



**FCC Certification Test Report  
for  
National Scientific Corporation  
FCC ID: Q79-703**

**July 23, 2003**

Prepared for:

**National Scientific Corporation  
14455 North Hayden Road  
Scottsdale, AZ 85260**

Prepared By:

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7560 Lindbergh Drive  
Gaithersburg, Maryland 20879**



# **FCC Certification Test Program**

## **FCC Certification Test Report for the National Scientific Corporation Gotcha! Perimeter Safety Device FCC ID: Q79-703**

**July 23, 2003**

WLL JOB# 7623

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## **Abstract**

This report has been prepared on behalf of National Scientific Corporation to support the attached Application for Equipment Authorization. The test report and application are submitted for a Periodic Intentional Radiator under Part 15.231 of the FCC Rules and Regulations. This Federal Communication Commission (FCC) Certification Test Report documents the test configuration and test results for a National Scientific Corporation Gotcha! Child Perimeter Safety Device.

Testing was performed on an Open Area Test Site (OATS) of Washington Laboratories, Ltd, 7560 Lindbergh Drive, Gaithersburg, MD 20879. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. Washington Laboratories, Ltd. has been accepted by the FCC and approved by NIST NVLAP (NVLAP Lab Code: 200066-0) as an independent FCC test laboratory.

The National Scientific Corporation Gotcha! Perimeter Safety Device complies with the limits for a Periodic Intentional Radiator device under Part 15.231 of the FCC Rules and Regulations.

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## **1 Introduction**

### **1.1 Compliance Statement**

The National Scientific Corporation Gotcha! Child Perimeter Safety Device complies with the limits for a Periodic Intentional Radiator device under Part 15.231 of the FCC Rules and Regulations.

### **1.2 Test Scope**

Tests for radiated emissions were performed. All measurements were performed according to the 1992 version of ANSI C63.4. The measurement equipment conforms to ANSI C63.2 Specifications for Electromagnetic Noise and Field Strength Instrumentation.

### **1.3 Contract Information**

Customer: National Scientific Corporation  
14455 North Hayden Road  
Scottsdale, AZ 85260

Quotation Number: 60889

### **1.4 Test Dates**

Testing was performed from June 18, 2003 to June 27, 2003.

### **1.5 Test and Support Personnel**

Washington Laboratories, LTD

Ken Gemmell

## 1.6 Abbreviations

|       |                                         |
|-------|-----------------------------------------|
| A     | Ampere                                  |
| Ac    | alternating current                     |
| AM    | Amplitude Modulation                    |
| Amps  | Amperes                                 |
| b/s   | bits per second                         |
| BW    | Bandwidth                               |
| CE    | Conducted Emission                      |
| cm    | centimeter                              |
| CW    | Continuous Wave                         |
| dB    | decibel                                 |
| dc    | direct current                          |
| EMI   | Electromagnetic Interference            |
| EUT   | Equipment Under Test                    |
| FM    | Frequency Modulation                    |
| G     | giga - prefix for $10^9$ multiplier     |
| Hz    | Hertz                                   |
| IF    | Intermediate Frequency                  |
| k     | kilo - prefix for $10^3$ multiplier     |
| M     | Mega - prefix for $10^6$ multiplier     |
| m     | Meter                                   |
| $\mu$ | micro - prefix for $10^{-6}$ multiplier |
| NB    | Narrowband                              |
| LISN  | Line Impedance Stabilization Network    |
| RE    | Radiated Emissions                      |
| RF    | Radio Frequency                         |
| rms   | root-mean-square                        |
| SN    | Serial Number                           |
| S/A   | Spectrum Analyzer                       |
| V     | Volt                                    |

## 2 Equipment Under Test

### 2.1 EUT Identification & Description

The National Scientific Corporation Gotcha! Perimeter Safety Device is a small battery powered, portable low power RF based proximity alarm system. The system consists of two components: an RF transmitter and an RF receiver. When the units are operational and beyond a specified distance that can be set manually on the transmitter unit, the receiver unit will emit an audible warning until it comes back within range.

The device is used as a parent assist device for ensuring small children do not exceed a safe distance from the parent.

**Table 1. Device Summary**

| ITEM                    | DESCRIPTION                                                    |
|-------------------------|----------------------------------------------------------------|
| Manufacturer:           | National Scientific Corporation                                |
| FCC ID Number           | Q79-703                                                        |
| EUT Name:               | Child Perimeter Safety Device                                  |
| Model:                  | Gotcha!                                                        |
| FCC Rule Parts:         | §15.231(e)                                                     |
| Frequency Range:        | 434MHz                                                         |
| Maximum Output Power:   | <1mW                                                           |
| Modulation:             | Pulsed                                                         |
| Bandwidth:              | 172.5kHz                                                       |
| Keying:                 | Automatic every 10 seconds and Manual Locate/Cancel button     |
| Type of Information:    | Code                                                           |
| Number of Channels:     | 1                                                              |
| Power Output Level      | 3 settings for Close (Low power), Medium, and Far (High Power) |
| Antenna Type            | Integral                                                       |
| Interface Cables:       | None                                                           |
| Power Source & Voltage: | 3Vdc from battery                                              |

### 2.2 Test Configuration

The Gotcha! was tested in an operational state with a receive unit located within the operating range.

### 2.3 Testing Algorithm

The Gotcha! transmitter was operated with the “Trigger Alarm” button continuously depressed to increase the rate transmitted signals. Also, the unit was set to the highest power setting (Far) during the testing.

Worst case emission levels are provided in the test results data.

## 2.4 Test Location

All measurements herein were performed at Washington Laboratories, Ltd. test center in Gaithersburg, MD. Site description and site attenuation data have been placed on file with the FCC's Sampling and Measurements Branch at the FCC laboratory in Columbia, MD. Washington Laboratories, Ltd. has been accepted by the FCC and approved by NIST NVLAP (NVLAP Lab Code: 200066-0) as an independent FCC test laboratory.

## 2.5 Measurements

### 2.5.1 References

ANSI C63.2 Specifications for Electromagnetic Noise and Field Strength Instrumentation

ANSI C63.4 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

Land Mobile FM or PM Communications Equipment Measurement and Performance Standards (ANSI/TIA/EIA-603-93)

## 2.6 Measurement Uncertainty

All results reported herein relate only to the equipment tested. For the purposes of the measurements performed by Washington Laboratories, the measurement uncertainty is  $\pm 2.3$  dB. This has been calculated for a *worst-case situation* (radiated emissions measurements performed on an open area test site).

The following measurement uncertainty calculation is provided:

$$\text{Total Uncertainty} = (A^2 + B^2 + C^2)^{1/2}/(n-1)$$

where:

A = Antenna calibration uncertainty, in dB = 2 dB

B = Spectrum Analyzer uncertainty, in dB = 1 dB

C = Site uncertainty, in dB = 4 dB

n = number of factors in uncertainty calculation = 3

Thus, Total Uncertainty =  $0.5 (2^2 + 1^2 + 4^2)^{1/2} = \pm 2.3$  dB.

### 3 Test Equipment

Table 2 shows a list of the test equipment used for measurements along with the calibration information.

**Table 2: Test Equipment List**

| Manufacturer | Model/Type       | Function           | Identification | Cal. Due |
|--------------|------------------|--------------------|----------------|----------|
| HP           | 8568B            | Spectrum Analyzer  | 2634A02888     | 7/03/03  |
| HP           | 85650A           | Quasi-Peak Adapter | 3303A01786     | 7/05/03  |
| Solar        | 8116-50-TS-100-N | LISN               | 962509         | 10/16/03 |
| ARA          | LPB-2520         | BiconiLog Antenna  | 1044           | 6/20/04  |
| HP           | 85685A           | RF Preselector     | 3221A01395     | 7/03/04  |

### 4 Test Results

#### 4.1 Duty Cycle Correction

Measurements may be adjusted where pulsed RF is utilized to find the average level associated with a quantity. This calculation is applied to limits for pulsed licensed and unlicensed devices.

On time =  $N_1L_1 + N_2L_2 + \dots + N_{N-1}L_{N-1} + N_NL_N$ , where  $N_1$  is number of type 1 pulses,  $L_1$  is length of type 1 pulses, etc.

- For Licensed Transmitters basic formula can be stated as  $20\log[\text{Duty Cycle}]$
- For Unlicensed Intentional Radiators under 47CFR Part 15, all duty cycle measurements compared to a 100 millisecond period
- i.e. duty cycle = on time/100 milliseconds or period, whichever is less
- Restating the basic formula:
  - o Duty cycle =  $(N_1L_1 + N_2L_2 + \dots + N_{N-1}L_{N-1} + N_NL_N)/100$  or T, whichever is less

Where T is the period of the pulse train.

The following Figures show the plots of the modulated carrier. The spectrum analyzer was set to Zero Span and the video triggered to collect the pulse train of the modulation. Calculations of the duty cycle correction factor were obtained from time data provided by the plots.

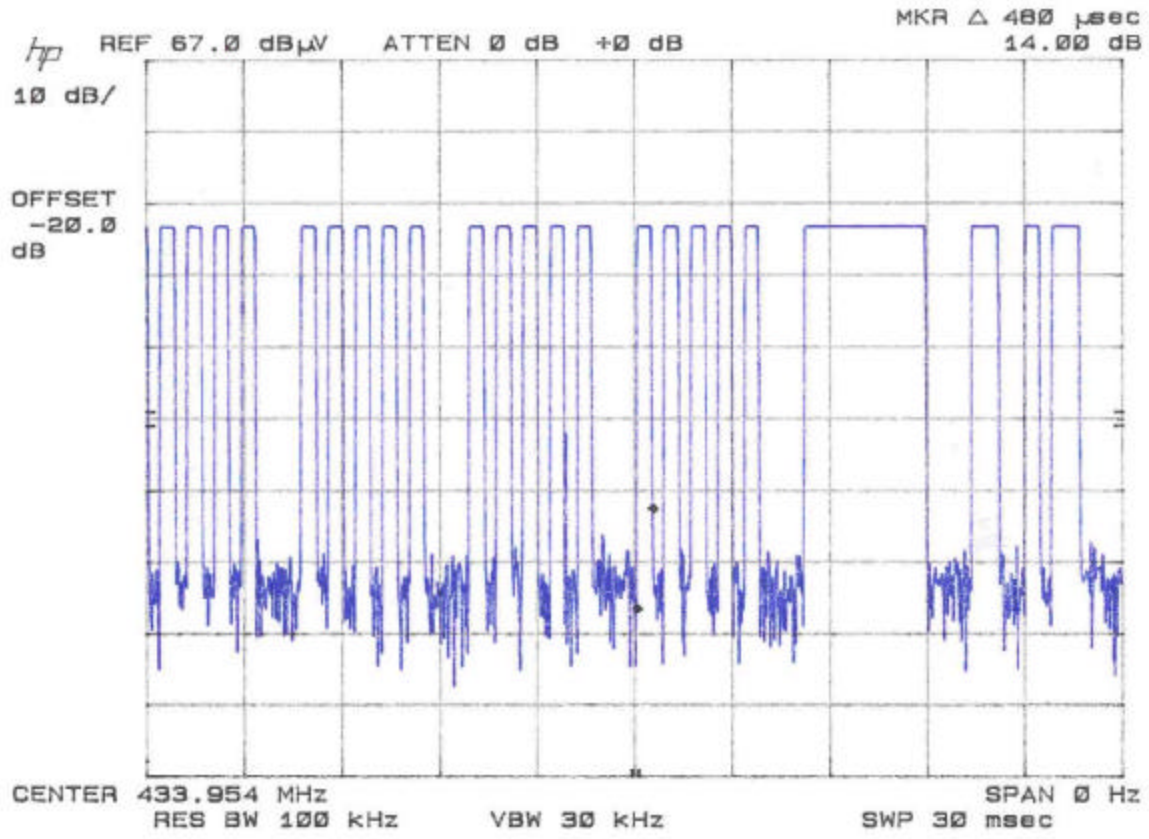


Figure 1. Duty Cycle; Narrow Pulse Width

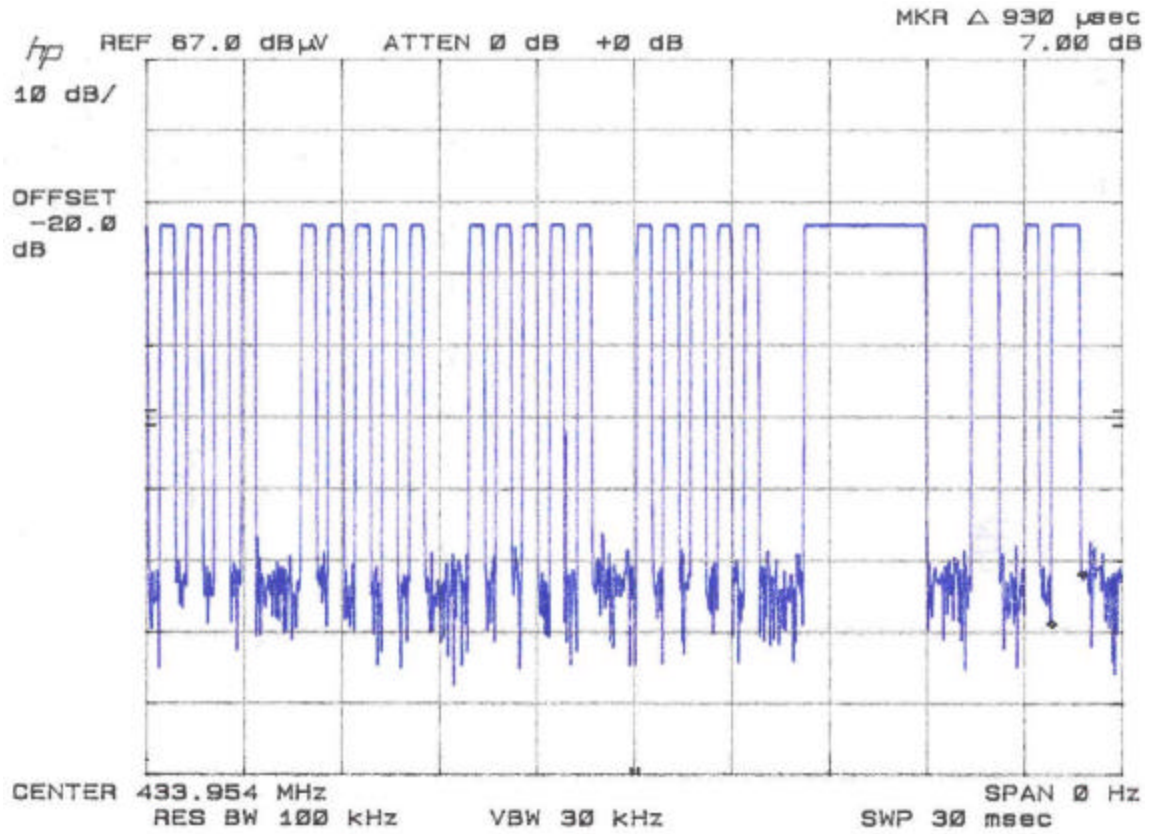


Figure 2. Duty Cycle; Medium Pulse Width

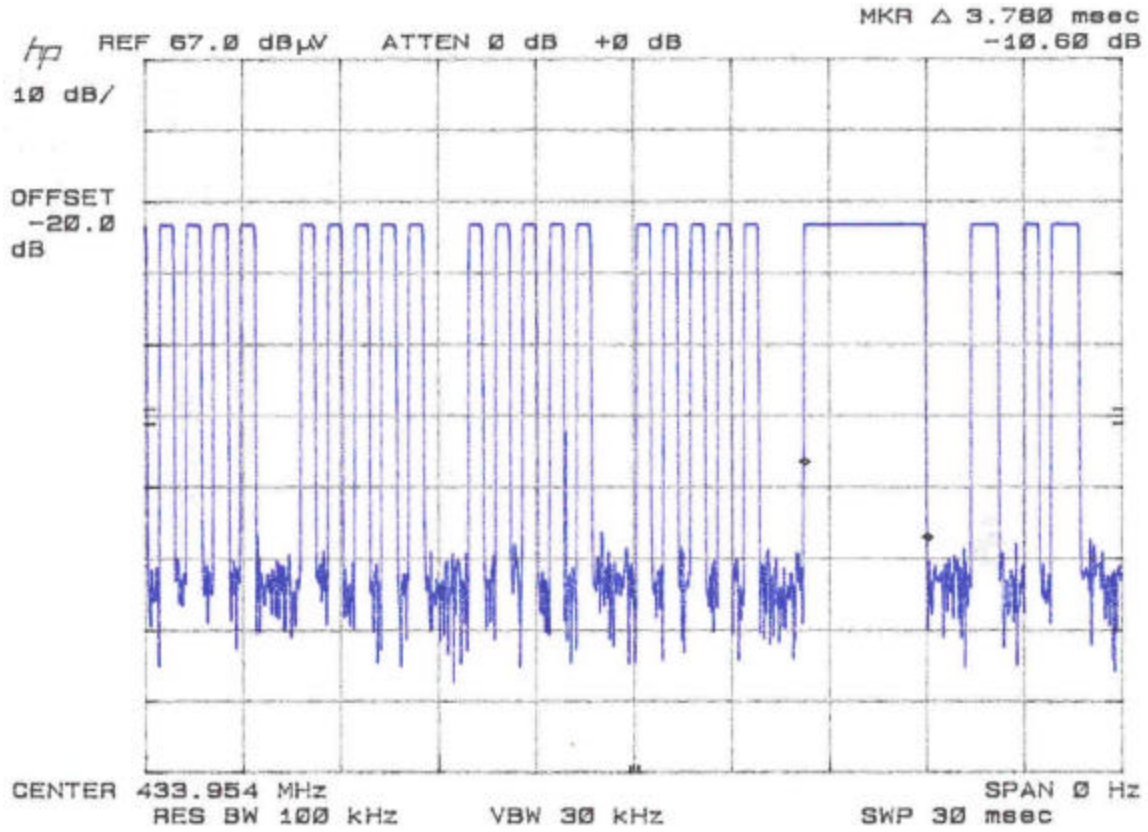


Figure 3. Duty Cycle; Wide Pulse Width

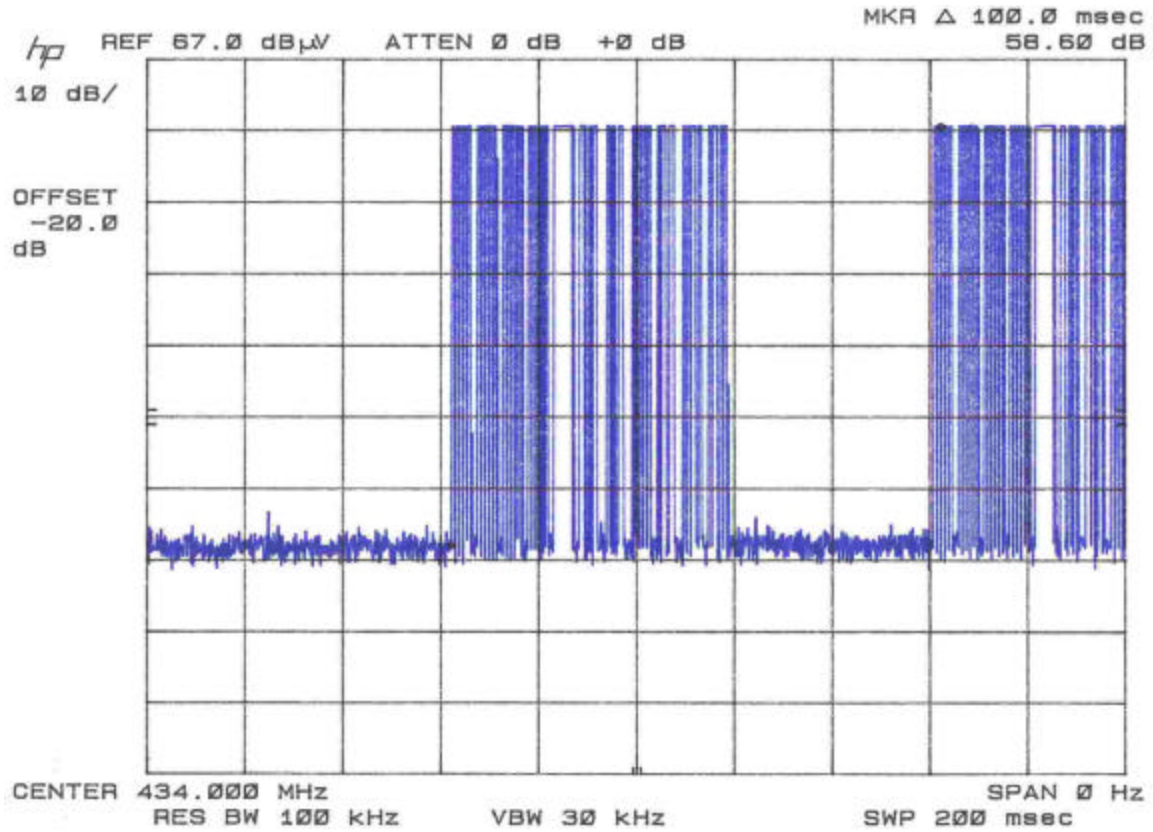
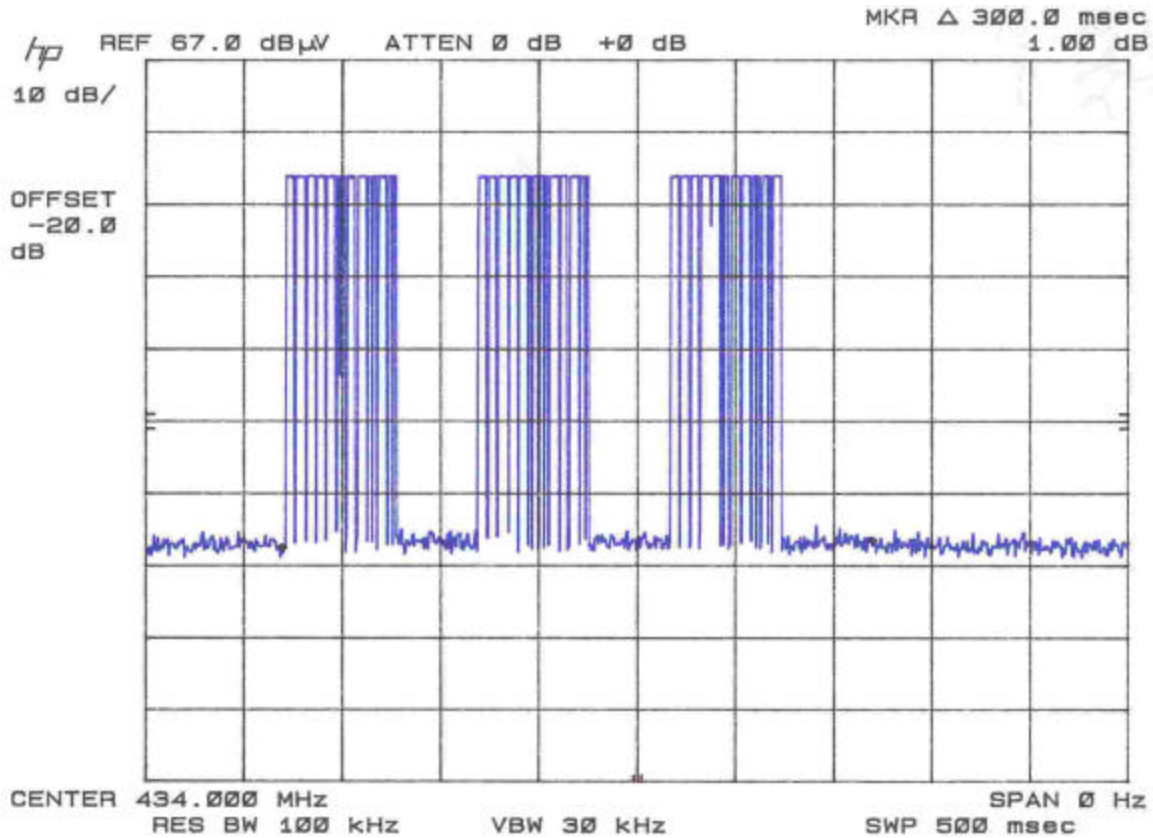


Figure 4. Duty Cycle Plot, Worst Case 100ms



**Figure 5. Complete Transmission**

**Table 3: Duty Cycle Correction**

CLIENT: National Scientific Corp. DATE: 6/25/03  
TESTER: Ken Gemmell JOB #: 7623  
EUT: Gotcha Transmitter

|                                  | Pulse 1      | Pulse 2 | Pulse 3 |
|----------------------------------|--------------|---------|---------|
| Number of pulses                 | 1            | 9       | 34      |
| Pulse Width (microseconds)       | 3780         | 930     | 480     |
| Total Time in (microseconds)     | 3780         | 8370    | 16320   |
| Total Time in (ms)               | 3.78         | 8.37    | 16.32   |
| Total time for both types Pulses |              |         | 28.47   |
| Worst Case Percent of 100 ms     |              |         | 28.47%  |
| Duty Cycle Correction Factor     | -10.91225 dB |         |         |

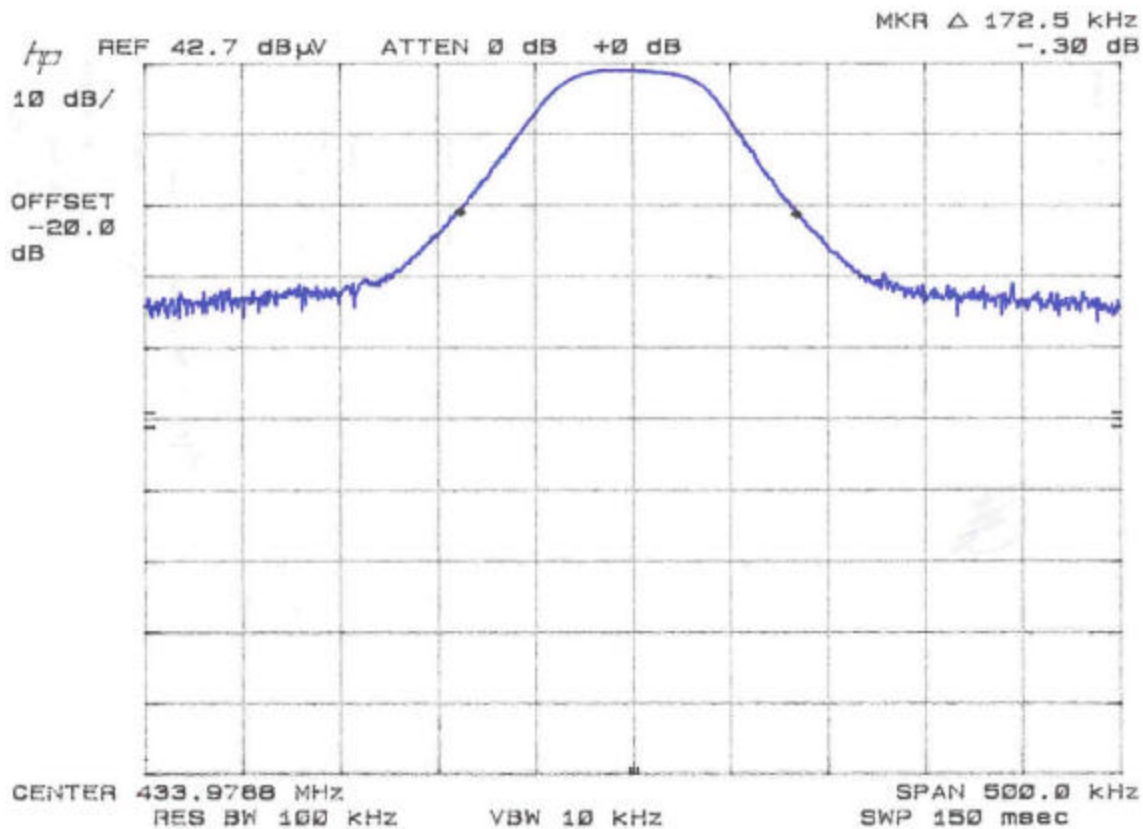
## 4.2 Occupied Bandwidth: (FCC Part §2.1049)

Occupied bandwidth was performed by coupling the output of the EUT to the input of a spectrum analyzer.

FCC Part 15.231 states that the 20 dB bandwidth of the modulated carrier shall be as follows:

| Frequency Range (MHz) | Occupied Bandwidth Limit |
|-----------------------|--------------------------|
| 70-900 MHz            | 0.25%                    |
| > 900 MHz             | 0.5%                     |

At full modulation, the occupied bandwidth was measured as shown:



**Figure 6. Occupied Bandwidth**

Table 4 provides a summary of the Occupied Bandwidth Results.

**Table 4. Occupied Bandwidth Results**

| Frequency | Bandwidth | Limit     | Pass/Fail |
|-----------|-----------|-----------|-----------|
| 434 MHz   | 172.5 kHz | 1.085 MHz | Pass      |

### 4.3 Radiated Spurious Emissions: (FCC Part §2.1053)

The EUT must comply with requirements for radiated spurious emissions. The limits are as shown in the following table. These limits are based on §15.231(e).

**Table 5. Radiated Spurious Emissions Limits**

| Frequency   | Fundamental          | Harmonic/Spurious Emission Level (-dBc or E-Field) |
|-------------|----------------------|----------------------------------------------------|
| Fundamental | 4400 $\mu\text{V/m}$ |                                                    |
| Harmonics   |                      | 440 $\mu\text{V/m}$                                |

#### 4.3.1 Test Procedure

The EUT was placed on motorized turntable for radiated testing on a 3-meter open field test site. The emissions from the EUT were measured continuously at every azimuth by rotating the turntable. Receiving antennas were mounted on an antenna mast to determine the height of maximum emissions. The height of the antenna was varied between 1 and 4 meters.

The emissions were measured using the following spectrum analyzer bandwidths:

| Frequency Range | Resolution Bandwidth | Video Bandwidth |
|-----------------|----------------------|-----------------|
| 30MHz-1000 MHz  | 100kHz               | >100kHz         |
| >1000 MHz       | 1 MHz                | 1MHz (peak)     |

Emissions were measured to the 10<sup>th</sup> harmonic of the transmit frequency. The EUT was tested in three orthogonal planes. Worst case emission levels are reported.

The following is a sample calculation used in the data tables for calculating the final field strength of spurious emissions and comparing these levels to the specified limits.

$$\text{Electric Field (Corr Level):} \quad \text{EdB}\mu\text{V/m} = \text{VdB}\mu\text{V} + \text{AFdB/m} + \text{CCdB} + \text{DCCdB} - \text{GdB}$$

**Table 6: Radiated Emission Test Data**

|                                            |                           |                                             |                 |
|--------------------------------------------|---------------------------|---------------------------------------------|-----------------|
| CLIENT:                                    | National Scientific Corp. | DATE:                                       | 6/27/03         |
| TESTER:                                    | Ken Gemmell               | JOB #:                                      | 7623            |
| EUT:                                       | Gotcha Transmitter        | <b>Test Requirements:</b>                   |                 |
| CONFIGURATION:                             | Transmitter               | TEST STD:                                   | FCC Part 15.231 |
| CLOCKS:                                    | 13.68 MHz                 | DISTANCE:                                   | 3m              |
| S/N:                                       |                           | CLASS:                                      | B               |
| <b>Low Frequency Test Equipment/Limit:</b> |                           | <b>High Frequency Test Equipment/Limit:</b> |                 |
| ANTENNA:                                   | A_00382                   | ANTENNA:                                    | A_00004         |
| CABLE:                                     | CSITE2_3m                 | CABLE:                                      | CSITE1_HF       |
| LIMIT:                                     | LFCC_3m_Class_B           | AMPLIFIER (dB)                              | A_00312         |

TX Frequency: 434 MHz **a = Ambient/Noise Floor**

Highest Power Setting X-Orientation Peak Data – Harmonics

| Frequency | Polarity | Azimuth | Ant. Hght | SA Level (Peak) | Ant. Corr. | Cable Corr. | Duty Cycle Corr | Amp Gain | Corr. Level | Corr. Level | Limit  | Margin |
|-----------|----------|---------|-----------|-----------------|------------|-------------|-----------------|----------|-------------|-------------|--------|--------|
| (MHz)     | H/V      | Degree  | (m)       | (dBuV)          | (dB/m)     | (dB)        | (dB)            | (dB)     | (dBuV/m)    | (uV/m)      | (uV/m) | dB     |
| 434.00    | V        | 180.0   | 1.6       | 42.1            | 17.1       | 4.8         | -10.9           | 0.0      | 53.1        | 453.5       | 4400.0 | -19.7  |
| 868.00    | V        | 180.0   | 1.0       | 18.5            | 23.6       | 7.5         | -10.9           | 0.0      | 38.7        | 85.9        | 440.0  | -14.2  |
| 1302.00   | V        | 180.0   | 1.0       | 53.0            | 26.3       | 2.0         | -10.9           | 34.2     | 36.1        | 64.0        | 440.0  | -16.7  |
| 1736.00   | V        | 180.0   | 1.0       | 57.4            | 28.0       | 3.0         | -10.9           | 34.1     | 43.4        | 147.3       | 440.0  | -9.5   |
| 2170.00   | V        | 180.0   | 1.0       | 48.7            | 29.3       | 3.3         | -10.9           | 34.1     | 36.2        | 64.6        | 440.0  | -16.7  |
| 2604.00   | V        | 180.0   | 1.0       | 51.7            | 30.1       | 3.0         | -10.9           | 34.4     | 39.4        | 93.8        | 440.0  | -13.4  |
| 3038.00   | V        | 180.0   | 1.0       | 46.7            | 30.7       | 2.8         | -10.9           | 34.6     | 34.7        | 54.3        | 440.0  | -18.2  |
| 3472.00   | V        | 180.0   | 1.0       | 46.8            | 31.2       | 2.8         | -10.9           | 34.6     | 35.3        | 58.3        | 440.0  | -17.6  |
| 3906.00   | V        | 0.0     | 1.0       | 42.5            | 31.6       | 2.8         | -10.9           | 34.6     | 31.4        | 37.1        | 440.0  | -21.5a |
| 4340.00   | V        | 0.0     | 1.0       | 43.8            | 32.2       | 3.4         | -10.9           | 34.6     | 33.9        | 49.7        | 440.0  | -18.9a |
| 434.00    | H        | 180.0   | 1.0       | 58.5            | 17.1       | 4.8         | -10.9           | 0.0      | 69.5        | 2996.5      | 4400.0 | -3.3   |
| 868.00    | H        | 180.0   | 1.0       | 26.5            | 23.6       | 7.5         | -10.9           | 0.0      | 46.7        | 215.8       | 440.0  | -6.2   |
| 1302.00   | H        | 180.0   | 1.0       | 59.0            | 26.3       | 2.0         | -10.9           | 34.2     | 42.1        | 127.7       | 440.0  | -10.7  |
| 1736.00   | H        | 180.0   | 1.0       | 61.0            | 28.0       | 3.0         | -10.9           | 34.1     | 47.0        | 223.9       | 440.0  | -5.9   |
| 2170.00   | H        | 180.0   | 1.0       | 52.7            | 29.3       | 3.3         | -10.9           | 34.1     | 40.2        | 102.3       | 440.0  | -12.7  |
| 2604.00   | H        | 180.0   | 1.0       | 55.5            | 30.1       | 3.0         | -10.9           | 34.4     | 43.3        | 145.9       | 440.0  | -9.6   |
| 3038.00   | H        | 180.0   | 1.0       | 54.0            | 30.7       | 2.8         | -10.9           | 34.6     | 42.0        | 126.2       | 440.0  | -10.8  |
| 3472.00   | H        | 0.0     | 1.0       | 45.8            | 31.2       | 2.8         | -10.9           | 34.6     | 34.3        | 52.0        | 440.0  | -18.6a |
| 3906.00   | H        | 0.0     | 1.0       | 42.8            | 31.6       | 2.8         | -10.9           | 34.6     | 31.7        | 38.6        | 440.0  | -21.1a |
| 4340.00   | H        | 0.0     | 1.0       | 43.8            | 32.2       | 3.4         | -10.9           | 34.6     | 33.9        | 49.7        | 440.0  | -18.9a |

Y-Orientation Peak Data – Harmonics

| Frequency | Polarity | Azimuth | Ant. Hght | SA Level (Peak) | Ant. Corr. | Cable Corr. | Duty Cycle Corr | Amp Gain | Corr. Level | Corr. Level | Limit  | Margin |
|-----------|----------|---------|-----------|-----------------|------------|-------------|-----------------|----------|-------------|-------------|--------|--------|
| (MHz)     | H/V      | Degree  | (m)       | (dBuV)          | (dB/m)     | (dB)        | (dB)            | (dB)     | (dBuV/m)    | (uV/m)      | (uV/m) | dB     |
| 434.00    | V        | 180.0   | 1.0       | 53.3            | 17.1       | 4.8         | -10.9           | 0.0      | 64.3        | 1646.7      | 4400.0 | -8.5   |
| 868.00    | V        | 180.0   | 1.0       | 21.2            | 23.6       | 7.5         | -10.9           | 0.0      | 41.4        | 117.2       | 440.0  | -11.5  |
| 1302.00   | V        | 180.0   | 1.0       | 58.8            | 26.3       | 2.0         | -10.9           | 34.2     | 42.0        | 125.3       | 440.0  | -10.9  |
| 1736.00   | V        | 180.0   | 1.0       | 60.8            | 28.0       | 3.0         | -10.9           | 34.1     | 46.8        | 219.6       | 440.0  | -6.0   |
| 2170.00   | V        | 180.0   | 1.0       | 57.0            | 29.3       | 3.3         | -10.9           | 34.1     | 44.5        | 168.5       | 440.0  | -8.3   |
| 2604.00   | V        | 180.0   | 1.0       | 52.4            | 30.1       | 3.0         | -10.9           | 34.4     | 40.2        | 102.1       | 440.0  | -12.7  |
| 3038.00   | V        | 180.0   | 1.0       | 49.2            | 30.7       | 2.8         | -10.9           | 34.6     | 37.2        | 72.4        | 440.0  | -15.7  |
| 3472.00   | V        | 0.0     | 1.0       | 47.0            | 31.2       | 2.8         | -10.9           | 34.6     | 35.5        | 59.5        | 440.0  | -17.4a |
| 3906.00   | V        | 0.0     | 1.0       | 43.0            | 31.6       | 2.8         | -10.9           | 34.6     | 31.9        | 39.3        | 440.0  | -21.0a |
| 4340.00   | V        | 0.0     | 1.0       | 43.7            | 32.2       | 3.4         | -10.9           | 34.6     | 33.8        | 48.8        | 440.0  | -19.1a |
| 434.00    | H        | 180.0   | 1.0       | 51.4            | 17.1       | 4.8         | -10.9           | 0.0      | 62.4        | 1323.1      | 4400.0 | -10.4  |
| 868.00    | H        | 180.0   | 1.0       | 20.7            | 23.6       | 7.5         | -10.9           | 0.0      | 40.9        | 110.7       | 440.0  | -12.0  |
| 1302.00   | H        | 180.0   | 1.0       | 53.3            | 26.3       | 2.0         | -10.9           | 34.2     | 36.5        | 66.5        | 440.0  | -16.4  |
| 1736.00   | H        | 180.0   | 1.0       | 60.2            | 28.0       | 3.0         | -10.9           | 34.1     | 46.2        | 203.3       | 440.0  | -6.7   |
| 2170.00   | H        | 180.0   | 1.0       | 54.0            | 29.3       | 3.3         | -10.9           | 34.1     | 41.5        | 119.3       | 440.0  | -11.3  |
| 2604.00   | H        | 160.0   | 1.0       | 51.3            | 30.1       | 3.0         | -10.9           | 34.4     | 39.1        | 90.3        | 440.0  | -13.8  |
| 3038.00   | H        | 180.0   | 1.0       | 51.7            | 30.7       | 2.8         | -10.9           | 34.6     | 39.7        | 96.5        | 440.0  | -13.2  |
| 3472.00   | H        | 0.0     | 1.0       | 45.2            | 31.2       | 2.8         | -10.9           | 34.6     | 33.7        | 48.2        | 440.0  | -19.2a |
| 3906.00   | H        | 0.0     | 1.0       | 43.0            | 31.6       | 2.8         | -10.9           | 34.6     | 31.9        | 39.3        | 440.0  | -21.0a |
| 4340.00   | H        | 0.0     | 1.0       | 43.3            | 32.2       | 3.4         | -10.9           | 34.6     | 33.4        | 47.0        | 440.0  | -19.4a |

Z-Orientation Peak Data – Harmonics

| Frequency | Polarity | Azimuth | Ant. Hght | SA Level (Peak) | Ant. Corr. | Cable Corr. | Duty Cycle Corr | Amp Gain | Corr. Level | Corr. Level | Limit  | Margin |
|-----------|----------|---------|-----------|-----------------|------------|-------------|-----------------|----------|-------------|-------------|--------|--------|
| (MHz)     | H/V      | Degree  | (m)       | (dBuV)          | (dB/m)     | (dB)        | (dB)            | (dB)     | (dBuV/m)    | (uV/m)      | (uV/m) | dB     |
| 434.00    | V        | 180.0   | 1.0       | 53.5            | 17.1       | 4.8         | -10.9           | 0.0      | 64.5        | 1685.0      | 4400.0 | -8.3   |
| 868.00    | V        | 180.0   | 1.0       | 18.3            | 23.6       | 7.5         | -10.9           | 0.0      | 38.5        | 83.9        | 440.0  | -14.4  |
| 1302.00   | V        | 180.0   | 1.0       | 57.8            | 26.3       | 2.3         | -10.9           | 34.2     | 41.3        | 115.6       | 440.0  | -11.6  |
| 1736.00   | V        | 180.0   | 1.0       | 60.7            | 28.0       | 2.4         | -10.9           | 34.1     | 46.1        | 201.9       | 440.0  | -6.8   |
| 2170.00   | V        | 180.0   | 1.0       | 59.5            | 29.3       | 2.7         | -10.9           | 34.1     | 46.5        | 210.6       | 440.0  | -6.4   |
| 2604.00   | V        | 180.0   | 1.0       | 52.6            | 30.1       | 3.1         | -10.9           | 34.4     | 40.4        | 105.0       | 440.0  | -12.4  |
| 3038.00   | V        | 180.0   | 1.0       | 57.2            | 30.7       | 3.4         | -10.9           | 34.6     | 45.8        | 195.2       | 440.0  | -7.1   |
| 3472.00   | V        | 180.0   | 1.0       | 48.3            | 31.2       | 3.6         | -10.9           | 34.6     | 37.6        | 76.3        | 440.0  | -15.2  |
| 3906.00   | V        | 0.0     | 1.0       | 42.8            | 31.6       | 3.8         | -10.9           | 34.6     | 32.8        | 43.4        | 440.0  | -20.1a |
| 4340.00   | V        | 0.0     | 1.0       | 43.8            | 32.2       | 3.9         | -10.9           | 34.6     | 34.5        | 52.8        | 440.0  | -18.4a |
| 434.00    | H        | 180.0   | 1.0       | 58.5            | 17.1       | 4.8         | -10.9           | 0.0      | 69.5        | 2996.5      | 4400.0 | -3.3   |
| 868.00    | H        | 180.0   | 1.0       | 26.5            | 23.6       | 7.5         | -10.9           | 0.0      | 46.7        | 215.8       | 440.0  | -6.2   |
| 1302.00   | H        | 180.0   | 1.0       | 59.3            | 26.3       | 2.0         | -10.9           | 34.2     | 42.5        | 132.7       | 440.0  | -10.4  |
| 1736.00   | H        | 180.0   | 1.0       | 62.6            | 28.0       | 3.0         | -10.9           | 34.1     | 48.6        | 269.2       | 440.0  | -4.3   |
| 2170.00   | H        | 180.0   | 1.0       | 53.5            | 29.3       | 3.3         | -10.9           | 34.1     | 41.0        | 112.6       | 440.0  | -11.8  |
| 2604.00   | H        | 180.0   | 1.0       | 57.8            | 30.1       | 3.0         | -10.9           | 34.4     | 45.6        | 189.5       | 440.0  | -7.3   |
| 3038.00   | H        | 180.0   | 1.0       | 49.7            | 30.7       | 2.8         | -10.9           | 34.6     | 37.7        | 76.7        | 440.0  | -15.2  |
| 3472.00   | H        | 180.0   | 1.0       | 47.8            | 31.2       | 2.8         | -10.9           | 34.6     | 36.3        | 65.4        | 440.0  | -16.6  |
| 3906.00   | H        | 180.0   | 1.0       | 47.7            | 31.6       | 2.8         | -10.9           | 34.6     | 36.6        | 67.3        | 440.0  | -16.3  |
| 4340.00   | H        | 0.0     | 1.0       | 44.3            | 32.2       | 3.4         | -10.9           | 34.6     | 34.4        | 52.7        | 440.0  | -18.4a |