

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
CERTIFICATION TO FCC PART 15 REQUIREMENTS**

for

INTENTIONAL RADIATOR

302 MHz CAR ALARM TRANSMITTER

MODEL NO: 7945

FCC ID NO: ELVMT1A

REPORT NO: 01E9826

ISSUE DATE: NOVEMBER 8, 2001

Prepared for

NUTEK CORPORATION

**5F, NO. 3, ALLEY 6, LANE 45, PAO-HSING RD.,
HSING-TIEN CITY, TAIPEI, TAIWAN, R. O. C.**

Prepared by

COMPLIANCE ENGINEERING SERVICES, INC.

**NO. 199, CHUNG SHENG ROAD,
HSIN TIEN CITY, TAIPEI,
TAIWAN, R. O. C.**

d.b.a.

COMPLIANCE CERTIFICATION SERVICES



**FCC, VCCI, CISPR, CE
UL, CSA, TÜV, VDE**

U.S.A. : P.O.BOX 612650, SAN JOSE, CA 95161-2650

TAIPEI : P.O.BOX 17-82, HSIN TIEN, TAIWAN, R.O.C.

| TABLE OF CONTENTS | PAGE |
|---|-------------|
| 1. VERIFICATION OF COMPLIANCE..... | 1 |
| 2. Product Description..... | 2 |
| 3. Test Facility..... | 2 |
| 4. Measurement Standards | 2 |
| 5. Test Methodology | 2 |
| 6. Measurement Equipment Used | 3 |
| 7. POWERLINE RFI LIMIT | 3 |
| 8. RADIATED EMISSION LIMITS | 3 |
| 9. SYSTEM TEST CONFIGURATION..... | 4 |
| 10. Test Procedure..... | 5 |
| 11. Equipment Modifications..... | 6 |
| 12. TEST RESULT | 7 |
| 12.1 Maximum Modulation Percentage (M%) | 7 |
| 12.2 The Emissions Bandwidth..... | 7 |
| TEST DATA | |
| • Maximum Modulation Percentage Plot | |
| • Emission Bandwidth Plot | |
| • Radiated Emission Worksheet for Average Measurement | |

1. VERIFICATION OF COMPLIANCE

COMPANY NAME: NUTEK CORPORATION
5F, NO. 3, ALLEY 6, LANE 45, PAO-HSING RD.,
HSING-TIEN CITY, TAIPEI, TAIWAN, R. O. C.

CONTACT PERSON: RUBY HSIEH / MARKETING DEPT.

TELEPHONE NO.: (02) 2918-9478 # 120

EUT DESCRIPTION: 302 MHz CAR ALARM TRANSMITTER

MODEL NAME/NUMBER: 7945

FCC ID: ELVMT1A

DATE TESTED: NOVEMBER 7, 2001

REPORT NUMBER: 01E9826

| | |
|-----------------------|---|
| TYPE OF EQUIPMENT | SECURITY EQUIPMENT (INTENTIONAL RADIATOR) |
| EQUIPMENT TYPE | 302 MHz CAR ALARM TRANSMITTER |
| MEASUREMENT PROCEDURE | ANSI C63.4 / 1992 |
| LIMIT TYPE | CERTIFICATION |
| FCC RULE | CFR 47, PART 15 |

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in the FCC CFR 47, PART 15. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties. **Warning** : This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by Compliance Engineering Services, Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Engineering Services, Inc. will constitute fraud and shall nullify the document.

Rick Yeo

RICK YEO / EMC MANAGER
COMPLIANCE ENGINEERING SERVICES, INC.

2. Product Description

| | |
|-----------------------|---|
| Fundamental Frequency | 302 MHz |
| Power Source | 12V Battery |
| Transmitting Time | Periodic \leq 5 seconds |
| Associated Receiver | Model: 7919P (FCC DoC) |

3. Test Facility

The open area test sites and conducted measurement facilities used to collect the radiated data are located at No. 199, Chung Sheng Road, Hsin Tien City, Taipei, Taiwan R.O.C. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

4. Measurement Standards

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/1992.

5. Test Methodology

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

6. Measurement Equipment Used

| Manufacturer | Model Number | Description | Cal Due Date |
|--------------------|--------------------------|-----------------------------------|--------------|
| ROHDE & SCHWARZ | DSAI- D 804.8932.52 | EMI Test Display | 10/2002 |
| ROHDE & SCHWARZ | ESBI- RF/1005.4300.52 | EMI Test RF Unit | 10/2002 |
| H.P. | 8595EM | Spectrum Analyzer (9KHz – 6.5GHz) | 01/2002 |
| EMCO | 3115 | Antenna (1-18GHz) | 02/2002 |
| SCHWARZBECK | VULB 9160 | Antenna (30-2000 MHz) | 05/2002 |
| H.P. | 8447D | Amplifier | 05/2002 |
| MITEQ | NSP2600-44 | Amplifier(1-26GHz) | 10/2002 |

7. POWERLINE RFI LIMIT

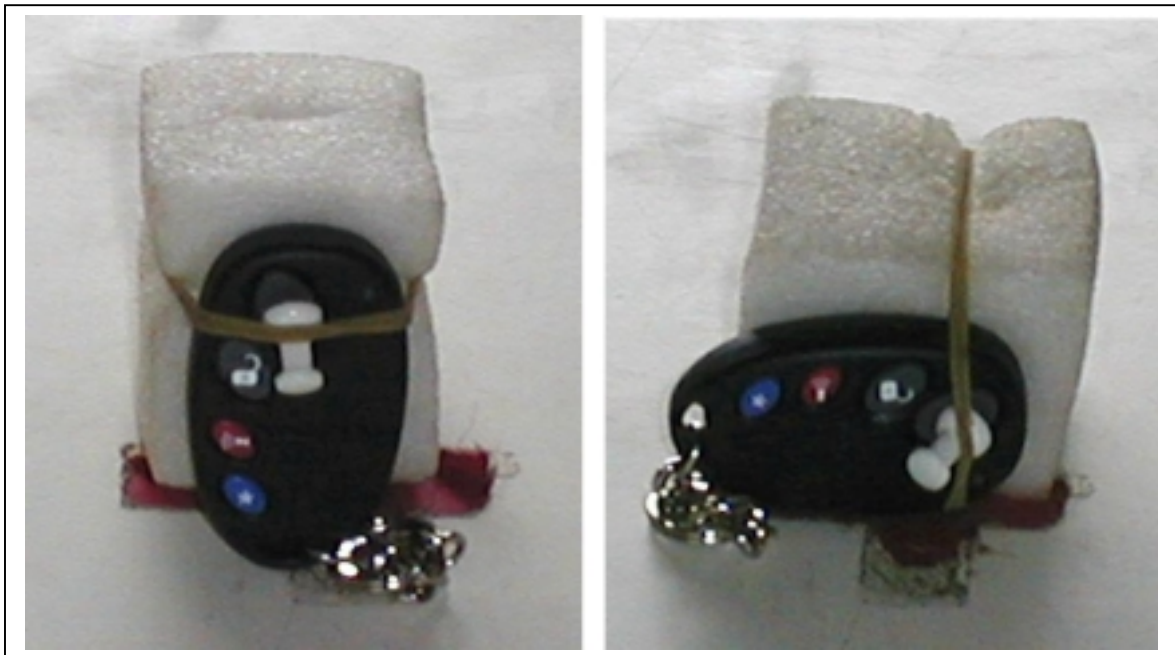
| | |
|--|--|
| CONNECTED TO AC POWER LINE | SECTION 15.207 |
| CARRIER CURRENT SYSTEM IN THE FREQUENCY RANGE OF 450 KHZ TO 30 MHz | SECTION 15.205 AND SECTION 15.209, 15.221, 15.223, 15.225 OR 15.227, AS APPROPRIATE. |
| BATTERY POWER | NO REQUIRED. |

8. RADIATED EMISSION LIMITS

| | |
|---|----------------|
| GENERAL REQUIREMENTS | SECTION 15.209 |
| RESTRICTED BANDS OF OPERATION | SECTION 15.205 |
| PERIODIC OPERATION IN THE BAND 40.66 -40.70 MHz AND ABOVE 70 MHz. | SECTION 15.231 |

9. SYSTEM TEST CONFIGURATION

Use a block of foam and combined it with EUT wrapping rubber band around it. This way it can test X.Y, and Z axis. To activate continuous transmission, place a small plastic block between rubber band and EUT push button.



10. Test Procedure

Radiated Emissions, 15.231(4)(b)

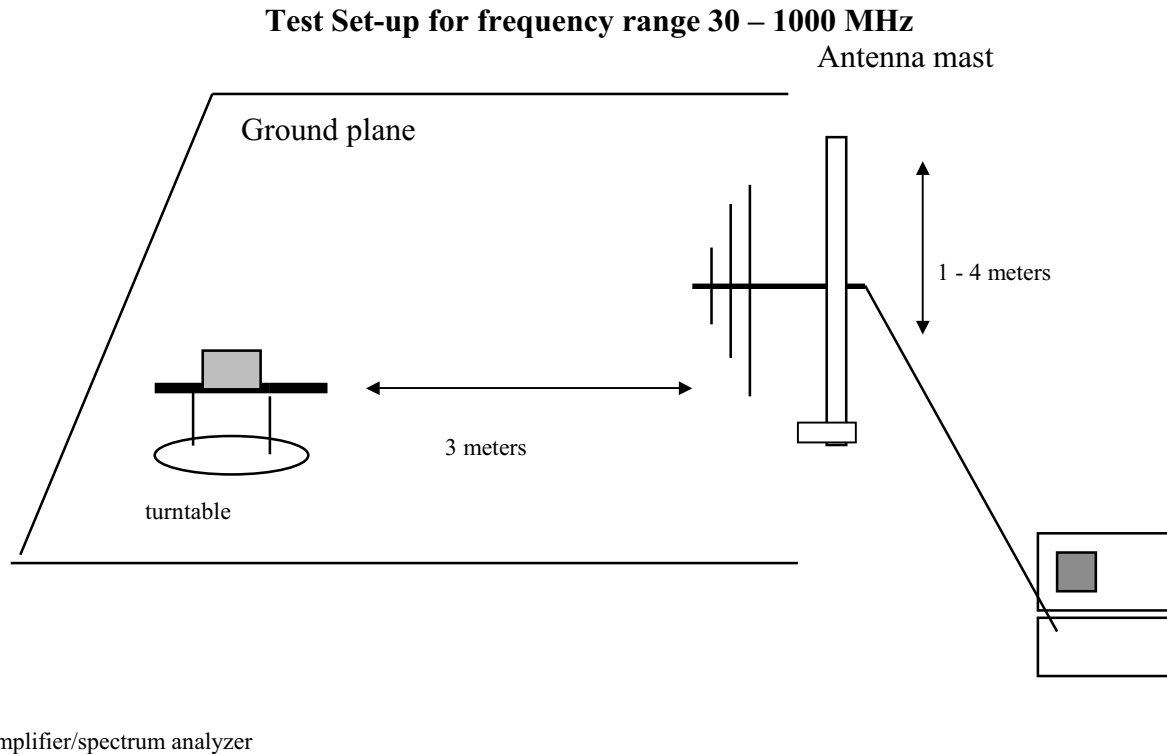
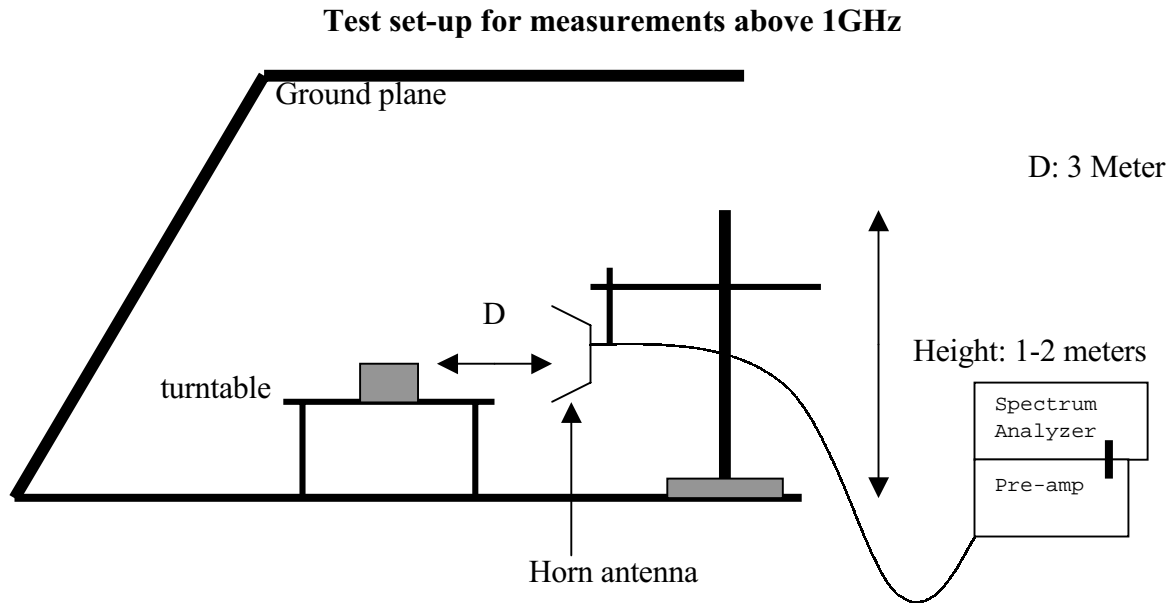


Fig. 1

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3-meters from the EUT.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.



1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 1-meters from the EUT. The EUT antenna was mounted vertically as per normal installation.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

11. Equipment Modifications

To achieve compliance to FCC Section 15.231 technical limits, the following change(s) were made during compliance testing:

NONE

12. TEST RESULT

| Powerline RFI Class B | Eut | Radiated Emission Limits | Eut |
|--|------------|---------------------------------|------------|
| SECTION 15.207 | | SECTION 15.209 | X |
| SECTION 15.205, 15.209, 15.221, 15.223, x 15.225 OR 15.227 | | SECTION 15.205 | |
| BATTERY POWER | X | SECTION 15.231 (b) | X |
| | | SECTION 15.231 (e) | |

12.1 Maximum Modulation Percentage (M%)

CALCULATION:

Average Reading = Peak Reading (dBuV/m)+ 20log (Duty Cycle)

In order to determine possible Maximum Modulation percentage, alternations are made to the EUT. We measured:

WHERE 1 Period = 120.00 mS >100 mS. use 100 mS for calculation
 Long pulse = 1.191 mS
 Short pulse = 0.3822 mS
 No of Long pulse = 19
 No of Short pulse = 18

Duty Cycle = (N1L1+N2L2+...+Nn-1Ln-1+NnLn)/100 or T

Duty Cycle = ((19x1.191)+(18x0.3822))/100=0.2951=29.51% or-10.6006dB

12.2 The Emissions Bandwidth

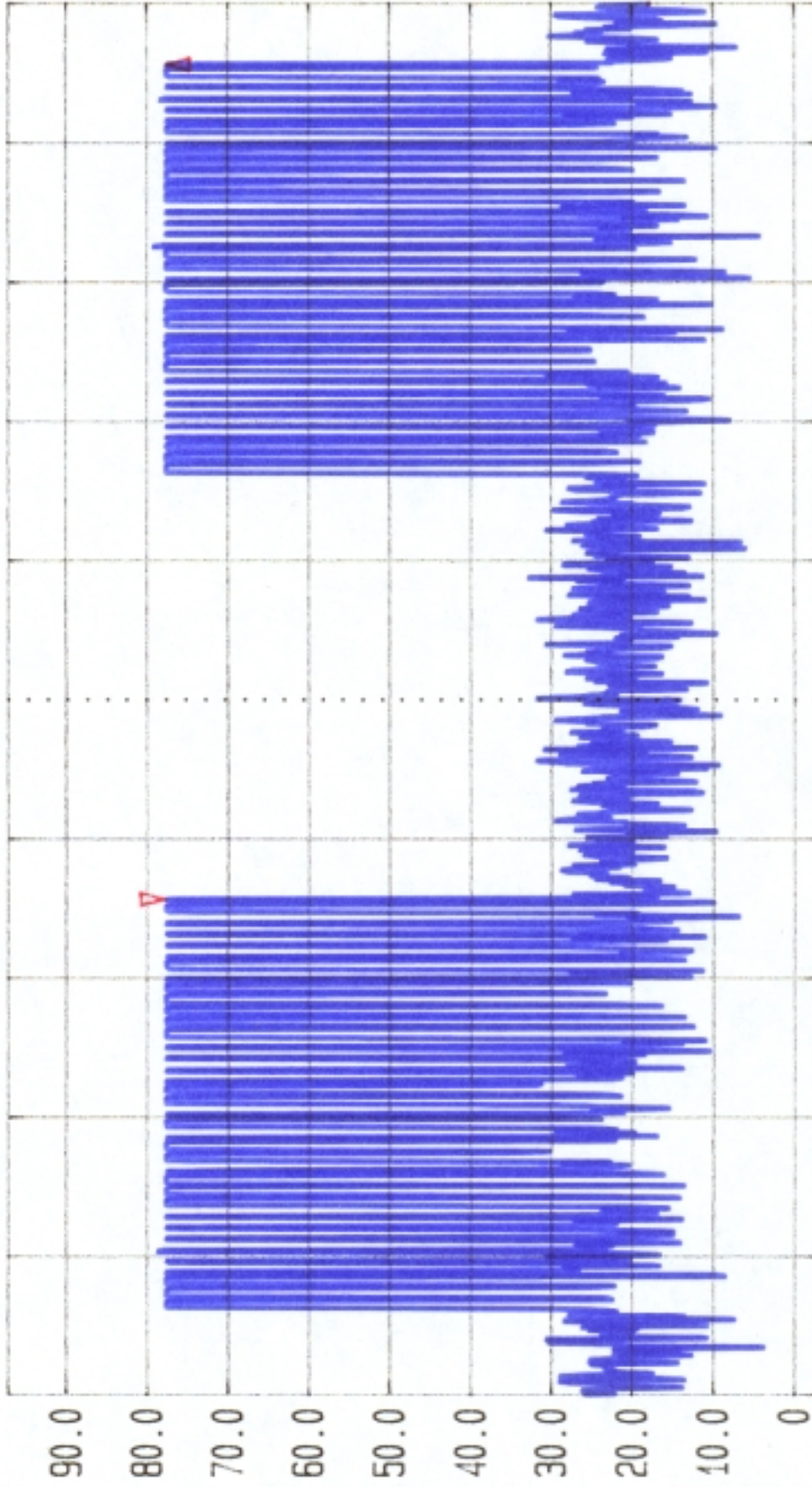
The bandwidth of the emissions were investigated per 15.231(c)

| Center Frequency | Measured | Limits |
|-------------------------|---|-----------------------------|
| 302 MHz | 608.8 kHz < (refer to plot) | 302MHzX0.25%=755 kHz |



Date 07.Nov.'01 Time 12:31:04
Ref.Lvl Delta
97.00 dBµV -0.08 dB
120.000 ms

TRG
Res.Bw 100.0 kHz [3dB]
TG.Lvl Off
CF.Stp 10.000 kHz
Vid.Bw 300 kHz
RF.Att 20 dB
Unit [dBµV]



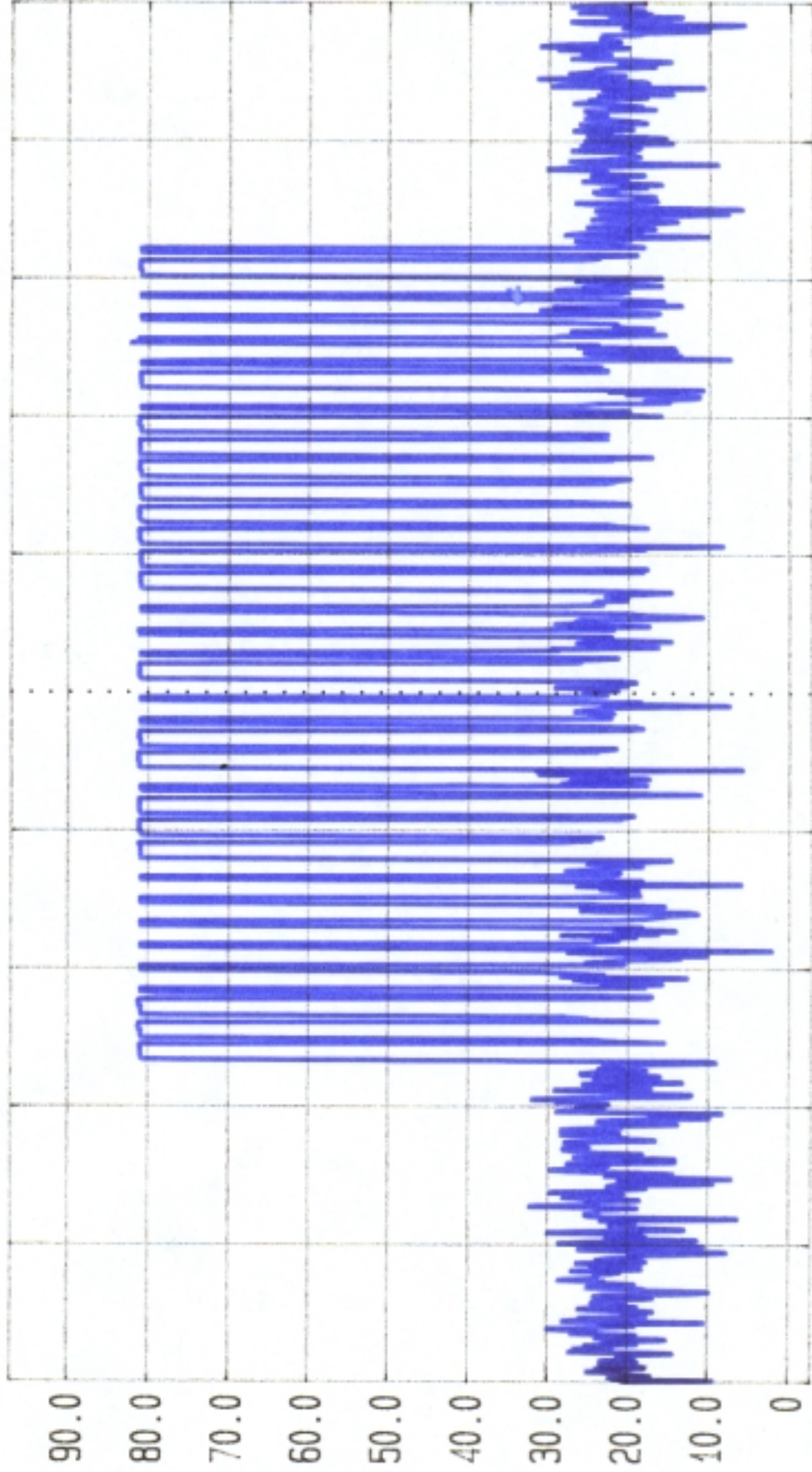
Span 0 Hz
Center 302.13777 MHz
Sweep 200 ms



Date 07.Nov.'01 Time 12:25:47

TRG
Res.Bw 100.0 kHz [3dB]
TG.Lvl Off
CF.Stp 10.000 kHz
Vid.Bw 300 kHz
RF.Att 20 dB
Unit [dBuV]

Ref.Lvl
97.00 dBuV

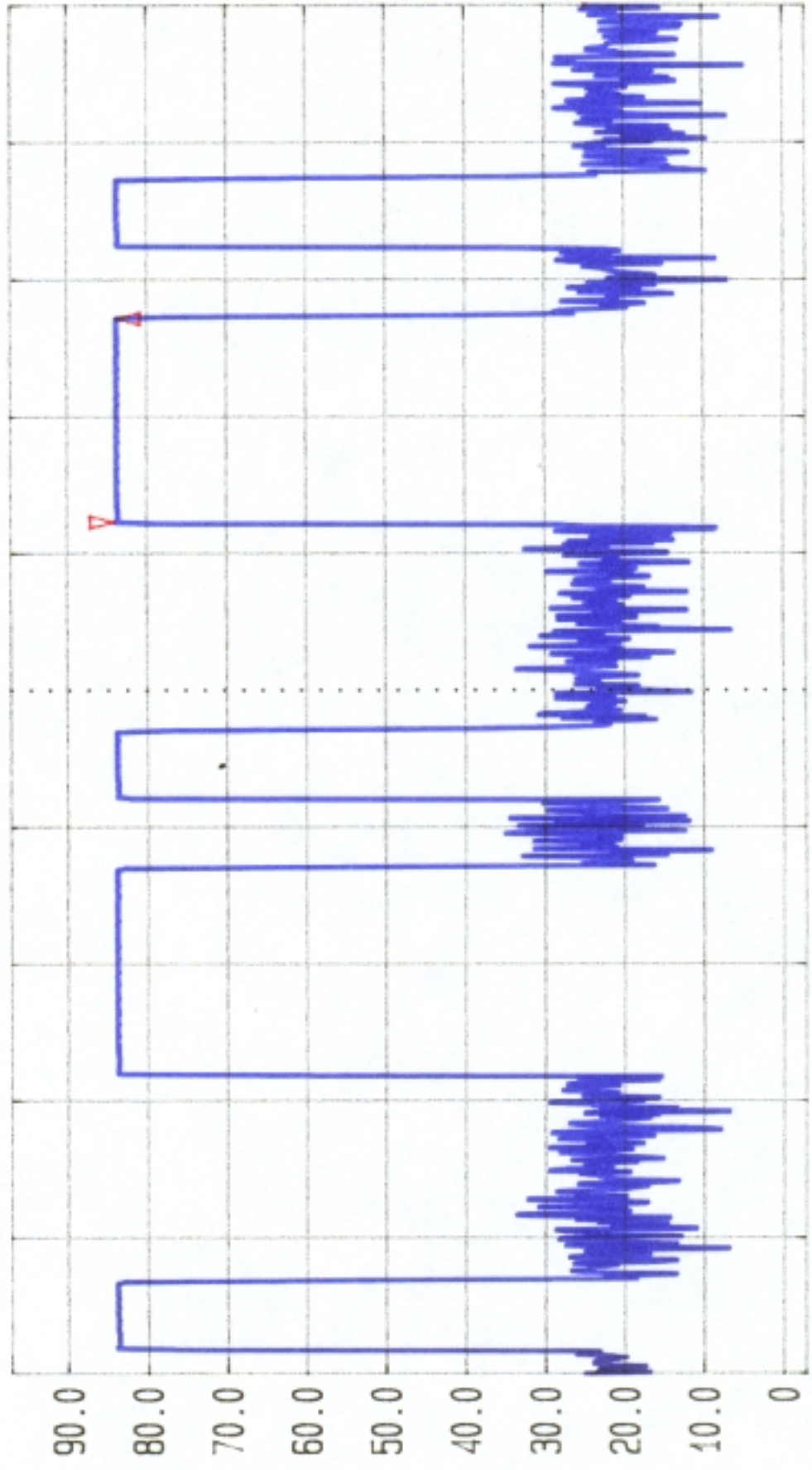


Span 0 Hz
Center 302.137777 MHz
Sweep 100 ms



Date 07.Nov.'01 Time 12:21:05
Ref.Lvl Delta
97.00 dBµV -0.25 dB
1.191 ms

Res.Bw 100.0 kHz [3dB]
TG.Lvl Off
CF.Stp 10.000 kHz
Vid.Bw 300 kHz
RF.Att 20 dB
Unit [dBµV]

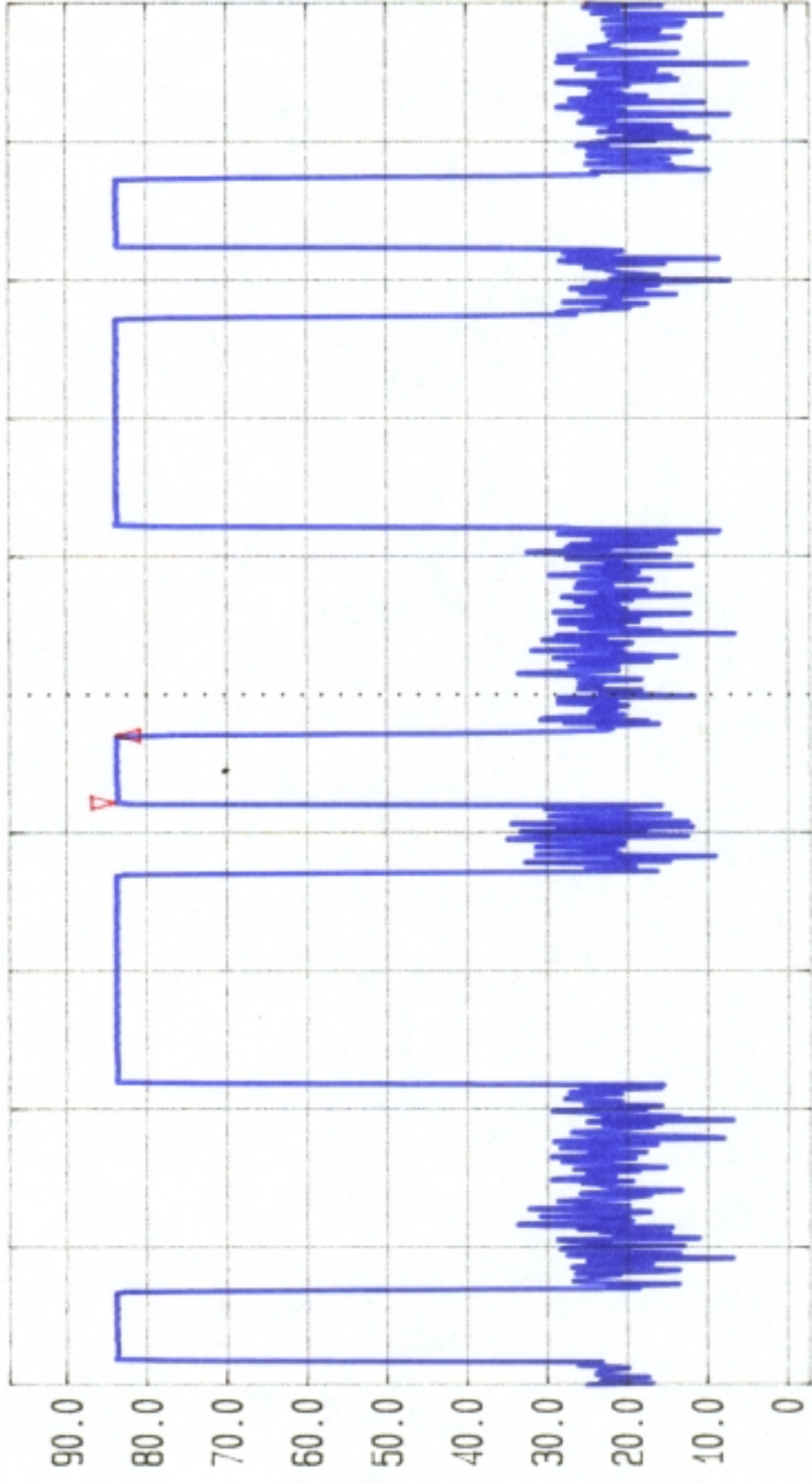


Span 0 Hz
Center 302.137777 MHz
Sweep 8 ms



Date 07.Nov.'01 Time 12:07:10 TRG
Ref.Lvl Delta -0.23 dB
97.00 dBuV 382.223 μ s

Res.Bw 100.0 kHz [3dB] TG.Lvl off
CF.Stp 10.000 kHz
Vid.Bw 300 kHz
RF.Att 20 dB
Unit [dBuV]



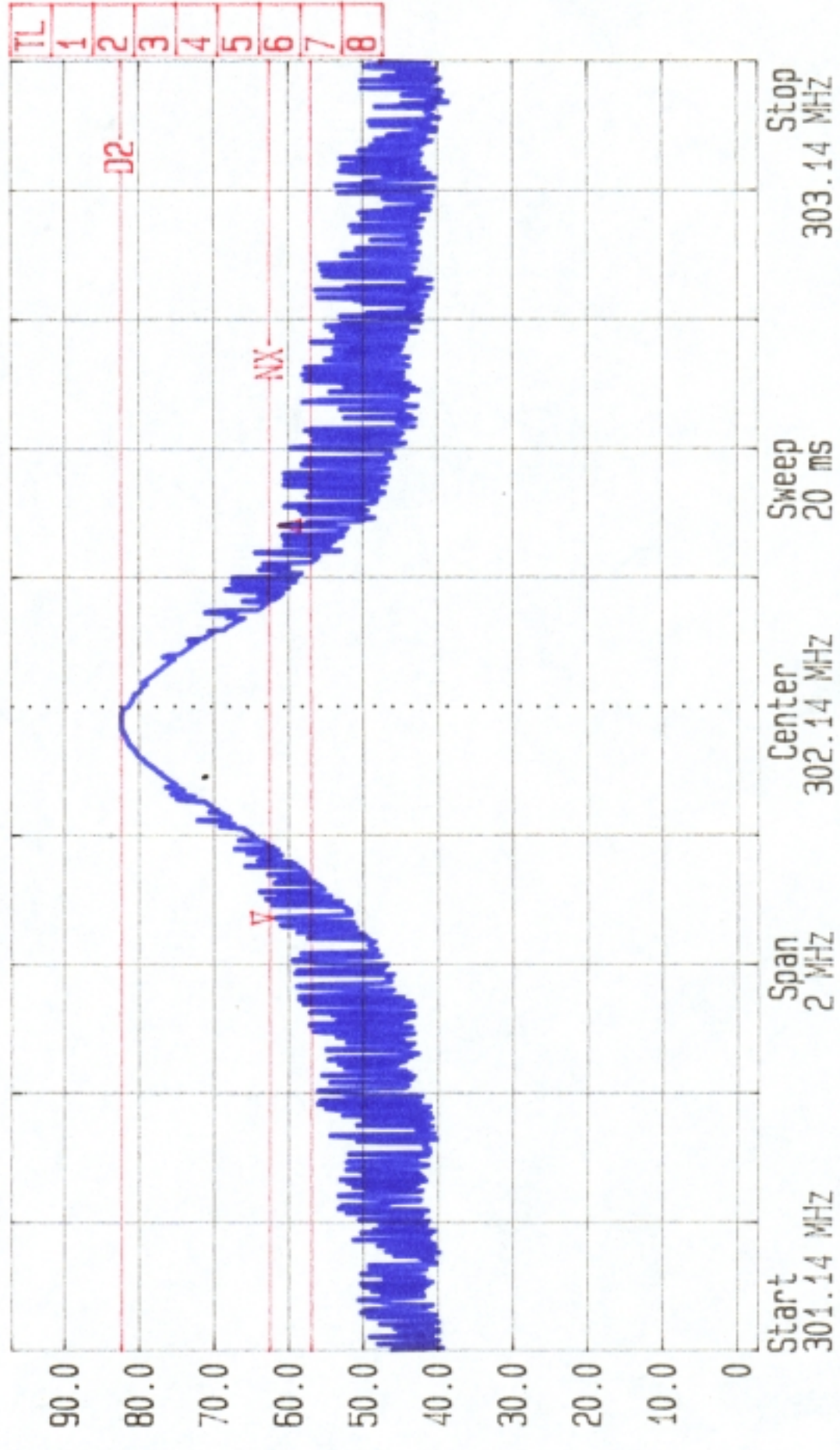
Span 0 Hz Center 302.137777 MHz Sweep 8 ms



Date 07.Nov.'01 Time 11:45:11

Ref.Lvl Delta
97.00 dBµV -0.41 dB
608.8 kHz

Res.Bw 120.9 kHz [3dB]
TG.Lvl Off
CF.Stp 302.350 MHz
Vid.Bw 300 kHz
RF.Att 0 dB
Unit [dBµV]



N dB down Level 20.0 dB
DELTA MARK 608.8 KHz



FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road
Hsin Tien City, Taipei, Taiwan, R.O.C.
PHONE: 02-2217-0894 FAX: 02-2217-1254

Project #: 01E9826
Report #: 9826D1
Date & Time: 2001/11/07
Test Engr: VINCE CHIANG

Company: NUTEK CORPORATION
EUT Description: 7945 (Alarm TX / 302 MHz)
Test Configuration : EUT ONLY
Type of Test: FCC 15.231(b)
Mode of Operation: NORMAL MODE

D-Site

E-Site

M% = $((t1+t2+t3+...)/T) * 100\% = 29.51\%$

Av Reading = Pk Reading + $20*\log(M\%)$
 $20*\log(M\%) = -10.601$

| | Freq. (MHz) | Pk Rdg (dBuV) | Av Rdg (dBuV) | AF (dB) | Closs (dB) | Pre-amp (dB) | Level (dBuV/m) | Limit FCC_B | Margin (dB) | Pol (H/V) | Az (Deg) | Height (Meter) |
|---|------------------|------------------|------------------|------------|---------------|-----------------|-------------------|----------------|----------------|--------------|-------------|-------------------|
| | Button #1: | | | | | | | | | | | |
| X | 302.35 | 68.72 | 58.12 | 13.26 | 2.25 | 26.26 | 47.37 | 74.83 | -27.46 | 3mV | 0 | 1.00 |
| | 604.67 | 38.50 | 27.90 | 19.17 | 3.26 | 27.31 | 23.02 | 54.83 | -31.81 | 3mV | 0 | 1.00 |
| | 907.09 | 29.79 | 19.19 | 22.68 | 4.10 | 26.51 | 19.46 | 54.83 | -35.37 | 3mV | 0 | 1.20 |
| Y | 302.42 | 77.45 | 66.85 | 13.26 | 2.25 | 26.26 | 56.10 | 74.83 | -18.73 | 3mV | 90 | 1.00 |
| | 604.78 | 44.29 | 33.69 | 19.17 | 3.26 | 27.31 | 28.81 | 54.83 | -26.02 | 3mV | 270 | 1.10 |
| | 907.18 | 31.39 | 20.79 | 22.68 | 4.10 | 26.51 | 21.06 | 54.83 | -33.77 | 3mV | 270 | 1.20 |
| Z | 302.41 | 77.66 | 67.06 | 13.26 | 2.25 | 26.26 | 56.31 | 74.83 | -18.52 | 3mV | 90 | 1.00 |
| | 604.73 | 43.58 | 32.98 | 19.17 | 3.26 | 27.31 | 28.10 | 54.83 | -26.73 | 3mV | 90 | 1.10 |
| | 907.19 | 30.78 | 20.18 | 22.68 | 4.10 | 26.51 | 20.45 | 54.83 | -34.38 | 3mV | 180 | 1.20 |
| | | | | | | | | | | | | |
| X | 302.39 | 84.62 | 74.02 | 13.26 | 2.25 | 26.26 | 63.27 | 74.83 | -11.56 | 3mH | 0 | 1.00 |
| | 604.76 | 40.18 | 29.58 | 19.17 | 3.26 | 27.31 | 24.70 | 54.83 | -30.13 | 3mH | 0 | 1.10 |
| | 907.21 | 30.47 | 19.87 | 22.68 | 4.10 | 26.51 | 20.14 | 54.83 | -34.69 | 3mH | 90 | 1.20 |
| Y | 302.41 | 83.50 | 72.90 | 13.26 | 2.25 | 26.26 | 62.15 | 74.83 | -12.69 | 3mH | 270 | 1.00 |
| | 604.80 | 35.76 | 25.16 | 19.17 | 3.26 | 27.31 | 20.28 | 54.83 | -34.55 | 3mH | 270 | 1.00 |
| | 907.23 | 29.25 | 18.65 | 22.68 | 4.10 | 26.51 | 18.92 | 54.83 | -35.91 | 3mH | 270 | 1.30 |
| Z | 302.41 | 80.47 | 69.87 | 13.26 | 2.25 | 26.26 | 59.12 | 74.83 | -15.71 | 3mH | 180 | 1.00 |
| | 604.80 | 39.84 | 29.24 | 19.17 | 3.26 | 27.31 | 24.36 | 54.83 | -30.47 | 3mH | 180 | 1.00 |
| | 907.21 | 30.07 | 19.47 | 22.68 | 4.10 | 26.51 | 19.74 | 54.83 | -35.09 | 3mH | 180 | 1.20 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | Total data #: 18 | | | | | | | | | | | |



FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road
Hsin Tien City, Taipei, Taiwan, R.O.C.
PHONE: 02-2217-0894 FAX: 02-2217-1254

Project #: 01E9826
Report #: 9826D2
Date & Time: 2001/11/07
Test Engr: VINCE CHIANG

Company: NUTEK CORPORATION
EUT Description: 7945 (Alarm TX / 302 MHz)
Test Configuration: EUT ONLY
Type of Test: FCC 15.231(b)
Mode of Operation: NORMAL MODE

D-Site

E-Site

$M\% = ((t1+t2+t3+...)/T) * 100\% = 29.51 \%$

$Av \text{ Reading} = Pk \text{ Reading} + 20 * \log(M\%)$
 $20 * \log(M\%) = -10.601$

| | Freq. (MHz) | Pk Rdg (dBuV) | Av Rdg (dBuV) | AF (dB) | Closs (dB) | Pre-amp (dB) | Level (dBuV/m) | Limit FCC_B | Margin (dB) | Pol (H/V) | Az (Deg) | Height (Meter) |
|------------------|----------------|------------------|------------------|------------|---------------|-----------------|-------------------|----------------|----------------|--------------|-------------|-------------------|
| | Button #2: | | | | | | | | | | | |
| X | 302.39 | 78.16 | 67.56 | 13.26 | 2.25 | 26.26 | 56.81 | 74.83 | -18.02 | 3mV | 90 | 1.00 |
| | 604.82 | 43.17 | 32.57 | 19.17 | 3.26 | 27.31 | 27.69 | 54.83 | -27.14 | 3mV | 90 | 1.00 |
| | 907.15 | 30.65 | 20.05 | 22.68 | 4.10 | 26.51 | 20.32 | 54.83 | -34.51 | 3mV | 180 | 1.10 |
| Y | 302.41 | 78.52 | 67.92 | 13.26 | 2.25 | 26.26 | 57.17 | 74.83 | -17.66 | 3mV | 90 | 1.00 |
| | 604.81 | 44.97 | 34.37 | 19.17 | 3.26 | 27.31 | 29.49 | 54.83 | -25.34 | 3mV | 0 | 1.00 |
| | 907.21 | 30.68 | 20.08 | 22.68 | 4.10 | 26.51 | 20.35 | 54.83 | -34.48 | 3mV | 0 | 1.20 |
| Z | 302.41 | 77.22 | 66.62 | 13.26 | 2.25 | 26.26 | 55.87 | 74.83 | -18.96 | 3mV | 270 | 1.00 |
| | 604.76 | 42.18 | 31.58 | 19.17 | 3.26 | 27.31 | 26.70 | 54.83 | -28.13 | 3mV | 270 | 1.00 |
| | 907.17 | 31.01 | 20.41 | 22.68 | 4.10 | 26.51 | 20.68 | 54.83 | -34.15 | 3mV | 180 | 1.20 |
| X | 302.41 | 83.90 | 73.30 | 13.26 | 2.25 | 26.26 | 62.55 | 74.83 | -12.28 | 3mH | 180 | 1.00 |
| | 604.78 | 41.01 | 30.41 | 19.17 | 3.26 | 27.31 | 25.53 | 54.83 | -29.30 | 3mH | 180 | 1.00 |
| | 907.27 | 30.75 | 20.15 | 22.68 | 4.10 | 26.51 | 20.42 | 54.83 | -34.41 | 3mH | 90 | 1.00 |
| Y | 302.40 | 74.66 | 64.06 | 13.26 | 2.25 | 26.26 | 53.31 | 74.83 | -21.52 | 3mH | 0 | 1.00 |
| | 604.81 | 39.74 | 29.14 | 19.17 | 3.26 | 27.31 | 24.26 | 54.83 | -30.57 | 3mH | 0 | 1.00 |
| | 907.23 | 30.27 | 19.67 | 22.68 | 4.10 | 26.51 | 19.94 | 54.83 | -34.89 | 3mH | 0 | 1.10 |
| Z | 302.36 | 74.73 | 64.13 | 13.26 | 2.25 | 26.26 | 53.38 | 74.83 | -21.45 | 3mH | 180 | 1.00 |
| | 604.81 | 41.80 | 31.20 | 19.17 | 3.26 | 27.31 | 26.32 | 54.83 | -28.51 | 3mH | 180 | 1.00 |
| | 907.24 | 30.98 | 20.38 | 22.68 | 4.10 | 26.51 | 20.65 | 54.83 | -34.18 | 3mH | 180 | 1.20 |
| Total data #: 18 | | | | | | | | | | | | |



FCC, VCCI, CISPR, CE, AUST EEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road
Hsin Tien City, Taipei, Taiwan, R.O.C.
PHONE: 02-2217-0894 FAX: 02-2217-1254

Project #: 01E9826
Report #: 9826D3
Date & Time: 2001/11/07
Test Engr: VINCE CHIANG

Company: NUTEK CORPORATION
EUT Description: 7945 (Alarm TX / 302 MHz)
Test Configuration : EUT ONLY
Type of Test: FCC 15.231(b)
Mode of Operation: NORMAL MODE

D-Ste

E-Ste

M% = ((t1+t2+t3+...)/T) * 100% = **29.51 %**

Av Reading = Pk Reading + 20*log(M%)
20*log(M%) = **-10.601**

| | Freq. | Pk Rdg | Av Rdg | AF | Closs | Pre-amp | Level | Limit | Margin | Pol | Az | Height |
|---|------------------|--------|--------|-------|-------|---------|----------|-------|--------|-------|-------|---------|
| | (MHz) | (dBuV) | (dBuV) | (dB) | (dB) | (dB) | (dBuV/m) | FCC_B | (dB) | (H/V) | (Deg) | (Meter) |
| | Button #3: | | | | | | | | | | | |
| X | 302.35 | 68.26 | 57.66 | 13.26 | 2.25 | 26.26 | 46.91 | 74.83 | -27.92 | 3mV | 270 | 1.00 |
| | 604.83 | 34.31 | 23.71 | 19.17 | 3.26 | 27.31 | 18.83 | 54.83 | -36.00 | 3mV | 270 | 1.00 |
| | 907.13 | 29.51 | 18.91 | 22.68 | 4.10 | 26.51 | 19.18 | 54.83 | -35.65 | 3mV | 270 | 1.10 |
| Y | 302.53 | 84.03 | 73.43 | 13.26 | 2.25 | 26.26 | 62.68 | 74.83 | -12.15 | 3mV | 90 | 1.00 |
| | 604.77 | 50.26 | 39.66 | 19.17 | 3.26 | 27.31 | 34.78 | 54.83 | -20.05 | 3mV | 0 | 1.00 |
| | 907.15 | 32.33 | 21.73 | 22.68 | 4.10 | 26.51 | 22.00 | 54.83 | -32.83 | 3mV | 0 | 1.10 |
| Z | 302.46 | 78.21 | 67.61 | 13.26 | 2.25 | 26.26 | 56.86 | 74.84 | -17.98 | 3mV | 90 | 1.00 |
| | 604.71 | 43.68 | 33.08 | 19.17 | 3.26 | 27.31 | 28.20 | 54.83 | -26.63 | 3mV | 90 | 1.00 |
| | 907.02 | 33.11 | 22.51 | 22.68 | 4.10 | 26.51 | 22.78 | 54.83 | -32.05 | 3mV | 90 | 1.10 |
| X | 302.36 | 85.30 | 74.70 | 13.26 | 2.25 | 26.26 | 63.95 | 74.83 | -10.88 | 3mH | 270 | 1.00 |
| | 604.76 | 42.28 | 31.68 | 19.17 | 3.26 | 27.31 | 26.80 | 54.83 | -28.03 | 3mH | 270 | 1.00 |
| | 907.22 | 29.56 | 18.96 | 22.68 | 4.10 | 26.51 | 19.23 | 54.83 | -35.60 | 3mH | 90 | 1.00 |
| Y | 302.34 | 79.74 | 69.14 | 13.26 | 2.25 | 26.26 | 58.39 | 74.83 | -16.44 | 3mH | 90 | 1.00 |
| | 604.85 | 44.52 | 33.92 | 19.17 | 3.26 | 27.31 | 29.04 | 54.83 | -25.79 | 3mH | 0 | 1.00 |
| | 904.16 | 30.37 | 19.77 | 22.68 | 4.10 | 26.51 | 20.04 | 54.83 | -34.79 | 3mH | 0 | 1.00 |
| Z | 302.41 | 81.01 | 70.41 | 13.26 | 2.25 | 26.26 | 59.66 | 74.83 | -15.18 | 3mH | 90 | 1.00 |
| | 604.64 | 42.74 | 32.14 | 19.17 | 3.26 | 27.31 | 27.26 | 54.83 | -27.57 | 3mH | 90 | 1.00 |
| | 907.18 | 30.19 | 19.59 | 22.68 | 4.10 | 26.51 | 19.86 | 54.83 | -34.97 | 3mH | 180 | 1.10 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | Total data #: 18 | | | | | | | | | | | |



FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road
Hsin Tien City, Taipei, Taiwan, R.O.C.
PHONE: 02-2217-0894 FAX: 02-2217-1254

Project #: 01E9826
Report #: 9826D4
Date & Time: 2001/11/07
Test Engr: VINCE CHIANG

Company: NUTEK CORPORATION
EUT Description: 7945 (Alarm TX / 302 MHz)
Test Configuration : EUT ONLY
Type of Test: FCC 15.231(b)
Mode of Operation: NORMAL MODE

D-Ste

E-Ste

$M\% = ((t1+t2+t3+...)/T) * 100\% = 29.51 \%$

$Av \text{ Reading} = Pk \text{ Reading} + 20 * \log(M\%)$
 $20 * \log(M\%) = -10.601$

| | Freq. (MHz) | Pk Rdg (dBuV) | Av Rdg (dBuV) | AF (dB) | Closs (dB) | Pre-amp (dB) | Level (dBuV/m) | Limit FCC_B | Margin (dB) | Pol (H/V) | Az (Deg) | Height (Meter) |
|---|------------------|------------------|------------------|------------|---------------|-----------------|-------------------|----------------|----------------|--------------|-------------|-------------------|
| | Button #4: | | | | | | | | | | | |
| X | 302.37 | 63.59 | 52.99 | 13.26 | 2.25 | 26.26 | 42.24 | 74.83 | -32.59 | 3mV | 90 | 1.00 |
| | 604.68 | 36.06 | 25.46 | 19.17 | 3.26 | 27.31 | 20.58 | 54.83 | -34.25 | 3mV | 90 | 1.00 |
| | 907.07 | 29.53 | 18.93 | 22.68 | 4.10 | 26.51 | 19.20 | 54.83 | -35.63 | 3mV | 0 | 1.20 |
| Y | 302.38 | 78.85 | 68.25 | 13.26 | 2.25 | 26.26 | 57.50 | 74.83 | -17.33 | 3mV | 180 | 1.00 |
| | 604.76 | 50.36 | 39.76 | 19.17 | 3.26 | 27.31 | 34.88 | 54.83 | -19.95 | 3mV | 180 | 1.00 |
| | 907.13 | 32.48 | 21.88 | 22.68 | 4.10 | 26.51 | 22.15 | 54.83 | -32.68 | 3mV | 180 | 1.20 |
| Z | 302.40 | 73.74 | 63.14 | 13.26 | 2.25 | 26.26 | 52.39 | 74.83 | -22.44 | 3mV | 0 | 1.00 |
| | 604.82 | 43.25 | 32.65 | 19.17 | 3.26 | 27.31 | 27.77 | 54.83 | -27.06 | 3mV | 90 | 1.00 |
| | 907.16 | 31.18 | 20.58 | 22.68 | 4.10 | 26.51 | 20.85 | 54.83 | -33.98 | 3mV | 90 | 1.10 |
| X | 302.38 | 84.89 | 74.29 | 13.26 | 2.25 | 26.26 | 63.54 | 74.83 | -11.29 | 3mH | 180 | 1.00 |
| | 604.71 | 44.49 | 33.89 | 19.17 | 3.26 | 27.31 | 29.01 | 54.83 | -25.82 | 3mH | 180 | 1.00 |
| | 907.27 | 29.76 | 19.16 | 22.68 | 4.10 | 26.51 | 19.43 | 54.83 | -35.40 | 3mH | 180 | 1.20 |
| Y | 302.38 | 87.20 | 76.60 | 13.26 | 2.25 | 26.26 | 65.85 | 74.83 | -8.98 | 3mH | 270 | 1.00 |
| | 604.75 | 44.08 | 33.48 | 19.17 | 3.26 | 27.31 | 28.60 | 54.83 | -26.23 | 3mH | 90 | 1.00 |
| | 907.29 | 30.78 | 20.18 | 22.68 | 4.10 | 26.51 | 20.45 | 54.83 | -34.38 | 3mH | 0 | 1.10 |
| Z | 302.38 | 83.95 | 73.35 | 13.26 | 2.25 | 26.26 | 62.60 | 74.83 | -12.23 | 3mH | 90 | 1.00 |
| | 604.71 | 44.29 | 33.69 | 19.17 | 3.26 | 27.31 | 28.81 | 54.83 | -26.02 | 3mH | 90 | 1.00 |
| | 907.22 | 31.54 | 20.94 | 22.68 | 4.10 | 26.51 | 21.21 | 54.83 | -33.62 | 3mH | 180 | 1.10 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | Total data #: 18 | | | | | | | | | | | |



FCC, VCCI, CISPR, CE, AUSTEL, NZ
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road
Hsin Tien City, Taipei, Taiwan, R.O.C.
PHONE: 02-2217-0894 FAX: 02-2217-1254

Project #: 01E9826
Report #: 9826D5
Date & Time: 2001/11/07
Test Engr: VINCE CHIANG

Company: NUTEK CORPORATION
EUT Description: 7945 (Alarm Tx / 302MHz)
Test Configuration : EUT ONLY
Type of Test: FCC 15.231(b)/FCC 15.209
Mode of Operation: NORMAL MODE

D-Ste
 E-Ste
 6 W oist
 Descendin

| Freq. (MHz) | Pk Rdg (dBuV) | Av Rdg (dBuV) | AF (dB) | Closs (dB) | Pre-amp (dB) | Level (dBuV/m) | Limit FCC_B | Margin (dB) | Pol (H/V) | Az (Deg) | Height (Meter) | Mark (P/Q/A) |
|----------------|------------------|------------------|------------|---------------|-----------------|-------------------|----------------|----------------|--------------|-------------|-------------------|-----------------|
| 1209 | 56.27 | 45.67 | 24.7 | 3.4 | 39.85 | 33.84 | 54.0 | -20.16 | 1mV | 0 | 1.0 | A |
| 1511 | 46.39 | 35.79 | 25.5 | 3.8 | 39.77 | 25.34 | 54.0 | -28.66 | 1mV | 0 | 1.0 | A |
| 1209 | 44.91 | 34.31 | 24.7 | 3.4 | 39.85 | 22.48 | 54.0 | -31.52 | 1mH | 0 | 1.0 | A |
| 1510 | 43.08 | 32.48 | 25.5 | 3.8 | 39.77 | 22.03 | 54.0 | -31.97 | 1mH | 0 | 1.0 | A |

* No other emission were found within 20dB under the limits upto 3.5 GHz.

Total data #:4

P(Peak): RBW=VBW=1MHz
A(Average): Pk Reading -10.601dB