



Nemko

Test Report:

3W06825

Applicant:

Desa International
PO Box 90004
2901 Industrial Ave
Bowling Green KY
42102

**Equipment Under Test:
(EUT)**

Door Chime Transmitter
6442TX and 6443TX

FCC ID:

BJ464WDB42TX

In Accordance With:

FCC Part 15, Subpart C, 15.231

Tested By:

Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

Glen Westwell, Wireless Technologist

Date:

27 January 2003

Total Number of Pages:

18

Table of Contents

Section 1.	Summary of Test Results.....	3
Section 2.	Equipment Under Test	5
Section 3.	Transmission Requirements	10
Section 4.	Radiated Emissions.....	12
Section 5.	Occupied Bandwidth.....	15
Section 6.	Block Diagrams.....	17
Section 7.	Test Equipment List	18

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX

Section 1. Summary of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".



TESTED BY: DATE: _____

Date: 23 January 2003

Russell Grant, Senior Approvals Eng.

Nemko Canada Inc. authorizes the above named company to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

This report applies only to the items tested.

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX

Summary Of Test Data

Name of Test	Para. Number	Results
Transmission Requirements	15.231(a)	Complies
Radiated Emissions	15.231(b)	Complies
Occupied Bandwidth	15.231(c)	Complies
Frequency Tolerance	15.231(d)	NA
Periodic Alternate Field Strength Requirements	15.231(e)	NA
Powerline Conducted Emissions	15.207	NA

Note: This device is powered by two 3Vdc lithium cells.

Test Conditions:

Indoor Temperature: 20°C
 Humidity: 20%

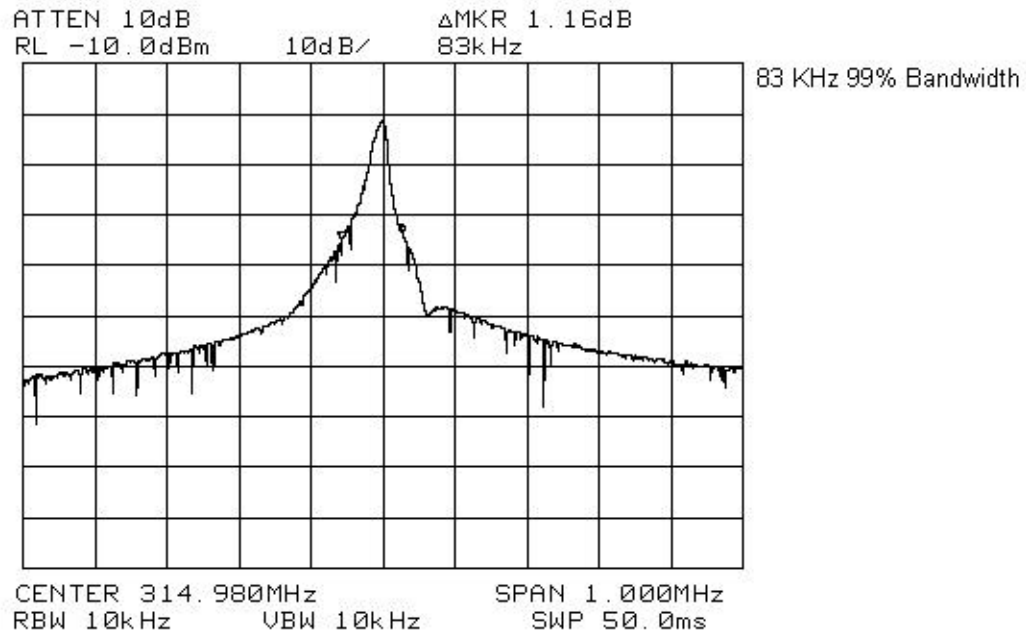
Outdoor Temperature: 15°C
 Humidity: 5%

Section 2. Equipment Under Test

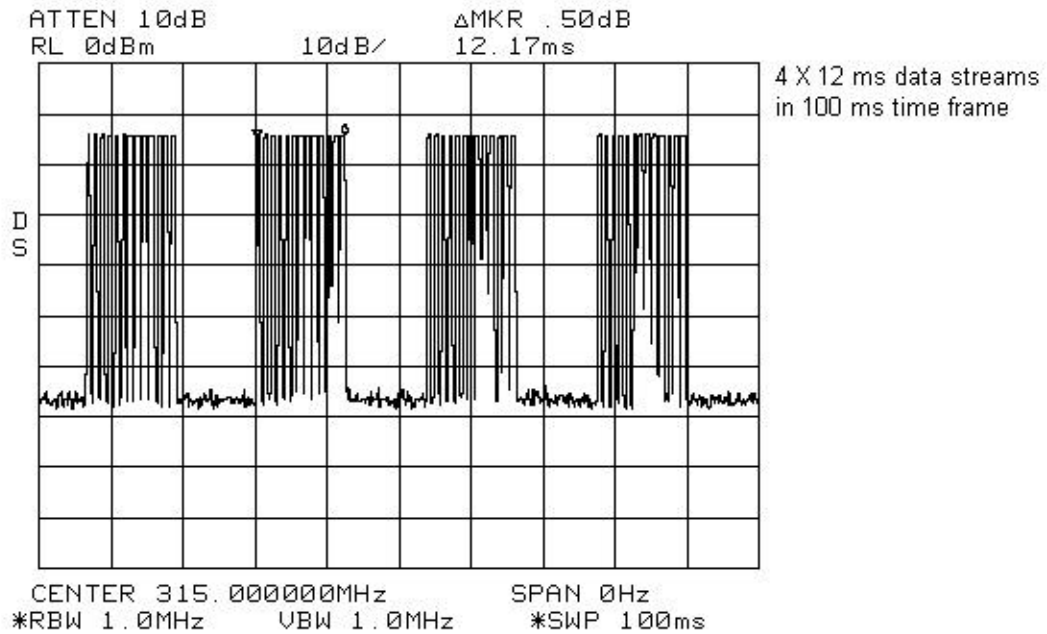
General Equipment Information

Manufacturer:	Desa International
Equipment	315 MHz Wireless Door Chime Transmitter
Model No.:	6442TX and 6443 TX both models use identical circuit board and components but differ only in style of plastic housing.
Serial No.:	None
Date Received In Laboratory:	Jan 22, 2003
Nemko Identification No.:	1
Transmit Frequency:	315MHz Fixed
Modulation:	Pulse Carrier On Off
Emission Designator:	83K0L1D
Duty Cycle:	Worst Case 13 long pulses per packet $20 \times \log (13 \times 0.666 \times 4 / 100) = -9.2 \text{ dB}$

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX



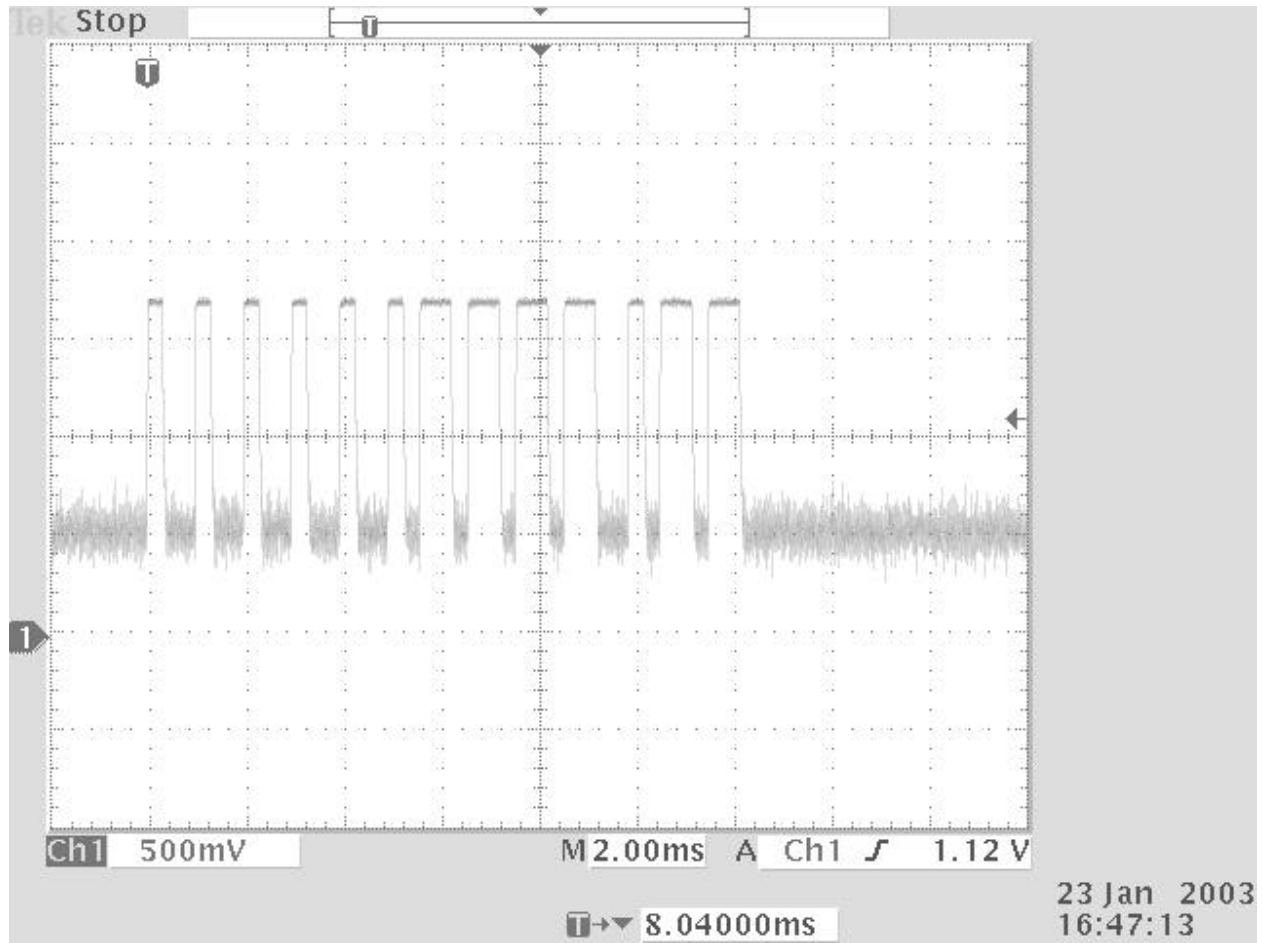
EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX



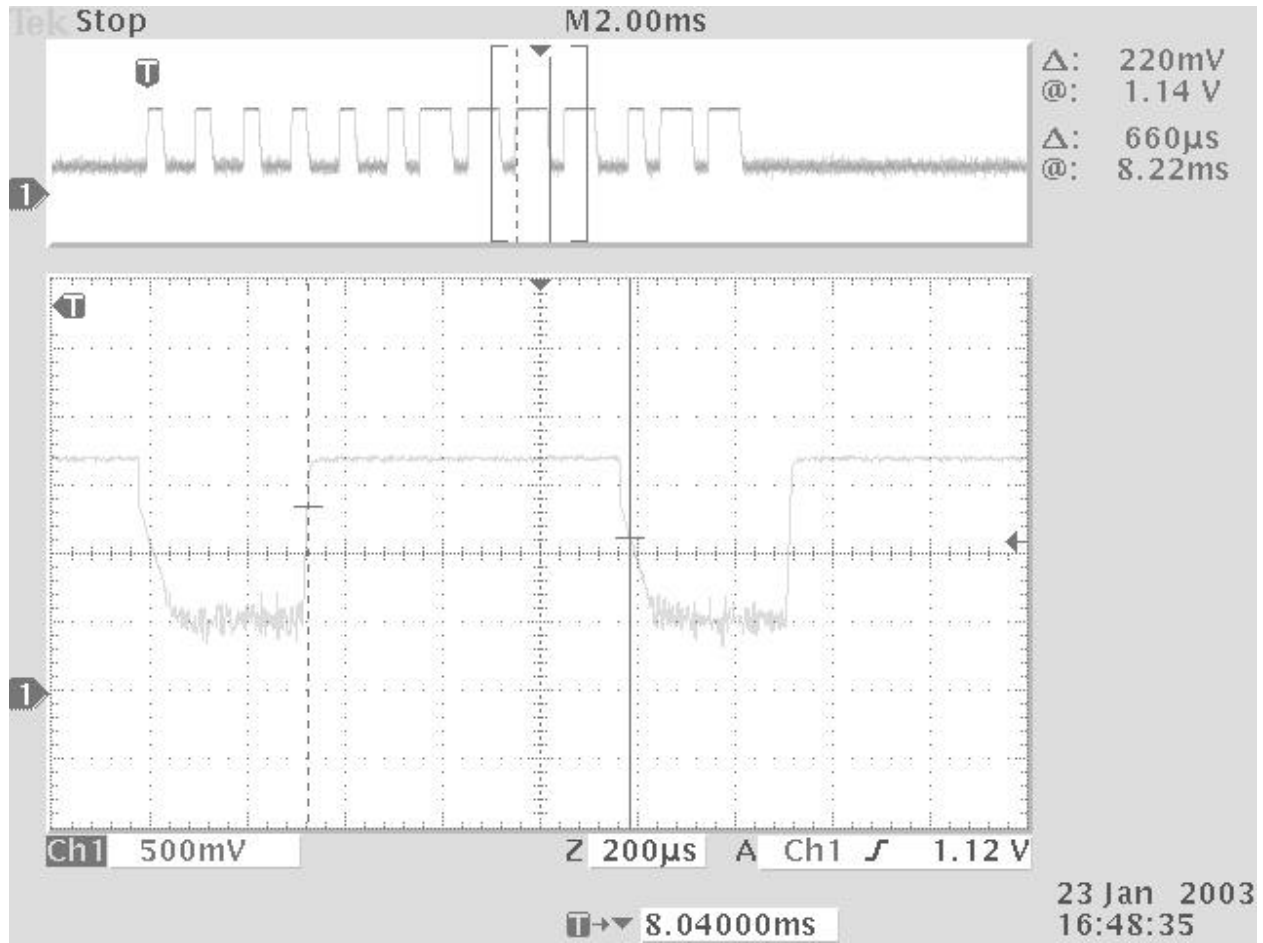
Duty Cycle

Worst Case 13 long pulses per packet
 $20 \times \log (13 \times 0.666 \times 4 / 100) = -9.2 \text{ dB}$

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX



EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX



Section 3. Transmission Requirements

Para. No.: 15.231(a)

Test Performed By: Russell Grant	Date of Test: Jan 23, 2003
----------------------------------	----------------------------

Minimum Standard: 15.231(a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231(a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds of activation.

15.231(a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling or supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231(a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm.

Test Results: Complies

Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX

Rationale for Compliance with Transmission Requirements

- 15.231(a)(1) :** The transmitter is deactivated immediately upon releasing the push button switch.
- 15.231(a)(2) :** No automatic activation.
- 15.231(a)(3) :** No periodic, polling, or supervision transmissions.
- 15.231(a)(4) :** NA

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX

Section 4. Radiated Emissions

Para. No.: 15.231(b)

Test Performed By: Russell Grant	Date of Test: Jan 23, 2003
---	-----------------------------------

Minimum Standard:

Fundamental Frequency (MHz)	Field Strength of Fundamental ($\mu\text{V/m}$ @ 3m)	Field Strength of Spurious Emissions ($\mu\text{V/m}$ @ 3m)
40.66 - 40.70	2,250	225
70-130	1, 250	125
130-174	1,250 to 3,750*	125 to 375
174-260 (note 1)	3,750	375
260-470 (note 1)	3,750 to 12,500*	375 to 1,250
Above 470	12,500	1,250

Restricted Band Limits		
Frequency (MHz)	Field Strength ($\mu\text{V/m}$ @ 3m)	Field Strength (dB$\mu\text{V/m}$ @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

Test Results: Complies**Test Data:** As per attached tabulated data.

- All spurious and harmonic emissions were search to the 10th harmonic.
- The EUT was searched on 3 orthogonal axis for maximum emission detection.
- The EUT was powered with fresh 3Vdc cells.

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX

Test Data - Radiated Emissions

Test Distance (meters) :3		Range: Almonte		Receiver: Spectrum Analyzer		RBW(kHz): 100		Detector: Peak	
Freq. (MHz)	Ant. *	Pol. (V/H)	RCVD Signal (dB μ V/m)	Ant. Factor (dB)**	Amp. Gain (dB)***	Duty Cycle (dB)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
315	LP	V	53	17.1		-9.2	60.9	75.6	14.7
315	LP	H	41.1	17.1		-9.2	49	75.6	26.6
630	LP	V	29.2	23		-9.2	43	55.6	12.6
630	LP	H	17	23		-9.2	30.8	55.6	24.8
945	LP	V	40.2	26.7	27	-9.2	30.7	55.6	24.9
945	LP	H	34.7	26.7	27	-9.2	25.2	55.6	30.4
Notes: L/P = Log-Periodic									

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX

OATS Set Up



Section 5. Occupied Bandwidth

Para. No.: 15.231(c)

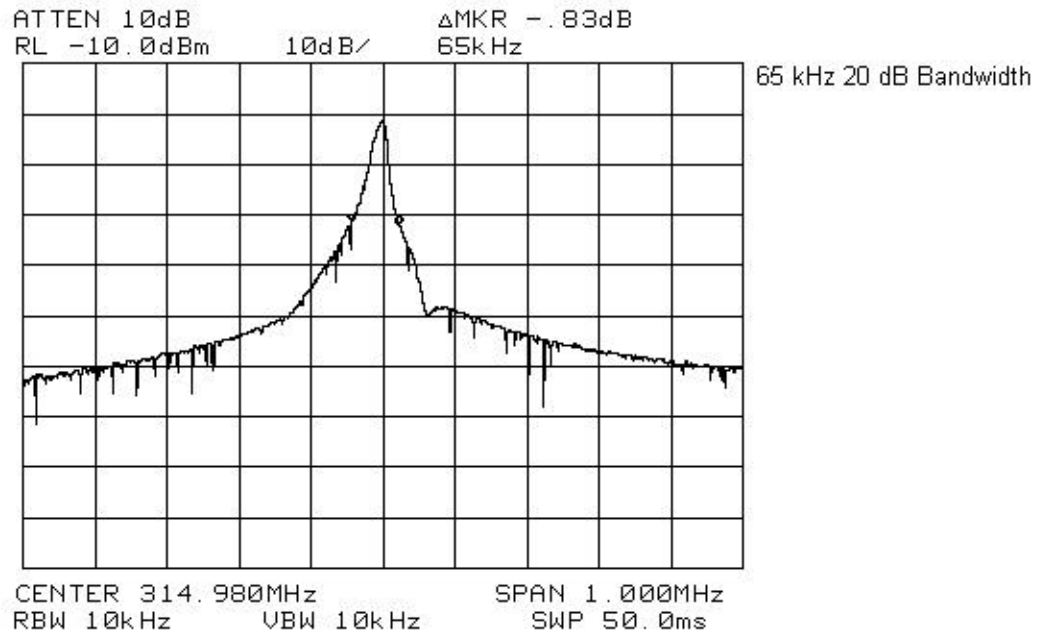
Test Performed By: Russell Grant	Date of Test: Jan 23, 2003
---	-----------------------------------

Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Test Results: Complies

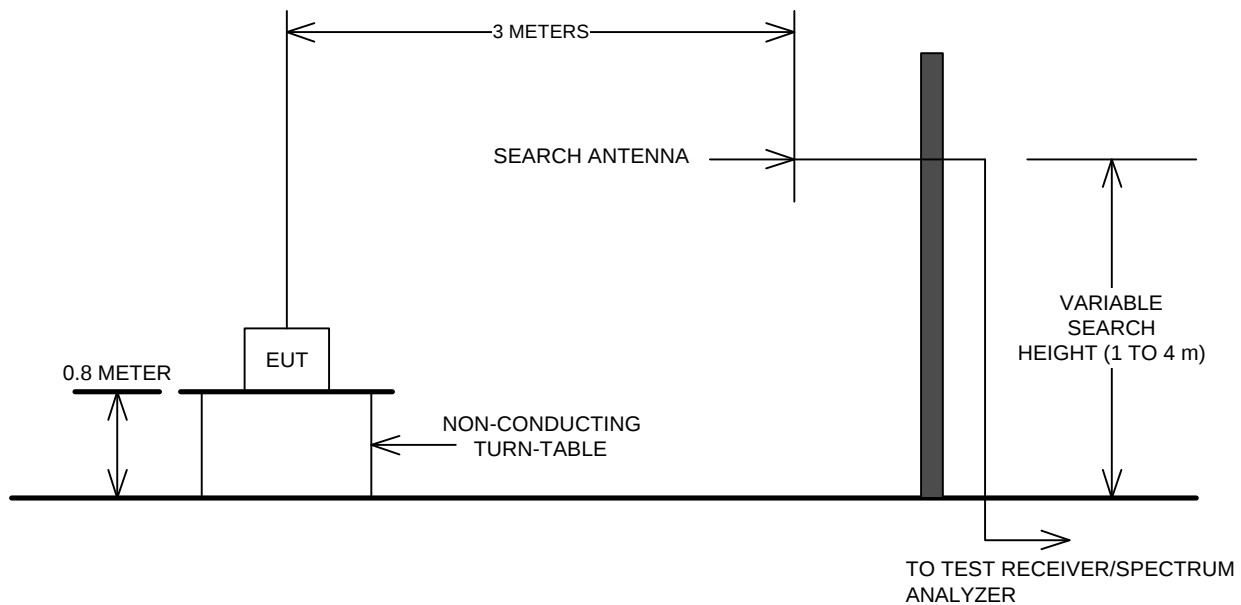
Test Data: See attached graph.

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX



Section 6. Block Diagrams

Outdoor Test Site For Radiated Emissions



The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation.

EQUIPMENT: Door Chime Transmitter FCC ID BJ464WDB42TX

Section 7. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981
1 Year	Horn Antenna	EMCO #2	3115	4336
1 Year	Dipole Antenna Set	EMCO #2	3121C	FA001349
1 Year	RF AMP	JCA	2-4 GHz	FA001496
1 Year	RF AMP	JCA	1-2 GHz	FA001498