

APPLICANT: ID FONE CO., LTD

FCC ID: PJ4ID-900TR - BASE UNIT

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## TEST EQUIPMENT LIST

1. Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/  
preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter  
HP 85650A, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02,  
S/N 3008A00372
2. Biconnical Antenna: Eaton Model 94455-1, S/N 1057,
3. Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171
4. Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
5. Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409
6. Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180,  
1-18 GHz, S/N 2319
7. 18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20
8. Horn 40-60GHz: ATM Part #19-443-6R
9. Line Impedance Stabilization Network: Electro-Metrics Model  
EM-7820, w/NEMA Adapter S/N 2682 Cal. 3/16/01
10. Temperature Chamber: Tenney Engineering Model TTTC, S/N 11717-7
11. Frequency Counter: HP Model 5385A, S/N 3242A07460
12. Peak Power Meter: HP Model 8900C, S/N 2131A00545
13. Open Area Test Site #1-3meters
14. Signal Generator: HP 8640B, S/N 2308A21464
15. Signal Generator: HP 8614A, S/N 2015A07428
16. Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N  
9706-1211
17. Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153
18. AC Voltmeter: HP Model 400FL, S/N 2213A14499
19. Digital Multimeter: Fluke Model 8012A, S/N 4810047
20. Digital Multimeter: Fluke Model 77, S/N 43850817
21. Oscilloscope: Tektronix Model 2230, S/N 300572

## TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC. Shielded interface cables were used in all cases except for cables connecting to the telephone line and the power cords. A test program was run which simulated a normal data transmission on a network.

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-1992 using a 50uH LISN. Both lines were observed with the UUT transmitting. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The ambient temperature of the UUT was 94°F with a humidity of 35 %.

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TEST PROCEDURES CONTINUED

BANDWIDTH 6.0dB: The measurements were made with the spectrum analyzer's resolution bandwidth(RBW)=100KHz and the video bandwidth(VBW)=300KHz and the span set as shown on plot.

POWER OUTPUT: The RF power output was measured at the antenna feed point using a peak power meter.

ANTENNA CONDUCTED EMISSIONS: The RBW=100KHz, VBW=300KHz and the span set to 10.0MHz and the spectrum was scanned from 30MHz to the 10th Harmonic of the fundamental. Above 1.0GHz the resolution bandwidth was 1.0MHz and the VBW = 3.0MHz and the span to 50MHz.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth(RBW) of the spectrum analyzer was 100kHz up to 1GHz and 1.0MHz above 1GHz with an appropriate sweep speed. The VBW above 1.0GHz was = 3.0MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 94oF with a humidity of 35%.

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PRODUCT DESCRIPTION:

This device is a 900 MHz DSSS wireless system that can be used by the Police Department to record dialog between the police and a suspect. When a policeman arrests a suspect, he must read the Miranda Rights to suspect. At the scene, a camcorder is recording the scene. This device will transmit the audio signal to the receiver which will be connected to the camcorder. Therefore, both the scene and sound can be recorded for future use.



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APPLICANT: ID FONE CO., LTD  
FCC ID: PJ4ID-900TR  
NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE  
RULES PART NUMBER: 15.107(a)  
REQUIREMENTS: .45 - 30 MHz 250 uV OR 47.96 dBuV  
TEST PROCEDURE: ANSI STANDARD C63.4-1992. The spectrum  
was scanned from .45 to 30 MHz.  
TEST DATA:

THE HIGHEST EMISSION READ FOR LINE 1 WAS 18.8 uV @ 28.88 MHz.

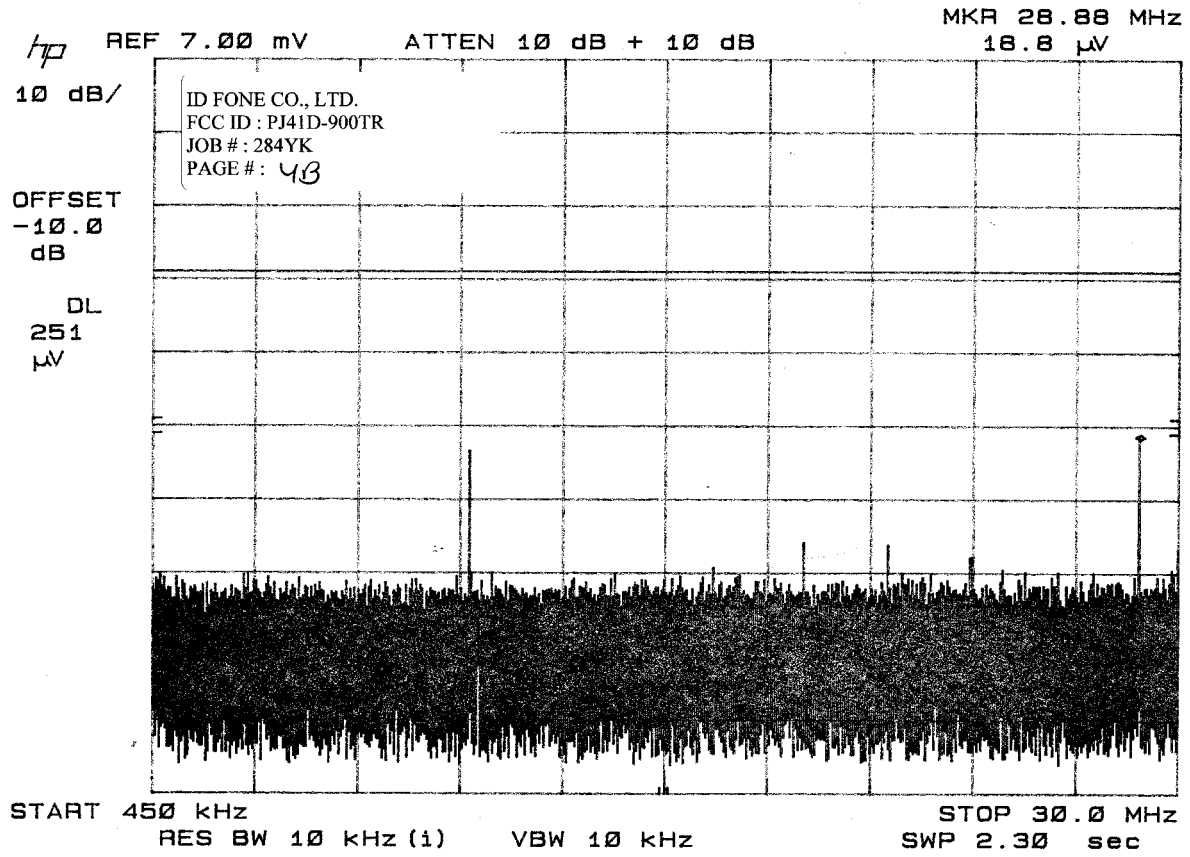
THE HIGHEST EMISSION READ FOR LINE 2 WAS 19.1 uV @ 9.61 MHz.

THE GRAPHS ON THE FOLLOWING TWO PAGES REPRESENT THE EMISSIONS TAKEN  
FOR THIS DEVICE.

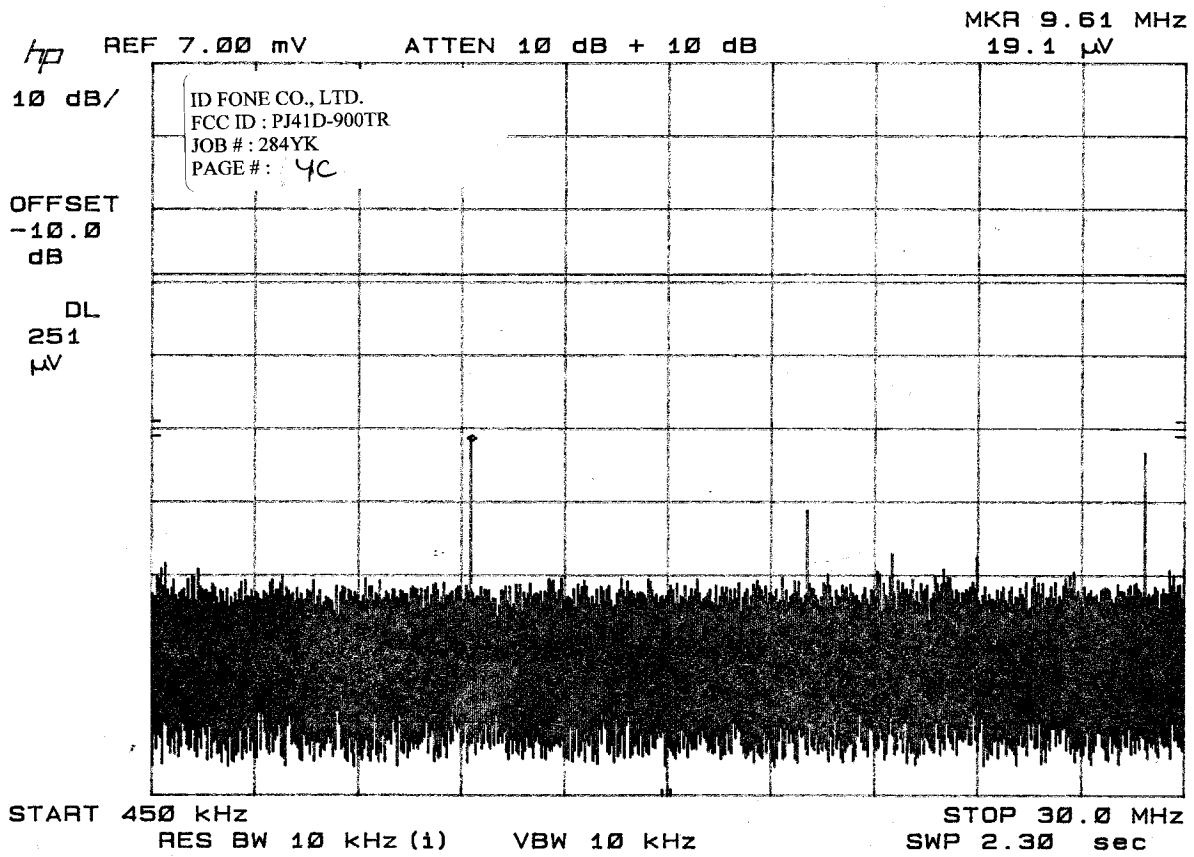
TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

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POWERLINE CONDUCTED - LINE 1



POWERLINE CONDUCTED - LINE 2

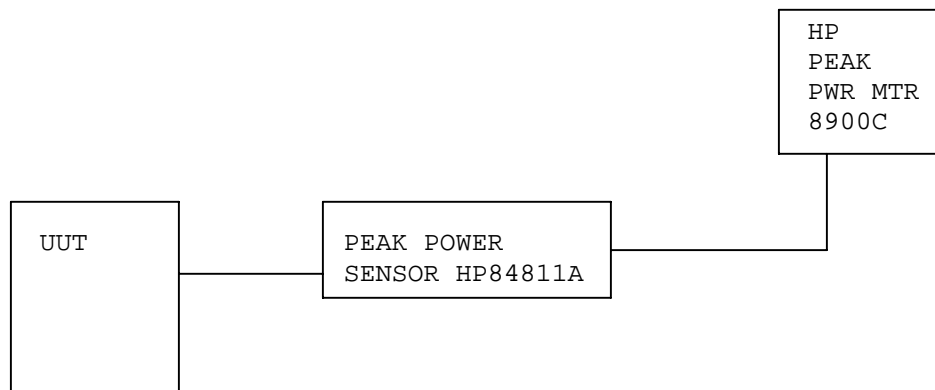


APPLICANT: ID FONE CO., LTD  
FCC ID: PJ4ID-900TR  
NAME OF TEST: 6.0dB BANDWIDTH  
RULES PART NUMBER: 15.247(a)(2)  
REQUIREMENTS: The 6.0dB bandwidth must be greater than 500KHz.  
MEASUREMENT: The 6.0dB bandwidth worst case measured:  
HANDSET: @ 925.20 MHz - 1.570 MHz  
BASE: @ 904.17 MHz - 1.540 MHz

MEASUREMENT DATA: SEE THE PLOTS OF THE FOLLOWING PAGES.

NAME OF TEST: POWER OUTPUT  
RULES PART NUMBER: 15.247(b) 1.0Watt or +30dBm  
MEASUREMENT: BASE - .049 Watts at 904.10 MHz (Channel 1)

15.247(c) Method of Measuring RF Power output:  
The Peak power Sensor was connected  
in place of the antenna.

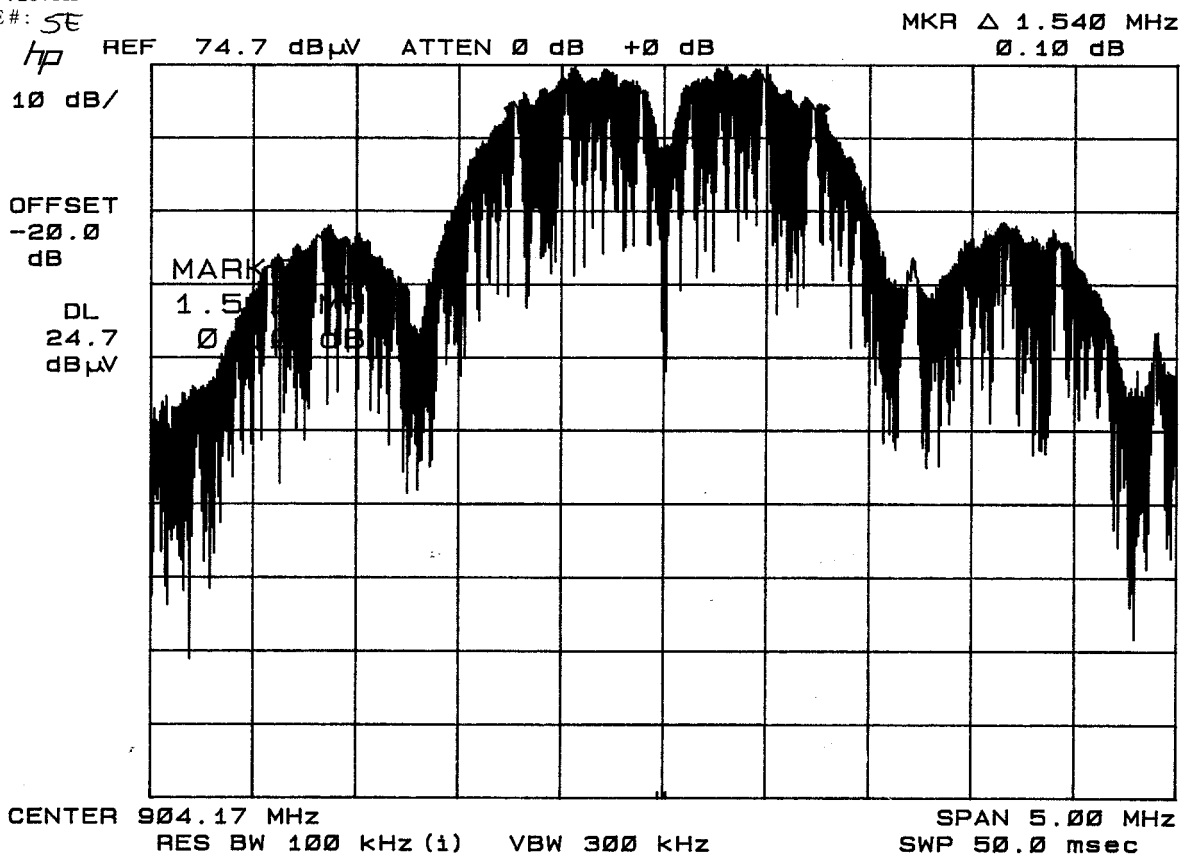


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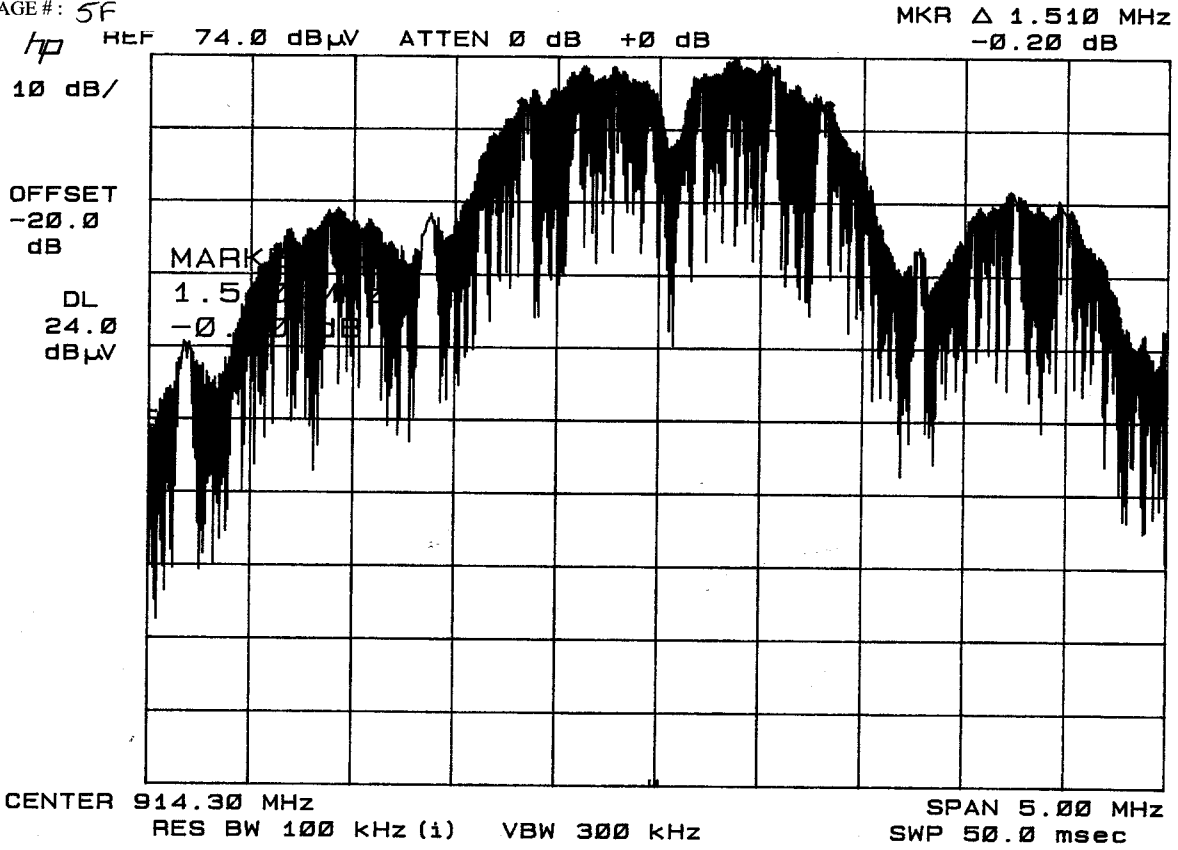
ID FONE CO., LTD.  
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BASE - 6 dB BANDWIDTH - CHANNEL 1



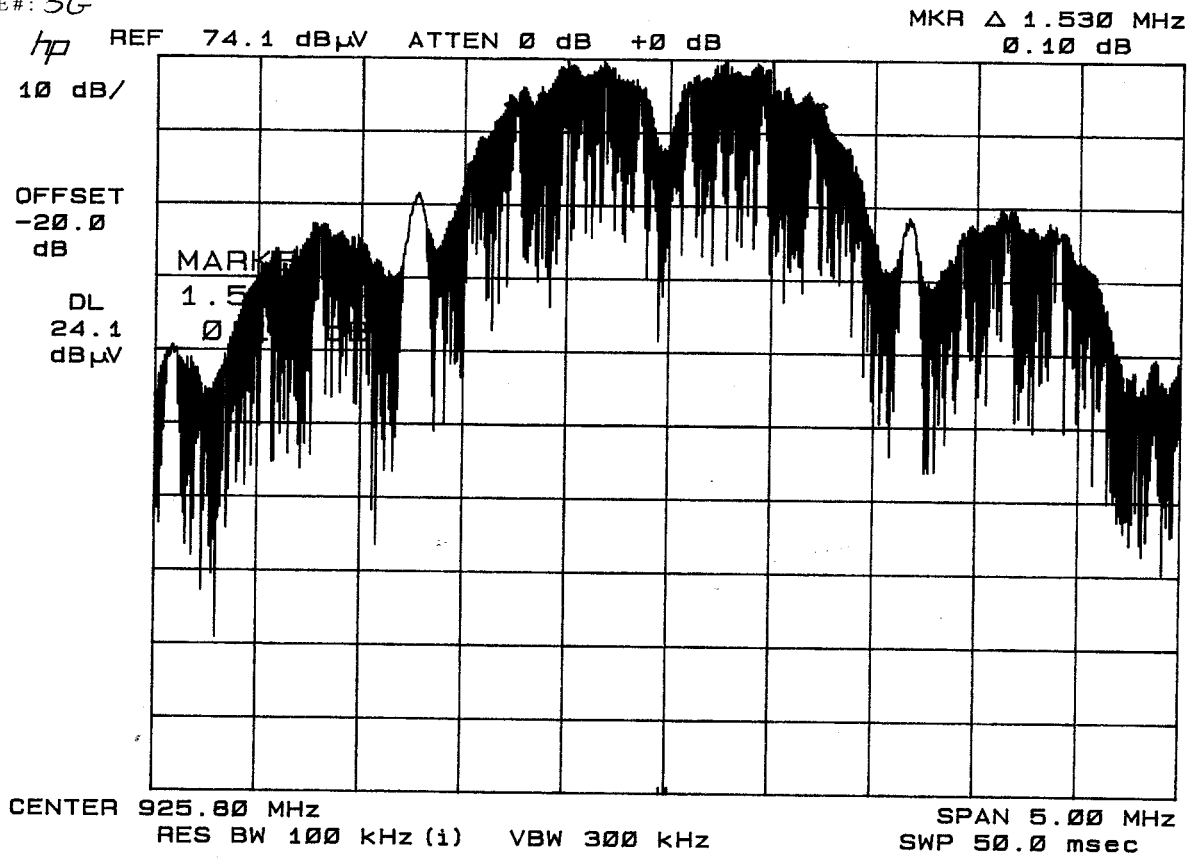
BASE - 6 dB BANDWIDTH - CHANNEL 10

ID FONE CO., LTD.  
FCC ID : PJ41D-900TR  
JOB # : 284YK  
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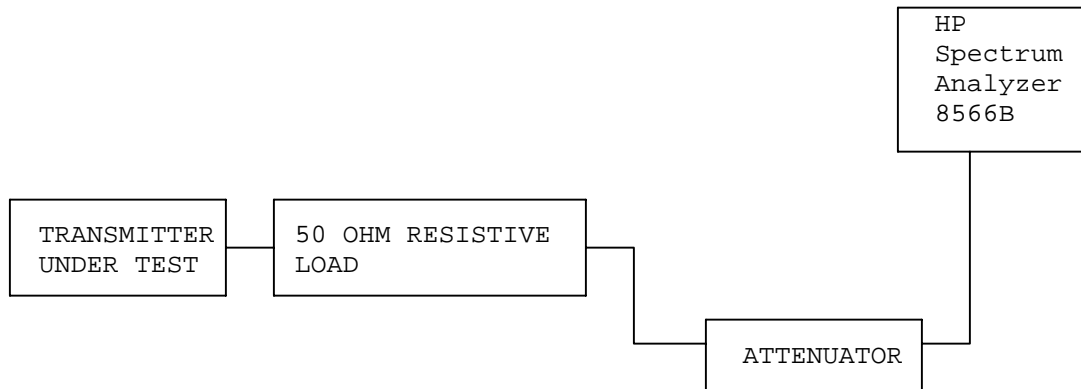
BASE - 6 dB BANDWIDTH - CHANNEL 20

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JOB # : 284YK  
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15.247(c)

Method of Measuring RF Conducted Spurious Emissions



NAME OF TEST: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

REQUIREMENTS: Emissions must be at least 20dB down from the highest emission level within the authorized band as measured with a 100KHz RBW.

NOTE: This test is not required for this device because it has a permanently fixed antenna.

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15.247(c),15.205 &15.209(b) Field\_strength\_of\_spurious\_emissions:

REQUIREMENTS:

|                  |                |                           |
|------------------|----------------|---------------------------|
| FIELD STRENGTH   | FIELD STRENGTH | S15.209                   |
| of Fundamental:  | of Harmonics   | 30 - 88 MHz 40 dBuV/m @3M |
| 902-928MHz       |                | 88 -216 MHz 43.5          |
| 2.4-2.4835GHz    |                | 216 -960 MHz 46           |
| 127.38dBuV/m @3m | 54 dBuV/m @3m  | ABOVE 960 MHz 54dBuV/m    |

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

REQUIREMENTS: Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

TEST DATA:

| Tuned<br>Frequency<br>MHz | Emission<br>Frequency<br>MHz | Meter<br>Reading<br>dBuV | Ant.<br>Polarity | Coax<br>Loss<br>dB | Correction<br>Factor<br>dB | Field<br>Strength<br>dBuV/m | Margin<br>dB |
|---------------------------|------------------------------|--------------------------|------------------|--------------------|----------------------------|-----------------------------|--------------|
| BASE                      |                              |                          |                  |                    |                            |                             |              |
| 904.1                     | 904.10                       | 78.9                     | v                | 4.11               | 24.85                      | 107.86                      | 19.52        |
| 904.1                     | 1,808.20                     | 24.8                     | v                | 2.80               | 28.42                      | 56.02                       | 31.84        |
| 904.1                     | 2,712.30R                    | 14.3                     | v                | 3.57               | 29.74                      | 47.61                       | 6.39         |
| 904.1                     | 3,616.40R                    | 17.0                     | v                | 4.42               | 31.53                      | 52.95                       | 1.05         |
| 904.1                     | 4,520.50R                    | 4.6                      | h                | 5.53               | 33.54                      | 43.67                       | 10.33        |
| 904.1                     | 5,424.60R                    | 2.6                      | v                | 6.35               | 34.28                      | 43.23                       | 10.77        |
| 904.1                     | 6,328.70                     | 0.8                      | h                | 6.62               | 35.29                      | 42.71                       | 45.15        |
| 904.1                     | 7,232.80                     | 3.3                      | h                | 7.04               | 36.04                      | 46.38                       | 44.48        |
| 914.3                     | 914.30                       | 79.7                     | v                | 3.88               | 24.73                      | 108.31                      | 19.07        |
| 914.3                     | 1,828.60                     | 24.5                     | v                | 2.82               | 28.43                      | 55.75                       | 32.56        |
| 914.3                     | 2,742.90R                    | 15.4                     | v                | 3.59               | 29.85                      | 48.84                       | 5.16         |
| 914.3                     | 3,657.20R                    | 17.3                     | v                | 4.46               | 31.71                      | 53.47                       | 0.53         |
| 914.3                     | 4,571.50R                    | 7.7                      | h                | 5.60               | 33.59                      | 46.89                       | 7.11         |
| 914.3                     | 5,485.80                     | 2.5                      | v                | 6.37               | 34.32                      | 43.19                       | 45.12        |
| 914.3                     | 6,400.10                     | 3.4                      | h                | 6.63               | 35.70                      | 45.73                       | 42.58        |
| 914.3                     | 7,314.40R                    | 5.0                      | h                | 7.14               | 36.20                      | 48.34                       | 5.66         |
| 925.8                     | 925.80                       | 78.1                     | v                | 3.62               | 23.28                      | 105.00                      | 22.38        |
| 925.8                     | 1,851.60                     | 22.4                     | v                | 2.84               | 28.45                      | 53.69                       | 31.31        |
| 925.8                     | 2,777.40R                    | 12.4                     | v                | 3.62               | 29.98                      | 46.00                       | 8.00         |
| 925.8                     | 3,703.20R                    | 13.1                     | v                | 4.50               | 31.92                      | 49.52                       | 4.48         |
| 925.8                     | 4,629.00R                    | 3.4                      | v                | 5.68               | 33.64                      | 42.72                       | 11.28        |
| 925.8                     | 5,554.80                     | 1.6                      | h                | 6.39               | 34.37                      | 42.36                       | 42.64        |
| 925.8                     | 6,480.60                     | 0.3                      | v                | 6.65               | 35.56                      | 42.51                       | 42.49        |
| 925.8                     | 7,406.40R                    | 3.7                      | h                | 7.26               | 36.38                      | 47.34                       | 6.66         |

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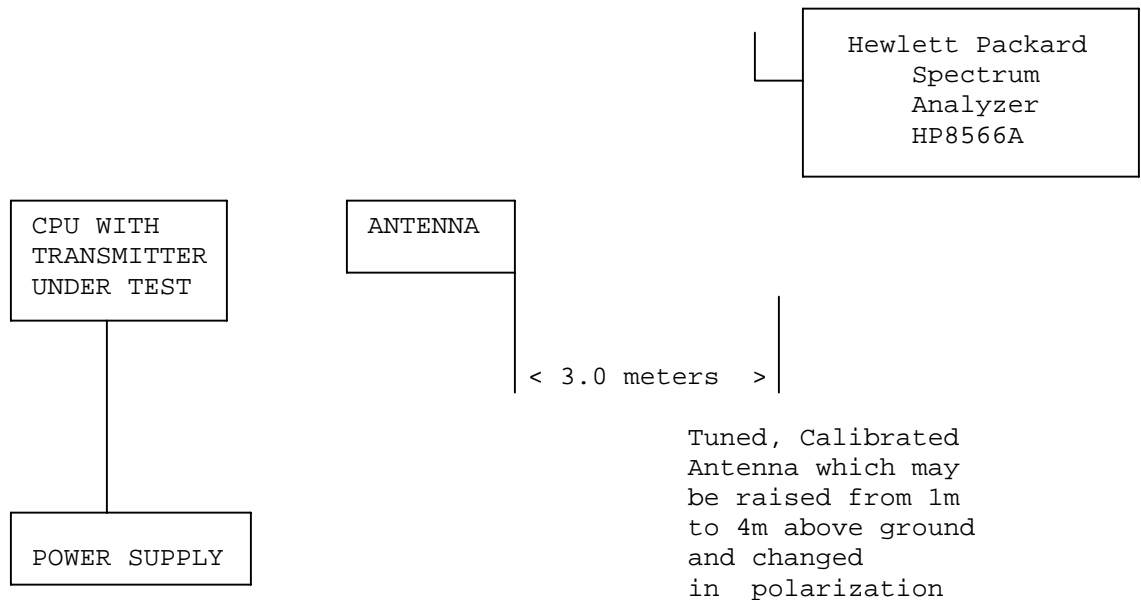
METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-1992 & the Guidance on Measurements for Direct Sequence Spread Spectrum Systems. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 N.W. State Road, Newberry, FL 32669.

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2.993(a)(b)

2.993(a)(b) Continued Field\_strength\_of\_spurious\_emissions:

#### Method of Measuring Radiated Spurious Emissions



Equipment placed 80 cm above ground  
on a rotatable platform.

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NAME OF TEST: POWER SPECTRAL DENSITY

RULES PART NUMBER: 15.247(d)

REQUIREMENTS: The power spectral density averaged over any 1 second interval shall not be greater than +8.0 dBm in any 3 kHz bandwidth within these bands.

TEST DATA:

The spectrum line spacing could not be resolved so the noise power Density was measured.

Measurement Method:

Starting from the settings that were used for the 6 dB bandwidth the peak signal was located and the span was reduced and the sweep time increased in a manner to maintain calibration and to keep the peak emission in the display, then the sweep time was increased to 500 seconds at 1.5 MHz span and a RBW changed to 3 kHz. The spectrum analyzer was put into the noise power mode and the plots made.

The worst case for the base is reported below:

BASE

35.10 dBuV  
30 dB ATTN  
35 dB CF

TOTALS 100.1 dBuV

100.1 dBuV-107= -6.90 dBm

NAME OF TEST: PROCESSING GAIN

RULES PART NUMBER: 15.247(e)

REQUIREMENTS: The processing gain shall be at least 10 dB.

TEST DATA: The processing gain of this unit is at least 11.2 dB. This information was provided by the manufacturer and is included as Exhibits 10A-10B.

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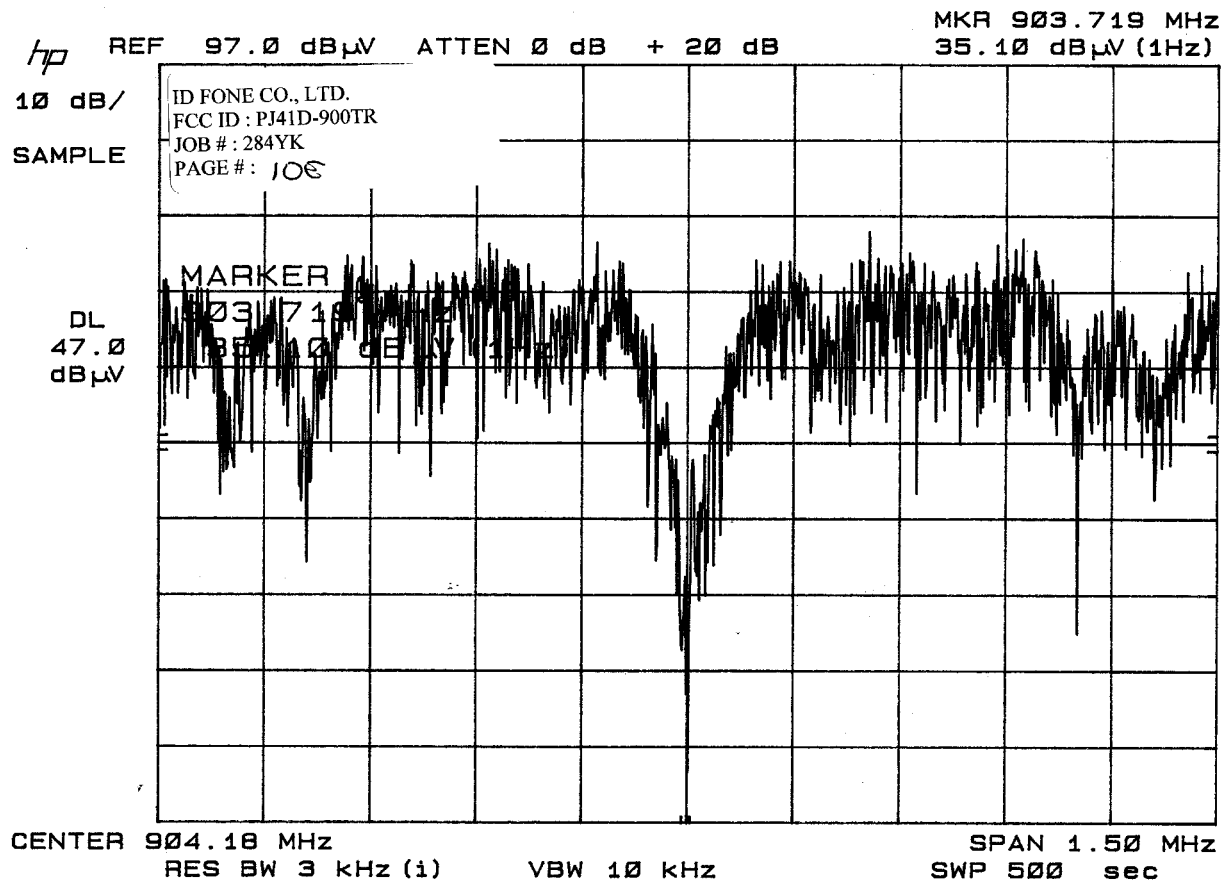
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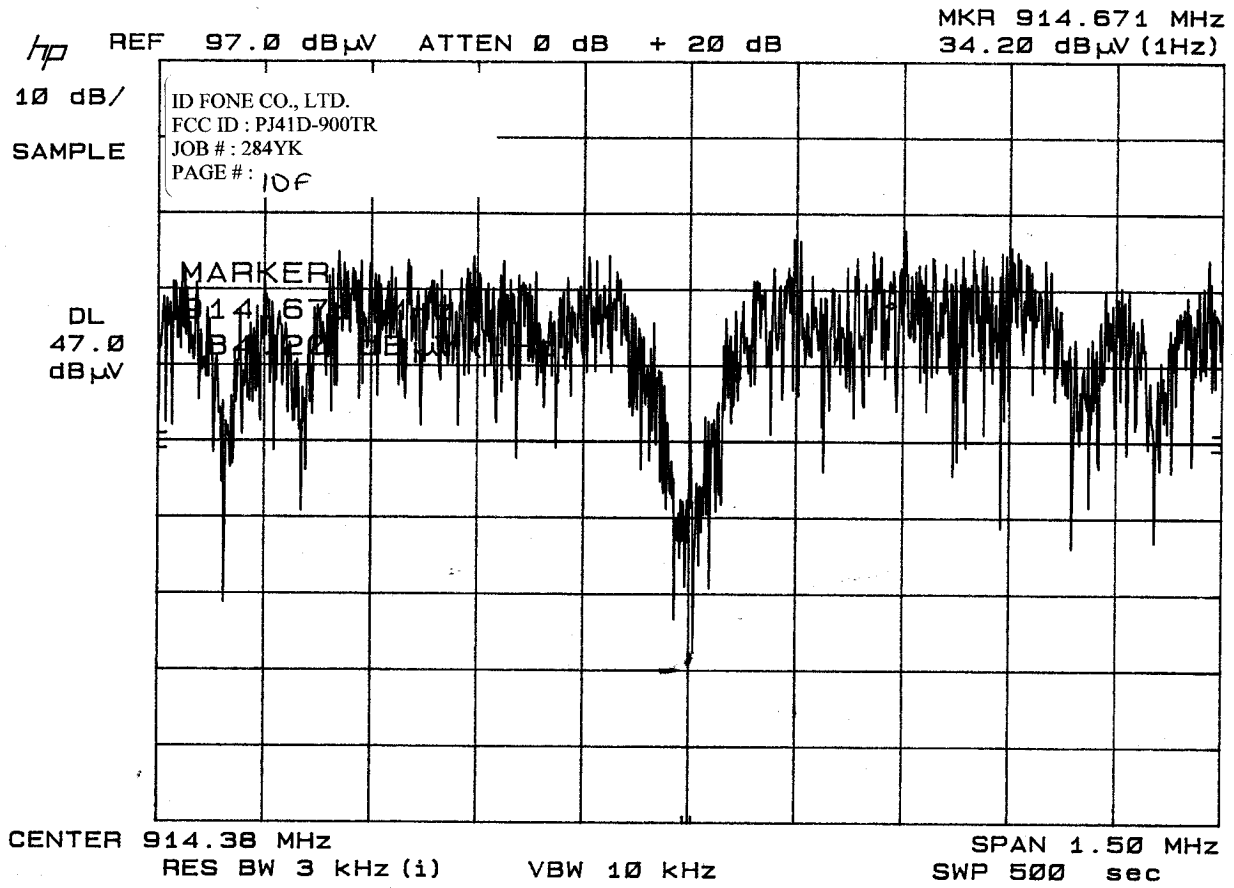
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BASE - SPECTRAL DENSITY - CHANNEL 1 - 30 dB ATTN.



BASE - SPECTRAL DENSITY - CHANNEL 10 - 30 dB ATTN.



BASE - SPECTRAL DENSITY - CHANNEL 20 - 30 dB ATTN.

