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Data Package on

Digital Transmitter
Model Number: VMD-TX-C

Customer Name: DTC Communications Customer P.O.: D000001081 Date of Revision: January 11, 2010 Data Package Number: R-5263N, Rev. A Test Start Date: December 16, 2009 Test Finish Date: December 17, 2009 **Test Technician:** Matthew Seamans Laboratory Supervisor: Todd Hannemann Branch Manager: Scott Wentworth Results Prepared By: Jamie Ramsey

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Certification and Signatures

We certify that these Test Results are true results obtained from the tests of the equipment stated, and relates only to the equipment tested. We further certify that the measurements shown in this Test Results package were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

Todd Hannemann

Laboratory Supervisor

NARTE Certified ATL-0255-T

Scott Wentworth Branch Manager

Acot Wenter

NVLAP Approved Signatory

Non-Warranty Provision

The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

Non-Endorsement

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report may not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the U.S. Government.



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Revision History

Revisions to this document are listed below; the latest revised document supersedes all previous issues of this document.

Revision	Date	Pages Affected
No.	December 18, 2009	Original Release
Α	January 11, 2010	Global Changes:

- Entire document R-5263N to R-5263N, Rev. A Cover, 5 & 19-21:
 - Updating Model Number for band of transmitter operation



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Test Program Summary

Data Package Number: R-5263N, Rev. A

Customer: DTC Communications, Inc.

486 Amherst Street

Nashua, NH 03063

Test Sample: Digital Transmitter

Part Number: N/A

Model Number: VMD-TX-C
Serial Number: TT001004

Manufacturer: DTC Communications, Inc.

Test Specification:

FCC Part 2.1053/TIA-603-C, Land Mobile FM or PM-Communications Equipment-Measurement and Performance Standards

Mode of Operation:

During the performance of all testing specified herein, the EUT was transmitting a signal into a 50 ohm load.

Test Method:

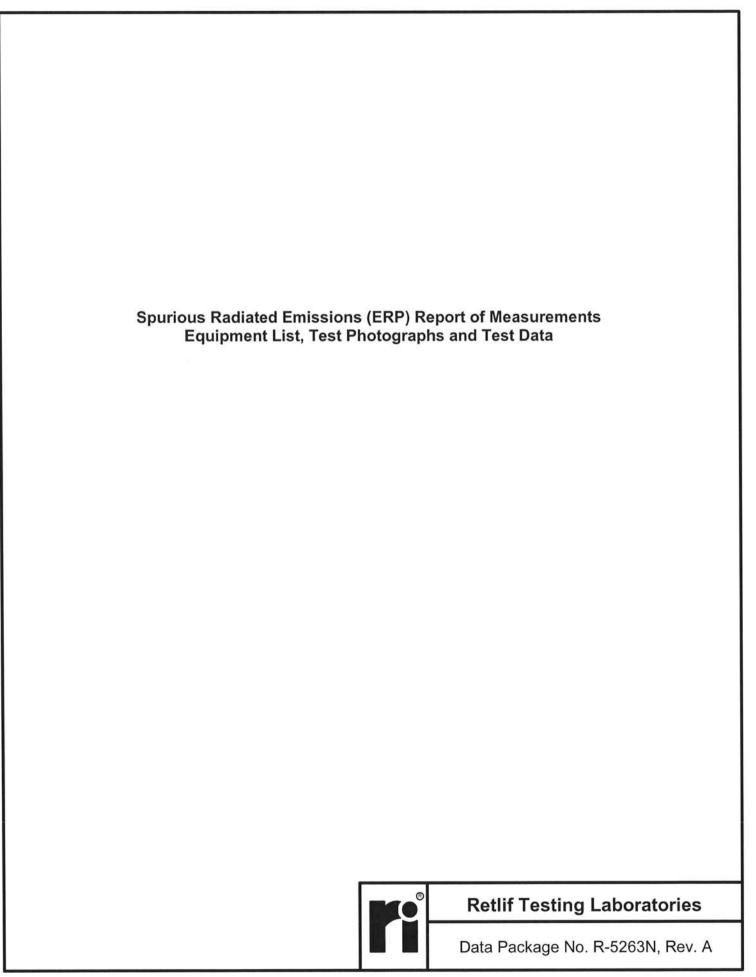
The following table depicts the test method that was performed on the EUT and the corresponding test results:

Testing Date(s)		Test
12 FORESTEEN 1 . 100 STATE 1 1	Test Method	Results
12/16/09 to 12/17/09	Spurious Radiated Emission (ERP), 30 MHz to 40 GHz	Complied

No modifications were made to the EUT during the course of this testing program in order to demonstrate compliance with the specified requirements.



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Equipment List

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due Date
3116	Pre-Amplifier	Miteq	0.1 GHz - 18 GHz	AFS42-35	1/21/2009	1/21/2010
3117	Power Supply	B&K Precision	0-30 Vdc, 3.0 A	1630	1/31/2009	1/31/2010
3429A	Horn Antenna	Microlab/FXR	26.5 GHz - 40 GHz	U638AF	1/21/2009	1/21/2010
3430	Horn Antenna	MCS Corporation	18 GHz - 26.5 GHz	K-5039	1/12/2009	1/12/2010
4003A	Double Ridge Guide	EMCO	1 - 18 GHz	3105	8/5/2009	8/5/2010
4202	Biconilog	EMCO	26 MHz - 2.7 GHz	3142	8/19/2009	8/19/2010
4984A	High Gain Horn	Microlab/FXR	1.0 - 1.7 GHz	L638A	1/21/2009	1/21/2010
4984B	High Gain Horn	Microlab/FXR	1.7 - 2.6 GHz	R638A	1/21/2009	1/21/2010
4984C	High Gain Horn	Microlab/FXR	2.6 - 3.95 GHz	S638A	1/21/2009	1/21/2010
4984D	High Gain Horn	Microlab/FXR	3.95 - 5.85 GHz	H638A	1/21/2009	1/21/2010
4984E	High Gain Horn	Microlab/FXR	5.8 - 8.2 GHz	C638A	1/21/2009	1/21/2010
4984F	High Gain Horn	Microlab/FXR	8.2 - 12.4 GHz	X638A	1/21/2009	1/21/2010
4984G	High Gain Horn	Microlab/FXR	12.4 GHz - 18 GHz	Y638A	1/21/2009	1/21/2010
5053	Biconilog	EMCO	26 MHz - 3 GHz	3142C	1/27/2009	1/27/2010
5070	EMI Test Receiver	Rohde & Schwarz	20 Hz - 40 GHz	ESIB40	1/14/2009	1/14/2010
5072	Preamplifier	Miteq	18 GHz-40 GHz	JS4-18004000-30	10/1/2009	10/1/2010
5107	Signal Generator	Agilent	100 kHz - 20 gHz	N5183A	3/6/2009	3/6/2010



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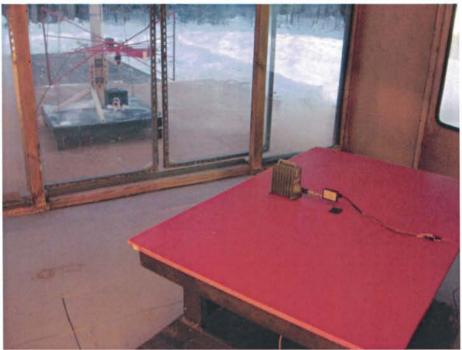
Low Frequency



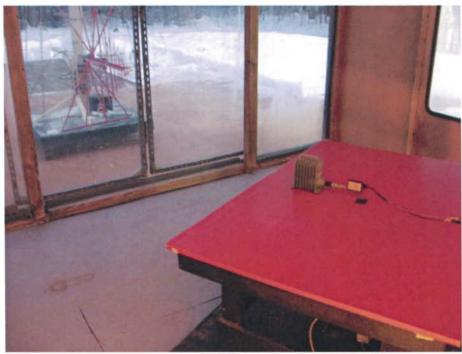
High Frequency



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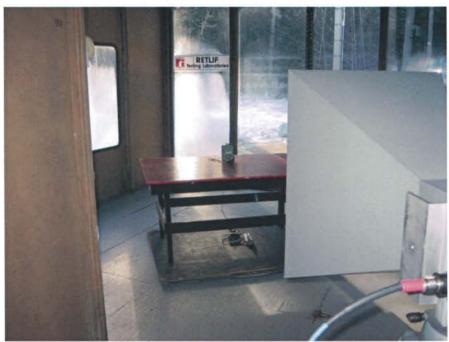
Horizontal Antenna Polarization, 30 to 1000 MHz



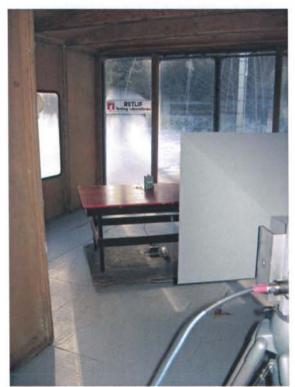
Vertical Antenna Polarization, 30 to 1000 MHz



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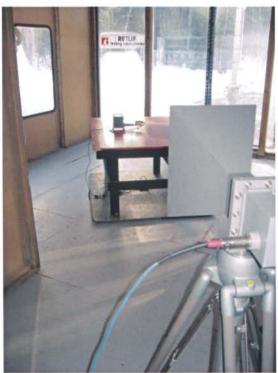
Horizontal Antenna Polarization, 1 to 1.7 GHz



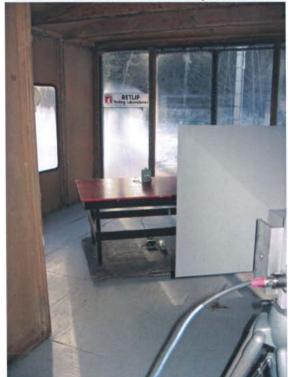
Vertical Antenna Polarization, 1 to 1.7 GHz



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Horizontal Antenna Polarization, 1.7 to 2.6 GHz



Vertical Antenna Polarization, 1.7 to 2.6 GHz



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Horizontal Antenna Polarization, 2.6 to 3.95 GHz



Vertical Antenna Polarization, 2.6 to 3.95 GHz



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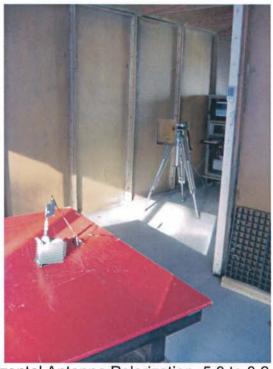
Horizontal Antenna Polarization, 3.95 to 5.8 GHz



Vertical Antenna Polarization, 3.95 to 5.8GHz



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Horizontal Antenna Polarization, 5.8 to 8.2 GHz



Vertical Antenna Polarization, 5.8 to 8.2 GHz



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Horizontal Antenna Polarization, 8.2 to 12.4 GHz



Vertical Antenna Polarization, 8.2 to 12.4 GHz



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Horizontal Antenna Polarization, 12.4 to 18 GHz



Vertical Antenna Polarization, 12.4 to 18 GHz



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Horizontal Antenna Polarization, 18 to 26 GHz



Vertical Antenna Polarization, 18 to 26 GHz



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Horizontal Antenna Polarization, 26 to 40 GHz



Vertical Antenna Polarization, 26 to 40 GHz



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RETLIF TESTING LABORATORIES EMISSIONS DATA SHEET Spurious Radiated Emissions (ERP) 30 MHz to 40 GHz **Test Method:** R-5263N Customer: DTC Communications, Inc. Job No: Test Sample: Digital Transmitter Model No: VMD-TX-C Serial No: TT001004 FCC Part 2, TIA-603-C **Test Specification:** Paragraph: 2.1053 **Operating Mode:** Continuously Transmitting into a 50 Ohm Load. 12/17/2009 Technician: M. Seamans Date: Notes: Transmit Frequency: 4.94075 GHz Peak Detector Test Antenna EUT Referance Signal Gen Reference Ant Corrected Spurious Limit Reading Frequency Position Position Reading Level Gain (H/V) - Height Degrees\Axis dBuV dBm dBd dBm dBm -13.00 30.00 -45.6 -29.27 1 9881.50 H-1m 54.56 16.3 14822.25 H-1m Y 56.67 -39.0 14.9 -24.11 1 1 19763.00 24703.75 29644.50 1 1 34585.25 39526.00 1 --40000.00 13.00

EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated.

10dB below the limit.

Data Sheet 1 of 1

* These harmonic frequencies were not observed above the noise floor of the test equipment which was a minimum of

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RETLIF TESTING LABORATORIES EMISSIONS DATA SHEET Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 40 GHz Customer: DTC Communications, Inc. Job No: R-5263N Test Sample: Digital Transmitter Model No: VMD-TX-C Serial No: TT001004 FCC Part 2, TIA-603-C **Test Specification:** Paragraph: 2.1053 **Operating Mode:** Continuously Transmitting into a 50 Ohm Load. Technician: M. Seamans Date: 12/17/2009 Notes: Transmit Frequency: 4.965 GHz Peak Detector Test Antenna EUT Referance Signal Gen Reference Ant Corrected Spurious Frequency Position Position Reading Level Gain Limit Reading (H/V) - Height MHz Degrees\Axis dBuV dBm dBd dBm dBm 30.00 -13.00 9930.00 H-1m 54.90 -40.9 15.9 -25.00 14895.00 V-1m X 56.50 -39.5 15.5 -23.95 1 19860.00 * 24825.00 29790.00 1 34755.00 1 39720.00 1 40000.00 13.00 EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. * These harmonic frequencies were not observed above the noise floor of the test equipment which was a minimum of 10dB below the limit. Data Sheet 1 of 1 R-5263N

RETLIF TESTING LABORATORIES **EMISSIONS DATA SHEET** Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 40 GHz R-5263N Customer: DTC Communications, Inc. Job No: Test Sample: Digital Transmitter TT001004 Model No: VMD-TX-C Serial No: FCC Part 2, TIA-603-C Test Specification: Paragraph: 2.1053 Operating Mode: Continuously Transmitting into a 50 Ohm Load. 12/17/2009 Technician: M. Seamans Date: Transmit Frequency: 4.98925 GHz Notes: Peak Detector Spurious EUT Reference Ant Test Antenna Referance Signal Gen Corrected Reading Limit Position Position Reading Gain Frequency Level dBm dBm dBuV dBd MHz (H/V) - Height Degrees\Axis dBm -13.00 30.00 ---1 -25.36 1 9978.50 H-1m Z 57.40 -41.6 16.2 -22.85 -38.7 1 14967.75 H-1m X 57.08 15.8 1 19957.00 24946.25 29935.50 34924.75 39914.00 1 1 13.00 40000.00 EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. * These harmonic frequencies were not observed above the noise floor of the test equipment which was a minimum of 10dB below the limit. R-5263N Data Sheet 1 of 1