

## Retlif Testing Laboratories

795 Marconi Avenue Ronkonkoma, NY 11779 631-737-1500 Fax 631-737-1497 (A NY Corporation) WASHINGTON

CORPORATE OFFICE

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

101 New Boston Road, Goffstown, NH 03045 603-497-4600 - Fax: 603-497-5281

February 12, 2003

DTC Communications 486 Amherst Street Nashua, NH 03063

Attention: Mr. Scott Frye

Dear Sir:

Enclosed you will find Data Package R-4087N covering the testing of the 2 Watt Video Transmitter, Model/Part Number: VMS2000, Serial Number: ENG-1 to the requirements of FCC Part 2. This testing was performed against Purchase Order Number SFR0056.

Test setup photographs and drawings, equipment lists, and test data are included for each test method performed on the above test sample.

Thank you for this opportunity to be of service to you. Should you have any questions concerning this data or the actual testing of your unit, please do not hesitate to contact us.

Sincerely,

**RETLIF TESTING LABORATORIES** 

Jamie Ramsey Publications

Enc. (as stated)







## 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)

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

# DATA PACKAGE FOR DTC COMMUNICATIONS VIDEO TRANSMITTER

Model/Part Number: VMS2000

Customer Name:

**DTC Communications** 

Customer P.O.:

SFR0056

Data Package No.:

R-4087N

Package Date:

February 12, 2003

Test Start Date:

January 27, 2003

Test Finish Date:

February 7, 2003

Test Technician(s):

Tim Firkowski

Test Engineer:

Scott Wentworth

Data Prepared By:

Jamie Ramsey

Supervisor:

Scott Wentworth

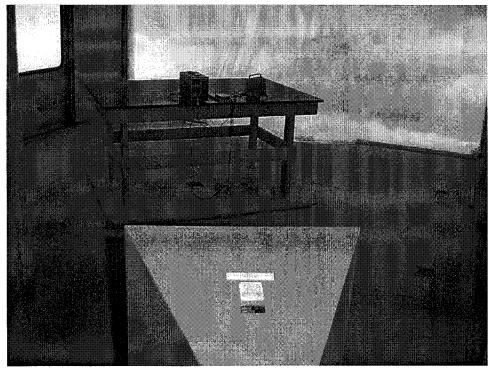
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#### **TEST SETUP PHOTOGRAPHS**



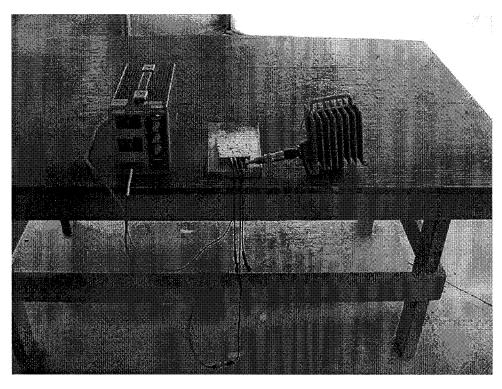




**Retlif Testing Laboratories** 

DATA PACKAGE No. R-4087N

#### **TEST SETUP PHOTOGRAPHS**







**Retlif Testing Laboratories** 

DATA PACKAGE No. R-4087N

est Method:		Spurious Rad	iated Emissior	ns (ERP) 30 MH	NS DATA SH								
ustomer:		DTC Commur			Job	No: R-4087N							
est Sample:		2 Watt Video Transmitter											
odel No:		VMS2000 Serial No: ENG1											
st Specific	ation:	FCC Part 2											
perating Mo	de:	Paragraph: 2.1053  Transmitting Carrier Signal only											
chnician:		T. Firkowski			₩ Date	2/7/03							
otes:		Transmit Fred Peak De		iHz									
Test	Antenna/EUT	Reference	Signal Gen	Reference Ant			Corrected	Spurious					
Frequency	Position	Reading	Level	Gain			Reading	Limit					
MHz	Polarity/Axis	dBm	dBm	dBl			dBm	dBm					
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9800.00	H/Y	-61.00	-31.76	11.80			-19.96						
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	EUT emission	s observed th	roughout the g	iven frequency	spectrum were reco	orded & evaluated. Emi	ssion levels						
	closest to the	limit are listed	on this data s	heet.									
						***							

#### **RETLIF TESTING LABORATORIES EMISSIONS DATA SHEET** Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz Customer: DTC Communications, Inc. Job No: R-4087N Test Sample: 2 Watt Video Transmitter Model No: VMS2000 Serial No: ENG1 Test Specification: FCC Part 2 Paragraph: 2.1053 Transmitting Carrier Signal only Operating Mode: Technician: T. Firkowski 2/7/03 Date: Notes: Transmit Frequency: 2.475 GHz Peak Detector Antenna/EUT Reference Signal Gen Reference Ant Test Spurious Corrected Frequency Position Reading Level Gain Limit Reading Polarity/Axis dBm dBm dBI dBm dBm 30.00 -13.00 ١ -\_ -4950.00 V/Y -63.52 -36.51 10.84 -25.67 ١ 7425.00 V/X -52.96 -26.58 10.46 -16.18 1 9900.00 H/X -58.39 -28.76 11.80 -16.56 1 -\_ 1 25000.00 -13.00 EUT emissions observed throughout the given frequency spectrum were recorded & evaluated. Emission levels closest to the limit are listed on this data sheet. Data Sheet 2 of 6 R-4087N

Test Method:		EMISSIONS DATA SHEET Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz										
rest meurou. Customer:		DTC Communications, Inc.  Job No: R-4087N  2 Watt Video Transmitter										
Fest Sample:		2 Watt Video	l ransmitter									
Model No:		VMS2000			Serial	No: ENG1						
Test Specific	ation:	FCC Part 2										
					Paragr	aph: 2.1053						
Operating Mo	ode:	Transmitting (	Carrier Signal	only								
Fechnician:		T. Firkowski			Date:	2/7/03						
Notes:		Transmit Freq	uency: 2.5 GH	łz								
		Peak De										
Test	Antenna/EUT	Reference	Signal Gen	Reference Ant				Corrected	Spurious			
Frequency	Position	Reading	Level	Gain				Reading	Limit			
MHz	Polarity/Axis	dBm	dBm	dBl				dBm	dBm			
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10000.00	H/Y	-60.51	-30.35	12.20				-18.15	<u>'</u>			
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		limit are listed			spectrum were record	ued & evaluated. E	mission levels	· ···				
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Test Method:		Spurious Rad	iated Emissior	ns (ERP) 30 Mł	lz to 25 GHz						
Customer:		DTC Commur	nications, Inc.		Job I	Job No: R-4087N					
Test Sample:		2 Watt Video Transmitter									
Model No:		VMS2000			Seria	No: ENG1	NG1				
Test Specific	ation:	FCC Part 2			J						
					Para	graph: 2.1053					
Operating Mo	ode:	Transmitting \	/ideo Signal								
Technician:		T. Firkowski	N.		Date	2/7/03			*****		
Notes:		Transmit Fred	uency: 2.45 G	Hz							
		Peak De									
Test	Antenna/EUT	Reference	Signal Gen	Reference Ant				Corrected	Spurious		
Frequency	Position	Reading	Level	Gain				Reading	Limit		
MHz	Polarity/Axis	dBm	dBm	dBl				dBm	dBm		
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Data Sheet	4 of 6								R-4087N		
	-								11-400/11		

Test Method: Customer: Test Sample:  Model No: Test Specification:  Technician: Test Antenna/EUT Reference Reading MHz Polarity/Axis dBm 30.00	RETLIF		TESTIN	G LABORATO	ORIES ====							
Customer:  Test Sample:  Model No:  Model No:  Test Specification:  Technician:  Technician:  Test Antenna/EUT Reference Reading  MHz Polarity/Axis dBm  30.00				DATA SHEET								
Test Sample:   2 Watt Video   5 CC Part 2   5 CC Par	Spurious Radiated Emissions (ERP) 30 MHz to 25 GHz											
Model No: VMS2000  Fest Specification: FCC Part 2  Departing Mode: Transmitting  Technician: T. Firkowski  Transmit Free Peak D  Test Antenna/EUT Reference Reading  MHz Polarity/Axis dBm  30.00	DTC Communications, Inc.  Job No: R-4087N											
Test   Specification:   FCC Part 2	2 Watt Video Transmitter											
Fest Specification:  Departing Mode:  Transmitting  T. Firkowski  Transmit Free Peak D  Test Antenna/EUT Reference Reading  MHz Polarity/Axis dBm  30.00				la tital Inda								
Derating Mode:  Transmitting  T. Firkowski  Transmit Fre Peak D  Test Antenna/EUT Reference Reading  MHz Polarity/Axis dBm  30.00             4950.00 V/Y -63.02  7425.00 V/X -53.41  9900.00 H/X -58.36       1  25000.00  EUT emissions observed the second content of the content o				Serial No: ENG1								
T. Firkowski   Transmit Free Peak D	FCC Part 2 Paragraph: 2.1053 Transmitting Video Signal											
T. Firkowski												
Transmit Free   Peak D	Transmitting video digital											
Test Antenna/EUT Reference Frequency Position Reading  MHz Polarity/Axis dBm  30.00	ski			Date: 2/7/03								
Test	Frequency: 2.47		GHz									
Position   Reading   MHz	k Detector											
MHz Polarity/Axis dBm  30.00	1		Reference Ant		Corrected	Spurious						
30.00			Gain		Reading	Limit						
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			-		-	-13.00						
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4950.00 V/Y -63.02 7425.00 V/X -53.41 9900.00 H/X -58.36	-	-	-		-	1						
7425.00 V/X -53.41 9900.00 H/X -58.36	-	-	-		-	ı						
9900.00 H/X -58.36			10.84		-25.17	I						
			10.46		-16.57	1						
EUT emissions observed the	6 -28.73		11.80		-16.93	1						
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i	sted on this data	st to the	heet.									
I Data Sheet 5 of 6		6				R-4087						

st Method:		Spurious Radi	ated Emission	ns (ERP) 30 MH	z to 25 GHz							
stomer:	į.	DTC Commur				No: R-4087	7N					
st Sample:		2 Watt Video	Fransmitter									
del No:		VMS2000			Ser	ial No: ENG1						
st Specific	ation:	FCC Part 2				•						
erating Mo	ode:	Transmitting \	/ideo Signal		Par	agraph: 2.1053						
		Transmitting Video Signal										
chnician:		T. Firkowski			Dat	e: 2/7/03						
tes:		Transmit Frequency: 2.5 GHz Peak Detector										
Test	Antenna/EUT	Reference	Signal Gen	Reference Ant				Corrected	Spurio			
requency	Position	Reading	Level	Gain				Reading	Limit			
MHz	Polarity/Axis	dBm	dBm	dBI				dBm	dBm			
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00.00	V/Y	-67.64	-42.95	10.90				-32.05	Ī			
500.00	H/X	-55.65	-30.36	10.40				-19.96	1			
00.000	H/Y -	-60.73 -	-30.57	12.20				-18.37				
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5000.00	-	-	-	-					-13.0			
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### **EQUIPMENT LIST**

#### **Spurious Radiated Emissions (ERP)**

EN	Type	Manufacturer	Description	Model No.	Cal Date	<b>Due Date</b>
3008	Signal Generator	Gigatronics	50 MHz - 18 GHz	900/0.05-18	12/2/02	12/2/03
4003	Double Ridge Guide	EMCO	1 GHz - 12.4 GHz	3105	9/20/02	9/20/03
4029	Test Site Attenuation	Retlif	3 / 10 Meters	RNH	8/8/02	8/8/03
4202	Biconilog	EMCO	26 MHz - 2 GHz	3142	7/25/02	7/25/03
4895	Spectrum Analyzer	Hewlett Packard	9kHz - 22GHz	8593EM	2/13/02	2/13/03
4921	Graphics Plotter	Hewlett Packard	N/A	7550A	9/20/02	9/20/03
4984	High Gain Horn	Microlab/FXR	1.0 - 1.7 GHz	L638A	1/3/03	1/3/04
4984	High Gain Horn	Microlab/FXR	1.7 - 2.6 GHz	R638A	1/3/03	1/3/04
4984	High Gain Horn	Microlab/FXR	2.6 - 3.95 GHz	S638A	1/3/03	1/3/04
4984	High Gain Horn	Microlab/FXR	3.95 - 5.85 GHz	H638A	1/3/03	1/3/04
4984	High Gain Horn	Microlab/FXR	5.8 - 8.2 GHz	C638A	1/3/03	1/3/04
4984F	High Gain Horn	Microlab/FXR	8.2 - 12.4 GHz	X638A	1/3/03	1/3/04
4984	High Gain Horn	Microlab/FXR	12.4 GHz - 18 GHz	Y638A	1/3/03	1/3/04
4984	High Gain Horn	Microlab/FXR	18 - 26.5 GHz	K638AF	1/3/03	1/3/04
713	EMI Test Receiver	Rohde & Schwarz	20Hz - 26.5GHz	ESI26	7/19/02	7/19/03



**Retlif Testing Laboratories** 

DATA PACKAGE No. R-4087N