Technical Information

Applicant		Manufacturer	
Name:	Integrated Control Corporation	Name:	Integrated Control Corporation
Address:	748 Park Avenue	Address:	748 Park Avenue
City, State, Zip:	Huntington, NY 11743	City, State, Zip:	Huntington, NY 11743

Test Specification: FCC Rules and Regulations Part 15, Subpart C, Para. 15.231

Test Procedure: ANSI C63.4:2003

Test Sample Description

Test Sample: 433.92 MHz Pulsed Transmitter and Receiver Repeater

Brandname(s): Integrated Control Corporation

Part Number: 980905

FCC ID: VXJ980905

Type: Pulsed Transmitter

Power Requirements: 9 VDC derived from AC Power Adapter

Frequency of Operation: 433.92 MHz

Applicable Rule Section: Part 15, Subpart C, Section 15.231

Tests Performed

Para. 15.107(a)	Conducted Emissions, Receiver Rx
Para 15.109(a)	Radiated Emissions, Receiver Rx
Para. 15.207(a)	Conducted Emissions Tx
Para. 15.231(e)	Radiated Emissions, Fundamental and Harmonics Tx
Para. 15.231(e)	Radiated Emissions, Spurious Case Tx
Para. 15.231(b)	Duty Cycle Determination Tx
Para. 15.231(c)	Occupied Bandwidth Tx

Test Results

15.207(a): The radio frequency voltage that was conducted back on to the AC power line on any frequency/frequencies within the bandwidth of 150 kHz to 30 MHz did not exceed Class B limits as specified in CISPR 22.

15.231 (a): This device transmits a control signal and is used as an: a remote control transmitter.

15.231 (a) (2) The transmitter is automatically operated. Transmission ends 5 seconds after activation

15.231 (e): The transmitter performs periodic transmissions at predetermined intervals greater than 10 seconds apart and are shorter than 1 second in duration.

15.231 (b): The fundamental field strength did not exceed 2985.4 µV/M (Average) at a test distance of 3 meters. In addition, the requirements of section 15.35 for averaging pulsed emissions and for limiting peak emissions were met. The field strength of harmonic and spurious emissions did not exceed 402.7 µV/M (AVERAGE).

15.231 (c) The Bandwidth of the emission was no wider than 0.25% of the center frequency (52.4 kHz) as measured 20 db down from the modulated carrier.

Determination of Field Strength Limits

The field strength limits shown below are found in Section 15.231(e):

	Frequency		Limit	
F1 =	260	1500 =	L1
Fo =	433.92		Lo
F2 =	470	5000 =	L2

The formula below was utilized to determine the limits:

Limit = L1 + [(Fo-F1)(L2-L1)/(F2-F1)]

Solving Yields

Fundamental Limit =	4398.7	µV/M (AVERAGE) @ 3 Meters
Harmonic Limit =	439.8	µV/M (AVERAGE) @ 3 Meters

Duty Cycle Determination

The unit's RF output was directly coupled to the input of the spectrum analyzer. The analyzer was set for a frequency span of 0 Hz. The sweep time was then adjusted in order to display one full pulse train. The transmitter on time was then summed and compared to the time for one full cycle in order to obtain the duty cycle. (See plots for additional information.)

Transmitter On Time =	9.0	milliseconds (maximum per cycle)
Transmitter Cycle Time =	100	milliseconds (100 ms maximum)
Transmitter Duty Cycle =	9.0	%

Calculation

			1 Large Pulse =	141	milliseconds
16	x	72	µs (small pulse) =	1.1	milliseconds
			7.8 + 1.1 =	9.0	milliseconds
			Duty Cycle (0.09/100) =	9.0	%
			Correction Factor =20 log 0.09 =	-20.9	dB

Spectrum Analyzer Desensitization Considerations

Due to the nature of the emissions being measured, care was taken to ensure that the resolution bandwidth of the spectrum analyzer was adequate to provide accurate measurements. The following formula was utilized: minimum bandwidth = 1/{minimum pulse width (in seconds) x 1.5} = Hz Setting pulse desensitization equal to zero and utilizing the minimum observed pulse width of 72 µs yields a minimum required bandwidth of 9259.3 Hz. FCC specified bandwidths of 100 kHz and 1 MHz were utilized below and above 1 GHz, respectively.

General Notes

1. All readings were taken utilizing a peak detector function at a test distance of 3 meters.
2. The duty cycle was applied to the peak readings in order to determine the average value of the emissions.
3. The frequency range was scanned from 30 MHz to 4.4 GHz. All emissions not reported were more than 20 dB below the specified limit.
4. The device was tested with the following accessories:
    - AC Power Adapter: Part Number: DPD090050-P5
      Manufactured By: Cui Inc.
      120 VAC, 60 Hz Input
      9 VDC Output
    - ¼ Wave Monopole Receiver Antenna
5. The device is exclusively utilized with Integrated Controls Corporation, Temperature Probe Transmitter. FCC ID Number: VXJ980902
6. The EUT uses a unique antenna connector which can only be utilized for this device.

Modifications

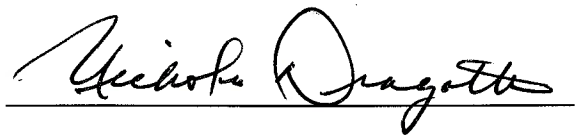
S/W change that transmits the data at a faster rate, thus reducing the transmit time.
Hardware changes to the transmitter PCB:

- Added an 18 pf capacitor in series between the XTL and ground.
- Added a 10 ohm resistor in series between C6 and C7 (two antenna terminating capacitors).

Certification and Signatures

We certify that this report is a true representation of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

Donald C. Lerner
EMC Test Engineer



Nicholas Dragotta
EMC Laboratory Supervisor

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 must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.

Equipment List

FCC Part 15, Conducted Emissions, Power Leads, 150 kHz to 30 MHz

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
078	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	7/5/2007	7/5/2008
079	LISN	Solar Electronics	10 kHz - 30 MHz	8028-50-TS24BNC	7/5/2007	7/5/2008
333	Attenuator	Narda	DC - 11 GHz	768-10	8/10/2007	8/10/2008
712	EMI Test Receiver	Rohde & Schwarz	20 Hz - 26.5 GHz	ESIB26	9/11/2007	9/11/2008

FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
062	High Gain Horn Antenna	Microlab/FXR	1.7 GHz - 2.6 GHz	R638A	8/30/2007	8/30/2008
063	High Gain Horn Antenna	Microlab/FXR	2.6 GHz-3.95 GHz	S638A	8/30/2007	8/30/2008
064	High Gain Horn Antenna	Microlab/FXR	3.95 GHz - 5.85 GHz	H638A	8/30/2007	8/30/2008
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
1232	Preamplifier	Agilent	1 - 26.5GHz	8449B	2/13/2008	2/13/2009
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/27/2007	6/27/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/27/2007	6/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/19/2007	10/19/2008
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	10/24/2007	10/24/2008
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	10/24/2007	10/24/2008
723	H.P. Filter	Mini-Circuits	1 GHz	BHP-1000	8/13/2007	8/13/2008

FCC Part 15, Subpart C, Spurious Case Radiated Emissions

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
062	High Gain Horn Antenna	Microlab/FXR	1.7 GHz - 2.6 GHz	R638A	8/30/2007	8/30/2008
063	High Gain Horn Antenna	Microlab/FXR	2.6 GHz-3.95 GHz	S638A	8/30/2007	8/30/2008
064	High Gain Horn Antenna	Microlab/FXR	3.95 GHz - 5.85 GHz	H638A	8/30/2007	8/30/2008
067	Open Area Test Site	Retlif	3/10 Meter	RNY	9/12/2006	9/12/2009
1232	Preamplifier	Agilent	1 - 26.5GHz	8449B	2/13/2008	2/13/2009
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/27/2007	6/27/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/27/2007	6/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/19/2007	10/19/2008
523	Biconilog	Electro-Mechanics	26 - 2000 MHz	3142B	10/24/2007	10/24/2008
617	Interference Analyzer	Electro-Metrics	10 kHz - 1 GHz	EMC-30	10/24/2007	10/24/2008
723	H.P. Filter	Mini-Circuits	1 GHz	BHP-1000	8/13/2007	8/13/2008

FCC Part 15.35, Duty Cycle Determination

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
1120	Oscilloscope	Tektronix	DC - 500 MHz	2440	5/23/2007	5/23/2008
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
231A	Graphics Plotter	Hewlett Packard	N/A	7440A	10/2/2007	10/2/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/19/2007	10/19/2008

FCC Part 15, Subpart C, 15.23(C) Occupied Bandwidth

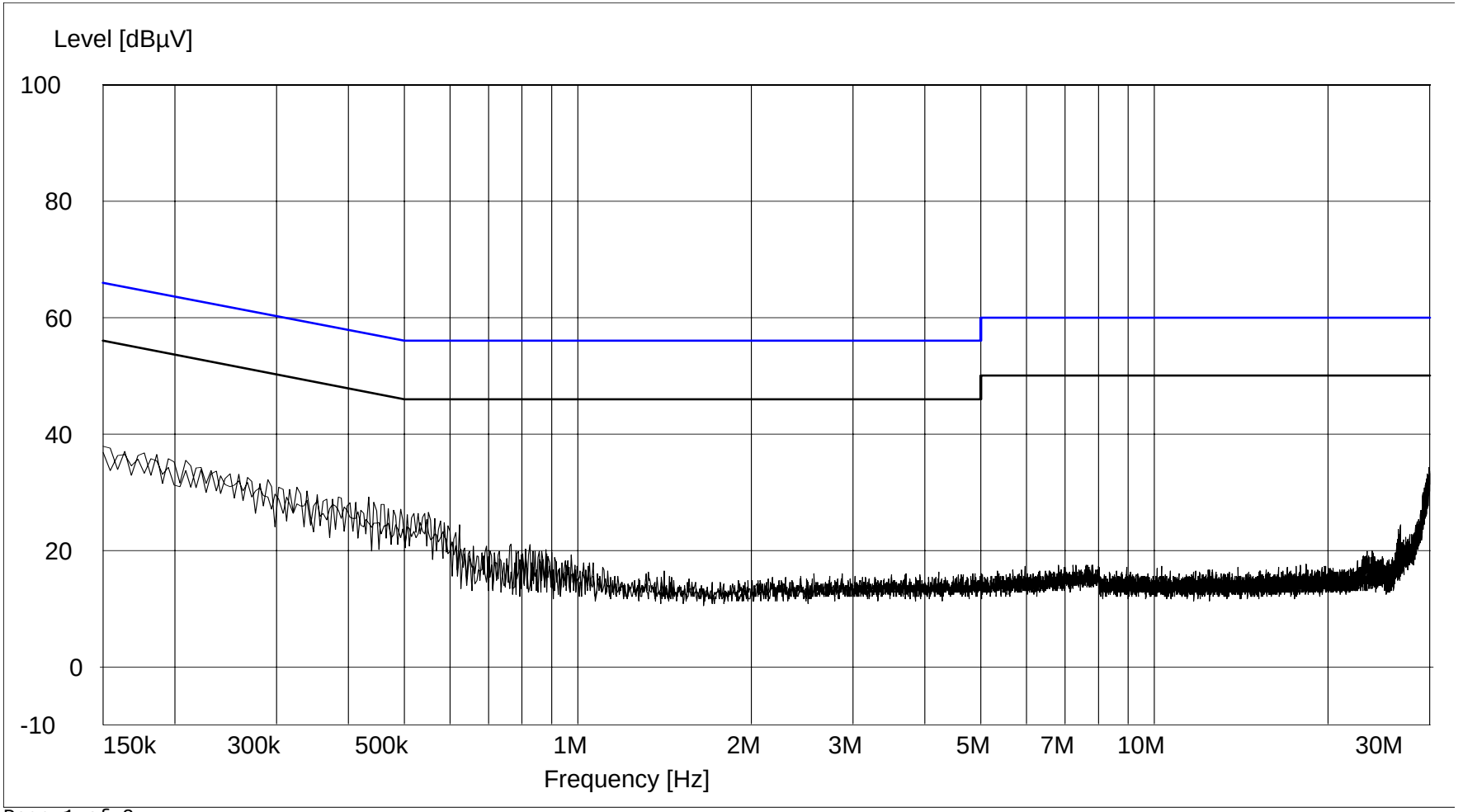
EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	4/27/2007	4/27/2008
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	4/27/2007	4/27/2008
512	Graphics Plotter	Hewlett Packard	N/A	7470A	10/19/2007	10/19/2008

FCC Part 15, Subpart C, Section 15.207(a), Conducted Emissions, Power Leads, 150 kHz to 30 MHz
Test Data
Transmit Mode

RETLIF Testing Laboratories, Job Number R-12110-3 Retest.

FCC Part 15, Subpart C, Section 15.207(a), Conducted Emissions, 150 kHz to 30 MHz.

Customer: Integrated Control Corporation
Test Sample: 433.92 MHz Pulsed Transmitter and Receiver Repeater
Part Number: 980905
FCC ID: VXJ980905
Test Specification: FCC Part 15, Subpart C, Section 15.207(a)
Mode of Operation: Continuously transmitting on a 433.92 MHz signal.
Lead Tested: 120 VAC/60 Hz hot input to AC adapter.
Technician / Date: N. Smith / March 20, 2008
Detector / Note: Peak / Peak emissions passed average limit.



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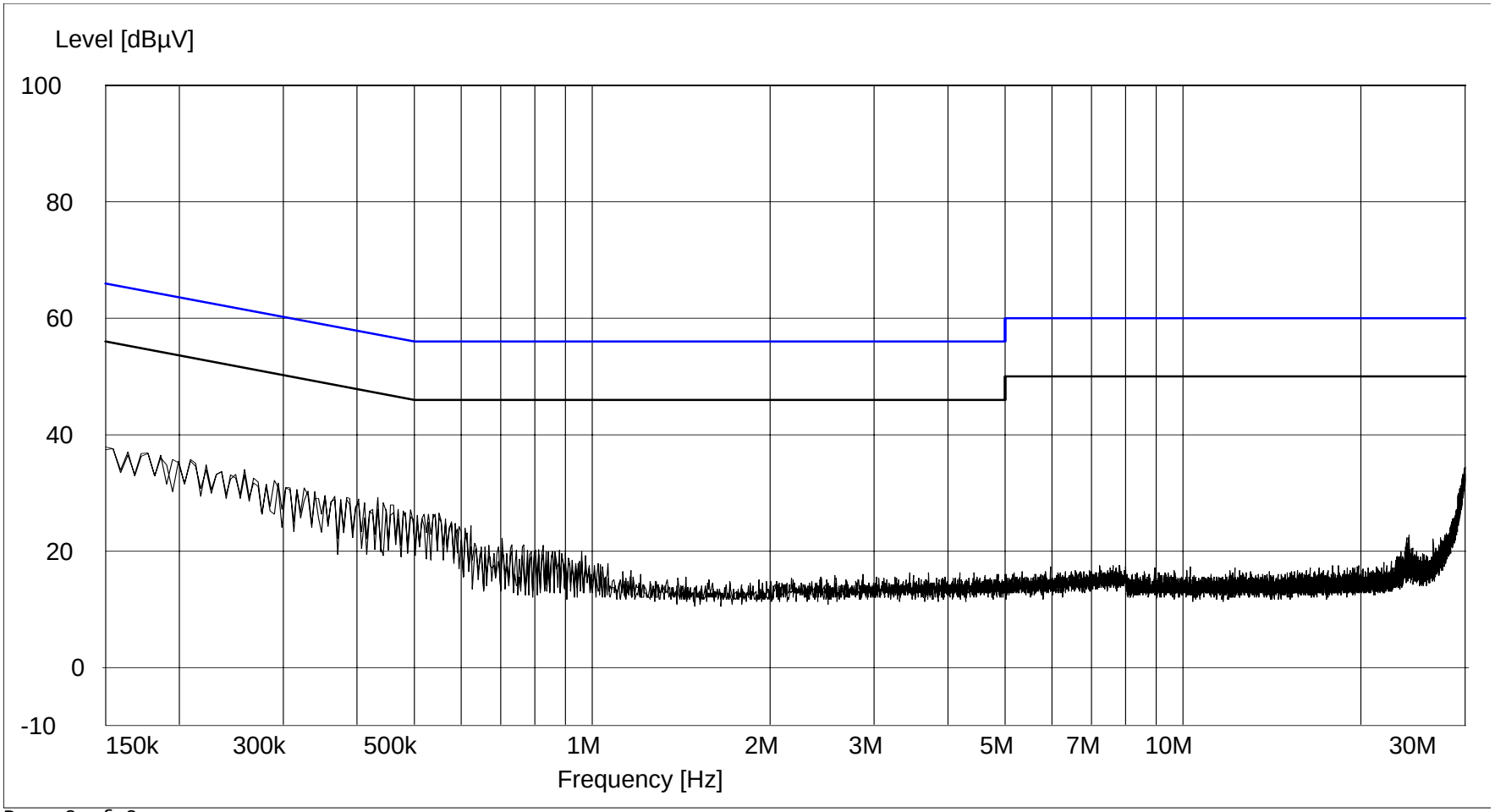
RETLIF Testing Laboratories, Job Number R-12110-3 Retest.

FCC Part 15, Subpart C, Section 15.207(a), Conducted Emissions, 150 kHz to 30 MHz.

Customer: Integrated Control Corporation
Test Sample: 433.92 MHz Pulsed Transmitter and Receiver Repeater
Part Number: 980905
FCC ID: VXJ980905
Test Specification: FCC Part 15, Subpart C, Section 15.207(a)
Mode of Operation: Continuously transmitting on a 433.92 MHz signal.
Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.
Technician / Date: N. Smith / March 20, 2008
Detector / Note: Peak / Peak emissions passed average limit.



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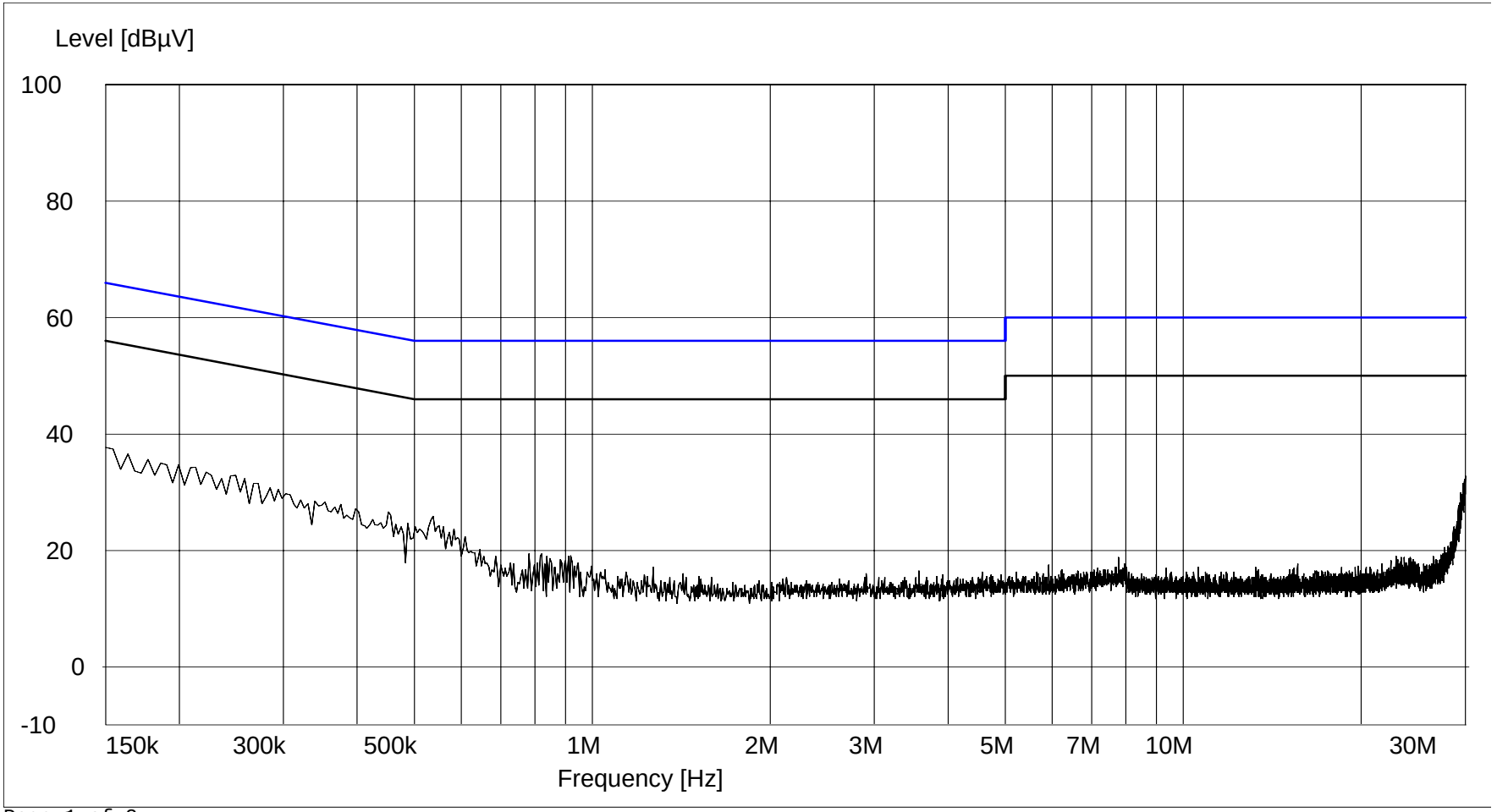
FCC Part 15, Subpart B, Section 15.107(a), Conducted Emissions, Power Leads, 150 kHz to 30 MHz
Retest Data
Receive Mode

RETLIF Testing Laboratories, Job Number R-12110-3 Retest.

FCC Part 15, Subpart B, Section 15.107(a), Conducted Emissions, 150 kHz to 30 MHz.

Customer: Integrated Control Corporation
Test Sample: 433.92 MHz Pulsed Transmitter and Receiver Repeater
Part Number: 980905
FCC ID: VXJ980905
Test Specification: FCC Part 15, Subpart B, Section 15.107(a)
Mode of Operation: EUT on standby mode waiting for a 433.92 MHz signal.
Lead Tested: 120 VAC/60 Hz hot input to AC adapter.
Technician / Date: N. Smith / March 20, 2008
Detector / Note: Peak / Peak emissions passed average limit.



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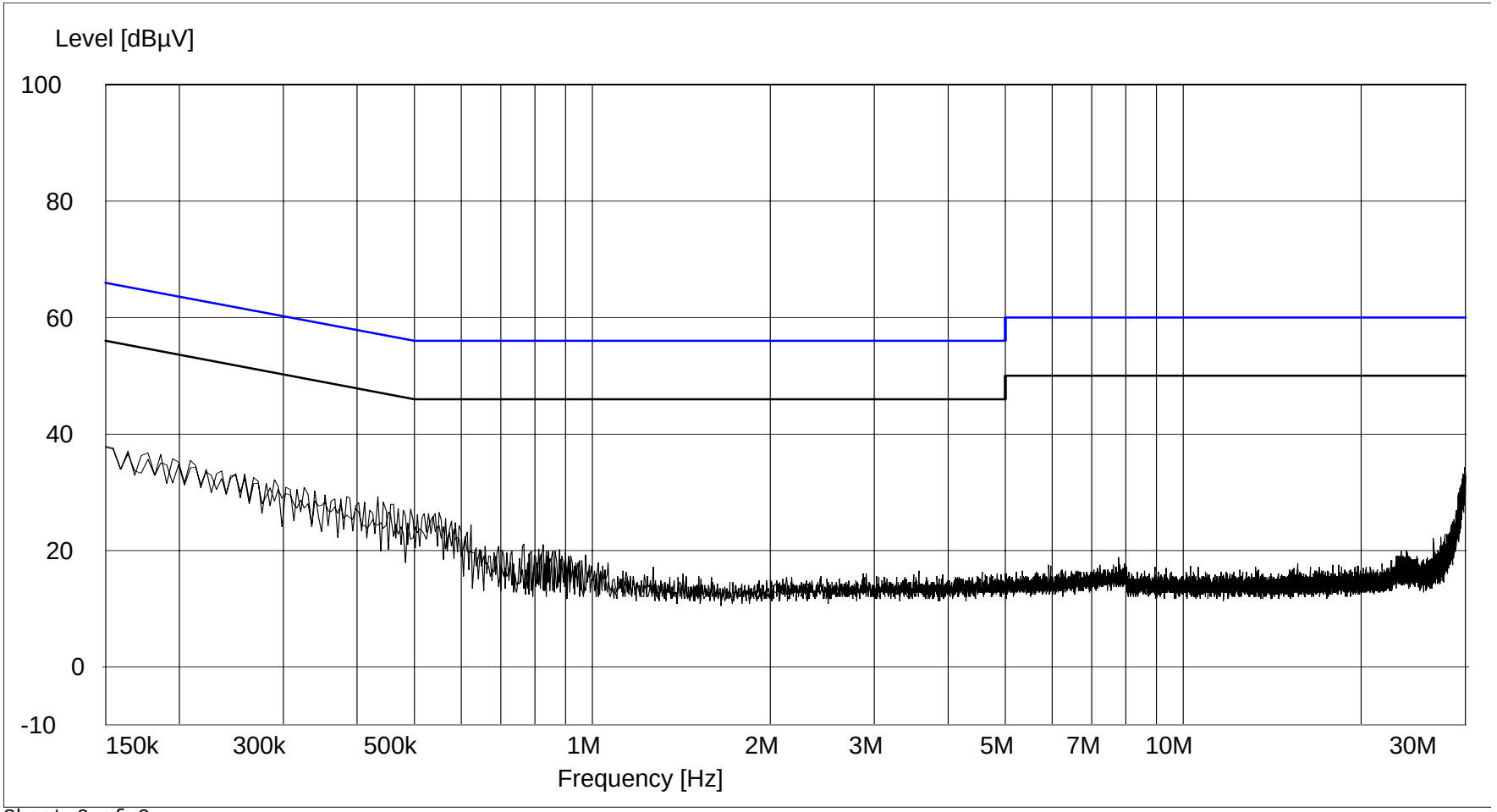
RETLIF Testing Laboratories, Job Number R-12110-3 Retest.

FCC Part 15, Subpart B, Section 15.107(a), Conducted Emissions, 150 kHz to 30 MHz.

Customer: Integrated Control Corporation
Test Sample: 433.92 MHz Pulsed Transmitter and Receiver Repeater
Part Number: 980905
FCC ID: VXJ980905
Test Specification: FCC Part 15, Subpart B, Section 15.107(a)
Mode of Operation: EUT on standby mode waiting for a 433.92 MHz signal.
Lead Tested: 120 VAC/60 Hz neutral input to AC adapter.
Technician / Date: N. Smith / March 20, 2008
Detector / Note: Peak / Peak emissions passed average limit.



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FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic
Test Data

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,		
Customer:	Integrated Control Corporation	**Job No.**	R-12110-3
Test Sample:	433.92 MHz Pulsed Transmitter and Receiver Repeater		
Part No.:	980905	**FCC ID:**	VXJ980905
Operating Mode:	Continuously transmitting a Pulsed 433.92 MHz signal.		
Technician:	R. Soodoo	**Date:**	March 6, 2008

Notes: Test Distance: 3 Meters
Detector: Peak, Unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
433.92	V / 1.0	X	83.8	-0.2	83.6	15135.6	43987.0
|	V / 1.8	Y	83.9	-0.2	83.7	15310.9	|
|	V / 1.0	Z	89.7	-0.2	89.5	29853.8	|
|	H / 1.7	X	89.3	-0.2	89.1	28510.2	|
|	H / 1.3	Y	83.1	-0.2	82.9	13963.7	|
433.92	H / 2.0	Z	76.1	-0.2	75.9	6237.3	43987.0
867.84	V / 1.0	X	49.4	8.8	58.2	812.8	4398.7
|	V / 2.2	Y	54.6	8.8	63.4	1479.1	|
|	V / 2.4	Z	57.8	8.8	66.6	2138.0	|
|	H / 1.0	X	48.4	8.8	57.2	724.4	|
|	H / 1.3	Y	53.1	8.8	61.9	1244.5	|
867.84	H / 1.0	Z	52.8	8.8	61.6	1202.3	4398.7
1301.76	V / 1.3	X	62.9	5.4	68.3	2600.2	5000.0
|	V / 1.0	Y	66.3	5.4	71.7	3845.9	|
|	V / 1.3	Z	62.1	5.4	67.5	2371.4	|
|	H / 1.0	X	64.2	5.4	69.6	3020.0	|
|	H / 1.0	Y	63.5	5.4	68.9	2786.1	|
1301.76	H / 1.0	Z	65.9	5.4	71.3	3672.8	5000.0
1735.68	V / 1.0	X	66.4	0.5	66.9	2213.1	4398.7
|	V / 1.0	Y	70.8	0.5	71.3	3672.8	|
|	V / 1.0	Z	67.1	0.5	67.6	2398.8	|
|	H / 1.0	X	70.8	0.5	71.3	3672.8	|
|	H / 1.0	Y	68.5	0.5	69.0	2818.4	|
1735.68	H / 1.3	Z	71.6	0.5	72.1	4027.2	4398.7
2169.60	V / 1.3	X	57.9	-5.1	52.8	436.5	4398.7
|	V / 1.2	Y	66.1	-5.1	61.0	1122.0	|
|	V / 1.4	Z	68.8	-5.1	63.7	1531.1	|
|	H / 1.0	X	65.1	-5.1	60.0	1000.0	|
|	H / 1.0	Y	65.3	-5.1	60.2	1023.3	|
2169.60	H / 1.9	Z	65.9	-5.1	60.8	1096.5	4398.7
	The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						

Retlif Job Number R-12110-3

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,		
Customer:	Integrated Control Corporation	**Job No.**	R-12110-3
Test Sample:	433.92 MHz Pulsed Transmitter and Receiver Repeater		
Part No.:	980905	**FCC ID:**	VXJ980905
Operating Mode:	Continuously transmitting a Pulsed 433.92 MHz signal.		
Technician:	R. Soodoo	**Date:**	March 6, 2008

Notes: Test Distance: 3 Meters
Detector: Peak, unless otherwise specified

Test Freq.	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
2603.52	V / 1.3	X	48.4	-4.4	44.0	158.5	4398.7
|	V / 1.0	Y	54.7	-4.4	50.3	327.3	|
|	V / 1.0	Z	53.7	-4.4	49.3	291.7	|
|	H / 1.0	X	54.4	-4.4	50.0	316.2	|
|	H / 1.0	Y	53.3	-4.4	48.9	278.6	|
2603.52	H / 1.0	Z	52.8	-4.4	48.4	263.0	4398.7
3037.44	V / 1.0	X	47.3	-2.8	44.5	167.9	4398.7
|	V / 1.0	Y	51.8	-2.8	49.0	281.8	|
|	V / 1.0	Z	51.6	-2.8	48.8	275.4	|
|	H / 1.0	X	49.7	-2.8	46.9	221.3	|
|	H / 1.0	Y	50.1	-2.8	47.3	231.7	|
3037.44	H / 1.0	Z	49.8	-2.8	47.0	223.9	4398.7
3471.36	V / 1.0	X	43.3	-1.4	41.9	124.5	4398.7
|	V / 1.0	Y	45.0	-1.4	43.6	151.4	|
|	V / 1.0	Z	42.7	-1.4	41.3	116.1	|
|	H / 1.0	X	43.7	-1.4	42.3	130.3	|
|	H / 1.0	Y	51.6	-1.4	50.2	323.6	|
3471.36	H / 1.0	Z	51.0	-1.4	49.6	302.0	4398.7
3905.28	V / 1.0	X	40.0	0.6	40.6	*107.2	5000.0
|	V / 1.0	Y	40.0	0.6	40.6	*107.2	|
|	V / 1.0	Z	40.0	0.6	40.6	*107.2	|
|	H / 1.0	X	40.0	0.6	40.6	*107.2	|
|	H / 1.0	Y	40.0	0.6	40.6	*107.2	|
3905.28	H / 1.0	Z	40.0	0.6	40.6	*107.2	5000.0
4339.2	V / 1.0	X	40.0	3.9	43.9	*156.7	5000.0
|	V / 1.0	Y	40.0	3.9	43.9	*156.7	|
|	V / 1.0	Z	40.0	3.9	43.9	*156.7	|
|	H / 1.0	X	40.0	3.9	43.9	*156.7	|
|	H / 1.0	Y	40.0	3.9	43.9	*156.7	|
4339.2	H / 1.0	Z	40.0	3.9	43.9	*156.7	5000.0
	The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more						
	than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	*=Noise Floor Measurements (Minimum system sensitivity)						

Retlif Job Number R-12110-3

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,		
Customer:	Integrated Control Corporation	**Job No.**	R-12110-3
Test Sample:	433.92 MHz Pulsed Transmitter and Receiver Repeater		
Part No.:	980905	**FCC ID:**	VXJ980905
Operating Mode:	Continuously transmitting a Pulsed 433.92 MHz signal.		
Technician:	R. Soodoo	**Date:**	March 6, 2008
Notes:	Test Distance: 3 Meters	Duty Cycle:9.0%	
	Detector: Peak, unless otherwise specified	Duty Cycle Correction: -20.0dB	

Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
433.92	V / 1.0	X	83.6	-20.0	63.6	1513.6	4398.7
|	V / 1.8	Y	83.7	-20.0	63.7	1531.1	|
|	V / 1.0	Z	89.5	-20.0	69.5	2985.4	|
|	H / 1.7	X	89.1	-20.0	69.1	2851.0	|
|	H / 1.3	Y	82.9	-20.0	62.9	1396.4	|
433.92	H / 2.0	Z	75.9	-20.0	55.9	623.7	4398.7
867.84	V / 1.0	X	58.2	-20.0	38.2	81.3	439.8
|	V / 2.2	Y	63.4	-20.0	43.4	147.9	|
|	V / 2.4	Z	66.6	-20.0	46.6	213.8	|
|	H / 1.0	X	57.2	-20.0	37.2	72.4	|
|	H / 1.3	Y	61.9	-20.0	41.9	124.5	|
867.84	H / 1.0	Z	61.6	-20.0	41.6	120.2	439.8
1301.76	V / 1.3	X	68.3	-20.0	48.3	260.0	500.0
|	V / 1.0	Y	71.7	-20.0	51.7	384.6	|
|	V / 1.3	Z	67.5	-20.0	47.5	237.1	|
|	H / 1.0	X	69.6	-20.0	49.6	302.0	|
|	H / 1.0	Y	68.9	-20.0	48.9	278.6	|
1301.76	H / 1.0	Z	71.3	-20.0	51.3	367.3	500.0
1735.68	V / 1.0	X	66.9	-20.0	46.9	221.3	439.8
|	V / 1.0	Y	71.3	-20.0	51.3	367.3	|
|	V / 1.0	Z	67.6	-20.0	47.6	239.9	|
|	H / 1.0	X	71.3	-20.0	51.3	367.3	|
|	H / 1.0	Y	69.0	-20.0	49.0	281.8	|
1735.68	H / 1.3	Z	72.1	-20.0	52.1	402.7	439.8
2169.60	V / 1.3	X	52.8	-20.0	32.8	43.7	439.8
|	V / 1.2	Y	61.0	-20.0	41.0	112.2	|
|	V / 1.4	Z	63.7	-20.0	43.7	153.1	|
|	H / 1.0	X	60.0	-20.0	40.0	100.0	|
|	H / 1.0	Y	60.2	-20.0	40.2	102.3	|
2169.60	H / 1.9	Z	60.8	-20.0	40.8	109.6	439.8
	The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more						
	Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						

Retlif Job Number R-12110-3

Test Method:	FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,		
Customer:	Integrated Control Corporation	**Job No.**	R-12110-3
Test Sample:	433.92 MHz Pulsed Transmitter and Receiver Repeater		
Part No.:	980905	**FCC ID:**	VXJ980905
Operating Mode:	Continuously transmitting a Pulsed 433.92 MHz signal.		
Technician:	R. Soodoo	**Date:**	March 6, 2008
Notes:	Test Distance: 3 Meters	Duty Cycle:9.0%	
	Detector: Peak, unless otherwise specified	Duty Cycle Correction: -20.0dB	

Test Freq.	Antenna Pol./Height	EUT Orientation	Peak Reading	Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBµV	dB	dBµV/m	uV/m	uV/m
2603.52	V / 1.3	X	44.0	-20.0	24.0	15.8	439.8
|	V / 1.0	Y	50.3	-20.0	30.3	32.7	|
|	V / 1.0	Z	49.3	-20.0	29.3	29.2	|
|	H / 1.0	X	50.0	-20.0	30.0	31.6	|
|	H / 1.0	Y	48.9	-20.0	28.9	27.9	|
2603.52	H / 1.0	Z	48.4	-20.0	28.4	26.3	439.8
3037.44	V / 1.0	X	44.5	-20.0	24.5	16.8	439.8
|	V / 1.0	Y	49.0	-20.0	29.0	28.2	|
|	V / 1.0	Z	48.8	-20.0	28.8	27.5	|
|	H / 1.0	X	46.9	-20.0	26.9	22.1	|
|	H / 1.0	Y	47.3	-20.0	27.3	23.2	|
3037.44	H / 1.0	Z	47.0	-20.0	27.0	22.4	439.8
3471.36	V / 1.0	X	41.9	-20.0	21.9	12.4	439.8
|	V / 1.0	Y	43.6	-20.0	23.6	15.1	|
|	V / 1.0	Z	41.3	-20.0	21.3	11.6	|
|	H / 1.0	X	42.3	-20.0	22.3	13.0	|
|	H / 1.0	Y	50.2	-20.0	30.2	32.4	|
3471.36	H / 1.0	Z	49.6	-20.0	29.6	30.2	439.8
3905.28	V / 1.0	X	40.6	-20.0	20.6	*10.7	500.0
|	V / 1.0	Y	40.6	-20.0	20.6	*10.7	|
|	V / 1.0	Z	40.6	-20.0	20.6	*10.7	|
|	H / 1.0	X	40.6	-20.0	20.6	*10.7	|
|	H / 1.0	Y	40.6	-20.0	20.6	*10.7	|
3905.28	H / 1.0	Z	40.6	-20.0	20.6	*10.7	500.0
4339.2	V / 1.0	X	43.9	-20.0	23.9	*15.7	500.0
|	V / 1.0	Y	43.9	-20.0	23.9	*15.7	|
|	V / 1.0	Z	43.9	-20.0	23.9	*15.7	|
|	H / 1.0	X	43.9	-20.0	23.9	*15.7	|
|	H / 1.0	Y	43.9	-20.0	23.9	*15.7	|
4339.2	H / 1.0	Z	43.9	-20.0	23.9	*15.7	500.0
	The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more						
	Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits.						
	*=Noise Floor Measurements (Minimum system sensitivity)						

Retlif Job Number R-12110-3

FCC Part 15, Subpart C, Spurious Case Radiated Emissions,
Paragraph 15.231(e)
Transmitter Retest Data

Test Method:	**FCC Part 15 Subpart C, Spurious Case Radiated Emissions Retest, Paragraph 15.231(e)**		
Customer:	Integrated Control Corporation	**Job No.:**	R-12110-3
Test Sample:	433.92 MHz Pulsed Transmitter and Receiver Repeater		
Part No.:	980905	**FCC ID No.:**	VXJ980905
Operating Mode:	Continuously transmitting a Pulsed 433.92 MHz signal.		
Technician:	R.Soodoo	**Date:**	March 7, 2008

Notes: Test Distance: 3 Meters Temp: 16.0 °C Humidity: 42%
Detector: Quasi-Peak from 30 MHz to 1 GHz, Average above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
|							|
|							|
88							100
88							150
|							|
|							|
|							|
|							|
216.0							150
216.0							200
|							|
|							|
270.1	H / 1.0	128.0	6.0	15.9	21.9	12.4	|
276.6	H / 1.0	128.0	10.0	15.9	25.9	19.7	|
282.2	H / 1.0	127.0	6.0	16.3	22.3	13.0	|
287.6	H / 1.0	128.0	14.0	16.4	30.4	33.1	|
293.2	H / 1.0	200.0	8.0	17.1	25.1	18.0	|
298.7	H / 1.0	200.0	14.0	17.1	31.1	35.9	|
304.0	H / 1.0	200.0	6.0	17.1	23.1	14.3	|
309.8	H / 1.0	200.0	9.0	17.2	26.2	20.4	|
398.2	H / 1.0	165.0	5.0	20.2	25.2	18.2	|
|							|
|							|
960.0							200
960.0							500
|							|
|							|
4330.0							500

The frequency range was scanned from 30 MHz to 4.33 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.

Page 1 of 1

FCC Part 15, Subpart B, Class B Radiated Emissions
Paragraph 15.109(a)
Receiver Test Data

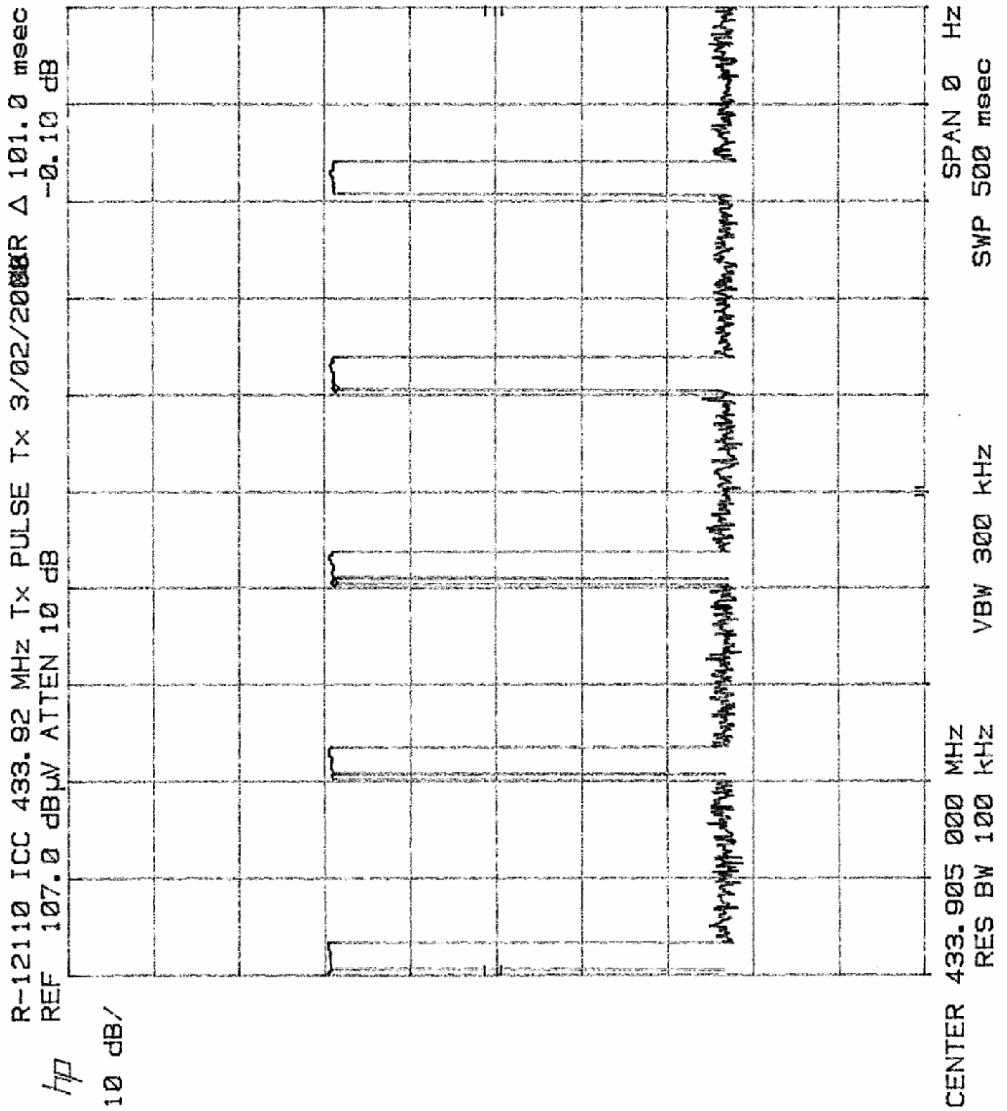
Test Method:	**FCC Part 15 Subpart B, Class B Radiated Emissions, Paragraph 15.109(a)**		
Customer:	Integrated Control Corporation	**Job No.:**	R-12110-3
Test Sample:	433.92 MHz Pulsed Transmitter and Receiver Repeater		
Part No.:	980905	**FCC ID No.:**	VXJ980905
Operating Mode:	EUT on standby mode waiting for a 433.92 MHz signal.		
Technician:	R.Soodoo	**Date:**	March 7, 2008

Notes: Test Distance: 3 Meters Temp: 16.0 °C Humidity: 42%
Detector: Quasi-Peak from 30 MHz to 1 GHz, Average above 1 GHz

Frequency	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBµV	dB	dBuV/m	uV/m	uV/m
30.00							100
|							|
|							|
88							100
88							150
|							|
|							|
|							|
|							|
216.0							150
216.0							200
|							|
|							|
270.1	H / 1.0	128.0	6.0	15.9	21.9	12.4	|
276.6	H / 1.0	128.0	10.0	15.9	25.9	19.7	|
282.2	H / 1.0	127.0	6.0	16.3	22.3	13.0	|
287.6	H / 1.0	128.0	14.0	16.4	30.4	33.1	|
293.2	H / 1.0	200.0	8.0	17.1	25.1	18.0	|
298.7	H / 1.0	200.0	14.0	17.1	31.1	35.9	|
304.0	H / 1.0	200.0	6.0	17.1	23.1	14.3	|
309.8	H / 1.0	200.0	9.0	17.2	26.2	20.4	|
398.2	H / 1.0	165.0	5.0	20.2	25.2	18.2	|
|							|
|							|
960.0							200
960.0							500
|							|
|							|
2000.0							500

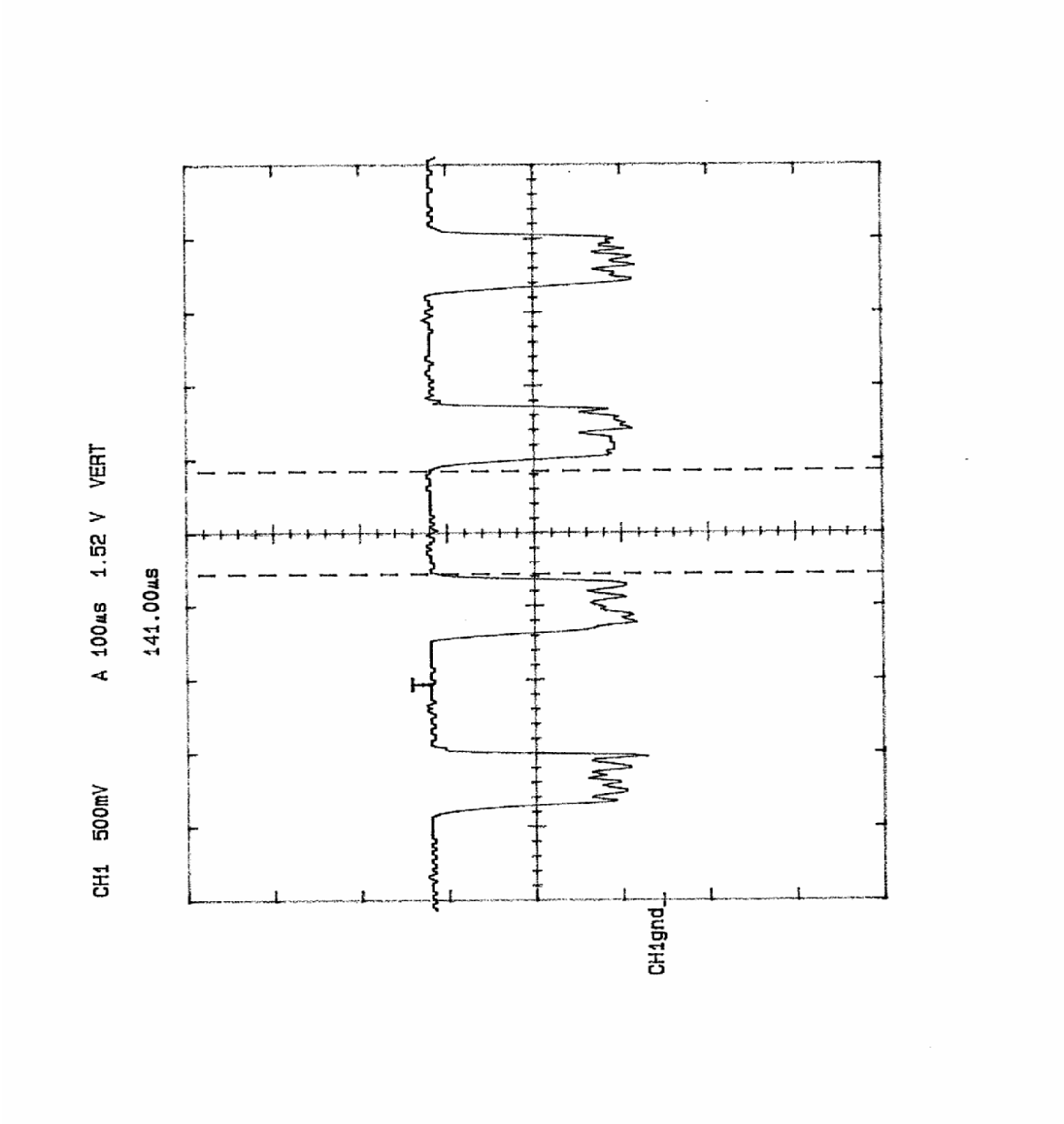
The frequency range was scanned from 30 MHz to 2.0 GHz.
The emissions observed from the EUT do not exceed the specified limits.
Emissions not recorded were more than 20dB under the specified limit.

FCC Part 15.35, Duty Cycle Determination
Test Data



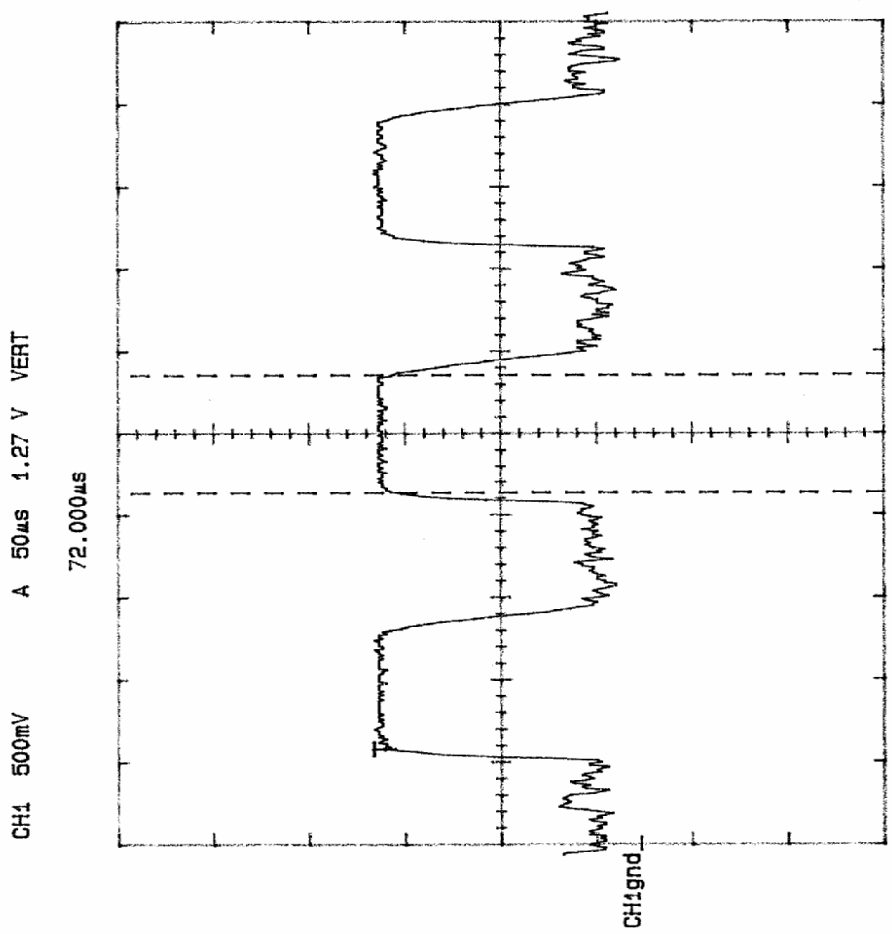
Test Method: **FCC Part 15.35, Duty Cycle Determination**.
Notes: Measurement of cycle time =101 mSec.
FCC ID.: VXJ980905

Customer	Integrated Control Corporation	
Test Sample	433.8 MHz Pulsed Transmitter and Receiver Repeater	
Part Number	980905	
Date: 3-03-2008.	Tech: R.Soodoo	Sheet 1 of 4



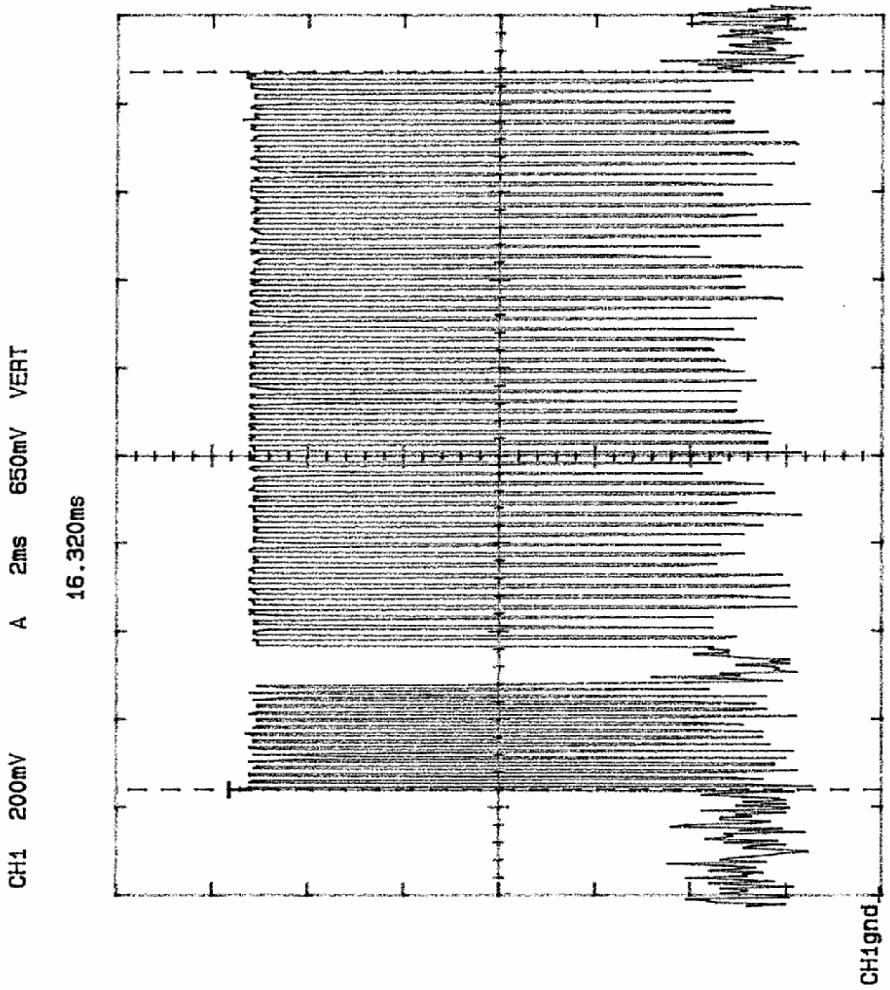
Test Method: FCC Part 15.35, Duty Cycle Determination.
Notes: Measurement of 1 large pulse = 141 µSec.
Measurements of 56 large pulses = 56(141µSec) = 7.8 ms.
FCC ID.: VXJ980905

Customer	Integrated Control Corporation	
Test Sample	433.8 MHz Pulsed Transmitter and Receiver Repeater	
Part Number	980905	
Date: 3-03-2008.	Tech: R.Soodoo	Sheet 2 of 4



Test Method: FCC Part 15.35, Duty Cycle Determination.
Notes: Measurement of 1 small pulse = 72 µSec.
Measurements of 16 small pulses = 16(72 µSec) = 1.1 ms.
FCC ID.: VXJ980905

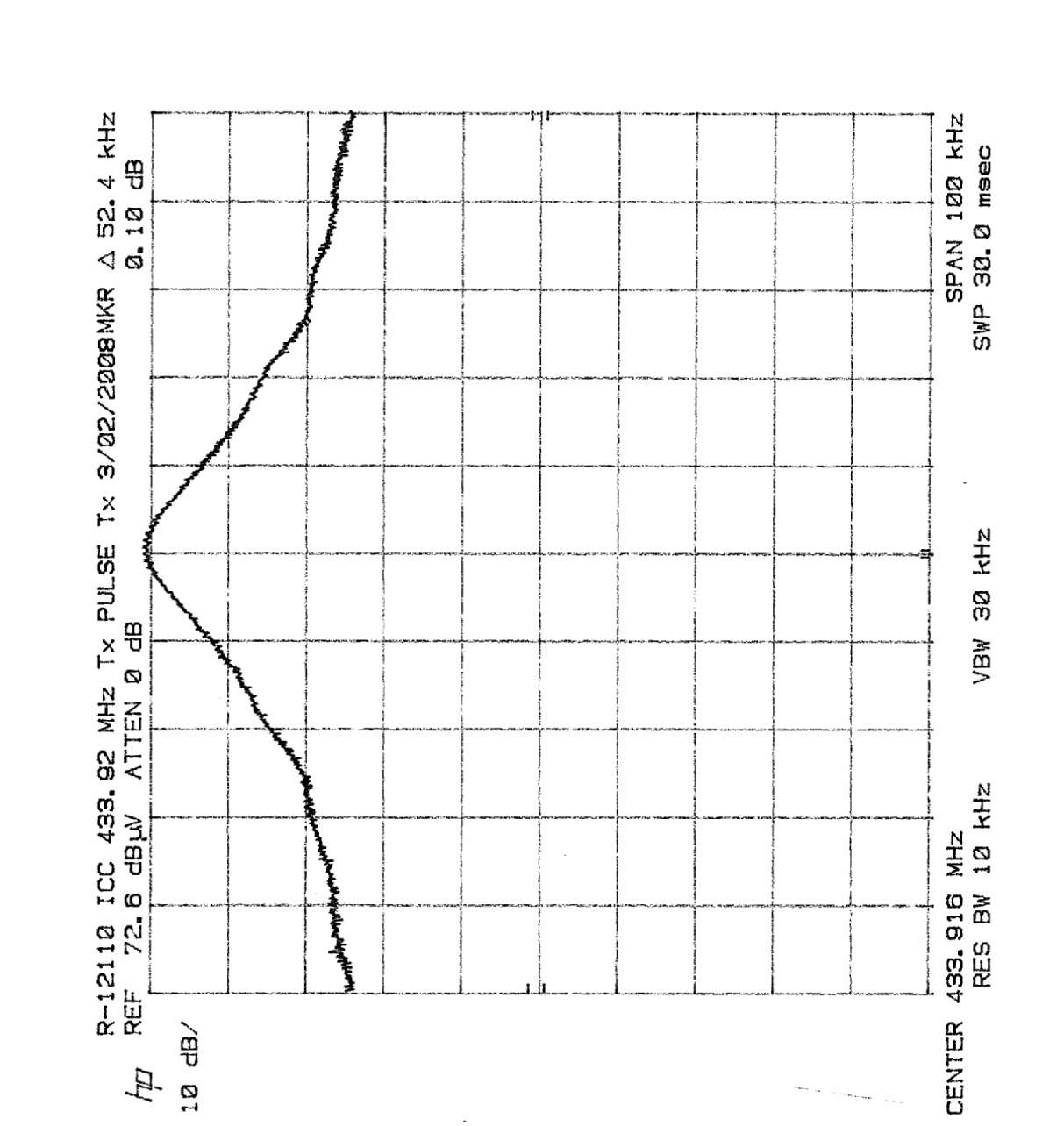
Customer	Integrated Control Corporation	
Test Sample	433.8 MHz Pulsed Transmitter and Receiver Repeater	
Part Number	980905	
Date: 3-03-2008.	Tech: R.Soodoo	Sheet 3 of 4



Test Method: FCC Part 15.35, Duty Cycle Determination.
Notes: Duty cycle = (56)(141 µSec) + (16) (72 µSec) = 9.0 ms.
Duty cycle = (9.0 ms / 100 ms=0.09) 20 log 0.09 = -20.9 dB (Only -20 dB maximum allowed)
FCC ID.: VXJ980905

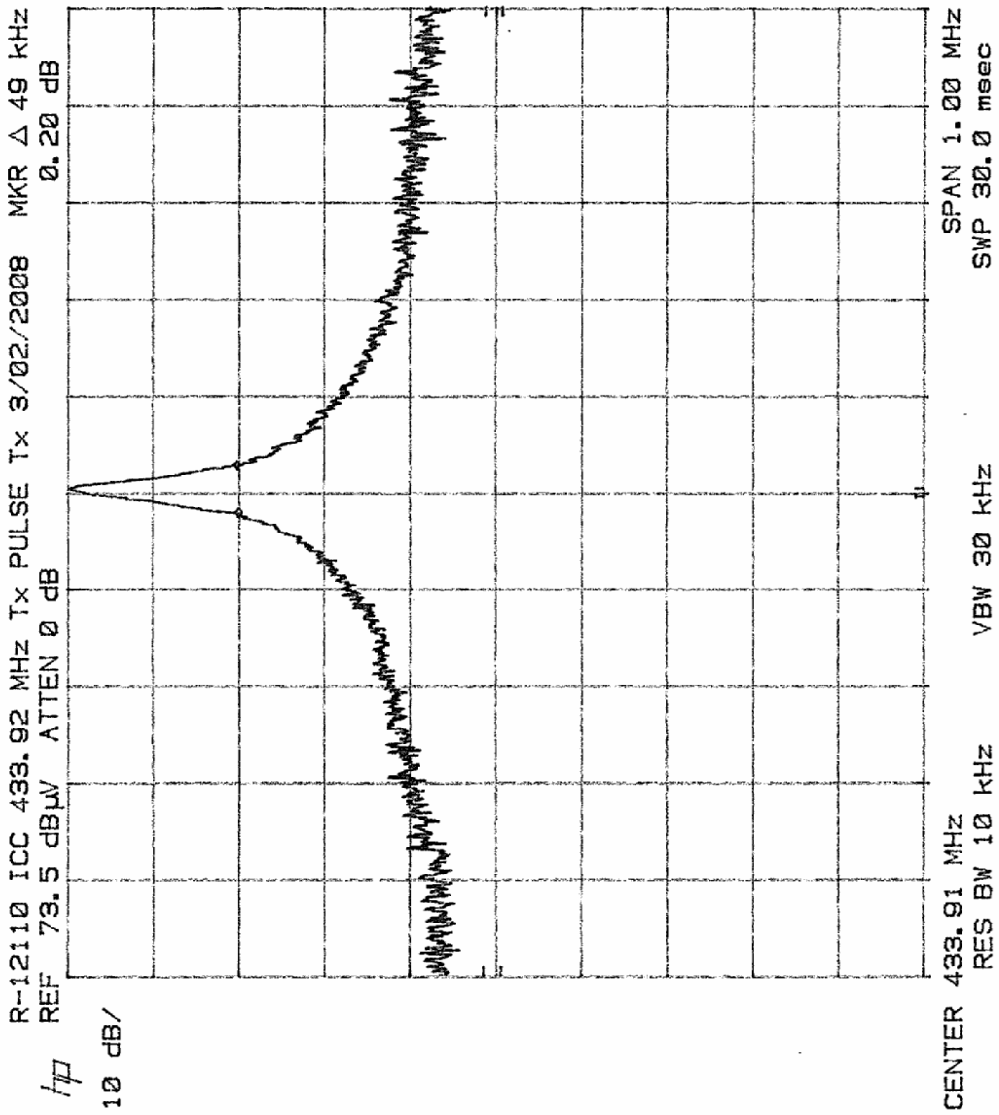
Customer	Integrated Control Corporation	
Test Sample	433.8 MHz Pulsed Transmitter and Receiver Repeater	
Part Number	980905	
Date: 3-03-2008.	Tech: R.Soodoo	Sheet 4 of 4

FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth
Test Data



Test Method: **FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth**.
Notes: Occupied Bandwidth measured 52.4 kHz, does not exceed 0.25% of center frequency at the 20 dBc points (1.08 MHz)
FCC ID.: VXJ980905

Customer	Integrated Control Corporation	
Test Sample	433.8 MHz Pulsed Transmitter and Receiver Repeater	
Part Number	980905	
Date: 3-03-2008.	Tech: R.Soodoo	Sheet 1 of 2



Test Method: **FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth**.
Notes: Occupied Bandwidth measured 52.4 kHz, does not exceed 0.25% of center frequency at the 20 dBc points (1.08 MHz)
FCC ID.: VXJ980905

Customer	Integrated Control Corporation	
Test Sample	433.8 MHz Pulsed Transmitter and Receiver Repeater	
Part Number	980905	
Date: 3-03-2008.	Tech: R.Soodoo	Sheet 2 of 2