TIMEX Corporation
Park Road Extension
Middlebury,CT
06762-0310

Federal Communications Commission
Equipment Approval Services
P.O. Box 358315
Pittsburgh, PA 15251-5315

SUBJECT: Application for certification of Timex's transmitter, model 807; FCC I.D. : EP9001

To the Federal Communications Commission:

We would appreciate if you would process the Application for Certification for FCC ID: EP9001 which was submitted electronically to the FCC on December 20, 1999 for the following:

Timex Corporation
Park Road Extension
Middlebury, CT 06762-0310

Please find enclosed a description of the transmitter circuit, schematics, label drawing, test report, photographs, under FCC Rules and Regulations, Part 15, subpart C.

Please contact me if you have any questions regarding the enclosed material at (203) 573-6405, or E-mail address rderosa@timex.com.

Yours Sincerely,
Ronald J. DeRosa
Project Engineer

FCC ID: EP9001

LIST OF EXHIBITS:

1) Functional Description
2) Circuit description and schematic
3) Message protocol, timing and duty cycle calculation
4) Photographs showing FCC ID label and printed circuit board
5) Report of measurements
6) Test equipment list
7) Installation instruction including FCC compliance statement and FCC user's warning

EXHIBIT 1

FCC ID: EP9001

FUNCTIONAL DESCRIPTION

The security watch transmitter is used in the Ademco security wireless alarm system. It is battery powered by a three volt lithium battery. The device is used in conjunction with fixed receivers and a security control system in burglary/fire alarm applications.

The messages are transmitter at 345 MHz +/- 82 kHZ using on-off keyed AM modulation.

EXHIBIT 2

FCC ID: EP9001

CIRCUIT DESCRIPTION

The watch and transmitter schematic is constructed on a single printed circuit board. The transmitter is a SAW (surface acoustic wave) resonator in a Colpitts oscillator. The transmitter is on-off keyed (AM) modulated by a control signal from the KEELOQ code hopping encoder integrated circuit manufactured by Microchip Technology Inc., which turns on or off, modulating the output signal. The RF output signal is connected to a loop antenna located under the bezel of the watch.

EXHIBIT 2

FCC ID: EP9001

SCHEMATIC

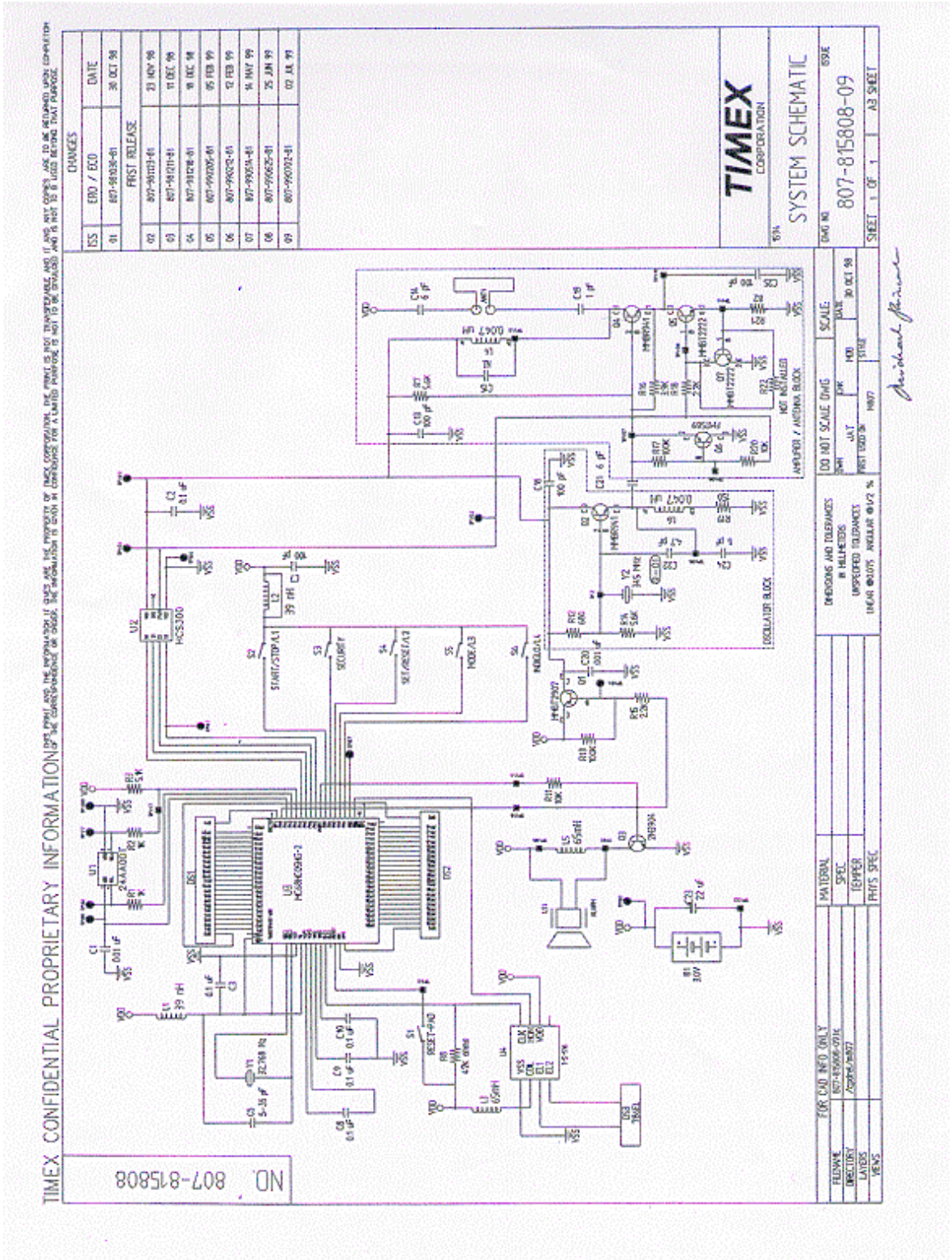

EXHIBIT 3

FCC ID: EP9001

MESSAGE PROTOCOL, TIMING AND DUTY CYCLE CALCULATION

The data output is a code hopping format designed for secure keyless entry. The format combines a thirty two bit hopping code generated by a non-linear encryption algorithm, with a twenty eight bit serial number and six status bits to create a sixty six bit transmission stream. The encryption key, serial number and configuration data are stored in EEPROM which is not accessible via external connection.

Ademco Security Watch
Duty Cycle Calculation

100 MS duration= one packet (44.5ms) + no packet (44.5ms) + part of second packet (11.0ms)

TRANSMIT TIME				**Total Time msec**	**X**	**Duty Cycle %/100**	**=**	**Transmit Time msec**
Packet 1								
Preamble	X	Duty Cycle	=	3.8	X	0.500	=	1.9
Header	X	Duty Cycle	=	1.7	X	0.000	=	0.0
Hopping Code Word	X	Duty Cycle	=	15.8	X	0.666	=	10.5
Fixed Code Word	X	Duty Cycle	=	16.8	X	0.666	=	11.2
Status	X	Duty Cycle		6.4	X	0.000	=	0.0
Off Time								
Off Time	X	Duty Cycle	=	44.5	X	0.000	=	0.0
Part Of Packet 2								
Preamble	X	Duty Cycle	=	3.8	X	0.500	=	1.9
Header	X	Duty Cycle	=	1.7	X	0.000	=	0.0
Part Of Hopping Code Word	X	Duty Cycle	=	5.5	X	0.666	=	3.7
TOTAL			=	**100.0**				**29.2**

DUTY CYCLE

Duty Cycle =Transmit Time / Total Time	=	**29.2**	**%**

EXHIBIT 4

FCC ID: EP9001

PHOTOGRAPHS SHOWING FCC ID LABEL

EXHIBIT 4

FCC ID: EP9001

PHOTOGRAPHS OF THE PRINTED CIRCUIT BOARD

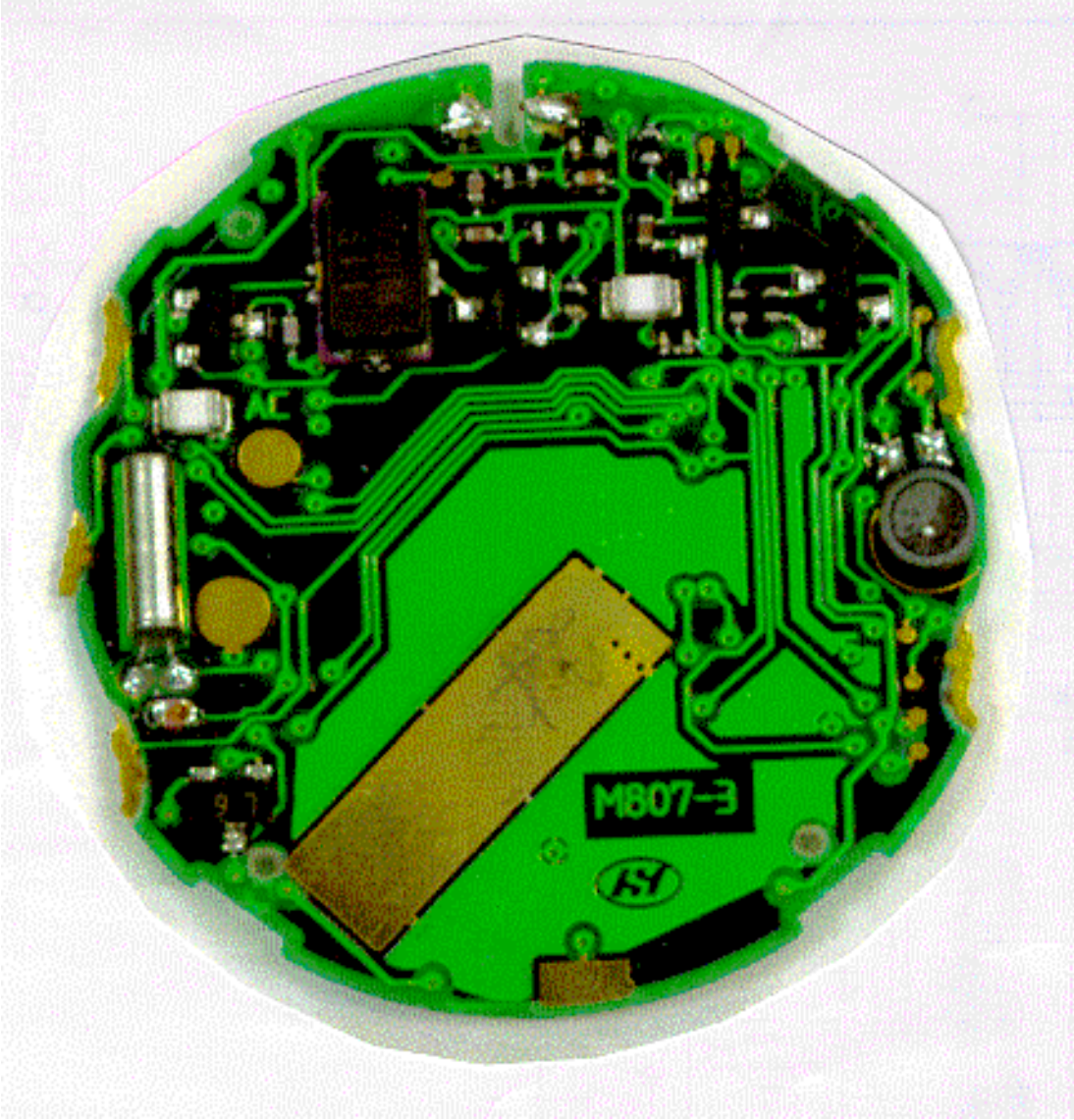

EXHIBIT 4

FCC ID: EP9001

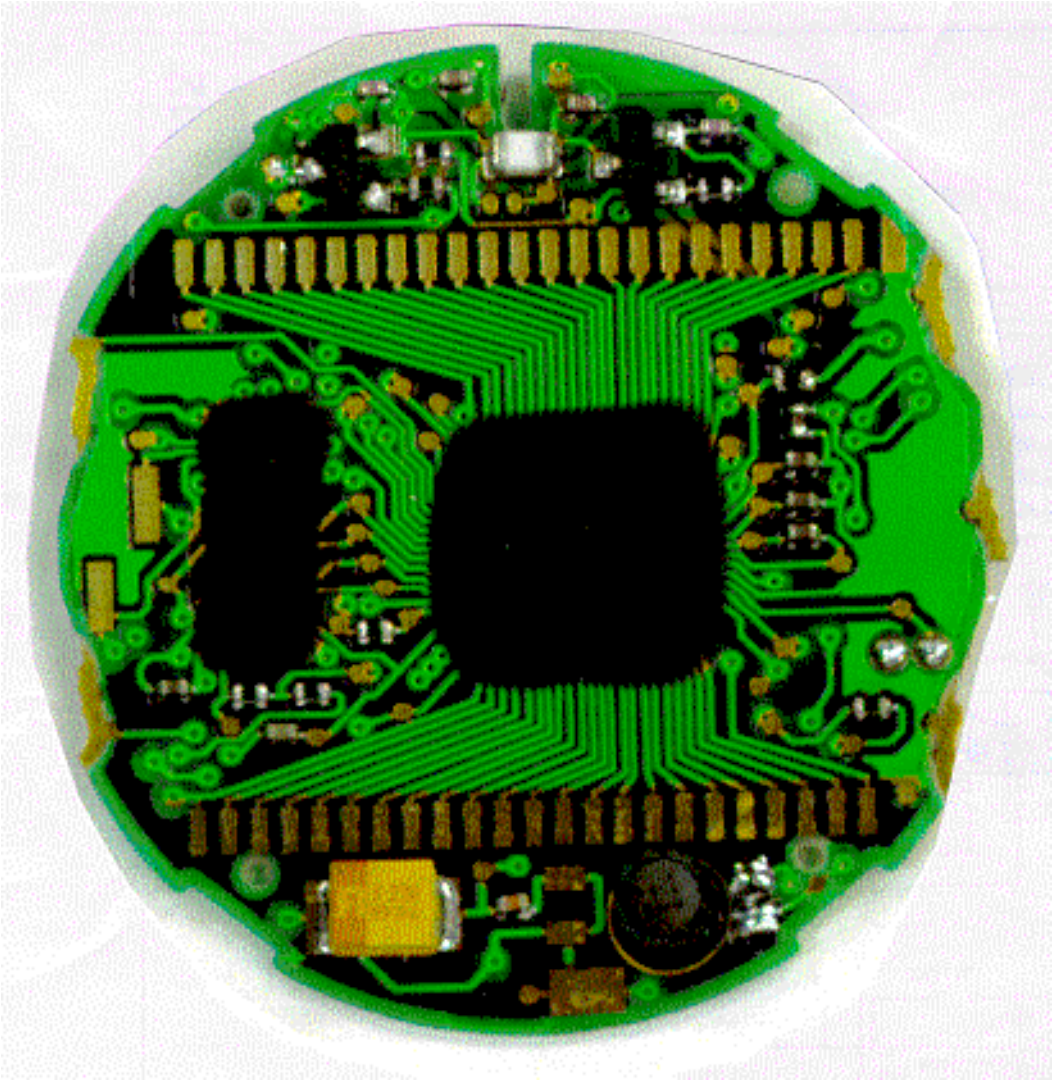

EXHIBIT 5

FCC ID: EP9001

REPORT OF MEASUREMENT

Measurements were made in accordance with the procedures and reporting on ANSI C63.4-1992.

The test set-up (C63.4 section 10.0.3) is shown in the attached drawing.

The sequence of testing (C63.4 section 10.1.7) for radiated emissions is as follows: A preliminary scan was conducted with the receiver antenna close to the EUT in order to identify the emission characteristics of the EUT (C63.4 section 8.3.1.1). The antenna and EUT were then placed at the proper separation with the EUT positioned on a non-conducting turntable. The EUT was rotated on the turntable to maximize the received signal strength, and then the receiver antenna height was varied to further maximize the received reading. Thereafter, the device was again rotated to a peak output position and the antenna height was re-adjusted for maximum received signal. This procedure was re-iterated until there was no further increase in signal level. This procedure was performed with the EUT rotating in three orthogonal planes (C63.4 section 13.1.4.4) to generate a final maximum reading which is recorded on the radiated emissions result sheet.

See Exhibit 6 for the list of test equipment (C63.4 section 10.1.4).

Note: Spectrum Analyzer resolution bandwidths set as follows (video bandwidth set greater than RBW):

> For occupied bandwidth measurement, RBW = 100 kHz, in accordance with the minimum RBW allowed by C63.4, which requires RBW greater than 5% of the FCC required occupied bandwidth specification of 0.25% of center frequency.
>
> For radiated emissions below 1 GHz, the RBW = 100 kHz, with detector function set to peak.
>
> For radiated emissions above 1 GHz, the RBW = 1 MHz, with the detector function set to peak.
>
> Occupied bandwidth is shown on the attached plot.
> Radiated bandwidth are recorded on the attached sheet.

EXHIBIT 5

FCC ID: EP9001

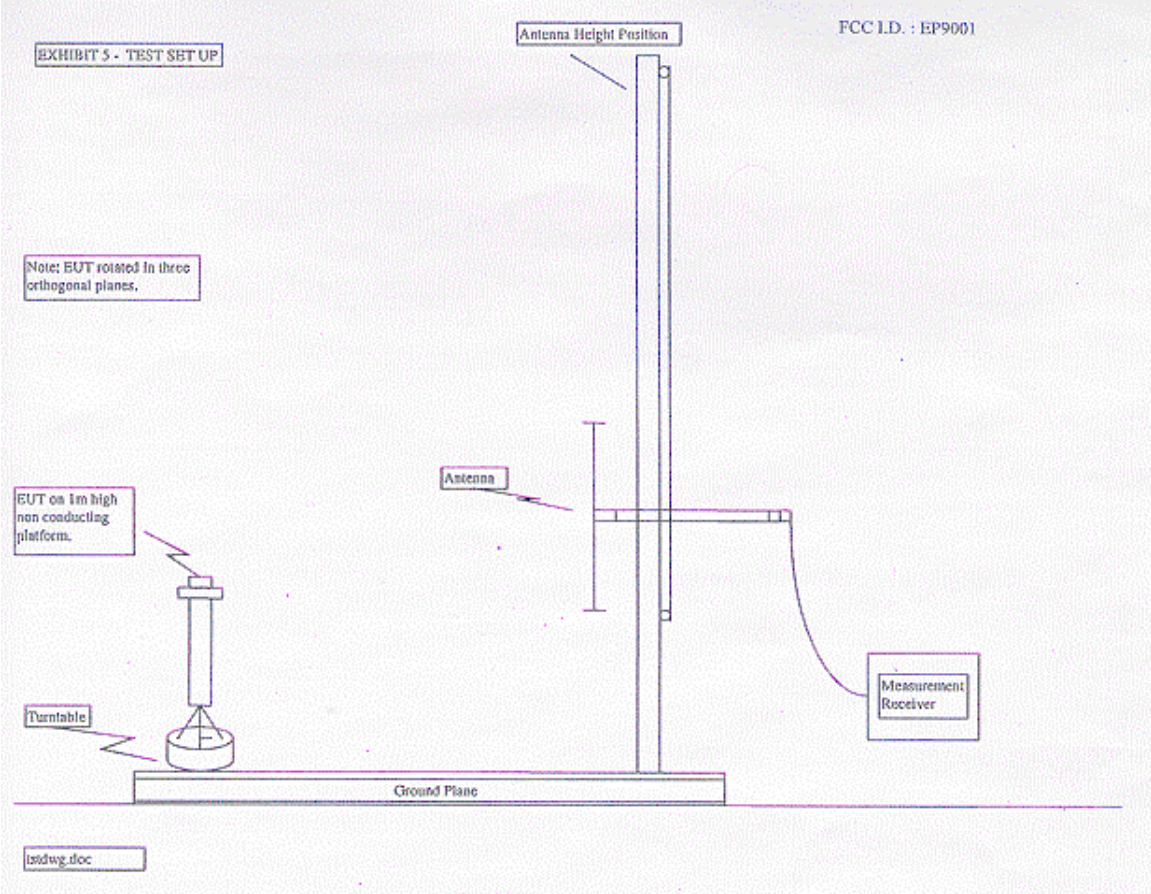

EXHIBIT 5

FCC ID: EP9001

RADIATED EMISSIONS
DATA SHEET

DATE: Oct 12 1999 TESTED BY: Stan Allweiss APPROVED BY: _____

TEST SAMPLE (model): ADEMCO RF Watch A052-4434 #3

TEST METHOD: ANSI C63.4 - 1992

TEST SPECIFICATION: FCC Part 15

NOTES: 1) Fc = 345 MHz 2) Detector = Peak, 3) Frequency range scanned to 4 GHz. Emissions not reported were more than 20 dB below the specified limit.

4) Conv. reading = $10^{\left[\frac{(\text{Meter reading} + \text{Cable/Amp factor} + \text{Antenna factor})}{20}\right]}$

5)

FREQUENCY (MHz)	POLARITY (V / H)	METER READING (dB uV)	CABLE/AMP FACTOR (dB)	ANTENNA FACTOR (dB/M)	CONV. READING (uV/M)	DUTY CYCLE (%)	CORR. READING (uV/M)	LIMIT @ 3M (uV/M)
30								
↓								↓
345	H	53.8	1.6	19.5	5559	29.2	1623.2	7292
↓								↓
690	V	37.7	2.0	25.5	1820	29.2	531.4	729
↓								↓
1035	V	36.2	2.4	23.5	1274	29.2	372.0	500
↓								↓
1380	V	24.8	3.0	25.5	462	29.2	134.9	500
↓								↓
1725	V	25.3	3.5	28.0	692	29.2	202.1	729
↓								↓
4000								

®ADEMCO

Alarm Device Manufacturing Company
A Division of Pittway Corporation
165 Eileen way
Syosset NY 11791

EXHIBIT 5

FCC ID: EP9001

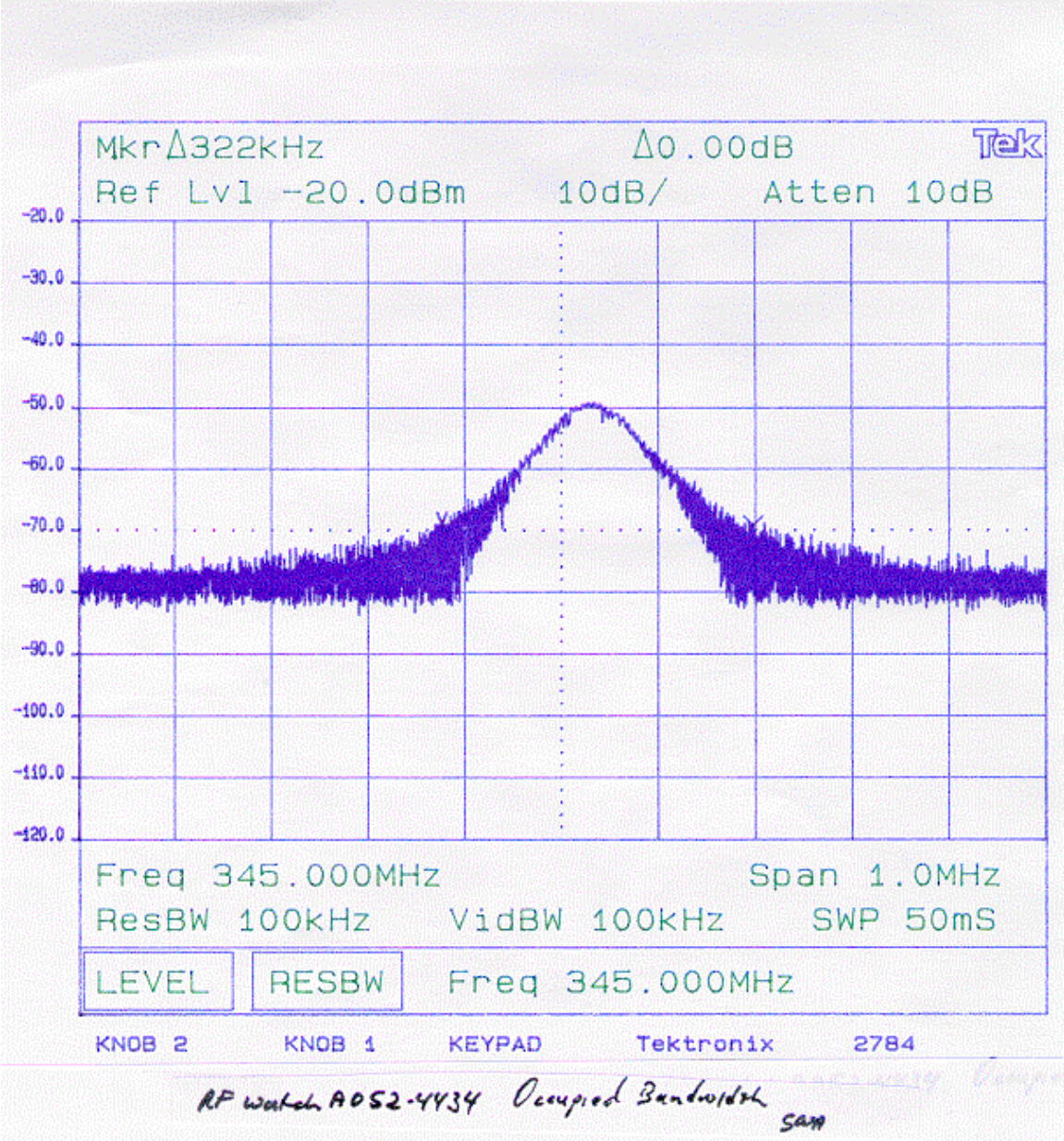

EXHIBIT 6

FCC ID: EP9001

TEST EQUIPMENT LIST

MODEL	DESCRIPTION	CALIBRATED	S/N
Antenna	Roberts dipole 30-65 MHz	1/20/99	110
Antenna	Roberts dipole 65-180 MHz	1/20/99	110
Antenna	Roberts dipole 180-400 MHz	1/20/99	110
Antenna	Roberts dipole 400-1000 MHz	1/20/99	110
Antenna	Roberts dipole 1-18 GHz	1/20/99	6127
Cable	RG 58U		
2784	Tektronix Spectrum Analyzer	7/29/98	B010165

EXHIBIT 7

FCC ID: EP9001

FCC COMPIANCE STATEMENT AND FCC USER'S WARNING FROM THE INSTALLATION INSTRUCTIONS