

Retlif Testing Laboratories

101 New Boston Road, Goffstown, NH 03045 603-497-4600 - Fax: 603-497-5281 CORPORATE OFFICE 795 Marconi Avenue Ronkonkoma, NY 11779 631-737-1500 Fax 631-737-1497 (A NY Corporation)

BRANCH LABORATORIES 3131 Detwiler Road Harleysville, PA 19438 215-256-4133 Fax 215-256-4130

WASHINGTON REGULATORY OFFICE 703-533-1614 Fax 703-533-1612



November 5, 2008

ATTN: Mr. Norv Stapelfeld DTC Communications 486 Amherst Street Nashua, NH 03063

Dear Mr. Stapelfeld:

Enclosed you will find the Test Results documenting the EMI testing which was performed on your 100 mW COFDM Video Transmitter, Model Number: PD2-TX-100-S, Serial Number: ENG-FCC. This testing was performed and the test results generated in accordance with your Purchase Order and Retlif Job Number: R-5088N.

The following table is a brief description of the test method(s) that were performed and the results obtained on the 100 mW COFDM Video Transmitter. Please refer to the Test Program Summary page for an overview of all testing performed.

Test Method	Test Results	
Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz	Complied	

Thank you for the opportunity to be of service to you. Should you have any questions regarding the enclosed test results or the actual testing of your sample, please do not hesitate to contact me.

Sincerely,

Retlif Testing Laboratories

Jamle Ramsey Publications

jramsey@retlif.com

Enc. (as stated)



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Test Results on

100 mW COFDM Video Transmitter Model Number: PD2-TX-100-S

Customer Name: DTC Communications Customer P.O.: 502562 Date of Results: November 3, 2008 **Test Results No.:** R-5088N Test Start Date: October 31, 2008 **Test Finish Date:** November 3, 2008 Test Technician: Todd Hannemann Test Engineer: Scott Wentworth Supervisor: Scott Wentworth **Results Prepared By:** Jamie Ramsey **Government Source Inspection:** N/A

Our letters, procedures and reports are for the exclusive use of the customer to whom they are addressed and their communication or the use of the name of Retlif Testing Laboratories must receive our prior written approval. Our letters, procedures and reports apply only to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar products. The letters, procedures and reports and the name of Retlif Testing Laboratories or insignia are not to be used under any circumstances in advertising to the public. This report shall not be reproduced, except in full, without the prior written approval of Retlif Testing Laboratories. The only official copy of this document is the signed original provided by Retlif Testing Laboratories.

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

Scott Wentworth Branch Manager

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	
-	November 3, 2008	Original Release	



Retlif Testing Laboratories

Test Program Summary

Test Results Number: R-5088N

Customer: DTC Communications
Address: 486 Amherst St.

Nashua, NH 03063

Test Sample: 100 mW COFDM Video Transmitter

Model Number: PD2-TX-100-S

Serial Number: ENG-FCC

Test Specification:

FCC Part 2.1053/TIA-603-C, Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz

Mode of Operation:

During the performance of all testing specified herein, the EUT was continuously transmitting.

Test Methods:

The following table depicts the test methods that were performed on the EUT and the corresponding test results:

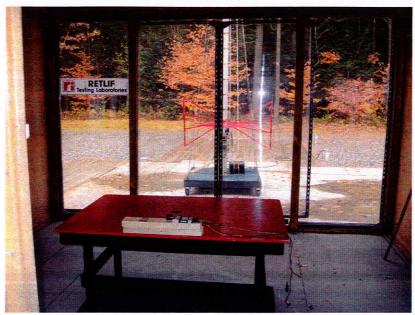
Testing Date(s)	Test Method	Test Results	
10/31/08 & 11/3/08	Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz	Complied	



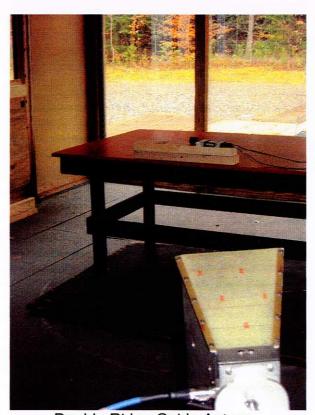
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Spurious Radiated Emiss Test Data	sions (ERP)
•	
	Retlif Testing Laboratories
	Test Results No. R-5088N

Test Photographs Spurious Radiated Emissions (ERP)



Biconilog Antenna

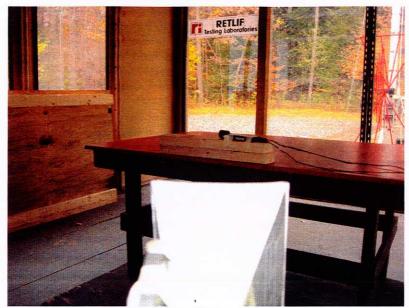


Double Ridge Guide Antenna



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Test Photograph Spurious Radiated Emissions (ERP)



Horn Antenna



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Equipment List Spurious Radiated Emissions (ERP)

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due
3258	Double Ridge Guide	EMCO	1 - 18 GHz	3115	8/20/2008	8/20/2009
4029	Open Area Test Site	Retlif	3 / 10 Meters	RNH	10/27/2006	10/27/2009
4202	Biconilog	EMCO	26 MHz - 2.7 GHz	3142	8/20/2008	8/20/2009
4984H	High Gain Horn	Microlab/FXR	18 - 26.5 GHz	K638AF	1/30/2008	1/30/2009
5053	Biconilog	EMCO	26 MHz - 3 GHz	3142C	10/4/2007	11/4/2008
5070	EMI Test Receiver	Rohde & Schwarz	20 Hz - 40 GHz	ESIB40	12/7/2007	12/7/2008
530A	AM/FM Signal Generator	Marconi Instru.	10 kHz - 1.2 GHz	2023	8/21/2008	8/21/2009



Retlif Testing Laboratories

Spurious Radiated Emiss Test Data	sions (ERP)
	Retlif Testing Laboratories Test Results No. R-5088N

RETLIF TESTING LABORATORIES **EMISSIONS DATA SHEET Test Method:** Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz Customer: R-5088N **DTC Communications** Job No: 100 mW COFDM Video Transmitter Test Sample: Model No: PD2-TX-100-S Serial No: **ENG-FCC** FCC Part 2, TIA-603-C **Test Specification:** Paragraph: 2.1053 Operating Mode: Continuously Transmitting into a 50 Ohm Load. Technician: T. Hannemann 11/3/2008 Date: Notes: Transmit Frequency: 2.450 GHz **Peak Detector** Test Antenna FUT Referance Signal Gen Reference Ant Spurious Corrected Position Position Frequency Reading Level Gain Reading Limit MHz (H/V) - Height Degrees\Axis dBuV dBm dBd dBm dBm 30.00 -13.00 V-1m 0/X 30.72 31.20 -46.60 -22.26 -68.86 1 32.62 V-1m 0/X 31.70 -47.60 -20.57 -68.17 1 V-1m 33.34 0/X 38.90 -40.80 -19.93 -60.731 34.06 V-1m 0/X 33.64 -44.51 -19.29-63.801 34.95 V-1m 0/X 36.72 -41.57 -18.49-60.06 1 36.38 V-1m 0/X 37.30 -43.21 -17.22-60.43V-1m -49.23 38.28 0/X 37.40 -15.53-64.761 V-1m 39.25 0/X 38.00 -53.80 -14.67 -68.47 1 39.68 V-1m 0/X 39.30 -56.91 -14.28 -71.19 1 40.20 V-1m 0/X 35.00 -52.85-13.85-66.70 1 41.59 V-1m 0/X 30.90 -60.99 -12.82 1 -73.81 43.51 V-1m 0/X 32.00 -56.93 -11.40 -68.33 1 46.80 V-1m 0/X 30.50 -56.75 -8.97 -65.72 1 48.22 V-1m 0/X 31.10 -54.85 -7.92-62.771 49.20 V-1m 0/X 30.70 -53.49-7.191 -60.6850.54 V-1m 0/X 32.30 -64.93 -58.52 -6.41 I 52.50 V-1m 0/X 29.00 -60.41 -5.73-66.141 53.88 V-1m 0/X 32.30 -58.35-5.24-63.59 1 56.76 V-1m 0/X 27.60 -64.80 -4.23 I -69.03 60.99 V-1m 0/X 28.70 -63.53 -3.00 ١ -66.5361.48 V-1m 0/X 27.60 -63.59-2.95-66.54 1 64.76 V-1m 0/X 32.30 -61.90 -2.62 1 -64.5266.67 V-1m 0/X 32.70 -62.50-2.43-64.93 ī 69.50 V-1m 0/X 32.80 -62.76-2.15-64.91 1 72.29 V-1m 0/X 34.40 -60.23-2.01-62.24 1 V-1m 74.71 0/X 35.60 -59.03 -1.91 -60.941 V-1m -66.18 76.76 0/X 31.50 -64.35-1.831 80.50 V-1m 0/X 27.50 -67.32-1.70-69.02 84.20 V-1m 0/X 25.90 -70.86 -1.70-72.56 EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. The Telemetry connector was unterminated during this test. Per Customer this is unused in it's final application. These harmonic frequencies were not observed above the noise floor of the test equipment which was a minimum of 10dB below the limit. R-5088N Data Sheet 1 of 2

RETLIF TESTING LABORATORIES EMISSIONS DATA SHEET Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz **Customer:** ESD Spec (3) Job No: Test Sample: EN61000-4-2:1995/A1:1998/A2:2001 Model No: EN61000-4-2:1995/A1:1998/A2:2001Table 3 Serial No: EN61000-4-2:1995/A1:1998/A2:2001 FCC Part 2, TIA-603-C **Test Specification:** Paragraph: 2.1053 Operating Mode: EN61000-4-2:1995/A1:1998/A2:2001 Technician: T. Hannemann 11/3/2008 Date: Notes: Transmit Frequency: 2.450 GHz Peak Detector Antenna EUT Signal Gen Test Referance Reference Ant Corrected Spurious Position Position Reading Reading Limit Frequency Gain Level (H/V) - Height MHz Degrees\Axis dBuV dBm dBd dBm dBm V-1m 86.90 0/X 25.80 -70.87 -1.70-72.57 110.65 V-1m 0/X 24.00 -73.95 0.10 -73.85 1 114.95 V-1m 0/X 25.30 -76.07 0.79 -75.28 1 V-1m 124.77 0/X 30.60 -73.40 2.03 -71.37 1 129.86 H-1m 0/Z 26.00 -78.83 2.49 -76.34 I 132.48 V-1m 0/X 31.20 -72.02 2.52 -69.50 1 V-1m 0/X 138.57 34.70 -67.102.59 -64.51 1 139.55 H-1m 0/Z 27.80 -79.86 2.60 -77.26 1 139.96 H-1m 0/Z 27.50 -75.40 2.60 -72.80 1 H-1m 0/Z 143.51 30.10 -71.73 2.49 -69.24 1 H-1m 0/Z 145.24 29.30 -73.43 2.44 -70.99 1 145.97 V-1m 0/X 34.40 -61.43 2.42 I -59.01 153.91 V-1m 0/X 31.40 -65.01 2.30 -62.711 171.23 V-1m 0/X 24.60 -78.192.94 -75.25 1 -_ ---1 4900.00 ī * 7350.00 1 9800.00 _ _ 1 12250.00 * 1 14700.00 ı 17150.00 1 19600.00 * 1 + 22050.00 --1 24500.00 1 25000.00 -13.00 --EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. The Telemetry connector was unterminated during this test. Per Customer this is unused in it's final application.\ * 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 2 of 2 0.0

RETLIF TESTING LABORATORIES EMISSIONS DATA SHEET Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz **DTC Communications** Job No: R-5088N 100 mW COFDM Video Transmitter PD2-TX-100-S Serial No: **ENG-FCC** FCC Part 2, TIA-603-C Paragraph: 2.1053 Continuously Transmitting into a 50 Ohm Load. 11/3/2008 T. Hannemann Date: Transmit Frequency: 2.466 GHz Peak Detector

Test Method:

Test Sample:

Customer:

Model No:

Test Specification:

Operating Mode:

10dB below the limit.

Data Sheet 1 of 2

Technician:

Notes:

EUT Reference Ant Spurious Antenna Referance Signal Gen Corrected Test Position Position Reading Reading Limit Level Gain Frequency MHZ (H/V) - Height dBuV dBm dBd dBm Degrees\Axis dBm 30.00 -13.00 -٠ _ 1 V-1m 0/X 31.20 -46.60 -22.26 1 30.72 -68.86V-1m -47.60 1 32.62 0/X 31.70 -20.57-68.1733.34 V-1m 0/X 38.90 -40.80-19.93-60.731 34.06 V-1m 0/X 33.64 -44.51 -19.29-63.801 34.95 V-1m 0/X 36.72 -41.57 -18.49-60.06 1 36.38 V-1m 0/X 37.30 -43.21-17.22-60.431 38.28 V-1m 0/X 37.40 -49.23 -15.53 -64.76 39.25 V-1m 0/X 38.00 -53.80-14.67-68.471 V-1m 0/X 39.30 -56.91 -14.28 1 39.68 -71.19 40.20 V-1m 0/X 35.00 -52.85 -13.85 -66.70 1 41.59 V-1m 0/X 30.90 -60.99 -12.82-73.81 1 43.51 V-1m 0/X 32.00 -56.93 1 -11.40-68.3346.80 V-1m 0/X 30.50 -56.75 -8.97 -65.721 V-1m 0/X -54.85 -7.92 1 48.22 31.10 -62.7749.20 V-1m 0/X 30.70 -53.49 -7.19-60.68 1 50.54 V-1m 0/X 32.30 -58.52 -6.41 -64.93 1 52.50 V-1m 0/X 29.00 -60.41 -66.14 1 -5.7353.88 V-1m 32.30 0/X -58.35 -5.24-63.5956.76 V-1m 0/X 27.60 -64.80-4.23-69.031 60.99 V-1m 0/X 28.70 -63.53 -3.00 -66.53 1 61.48 V-1m 0/X 27.60 -63.59 -2.95 -66.54 1 64.76 V-1m 0/X 32.30 -61.90 -2.62-64.521 66.67 V-1m 0/X 32.70 -62.50 -2.43 -64.93 1 V-1m 1 69.50 0/X 32.80 -62.76 -2.15-64.91 72.29 V-1m 0/X 34.40 -60.23-2.01 -62.241 74.71 V-1m 0/X 35.60 -59.03 -1.91 -60.94 1 1 76.76 V-1m 0/X 31.50 -64.35-1.83-66.1827.50 -67.32 -1.70 -69.02 1 80.50 V-1m 0/X -72.56 84.20 V-1m 0/X 25.90 -70.86 -1.70EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. The Telemetry connector was unterminated during this test. Per Customer this is unused in it's final application.

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

R-5088N

RETLIF TESTING LABORATORIES **EMISSIONS DATA SHEET** Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz Customer: ESD Spec (3) Job No: 0 Test Sample: EN61000-4-2:1995/A1:1998/A2:2001 Model No: EN61000-4-2:1995/A1:1998/A2:2001Table 3 Serial No: EN61000-4-2:1995/A1:1998/A2:2001 **Test Specification:** FCC Part 2, TIA-603-C Paragraph: 2.1053 **Operating Mode:** EN61000-4-2:1995/A1:1998/A2:2001 11/3/2008 Technician: T. Hannemann Date: Notes: Transmit Frequency: 2.466 GHz **Peak Detector** Test Antenna **EUT** Referance Signal Gen Reference Ant Spurious Limit Frequency Position Position Reading Level Gain Reading MHz (H/V) - Height Degrees\Axis dBuV dBm dBd dBm 86.90 V-1m 0/X 25.80 -70.87 -1.70-72.57 V-1m 0/X 24.00 -73.95 110.65 0.10 -73.85 1 114.95 V-1m 0/X 25.30 -76.07 -75.28 0.79 1 124.77 V-1m 0/X 30.60 -73.40 ī 2.03 -71.37 0/Z -78.83 129.86 H-1m 26.00 2.49 -76.34 1 0/X 132.48 V-1m -72.02 31.20 2.52 -69.50 1 V-1m 138.57 0/X 34.70 -67.102.59 -64.51 1 139.55 H-1m 0/Z 27.80 -79.86 2.60 -77.26 1 0/Z 139.96 H-1m 27.50 -75.40 2.60 -72.80 1 143.51 H-1m 0/Z 30.10 -71.73 2.49 -69.24 1 145.24 H-1m 0/Z 29.30 -73.43 2.44 -70.99 1 145.97 V-1m 0/X 34.40 -61.43 2.42 -59.01 1 153.91 V-1m 0/X 31.40 -65.01 1 2.30 -62.71171.23 V-1m 0/X 24.60 -78.19 2.94 -75.25 1 ı 4932.00 1 7398.00 1 -9864.00 1 12330.00 14796.00 --_ _ 1 17262.00 * ī 19728.00 1 22194.00 1 24660.00 1 25000.00 -13.00EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. The Telemetry connector was unterminated during this test. Per Customer this is unused in it's final application. * These harmonic frequencies were not observed above the noise floor of the test equipment which was a minimum of 10dB below the limit. 0.0 Data Sheet 2 of 2

RETLIF TESTING LABORATORIES **EMISSIONS DATA SHEET Test Method:** Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz **Customer:** R-5088N **DTC Communications** Job No: 100 mW COFDM Video Transmitter Test Sample: Model No: PD2-TX-100-S **ENG-FCC** Serial No: FCC Part 2, TIA-603-C **Test Specification:** Paragraph: 2.1053 Operating Mode: Continuously Transmitting into a 50 Ohm Load. Technician: T. Hannemann 11/3/2008 Date: Notes: Transmit Frequency: 2.483 GHz **Peak Detector** FUT Signal Gen Antenna Referance Test Reference Ant Corrected Spurious Position Position Limit Frequency Reading Reading Gain Leve MHz (H/V) - Height dBuV dBm Degrees\Axis dBd dBm dBm -13.00 30.00 _ --30.72 V-1m 0/X 31.20 -46.60-22.26-68.86 -47.60 32.62 V-1m 0/X -20.57 31.70 -68.17 1 33.34 V-1m 0/X 38.90 -40.80 -19.93 -60.73 ī 34.06 V-1m 0/X 33.64 -44.51 -19.29 -63.8034.95 V-1m 0/X 36.72 -41.57 -18.49-60.06 1 36.38 V-1m 0/X 37.30 -43.21 -17.22 -60.43 1 38.28 V-1m 0/X 37.40 -49.23-15.53 -64.76 1 39.25 V-1m 0/X 38.00 -53.80 -14.67-68.47 1 39.68 V-1m 0/X 39.30 -56.91 -14.28-71.19 1 40.20 V-1m 0/X 35.00 -52.85 -13.85 -66.70 1 41.59 V-1m 0/X 30.90 -60.99 -12.82-73.81 1 43.51 V-1m 32.00 -56.93 0/X -11.40-68.33 46.80 V-1m 0/X 30.50 -56.75 -8.97 -65.72 1 V-1m 48.22 0/X 31.10 -54.85 -7.92 -62.77 1 49.20 V-1m 0/X 30.70 -53.49 -7.19-60.681 50.54 V-1m 0/X 32.30 -58.52 -6.41 -64.93 1 52.50 V-1m 0/X 29.00 -60.41 -5.73 -66.14 1 53.88 V-1m 0/X 32.30 -58.35 -5.241 -63.5956.76 V-1m 0/X 27.60 -64.80-4.23-69.03 1 60.99 V-1m 0/X 28.70 -63.53 -3.00 -66.53 1 61.48 V-1m 0/X 27.60 -63.59 -2.95-66.541 64.76 V-1m 0/X 32.30 -61.90 -2.62 -64.521 66.67 V-1m 0/X 32.70 -62.50 -2.43-64.93 I 69.50 V-1m -62.76 0/X 32.80 -2.15 -64.911 72.29 V-1m 0/X 34.40 -60.23-2.01 -62.24 1 74.71 V-1m 0/X 35.60 -59.03 -1.91 -60.94 1 76.76 V-1m 0/X 31.50 -64.35-1.83-66.18 1 80.50 27.50 V-1m 0/X -67.32 -1.70-69.02 1 84.20 V-1m 0/X 25.90 -70.86 -1.70-72.56 EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. The Telemetry connector was unterminated during this test. Per Customer this is unused in it's final application. These harmonic frequencies were not observed above the noise floor of the test equipment which was a minimum of 10dB below the limit.

R-5088N

Data Sheet 1 of 2

RETLIF TESTING LABORATORIES EMISSIONS DATA SHEET Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz **Customer:** ESD Spec (3) Job No: 0 Test Sample: EN61000-4-2:1995/A1:1998/A2:2001 Model No: EN61000-4-2:1995/A1:1998/A2:2001Table 3 Serial No: EN61000-4-2:1995/A1:1998/A2:2001 **Test Specification:** FCC Part 2, TIA-603-C Paragraph: 2.1053 EN61000-4-2:1995/A1:1998/A2:2001 Operating Mode: Technician: T. Hannemann 11/3/2008 Date: Notes: Transmit Frequency: 2.483 GHz **Peak Detector** Test Antenna EUT Referance Signal Gen Reference Ant Corrected Spurious Frequency Position Position Reading Limit Level Gain Reading MHz (H/V) - Height Degrees\Axis dBuV dBm dRd dBm dBm 86.90 V-1m 0/X 25.80 -70.87 -1.70-72.57110.65 V-1m 0/X 24.00 -73.95 0.10 -73.85 1 114.95 V-1m 0/X 25.30 -76.07 0.79 -75.28 1 124.77 V-1m 0/X 30.60 -73.40 2.03 -71.37 1 129.86 H-1m 0/Z 26.00 -78.83 2.49 -76.34 1 132.48 V-1m 0/X 31.20 -72.02 2.52 -69.50 1 V-1m 0/X 138.57 34.70 -67.102.59 -64.51 1 139.55 H-1m 0/Z 27.80 -79.86 2.60 -77.26 1 139.96 H-1m 0/Z 27.50 -75.40 2.60 -72.80 1 143.51 H-1m 0/Z 30.10 -71.73 2.49 -69.241 145.24 H-1m 0/Z 29.30 -73.43 2.44 -70.99 1 145.97 V-1m 0/X 34.40 -61.43 2.42 -59.01 1 153.91 V-1m 0/X 31.40 -65.01 2.30 -62.71 1 171.23 V-1m 0/X 24.60 -78.19 2.94 -75.25 1 -_ --1 4966.00 1 * 7449.00 1 9932.00 -1 12415.00 * 1 14898.00 1 17381.00 1 19864.00 * 22347.00 --24830.00 25000.00 -13.00---EUT Emissions observed throughout the given frequency spectrum were recorded & evaluated. The Telemetry connector was unterminated during this test. Per Customer this is unused in it's final application. * 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 2 of 2 0.0