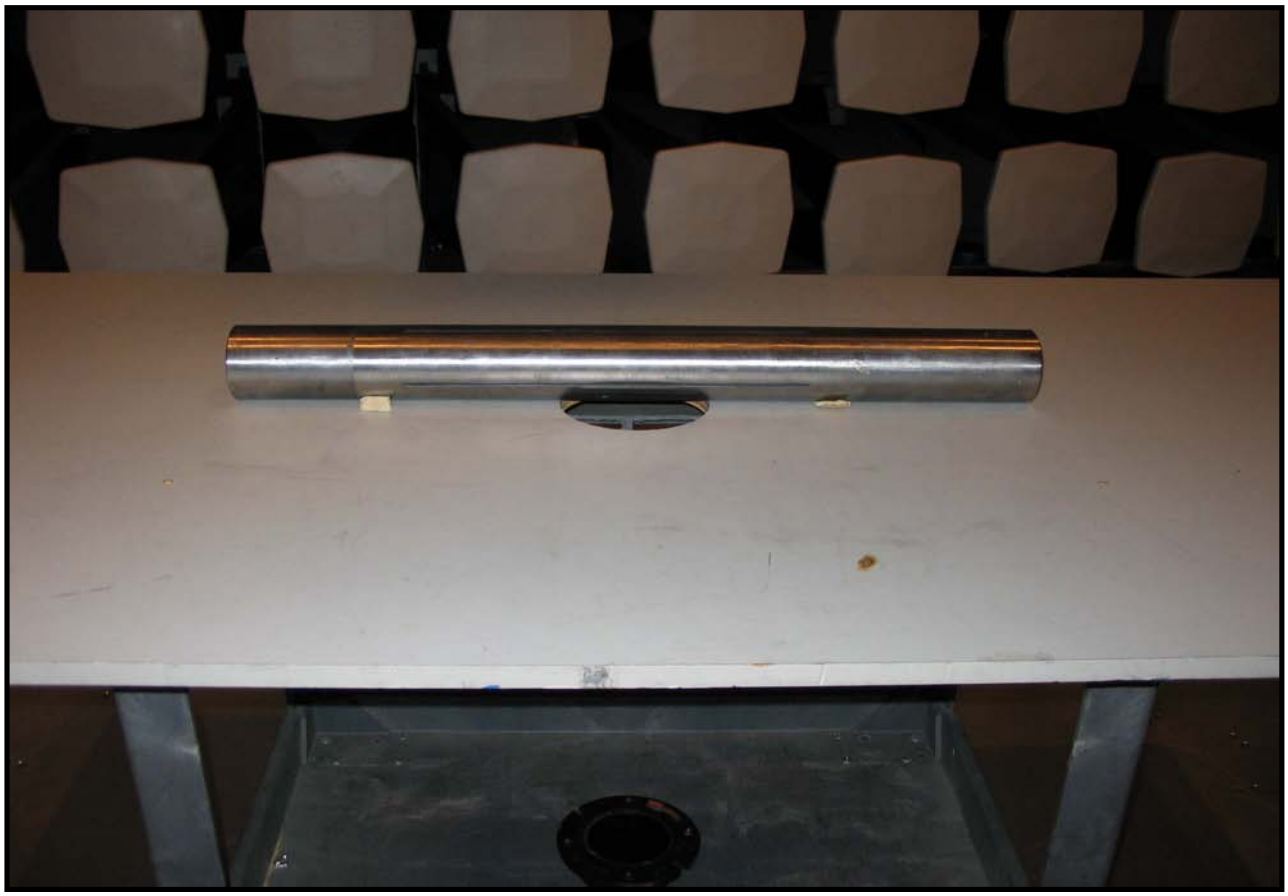
Work Order:	DIGC0050	**Date:**	02/17/09		
Project:	None	**Temperature:**	20		
Job Site:	EV11	**Humidity:**	30		
Serial Number:	1026646	**Barometric Pres.:**	1008.7	**Tested by:**	Jennifer Herrett
EUT:	F Series Extended Range Transmitter (FXL)				
Configuration:	1 - Basic Configuration - Transmitter				
Customer:	Digital Control, Inc.				
Attendees:	None				
EUT Power:	Battery				
Operating Mode:	Typical, Tx				
Deviations:	None				
Comments:	None				

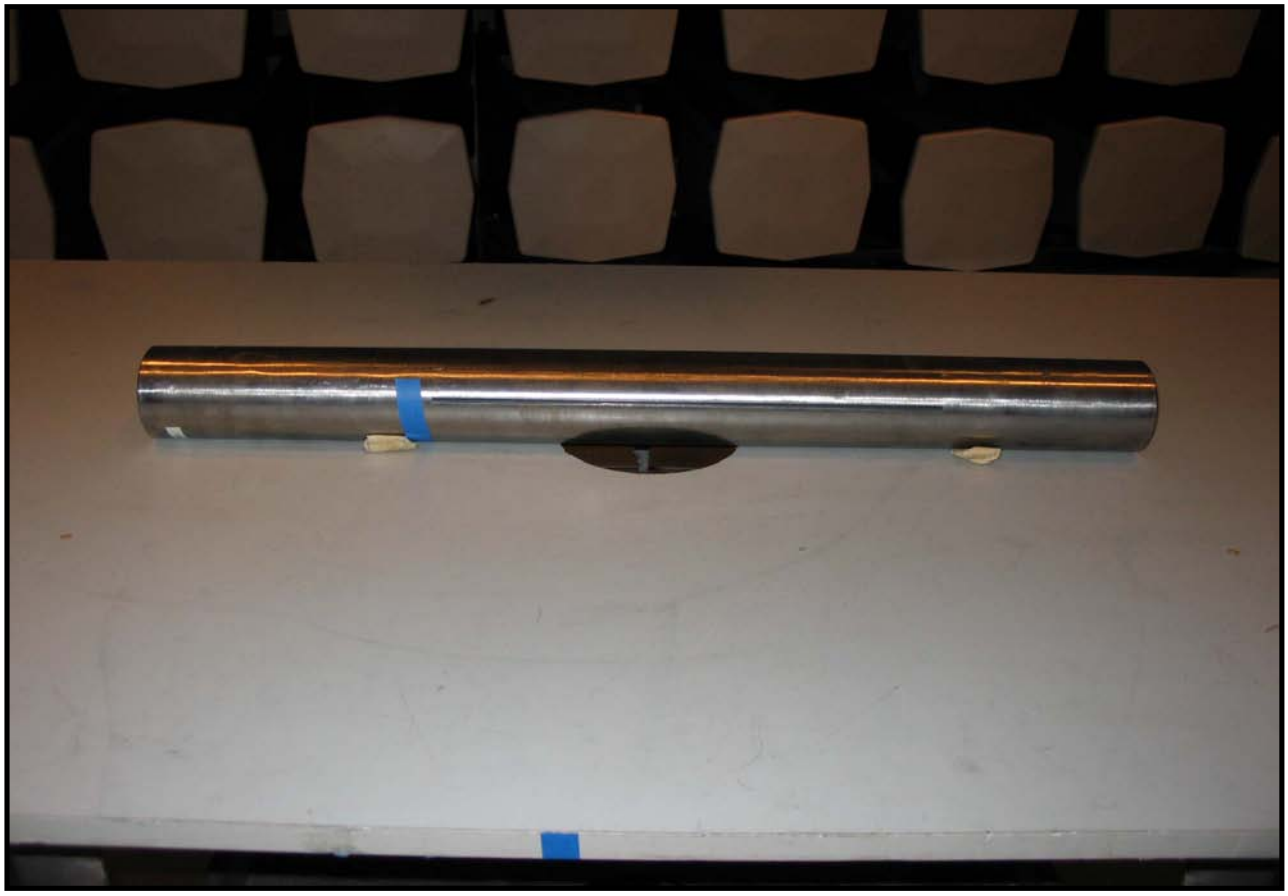
Test Specifications	**Test Method**
CISPR 22:2005 (Amended by A1:2005 and A2:2006) **Class B**	CISPR 22:2005 (Amended by A1:2005 and A2:2006)

Run #	1	**Test Distance (m)**	10	**Antenna Height(s)**	1-4m	**Results**	Pass



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (dB)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)
990.658	30.3	-7.8	2.9	348.0	10.0	0.0	Horz	QP	0.0	22.5	37.0	-14.5
990.086	30.2	-7.8	2.5	25.0	10.0	0.0	Vert	QP	0.0	22.4	37.0	-14.6
30.873	31.4	-16.5	2.5	273.0	10.0	0.0	Horz	QP	0.0	14.9	30.0	-15.1
31.357	31.4	-16.8	3.0	327.0	10.0	0.0	Vert	QP	0.0	14.6	30.0	-15.4
33.602	31.3	-17.9	2.9	97.0	10.0	0.0	Vert	QP	0.0	13.4	30.0	-16.6
34.085	31.3	-18.1	2.7	208.0	10.0	0.0	Horz	QP	0.0	13.2	30.0	-16.8
731.773	30.7	-10.9	2.7	60.0	10.0	0.0	Vert	QP	0.0	19.8	37.0	-17.2
731.599	30.7	-10.9	2.7	98.0	10.0	0.0	Horz	QP	0.0	19.8	37.0	-17.2
490.823	30.3	-14.9	1.0	97.0	10.0	0.0	Vert	QP	0.0	15.4	37.0	-21.6
490.033	30.3	-14.9	3.0	9.0	10.0	0.0	Horz	QP	0.0	15.4	37.0	-21.6
219.709	30.9	-22.6	1.5	195.0	10.0	0.0	Vert	QP	0.0	8.3	30.0	-21.7
225.564	30.1	-22.3	1.5	170.0	10.0	0.0	Horz	QP	0.0	7.8	30.0	-22.2
109.408	30.7	-27.3	2.5	45.0	10.0	0.0	Vert	QP	0.0	3.4	30.0	-26.6
109.460	30.6	-27.3	1.8	172.0	10.0	0.0	Horz	QP	0.0	3.3	30.0	-26.7





Field Strength of Fundamental

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Tx

MODE USED FOR FINAL DATA

Tx

POWER SETTINGS INVESTIGATED

Battery

POWER SETTINGS USED FOR FINAL DATA

Battery

FREQUENCY RANGE INVESTIGATED

Start Frequency	10kHz	Stop Frequency	20kHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Spectrum Analyzer	Agilent	E4443A	AAS	12/12/2008	13
EV11 Cables		3m Test Distance Cables	EVM	5/24/2008	13
Antenna, Loop	EMCO	6502	AOA	5/7/2007	24

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:1993).

NORTHWEST EMC

Field Strength of Fundamental

PSA 2007.05.07
EMI 2008.1.9

EUT:	F Series Extended Range Transmitter (FXL)	Work Order:	DIGC0050
Serial Number:	01026646	Date:	02/16/09
Customer:	Digital Control, Inc.	Temperature:	19
Attendees:	None	Humidity:	28%
Project:	None	Barometric Pres.:	29.69
Tested by:	Jennifer Herrett	Power: Battery	Job Site: EV11

TEST SPECIFICATIONS	Test Method
FCC 15.209:2009	ANSI C63.4:2003

TEST PARAMETERS			
Antenna Height(s) (m)	1.85-2.5	Test Distance (m)	3

COMMENTS

None

EUT OPERATING MODES

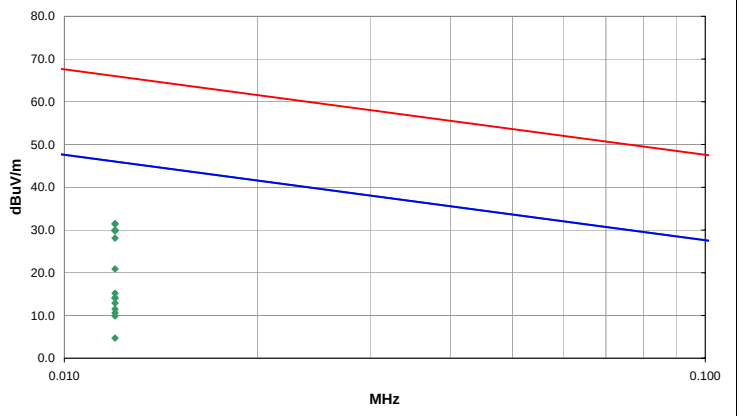
Tx

DEVIATIONS FROM TEST STANDARD

No deviations.

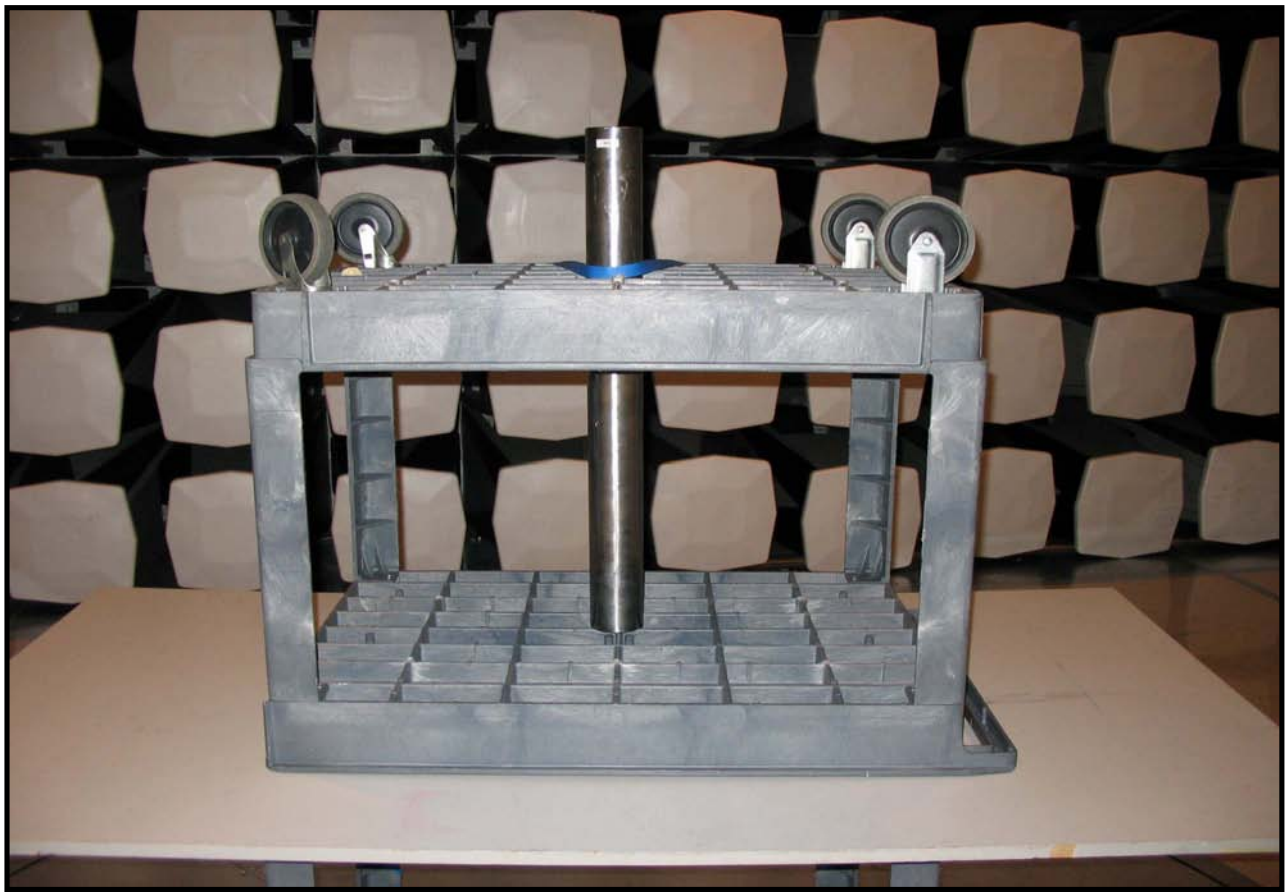
Run #	2
Configuration #	1
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
0.012	77.9	17.3	360.0	1.9	3.0	0.0	oop/Active	AV	80.0	15.2	46.0	-30.8	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and perp to ground.
0.012	76.8	17.3	101.0	2.4	3.0	0.0	oop/Active	AV	80.0	14.1	46.0	-31.9	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and parallel to ground.
0.012	76.8	17.3	92.0	1.9	3.0	0.0	oop/Active	AV	80.0	14.1	46.0	-31.9	EUT horizontal with yellow slot up. Antenna parallel to EUT and pert to ground.
0.012	75.6	17.3	0.0	1.9	3.0	0.0	oop/Active	AV	80.0	12.9	46.0	-33.1	EUT horizontal with yellow slot up. Antenna perp to EUT and perp to ground.
0.012	94.2	17.3	276.0	1.9	3.0	0.0	oop/Active	PK	80.0	31.5	66.0	-34.5	EUT horizontal with yellow slot on the left side. Antenna parallel to EUT and pert to ground.
0.012	74.2	17.3	276.0	1.9	3.0	0.0	oop/Active	AV	80.0	11.5	46.0	-34.5	EUT horizontal with yellow slot on the left side. Antenna parallel to EUT and pert to ground.
0.012	94.1	17.3	92.0	1.9	3.0	0.0	oop/Active	PK	80.0	31.4	66.0	-34.6	EUT horizontal with yellow slot up. Antenna parallel to EUT and pert to ground.
0.012	73.3	17.3	284.0	2.5	3.0	0.0	oop/Active	AV	80.0	10.6	46.0	-35.4	EUT horizontal with yellow slot up. Antenna perp to EUT and parallel to ground.
0.012	92.7	17.3	0.0	1.9	3.0	0.0	oop/Active	PK	80.0	30.0	66.0	-36.0	EUT horizontal with yellow slot up. Antenna perp to EUT and perp to ground.
0.012	92.6	17.3	360.0	1.9	3.0	0.0	oop/Active	PK	80.0	29.9	66.0	-36.1	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and perp to ground.
0.012	92.6	17.3	101.0	2.4	3.0	0.0	oop/Active	PK	80.0	29.9	66.0	-36.1	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and parallel to ground.
0.012	72.6	17.3	334.0	1.9	3.0	0.0	oop/Active	AV	80.0	9.9	46.0	-36.1	EUT vertical. Antenna perp to EUT and parallel to ground.
0.012	92.5	17.3	284.0	2.5	3.0	0.0	oop/Active	PK	80.0	29.8	66.0	-36.2	EUT horizontal with yellow slot up. Antenna perp to EUT and parallel to ground.
0.012	90.8	17.3	334.0	1.9	3.0	0.0	oop/Active	PK	80.0	28.1	66.0	-37.9	EUT vertical. Antenna perp to EUT and parallel to ground.
0.012	67.4	17.3	48.0	2.5	3.0	0.0	oop/Active	AV	80.0	4.7	46.0	-41.3	EUT vertical. Antenna parallel to EUT and pert to ground.
0.012	83.6	17.3	48.0	2.5	3.0	0.0	oop/Active	PK	80.0	20.9	66.0	-45.1	EUT vertical. Antenna parallel to EUT and pert to ground.
0.012	50.2	17.3	103.0	2.2	3.0	0.0	oop/Active	AV	80.0	-12.5	46.0	-58.5	EUT vertical. Antenna perp to EUT and pert to ground.
0.012	60.9	17.3	103.0	2.2	3.0	0.0	oop/Active	PK	80.0	-1.8	66.0	-67.8	EUT vertical. Antenna perp to EUT and pert to ground.

Field Strength of Fundamental



Field Strength of Fundamental

Field Strength of Spurious Emissions

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

Tx

MODE USED FOR FINAL DATA

Tx

POWER SETTINGS INVESTIGATED

Battery

POWER SETTINGS USED FOR FINAL DATA

Battery

FREQUENCY RANGE INVESTIGATED

Start Frequency	10kHz	Stop Frequency	1000MHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Pre-Amplifier	Miteq	AM-1551	AOY	5/22/2008	13
Antenna, Biconilog	EMCO	3142	AXB	1/15/2008	24
Antenna, Loop	EMCO	6502	AOA	5/7/2007	24
Spectrum Analyzer	Agilent	E4443A	AAS	12/12/2008	13
EV11 Cables		3m Test Distance Cables	EVM	5/24/2008	13

MEASUREMENT BANDWIDTHS

	Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
	0.01 - 0.15	1.0	0.2	0.2
	0.15 - 30.0	10.0	9.0	9.0
	30.0 - 1000	100.0	120.0	120.0
	Above 1000	1000.0	N/A	1000.0

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY

Measurement uncertainty is used to reflect the accuracy of the measured result as compared with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. In the case of transient tests our test equipment has been demonstrated by calibration to provide at least a 95% confidence that it complies with the test specification requirements. The measurement uncertainty for any test is available upon request.

TEST DESCRIPTION

The antennas to be used with the EUT were tested. The EUT was transmitting while set at the channel available. While scanning, emissions from the EUT were maximized by rotating the EUT, adjusting the measurement antenna height and orientation in 3 orthogonal planes, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.4:2003). An active loop antenna was used for this test in order to provide sufficient measurement sensitivity.

NORTHWEST EMC

Field Strength of Spurious Emissions

PSA 2007.05.07
EMI 2008.1.9

EUT:	F Series Extended Range Transmitter (FXL)	Work Order:	DIGC0050
Serial Number:	01026646	Date:	02/19/09
Customer:	Digital Control, Inc.	Temperature:	20
Attendees:	None	Humidity:	29%
Project:	None	Barometric Pres.:	30.25
Tested by:	Jennifer Herrett	Power: Battery	Job Site: EV11

TEST SPECIFICATIONS	Test Method
FCC 15.209:2009	ANSI C63.4:2003

TEST PARAMETERS			
Antenna Height(s) (m)	1.85 - 2.5	Test Distance (m)	3

COMMENTS

None

EUT OPERATING MODES

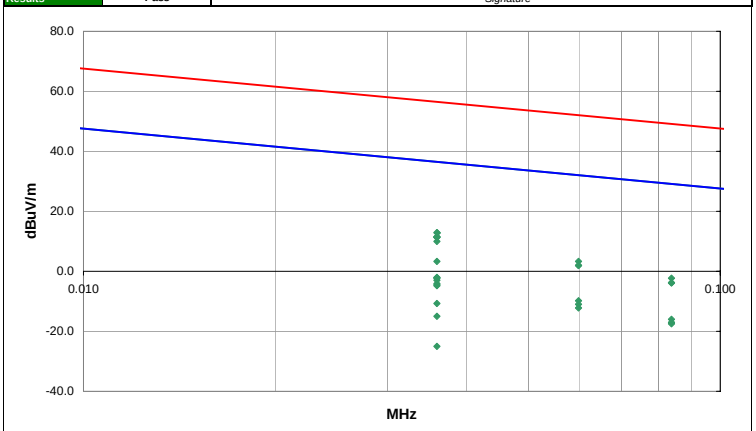
Tx

DEVIATIONS FROM TEST STANDARD

No deviations.

Run #	3
Configuration #	1
Results	Pass

Signature



Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Azimuth (degrees)	Height (meters)	Distance (meters)	External Attenuation (dB)	Polarity	Detector	Distance Adjustment (dB)	Adjusted dBuV/m	Spec. Limit dBuV/m	Compared to Spec. (dB)	Comments
0.036	66.0	12.0	360.0	1.9	3.0	0.0	oop/Active	AV	80.0	-2.0	36.5	-38.5	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and perp to ground.
0.036	65.8	12.0	89.0	1.9	3.0	0.0	oop/Active	AV	80.0	-2.2	36.5	-38.7	EUT vertical. Antenna perp to EUT and parallel to ground.
0.036	65.7	12.0	86.0	1.9	3.0	0.0	oop/Active	AV	80.0	-2.3	36.5	-38.8	EUT horizontal with yellow slot on the left side. Antenna parallel to EUT and perp to ground.
0.036	65.0	12.0	271.0	1.9	3.0	0.0	oop/Active	AV	80.0	-3.0	36.5	-39.5	EUT horizontal with yellow slot up. Antenna parallel to EUT and perp to ground.
0.036	63.9	12.0	1.0	1.9	3.0	0.0	oop/Active	AV	80.0	-4.1	36.5	-40.6	EUT horizontal with yellow slot up. Antenna perp to EUT and perp to ground.
0.036	63.5	12.0	102.0	2.0	3.0	0.0	oop/Active	AV	80.0	-4.5	36.5	-41.0	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and parallel to ground.
0.036	63.2	12.0	278.0	2.5	3.0	0.0	oop/Active	AV	80.0	-4.8	36.5	-41.3	EUT horizontal with yellow slot up. Antenna perp to EUT and parallel to ground.
0.060	59.4	10.8	102.0	2.5	3.0	0.0	oop/Active	AV	80.0	-9.8	32.0	-41.8	EUT horizontal with yellow slot on left side. Antenna perp to EUT and parallel to ground.
0.060	58.2	10.8	360.0	1.9	3.0	0.0	oop/Active	AV	80.0	-11.0	32.0	-43.0	EUT horizontal with yellow slot on left side. Antenna perp to EUT and perp to ground.
0.036	80.9	12.0	86.0	1.9	3.0	0.0	oop/Active	PK	80.0	12.9	56.5	-43.6	EUT horizontal with yellow slot on the left side. Antenna parallel to EUT and perp to ground.
0.036	80.8	12.0	271.0	1.9	3.0	0.0	oop/Active	PK	80.0	12.8	56.5	-43.7	EUT horizontal with yellow slot up. Antenna parallel to EUT and perp to ground.
0.060	57.0	10.8	84.0	1.9	3.0	0.0	oop/Active	AV	80.0	-12.2	32.0	-44.2	EUT horizontal with yellow slot up. Antenna parallel to EUT and perp to ground.
0.036	79.5	12.0	1.0	1.9	3.0	0.0	oop/Active	PK	80.0	11.5	56.5	-45.0	EUT horizontal with yellow slot up. Antenna perp to EUT and perp to ground.
0.036	79.4	12.0	102.0	2.0	3.0	0.0	oop/Active	PK	80.0	11.4	56.5	-45.1	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and parallel to ground.
0.036	79.4	12.0	360.0	1.9	3.0	0.0	oop/Active	PK	80.0	11.4	56.5	-45.1	EUT horizontal with yellow slot on the left side. Antenna perp to EUT and perp to ground.
0.084	53.3	10.7	268.0	1.9	3.0	0.0	oop/Active	AV	80.0	-16.0	29.1	-45.1	EUT horizontal with yellow slot up. Antenna parallel to EUT and perp to ground.
0.036	79.3	12.0	278.0	2.5	3.0	0.0	oop/Active	PK	80.0	11.3	56.5	-45.2	EUT horizontal with yellow slot up. Antenna perp to EUT and parallel to ground.
0.084	52.3	10.7	271.0	2.4	3.0	0.0	oop/Active	AV	80.0	-17.0	29.1	-46.1	EUT horizontal with yellow slot on left side. Antenna perp to EUT and parallel to ground.
0.036	78.0	12.0	89.0	1.9	3.0	0.0	oop/Active	PK	80.0	10.0	56.5	-46.5	EUT vertical. Antenna perp to EUT and parallel to ground.
0.084	51.8	10.7	0.0	1.9	3.0	0.0	oop/Active	AV	80.0	-17.5	29.1	-46.6	EUT horizontal with yellow slot on left side. Antenna perp to EUT and perp to ground.