EMI TESTING REPORT

EUT : 900MHz Analog Cordless phone with DTAD

MODEL : 43-732

FCC ID : AAO4300732

PREPARED FOR :

RADIOSHACK, A DIVISION OF TANDY CORP.

100 THROCKMORTON STREET, SUITE 1300,

FORT WORTH, TEXAS, 76102-2802,

U.S.A.

PREPARED BY :

SPECTRUM RESEARCH & TESTING LABORATORY INC.
NO. 101-10, LING 8, SHAN-TONG LI CHUNG-LI CITY,
TAOYUAN, TAIWAN, R. O. C.
TEL : (03) 4987684 FAX : (03) 4986528

TABLE OF CONTENTS

1. **TEST REPORT CERTIFIICATION** 4

2. **TEST STATEMENT**
   - 2.1 TEST STATEMENT 5
   - 2.2 DEPARTURE FROM DOCUMENT POLICIES, PROCEDURE OR SPECIFICATIONS, TEST STATEMENT 5

3. **EUT MODIFICATIONS** 6

4. **MODIFICATION LETTER** 7

5. **CONDUCTED POWER LINE TEST**
   - 5.1 TEST EQUIPMENT 8
   - 5.2 TEST PROCEDURE 8
   - 5.3 TEST SETUP 9
   - 5.4 CONFIGURATION OF THE EUT 10-11
   - 5.5 EUT OPERATING CONDITION 12
   - 5.6 EMISSION LIMIT 12
   - 5.7 EMISSION TEST RESULT 13-17

6. **RADIATED EMISSION TEST**
   - 6.1 TEST EQUIPMENT 18
   - 6.2 TEST PROCEDURE 19
   - 6.3 TEST SETUP 19-20
   - 6.4 CONFIGURATION OF THE EUT 21
   - 6.5 EUT OPERATING CONDITION 21
   - 6.6 EMISSION LIMIT 21
   - 6.7 RADIATION EMISSION TEST RESULT 22-35

7. **BANDWIDTH**
   - 7.1 LIMIT 36
   - 7.2 RESULT 36-42

8. **VERIFY CHANNELS AND FREQUENCIES** 43

9. **PHOTOS OF TESTING** 44-58

1. TEST REPORT CERTIFICATION

APPLICANT : RADIOSHACK, A DIVISION OF TANDY CORP.

ADDRESS : 100 THROCKMORTON STREET, SUITE 1300,
FORT WORTH, TEXAS, 76102-2802,
U.S.A.

EUT DESCRIPTION : 900MHz Analog Cordless phone with DTAD

(A) POWER SUPPLY : BASE BY ADAPTOR (120VAC/60Hz)
HANDSET BY BATTERY (3.6V/610mAh)

(B) MODEL : 43-732

(C) FCC ID : AAO4300732

FINAL TEST DATE : 07/02/1999

MEASUREMENT PROCEDURE USED :

* PART 15 SUBPART B & C OF FCC RULES AND REGULATIONS (47 CFR PART 15)
* ANSI C63.4 - 1992
* TEST PROCEDURE AND DATA ARE TRACEABLE TO NIST / USA.

We hereby show that :

The measurement shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable.

TESTING ENGINEER : Addison Liu DATE 7/2/99
Addison Liu

SUPERVISOR : DATE 7/2/99
Jesse Ho

APPROVED BY : DATE 7/2/99
Johnson Ho

2. TEST STATEMENT

2.1 TEST STATEMENT

1. This letter is to explain the EUT will be class II change.

2. The original FCC ID: AAO4300732 was approved by FCC.
   The different between new one and old one is changed RF module.

3. EUT conditions:

   Frequency Range: Base → 902.302 ~ 906.101MHz
   Handset → 923.901 ~ 927.701MHz
   Support Channel: 20 channel

4. NVLAP logo is to be approved by management (it is according to NVLAP requirement if it need) before use.

2.2 DEPARTURE FROM DOCUMENT POLICIES, PROCEDURE OR SPECIFICATIONS, THE STATEMNT

A. Did have
Any departure from document policies & procedures or from specifications.
Yes _____, No ____√____ .
If yes, the description as below.

B. The certificate and report shall not be reproduced except in full, without the written approval of SRT laboratory.

C. The report must not be used by the client to claim product endorsement by NVLAP or any agency the government.

D. This product is a prototype product.

E. The effect that the results relate only to the items tested.

3. EUT MODIFICATIONS

The following accessories were added to the EUT during testing :

No modifications by SRT lab.

4. MODIFICATION LETTER

This section contains the following documents :

A. Letter of modifications

5. CONDUCTED POWER LINE TEST

5.1 TEST EQUIPMENT

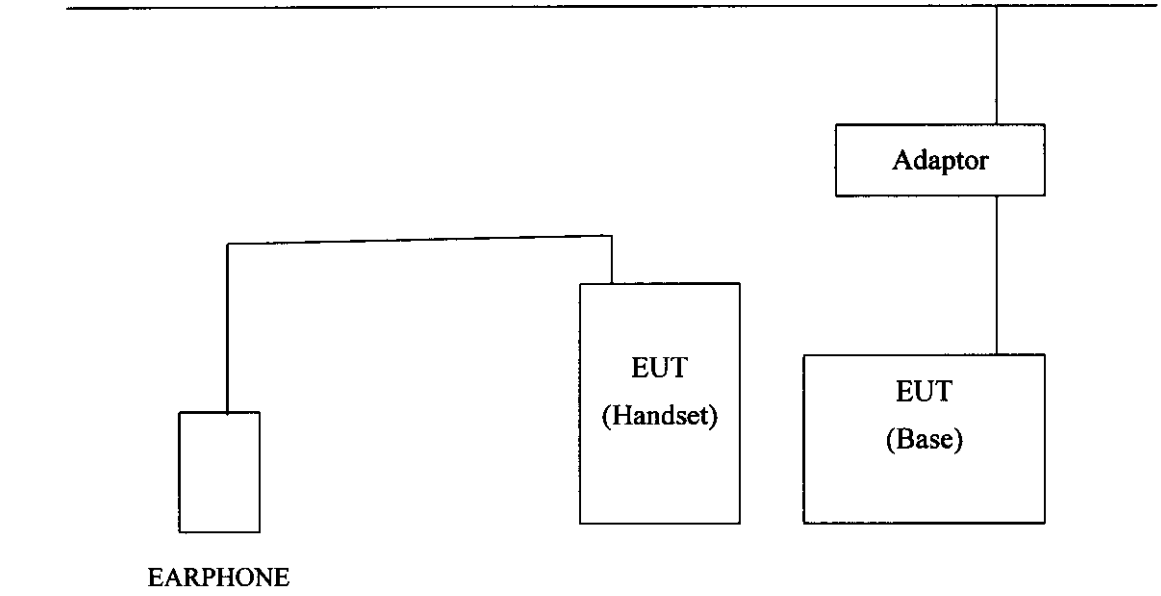
The following test equipment were used during the conducted power line test :

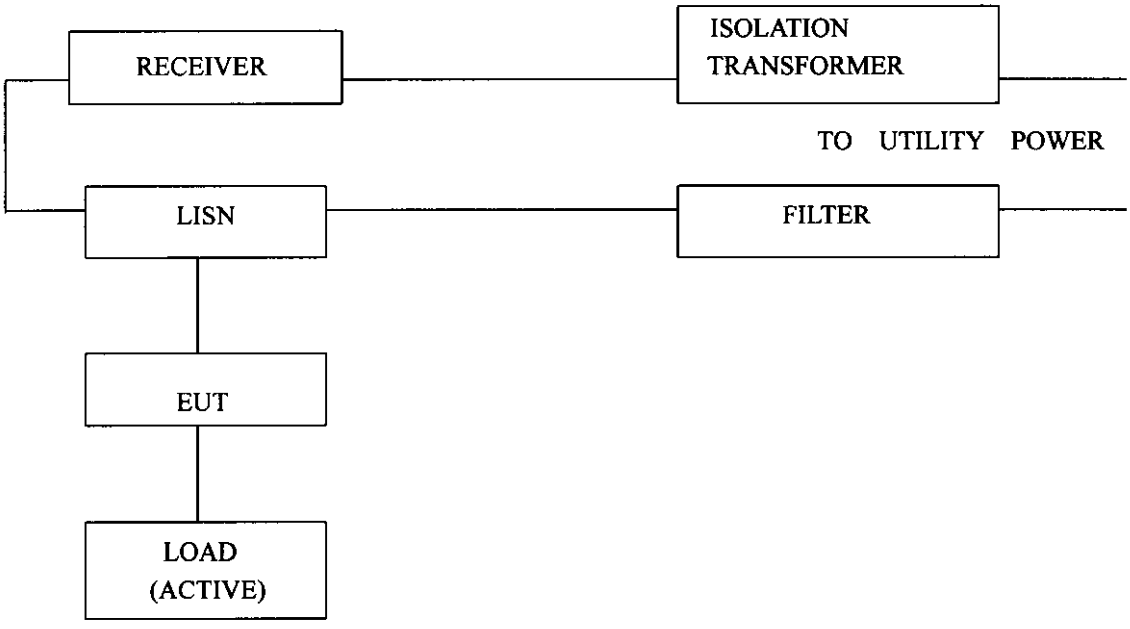
EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL# SER.#/	DATE OF CAL. & CAL. CENTER	DUE DATE	FINAL TEST
SPECTRUM ANALYZER	9 KHz TO 1 GHz	HP	8590L/ 3624A01317	AUGUST 1998 ETC	1Y	
EMI TEST RECEIVER	9 KHz TO 30 MHz	ROHDE & SCHWARZ	ESHS30/ 826003/008	AUGUST 1998 ETC	1Y	√
LISN	50 uH, 50 ohm	SOLAR ELECTRONICS	9252-50-R24-BNC/ 951315	AUGUST 1998 ETC	1Y	√
LISN	50uH, 50 ohm	SOLAR ELECTRONICS	9252-50-R24-BNC/ 951318	AUGUST 1998 ETC	1Y	√
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	APRIL 1999 ETC	1Y	√
POWER CONVERTER	0 TO 300 VAC VAC 47-500 Hz	AFC	AFC-1KW/ 850510	MARCH 1999 SRT	1Y	√

5.2 TEST PROCEDURE

The EUT was tested according to ANSI C63.4 - 1992. The frequency spectrum from 0.45 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry as specified by SECTION 5.1 of ANSI C63.4 - 1992. Cables and peripherals were moved to find the maximum emission levels for each frequency.

5.3 TEST SETUP





5.4 CONFIGURATION OF THE EUT

The EUT was configured according to ANSI C63.4 - 1992. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

A. EUT

DEVICE	MANUFACTURER	MODEL #	FCC ID
900MHz Analog Cordless phone with DTAD	RADIOSHACK, A DIVISION OF TANDY CORP.	47-732	AAO4300732

B. INTERNAL DEVICES

DEVICE	MANUFACTURER	MODEL #	FCC ID / DoC
N/A			

C. PERIPHERALS

DEVICE	MANUFAC-TURER	MODEL # SERIAL #	FCCID / DoC	CABLE
EARPHONE	NATIONAL	RD-9267	N/A	1.2m unshielded data cable
ADAPTOR	RADIOSHACK	43-732	N/A	1.8m unshielded power cord

- REMARK :

(1). Cable - uns : Unshielded
s : Shielded
S1 : Single point shielding
S2 : 360° shielding
S3 : Double shielding

(2). Cables - all 1m or greater in length – bundled according to ANSI C63.4 – 1992.

5.5 EUT OPERATING CONDITION

Operating condition is according to ANSI C63.4 - 1992.

1. EUT power on.
2. Frequency Range : Base → 902.302 ~ 906.101MHz
   Handset → 923.901 ~ 927.701MHz

5.6 CONDUCTED POWER LINE EMISSION LIMIT

FREQUENCY RANGE (MHz)	CLASS B
0.45 - 1.705	48.0dBuV
1.705 - 30	48.0dBuV

NOTE : In the above table, the toghter limit applies at the band edges.

5.7 CONDUCTED POWER LINE TEST RESULT

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All readinges are quasi-peak values with a resolution bandwidth of 9 KHz.

Temperature : 25 °C Humidity : 50 %RH

FREQUENCY (MHz)	LINE1 (dBuV)	LINE2 (dBuV)	LIMIT (dBuV)
0.77	2.9	3.3	48.0
1.42	9.1	6.4	48.0
4.00	5.4	6.6	48.0
8.00	24.0	23.7	48.0
12.0	29.1	28.7	48.0
28.0	39.7	40.9	48.0

REMARKS : (1). * = measurement does not apply for this frequency
(2). uncertainty in conducted emission measured is <+/-2dB
(3). any departure from specification : N/A
(4). Charge mode

SIGNED BY TESTING ENGINEER : Addison

5.7 CONDUCTED POWER LINE TEST RESULT

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All readinges are quasi-peak values with a resolution bandwidth of 9 KHz.

Temperature : 25 °C Humidity : 50 %RH

FREQUENCY (MHz)	LINE1 (dBuV)	LINE2 (dBuV)	LIMIT (dBuV)
0.77	0.8	2.2	48.0
1.42	6.6	8.3	48.0
5.53	3.0	4.4	48.0
8.00	25.6	25.6	48.0
16.0	13.4	14.2	48.0
29.5	31.3	32.8	48.0

REMARKS : (1). * = measurement does not apply for this frequency
(2). uncertainty in conducted emission measured is <+/-2dB
(3). any departure from specification : N/A
(4). Play mode

SIGNED BY TESTING ENGINEER : Addison

5.7 CONDUCTED POWER LINE TEST RESULT

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All readinges are quasi-peak values with a resolution bandwidth of 9 KHz.

Temperature : 25 °C Humidity : 50 %RH

FREQUENCY (MHz)	LINE1 (dBuV)	LINE2 (dBuV)	LIMIT (dBuV)
0.77	2.6	*	48.0
1.42	8.6	10.6	48.0
4.00	*	4.0	48.0
8.00	24.2	25.3	48.0
16.0	16.9	13.7	48.0
27.9	32.0	3.2	48.0

REMARKS : (1). * = measurement does not apply for this frequency
(2). uncertainty in conducted emission measured is <+/-2dB
(3). any departure from specification : N/A
(4). Base channel 01

SIGNED BY TESTING ENGINEER : Addison

5.7 CONDUCTED POWER LINE TEST RESULT

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All readinges are quasi-peak values with a resolution bandwidth of 9 KHz.

Temperature : 25 °C Humidity : 50 %RH

FREQUENCY (MHz)	LINE1 (dBuV)	LINE2 (dBuV)	LIMIT (dBuV)
0.69	*	0.2	48.0
0.77	1.2	*	48.0
1.42	6.7	10.0	48.0
4.00	2.1	3.5	48.0
8.00	25.2	25.1	48.0
16.0	13.4	13.5	48.0
29.5	31.8	32.9	48.0

REMARKS : (1). * = measurement does not apply for this frequency
(2). uncertainty in conducted emission measured is <+/-2dB
(3). any departure from specification : N/A
(4). Base channel 10

SIGNED BY TESTING ENGINEER : Addison

5.7 CONDUCTED POWER LINE TEST RESULT

The frequency spectrum from 0.45 MHz to 30 MHz was investigated. All readinges are quasi-peak values with a resolution bandwidth of 9 KHz.

Temperature : 25 °C Humidity : 50 %RH

FREQUENCY (MHz)	LINE1 (dBuV)	LINE2 (dBuV)	LIMIT (dBuV)
0.77	*	2.9	48.0
1.42	2.8	9.7	48.0
5.53	2.7	*	48.0
8.00	26.0	25.1	48.0
16.0	18.6	13.4	48.0
29.5	32.0	34.4	48.0

REMARKS : (1). * = measurement does not apply for this frequency
(2). uncertainty in conducted emission measured is <+/-2dB
(3). any departure from specification : N/A
(4). Base channel 20

SIGNED BY TESTING ENGINEER : Addison

6. RADIATED EMISSION TEST

6.1 TEST EQUIPMENT

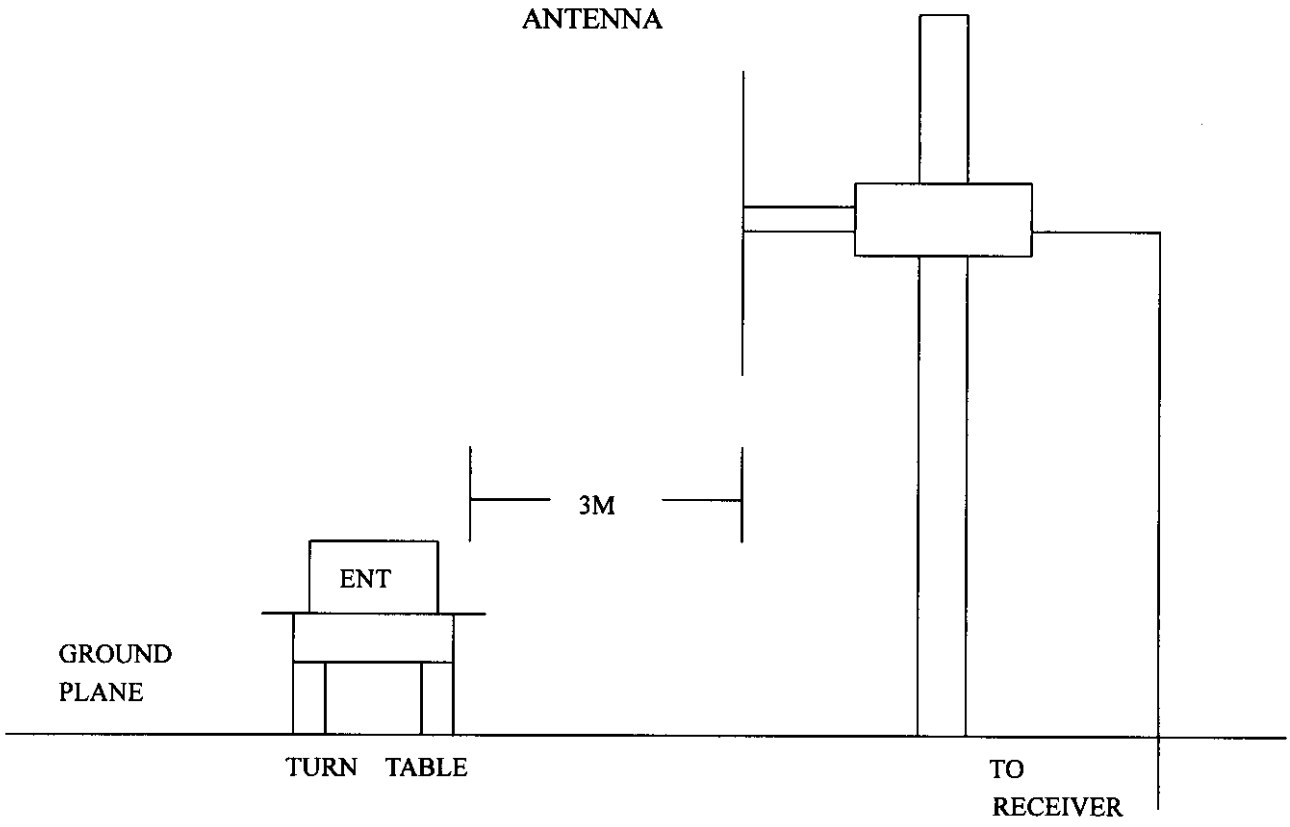
The following test equipment were used during the radiated emission test :

EQUIPMENT / FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL # / SERIAL #	DATE OF CAL. & CAL. CENTER	DUE DATE	FINAL TEST
RECEIVER	20 MHz TO 1000 MHz	R & S	ESVS30/ 841977/003	APRIL 1999 ETC	1Y	√
SPECTRUM ANALYZER	100 Hz TO 1500 MHz	HP	8568B/ 3019A05294	OCT. 1998 ETC	1Y	
SPECTRUM ANALYZER	9 KHz TO 22 GHz	HP	8593E/ 3322A00670	APRIL 1999 ETC	1Y	√
SPECTRUM ANALYZER	100 Hz TO 1000 MHz	IFR	A-7550/ 2684/1248	JULY 1998 ETC	1Y	
SIGNAL GENERATOR	9 KHz TO 1080 MHz	ROHDE & SCHWARZ	SMY01/ 841104/019	APRIL 1999 ETC	1Y	√
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9003-534	MARCH 1999 SRT	1Y	
DIPOLE ANTENNA	28 MHz TO 1000 MHz	EMCO	3121C/ 9611-1239	SEP. 1998 SRT	1Y	
BI-LOG ANTENNA	26 MHz TO 2000 MHz	EMCO	3142/ 9608-1073	SEP. 1998 SRT	1Y	√
BI-LOG ANTENNA	26 MHz TO 1100 MHz	EMCO	3143/ 9509-1152	SEP. 1998 SRT	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A08402	APRIL 1999 ETC	1Y	
PRE-AMPLIFIER	0.1 MHz TO 1300 MHz	HP	8447D/ 2944A06412	AUGUST 1998 ETC	1Y	
HORN ANTENNA	1 GHz TO 18 GHz	EMCO	3115/ 9012-3619	JAN. 1999 EMCO	1Y	√

6 . 2 TEST PROCEDURE

(1).The EUT was tested according to ANSI C63.4 - 1992. The radiated test was performed at SRT lab's open site. this site is on file with the FCC laboratory division, reference 31040 / SIT.
(2).The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-1992.
(3).The frequency spectrum from 30 MHz to 10 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters.
(4). The antenna high were varied from 1 m to 4 m high to find the maximum emission for each frequency.
(5). The antenna polarization : Vertical polarization and horizontal polarization.

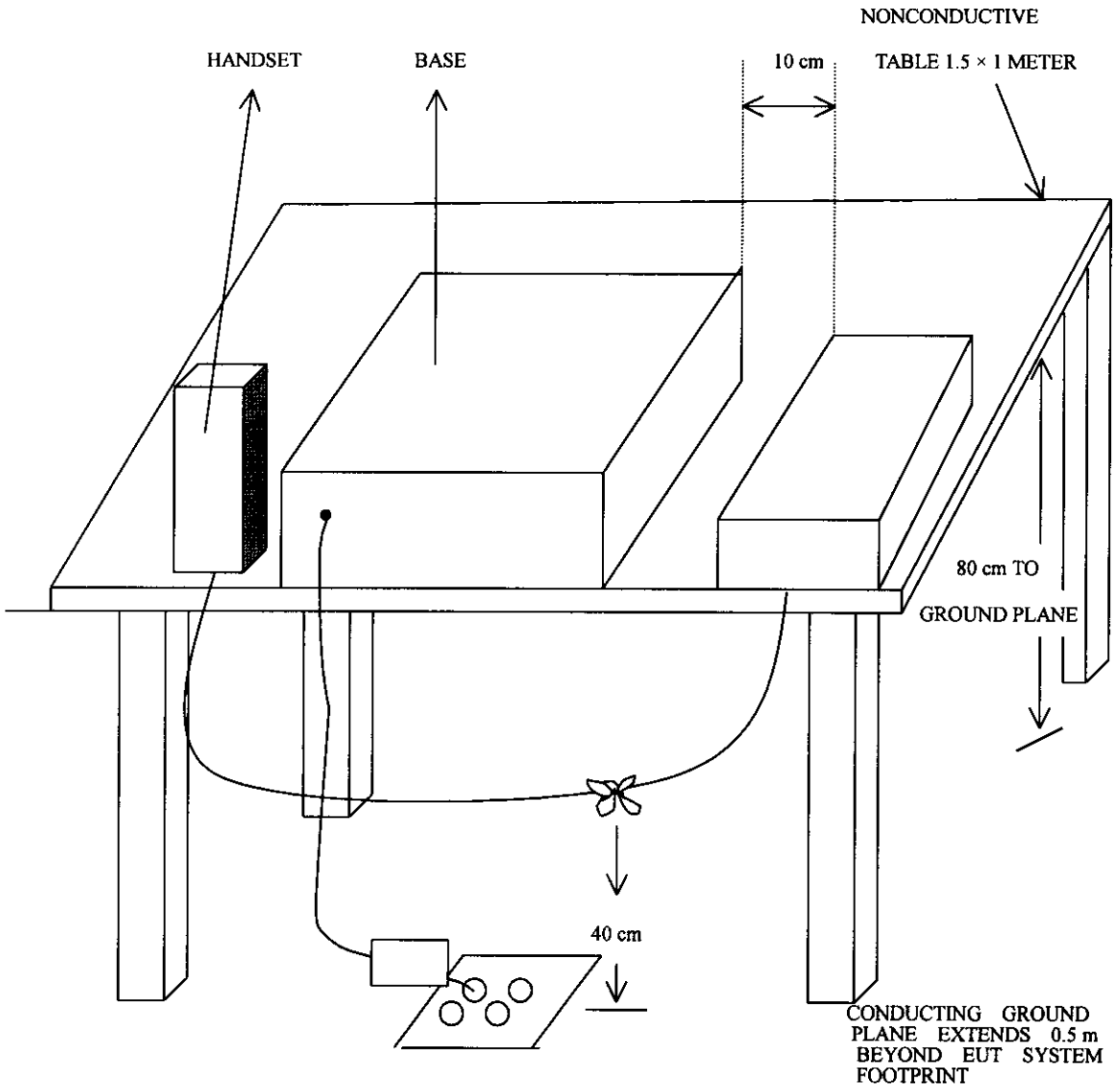
6 . 3 RADIATED TEST SET-UP



6 . 3 RADIATED TEST SET-UP

ANSI C63.4-1992

ELECTRICAL AND ELECTRONIC EQUIIPMENT IN THE RANGE IN THE RANGE OF 9 KHz TO 40 GHz



6.4 CONFIGURATION OF THE THE EUT

Same as section 5.4 of this report

6.5 EUT OPERATING CONDITION

Same as section 5.5 of this report.

6.6 REDIATED EMISSION LIMIT

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below :

CLASS B

FREQUENCY (MHz)	DISTANCE (m)	FIELS STRENGTH (dBuV/m)
30 - 88	3	40.0
88 - 216	3	43.5
216 - 960	3	46.0
ABOVE 960	3	54.0

FUNDAMENTAL AND HARMONICS

FUNDAMENTAL FREQUENCY	FIELD STRENGTH OF FUNDAMENTAL (MILLIVOLTS/METER)	FIELD STRENGTH OF HARMONICS (MILLIVOLTS/METER)
902MHz - 928MHz	50	500
2400MHz - 2483.5MHz	50	500
5725MHz - 5875MHz	50	500
24.0GHz - 24.25GHz	250	2500

NOTE : 1. In the emission tables above, the tighter limit applies at the band edges.

2. Distance refers to the distance between measuring instrument, antenna, and the closest point of any part of the device or system.

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (DB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (uV/m)		LMTS (uV/m)
			HORIZ	VERT	HORIZ	VERT	
73.7132	0.8	7.9	19.5	20.5	28.2	29.2	40.0
160.3420	1.1	10.8	22.1	22.5	34.0	34.4	43.5
160.0365	1.1	10.5	24.2	24.6	35.8	36.2	43.5
167.7188	1.1	10.3	23.1	22.8	34.5	34.2	43.5
171.4050	1.1	10.0	23.5	23.1	34.6	34.2	43.5
182.4638	1.1	10.9	25.5	25.4	37.5	37.4	43.5
189.8338	1.1	11.4	25.0	23.6	37.5	36.1	43.5
200.9063	1.2	12.2	24.5	21.8	37.9	35.2	43.5
259.8825	1.4	14.7	25.3	22.6	41.4	38.7	46.0
278.3125	1.5	14.8	24.6	21.3	40.9	37.6	46.0

REMARKS : (1). *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Charge mode

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (uV/m)		LMTS (uV/m)
			HORIZ	VERT	HORIZ	VERT	
73.7132	0.8	7.9	19.2	20.4	27.9	29.1	40.0
160.3420	1.1	10.8	21.8	22.1	33.7	34.0	43.5
164.0365	1.1	10.5	18.4	17.9	30.0	29.5	43.5
167.7188	1.1	10.3	22.8	22.5	34.2	33.9	43.5
171.4050	1.1	10.0	23.6	23.4	34.7	34.5	43.5
182.4638	1.1	10.9	25.7	25.7	37.7	37.7	43.5
189.8338	1.1	11.4	25.4	23.9	37.9	36.4	43.5
200.9063	1.2	12.2	24.8	22.4	38.2	35.8	43.5
278.3125	1.5	14.8	25.1	23.2	41.4	39.5	46.0
259.8825	1.4	14.7	25.6	23.1	41.7	39.2	46.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Play mode

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (dBuV/m)		LIMITS (dBuV/m)
			HORIZ	VERT	HORIZ	VERT	
160.3420	1.1	10.8	24.1	25.4	36.0	37.3	43.5
164.0365	1.1	10.5	25.4	25.6	37.0	37.2	43.5
167.7188	1.1	10.3	24.7	25.1	36.1	36.5	43.5
171.4050	1.1	10.0	25.2	24.7	36.3	35.8	43.5
182.4638	1.1	10.9	25.3	25.1	37.3	37.1	43.5
200.9063	1.2	12.2	25.1	22.6	38.5	36.0	43.5
259.8825	1.4	14.7	24.8	23.7	40.9	39.8	46.0
278.3125	1.5	14.8	24.1	23.4	40.4	39.7	46.0
902.3000	2.9	29.0	48.6	57.1	80.5	89.0	94.0

REMARKS : (1). *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Base channel 01

SIGNED BY TESTING ENGINEER : addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (dBuV/m)		LMTS (dBuV/m)
			HORIZ	VERT	HORIZ	VERT	
160.3420	1.1	10.8	23.8	25.1	35.7	37.0	43.5
164.0365	1.1	10.5	25.3	24.8	36.9	36.4	43.5
167.7188	1.1	10.3	25.4	25.8	36.8	37.2	43.5
171.4050	1.1	10.0	25.7	26.1	36.8	37.2	43.5
182.4638	1.1	10.9	25.1	24.8	37.1	36.8	43.5
200.9063	1.2	12.2	25.0	22.3	38.4	35.7	43.5
259.8825	1.4	14.7	25.2	24.3	41.3	40.4	46.0
278.3125	1.5	14.8	25.4	24.1	41.7	40.4	46.0
904.1000	2.9	29.0	52.1	56.7	84.0	88.6	94.0

REMARKS : (1). *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Base channel 10

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (dBuV/m)		LMTS (dBuV/m)
			H(QP)	V(QP)	H(QP)	V(QP)	
160.3420	1.1	10.8	24.2	25.3	36.1	37.2	43.5
164.0365	1.1	10.5	25.7	25.4	37.3	37.0	43.5
167.7188	1.1	10.3	25.6	25.9	37.0	37.3	43.5
171.4050	1.1	10.0	26.1	26.5	37.2	37.6	43.5
182.4638	1.1	10.9	25.5	25.1	37.5	37.1	43.5
200.9063	1.2	12.2	24.7	22.1	38.1	35.5	43.5
259.8825	1.4	14.7	25.4	24.8	41.5	40.9	46.0
278.3125	1.5	14.8	25.3	24.4	41.6	40.7	46.0
906.1000	2.9	29.0	51.6	57.6	83.5	89.5	94.0

REMARKS : (1). *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Base channel 20

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (dBuV/m)		LIMIT (dBuV/m)
			HORIZ	VERT	HORIZ	VERT	
112.5120	0.9	9.4	15.8	16.1	26.1	26.4	43.5
180.2380	1.1	10.7	17.4	16.4	29.2	28.2	43.5
232.4512	1.3	13.8	18.4	17.9	33.5	33.0	46.0
246.1570	1.3	14.4	18.1	18.4	33.8	34.1	46.0
923.9000	2.9	29.0	50.7	52.3	82.6	84.2	94.0

REMARKS : (1). *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Handset channel 01

SIGNED BY TESTING ENGINEER : addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (dBuV/m)		LIMITS (dBuV/m)
			HORIZ	VERT	HORIZ	VERT	
112.5120	0.9	9.4	14.3	14.7	24.6	25.0	43.5
180.2380	1.1	10.7	16.7	15.7	28.5	27.5	43.5
232.4512	1.3	13.8	17.4	17.5	32.5	32.6	46.0
925.7000	3.0	29.0	51.3	52.7	83.3	84.7	94.0

REMARKS : (1). *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Handset channel 10

SIGNED BY TESTING ENGINEER : Addison

6 . 7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 KHz. Measurements were made at 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (MHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	READING (dBuV)		EMISSION (dBuV/m)		LIMIT (dBuV/m)
			HORIZ	VERT	HORIZ	VERT	
142.2150	1.0	11.4	20.1	20.4	32.5	32.8	43.5
239.4120	1.3	14.1	19.1	18.5	34.5	33.9	46.0
452.2140	1.7	17.4	14.0	11.8	33.1	30.9	46.0
927.7000	3.0	29.0	50.7	54.7	82.7	86.7	94.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB)+Ant. factor(dB/m)+reading(dBuV)
(6). Handset channel 20

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 1 GHz to 10 GHz was investigated. The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at a distance of 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (GHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	PRE-AMP. (dB)	READING (dBuV)		EMISSION (dBuV/m)		LIMITS (dBuV/m)
				HORIZ	VERT	HORIZ	VERT	
1.8046	0.5	28.8	35.9	43.7	55.3	37.1	48.7	54.0
2.7069	0.4	30.1	35.8	41.7	49.6	36.4	44.3	54.0
2.8039	0.5	32.0	36.0	51.1	54.5	47.6	51.0	54.0
3.5992	0.6	32.4	36.1	41.9	46.9	38.8	43.8	54.0
4.5115	0.8	33.8	35.7	40.6	45.6	39.5	44.5	54.0
5.4137	0.8	35.7	35.2	39.6	44.6	40.9	45.9	54.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB) + Ant. factor(dB/m) - Pre-Amp.(dB) + Reading(dBuV)
(6). Base channel 01

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 1 GHz to 10 GHz was investigated. The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at a distance of 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (GHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	PRE-AMP (dB)	READING (dBuV)		EMISSION (dBuV/m)		LMTS (dBuV/m)
				HORIZ	VERT	HORIZ	VERT	
1.8082	0.5	28.8	35.9	41.4	56.8	34.8	50.2	54.0
2.7122	0.4	30.1	35.8	41.7	47.4	36.4	42.1	54.0
2.8091	0.5	32.0	36.0	50.8	54.5	47.3	51.0	54.0
3.6120	0.6	32.4	36.1	41.0	39.8	37.9	36.7	54.0
4.4520	0.8	33.8	35.7	38.3	38.6	37.2	37.5	54.0
5.5425	0.8	35.7	35.2	35.8	43.1	37.1	44.4	54.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB) + Ant. factor(dB/m) - Pre-Amp.(dB) + Reading(dBuV)
(6). Base channel 10

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 1 GHz to 10 GHz was investigated. The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at a distance of 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (GHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	PRE-AMP. (dB)	READING (dBuV)		EMISSION (dBuV/m)		LIMIT (dBuV/m)
				HORIZ	VERT	HORIZ	VERT	
1.8121	0.5	28.8	35.9	54.8	56.3	48.2	49.7	54.0
2.8151	0.5	32.0	36.0	53.7	54.1	50.2	50.6	54.0
3.2847	0.6	32.4	36.1	43.7	44.1	40.6	41.0	54.0
4.5339	0.8	33.8	35.7	39.1	39.8	38.0	38.7	54.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB) + Ant. factor(dB/m) - Pre-Amp.(dB) + Reading(dBuV)
(6). Base channel 20

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 1 GHz to 10 GHz was investigated. The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at a distance of 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (GHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	PRE-AMP (dB)	READING (dBuV)		EMISSION (dBuV/m)		LIMITS (dBuV/m)
				HORIZ	VERT	HORIZ	VERT	
1.8478	0.5	28.8	35.9	57.3	42.6	50.7	36.0	54.0
2.7717	0.5	32.0	36.0	47.8	39.4	44.3	35.9	54.0
3.6956	0.6	32.4	36.1	37.4	38.4	34.3	35.3	54.0
4.6195	0.8	33.8	35.7	35.7	36.2	34.6	35.1	54.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB) + Ant. factor(dB/m) - Pre-Amp.(dB) + Reading(dBuV)
(6). Handset channel 01

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 1 GHz to 10 GHz was investigated. The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at a distance of 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (GHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	PRE-AMP. (dB)	READING (dBuV)		EMISSION (dBuV)		LIMIT (dBuV/m)
				HORIZ	VERT	HORIZ	VERT	
1.8514	0.5	28.8	35.9	54.5	44.3	47.9	37.7	54.0
2.7771	0.5	32.0	36.0	43.9	39.6	40.4	36.1	54.0
3.7028	0.6	32.4	36.1	39.1	38.2	36.0	35.1	54.0
4.6285	0.8	33.8	35.7	38.0	35.1	36.9	34.0	54.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB) + Ant. factor(dB/m) - Pre-Amp.(dB) + Reading(dBuV)
(6). Handset channel 10

SIGNED BY TESTING ENGINEER : Addison

6.7 RADIATED EMISSION TEST RESULT

The frequency spectrum from 1 GHz to 10 GHz was investigated. The measurements above 1 GHz with a resolution bandwidth of 1 MHz are peak reading at a distance of 3 meters.

Temperature : 28 °C Humidity : 55 %RH

FREQ. (GHz)	FACTOR (dB)	ANT. FACTOR (dB/m)	PRE-AMP. (dB)	READING (dBuV)		EMISSION (dBuV/m)		LMTS (dBuV/m)
				HORIZ	VERT	HORIZ	VERT	
1.8554	0.5	28.8	35.9	55.9	45.9	49.3	39.3	54.0
2.7831	0.5	32.0	36.0	44.9	42.5	41.4	39.0	54.0
3.7108	0.6	32.4	36.1	41.5	41.2	38.4	38.1	54.0
4.6385	0.8	33.8	35.7	38.8	38.1	37.7	37.0	54.0

REMARKS : (1) . *= Measurement does not apply for this frequency.
(2). Uncertainty in radiated emission measured is <+/-4dB
(3). Any departure from specification : N/A
(4). Factor will include cable loss and correction factor.
(5). Sample calculation
20 log (emission) uV/m = Factor(dB) + Ant. factor(dB/m) - Pre-Amp.(dB) + Reading(dBuV)
(6). Handset channel 20

SIGNED BY TESTING ENGINEER : Addison

7 BANDWITH

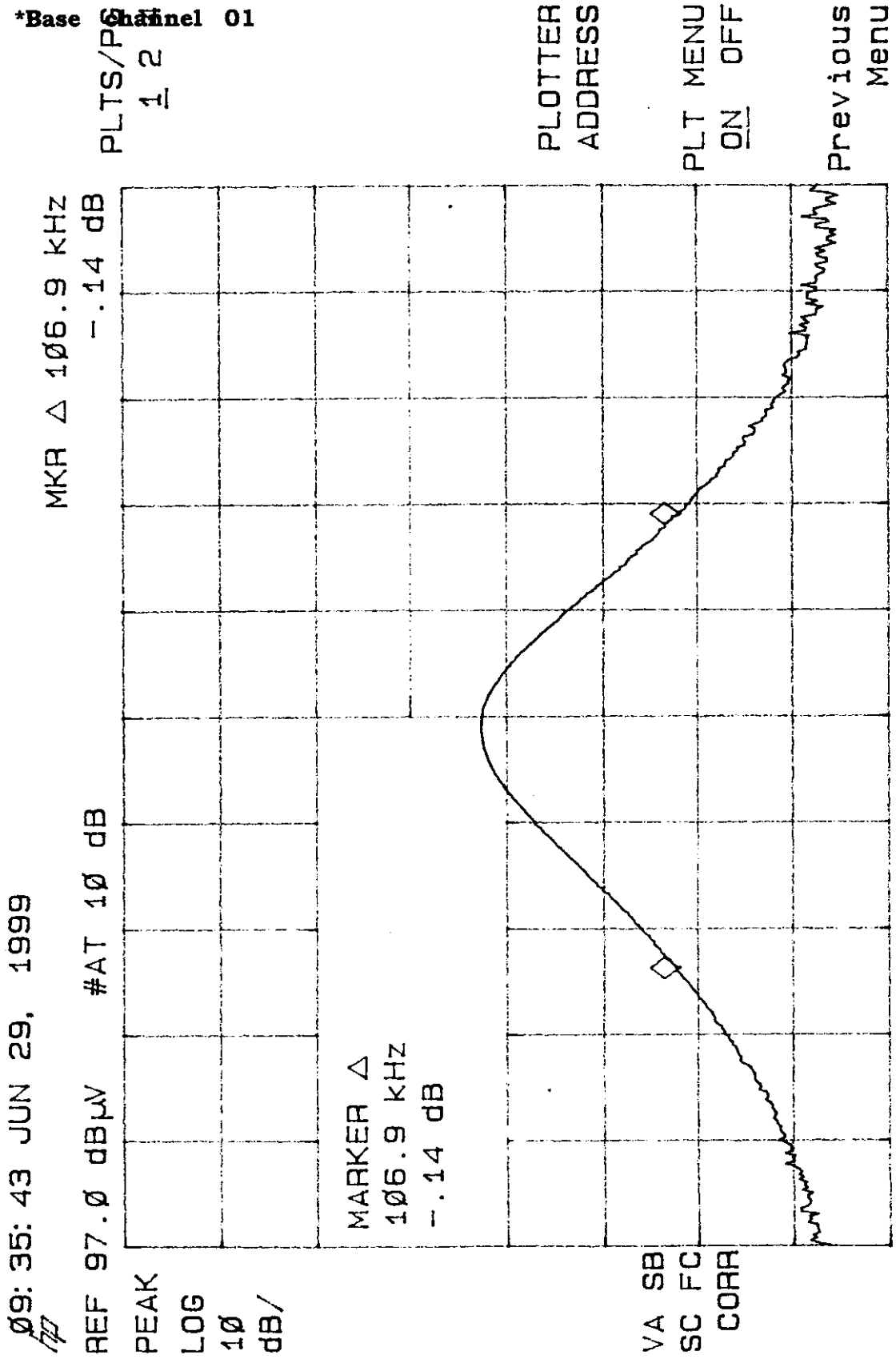
7.1 Limit

Base	channel	01	:	Minimum	20dB	bandwidth =	106.9KHz
Base	channel	10	:	Minimum	20dB	bandwidth =	106.6KHz
Base	channel	20	:	Minimum	20dB	bandwidth =	104.4KHz
Handset	channel	01	:	Minimum	20dB	bandwidth =	128.1KHz
Handset	channel	10	:	Minimum	20dB	bandwidth =	126.2KHz
Handset	channel	20	:	Minimum	20dB	bandwidth =	112.9KHz

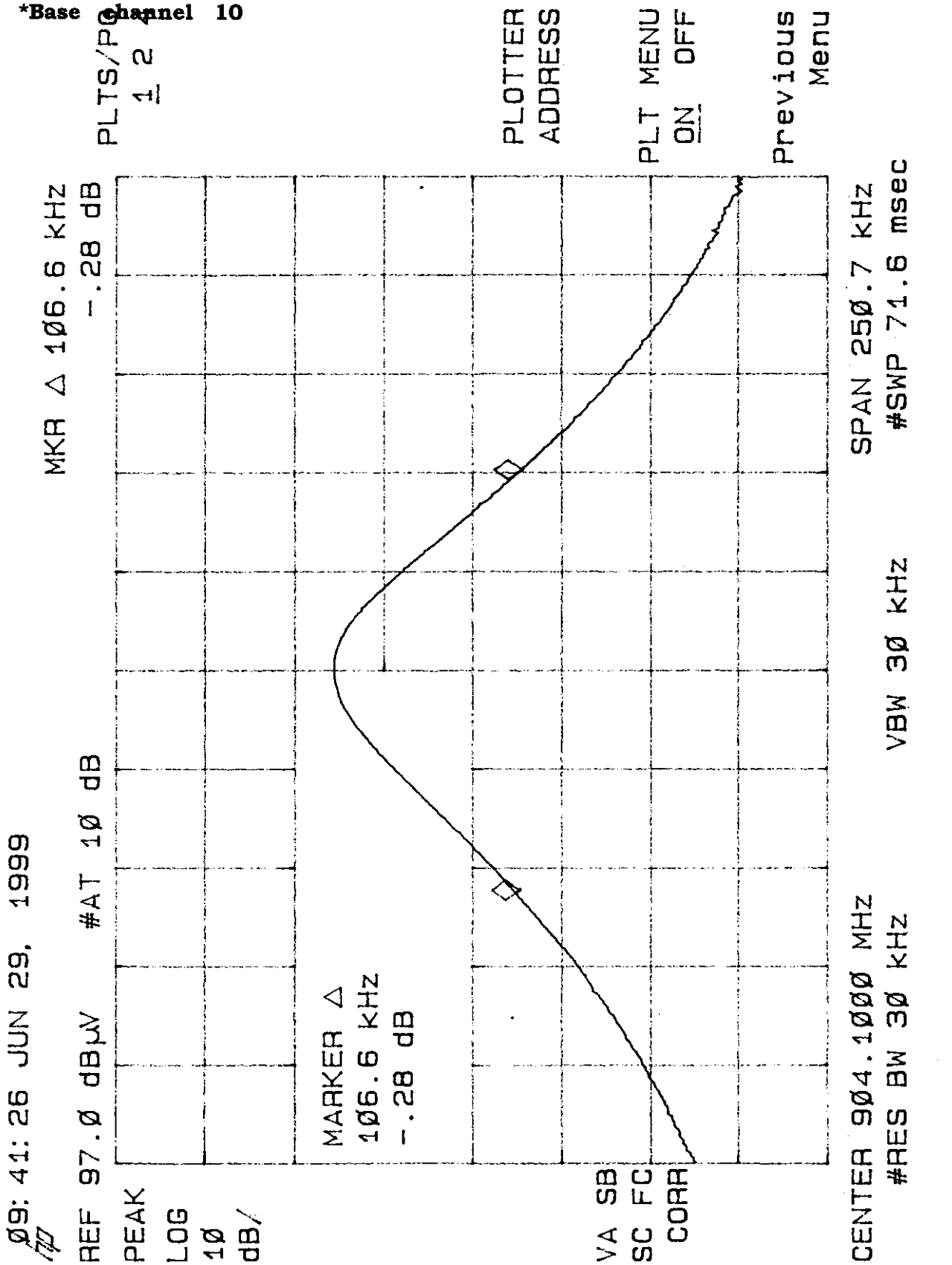
7.2 Test Result

Please see attached plotter.

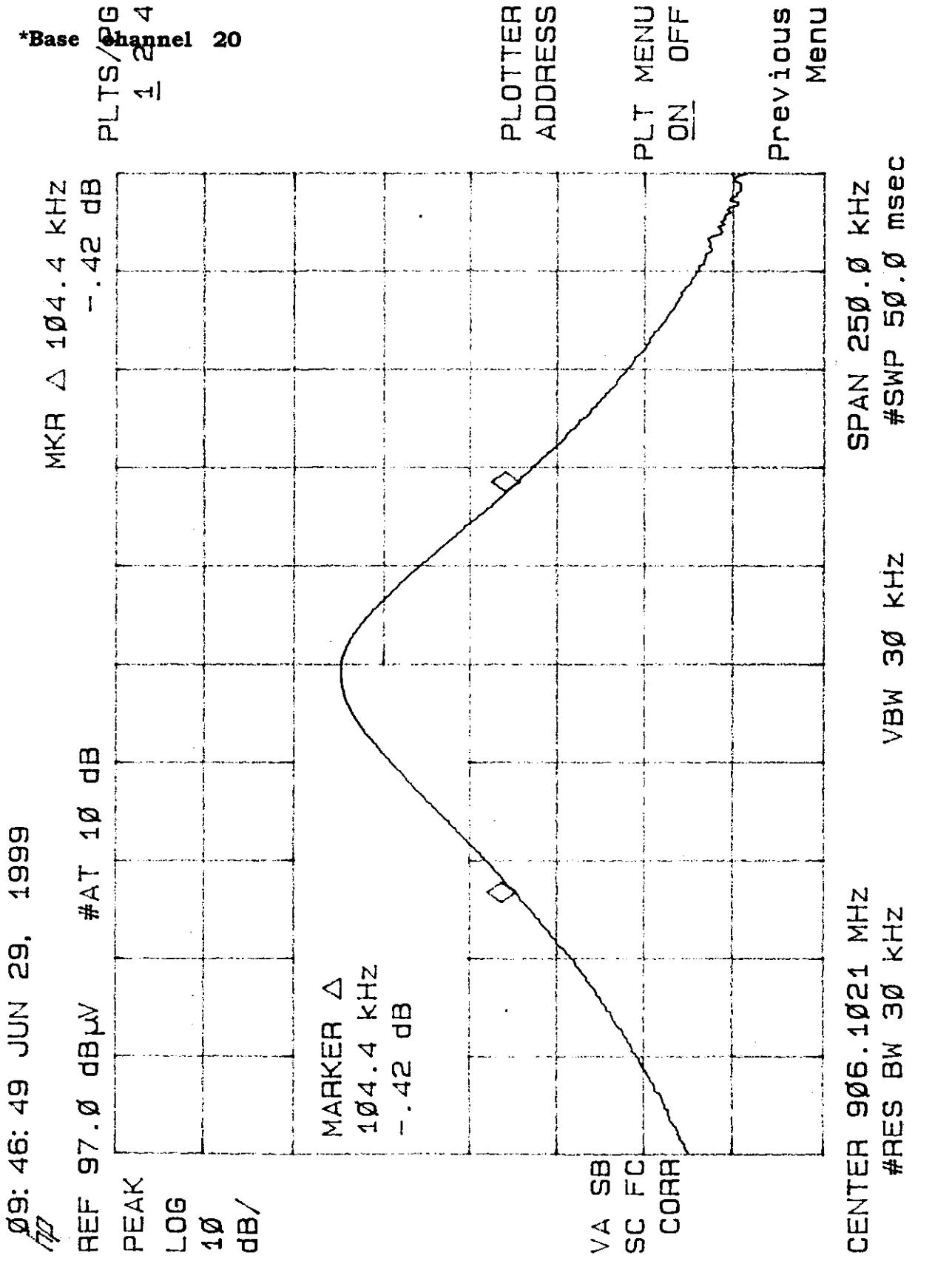
*Base Channel 01



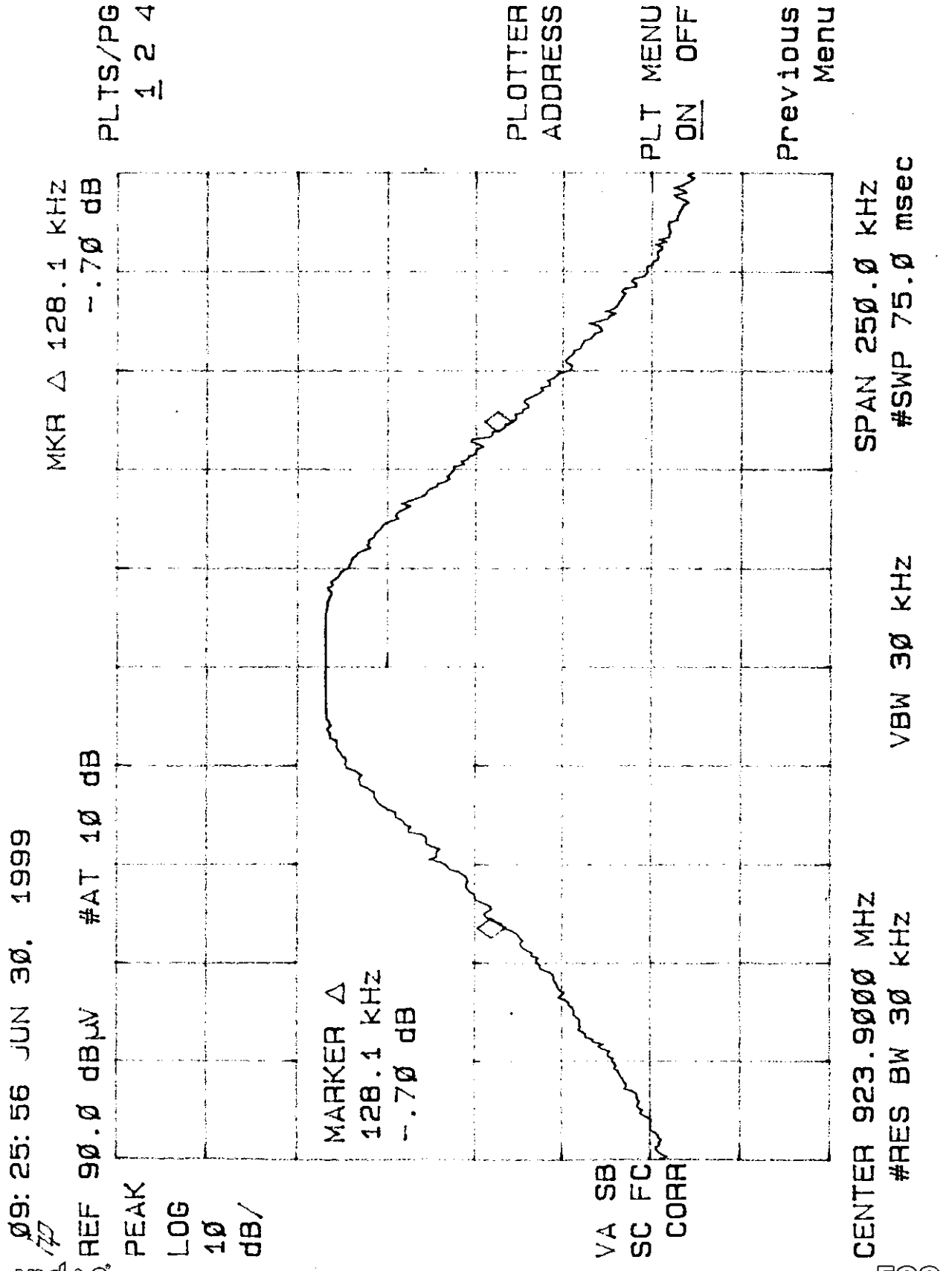
*Base channel 10



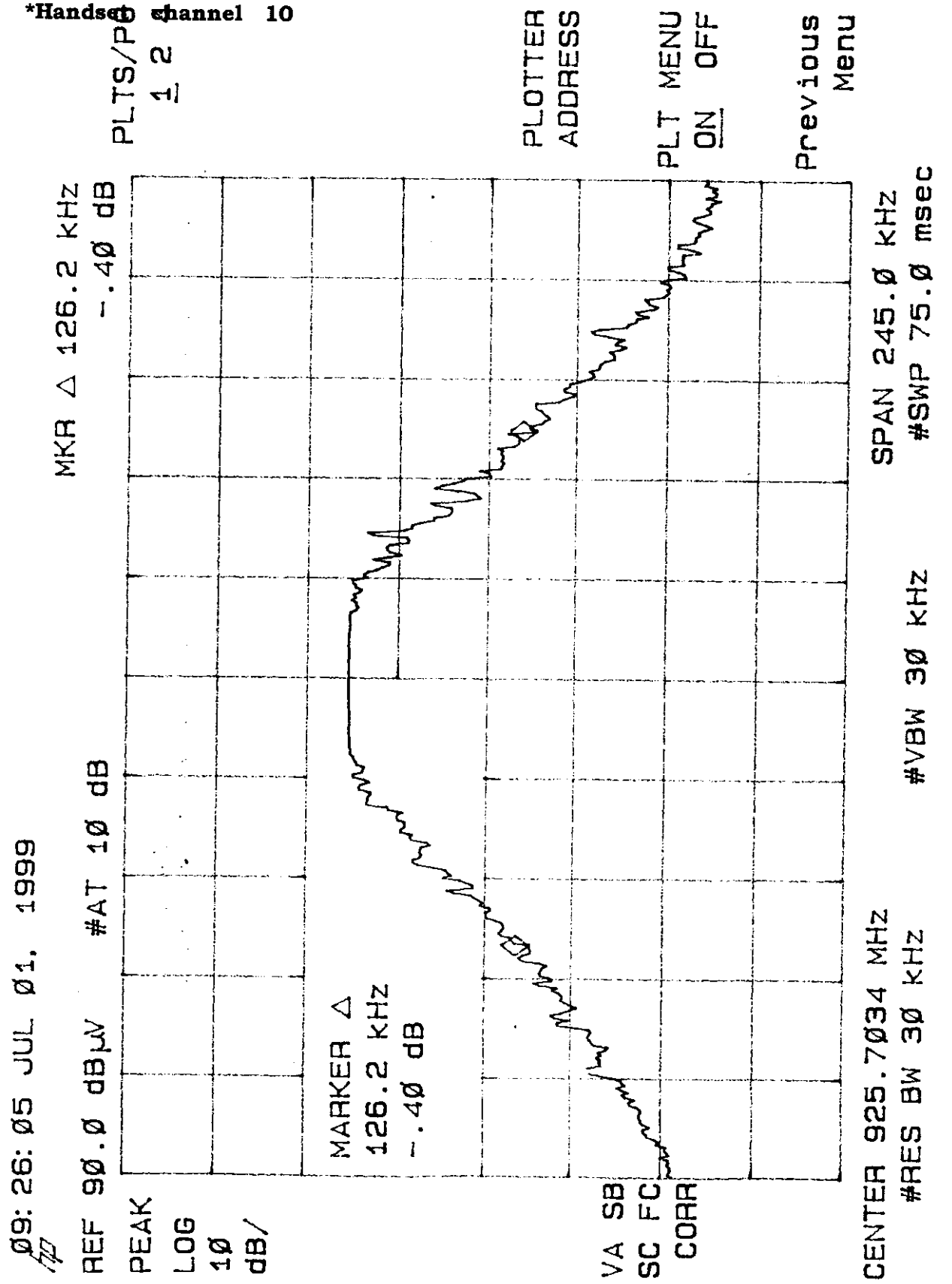
*Base channel 20



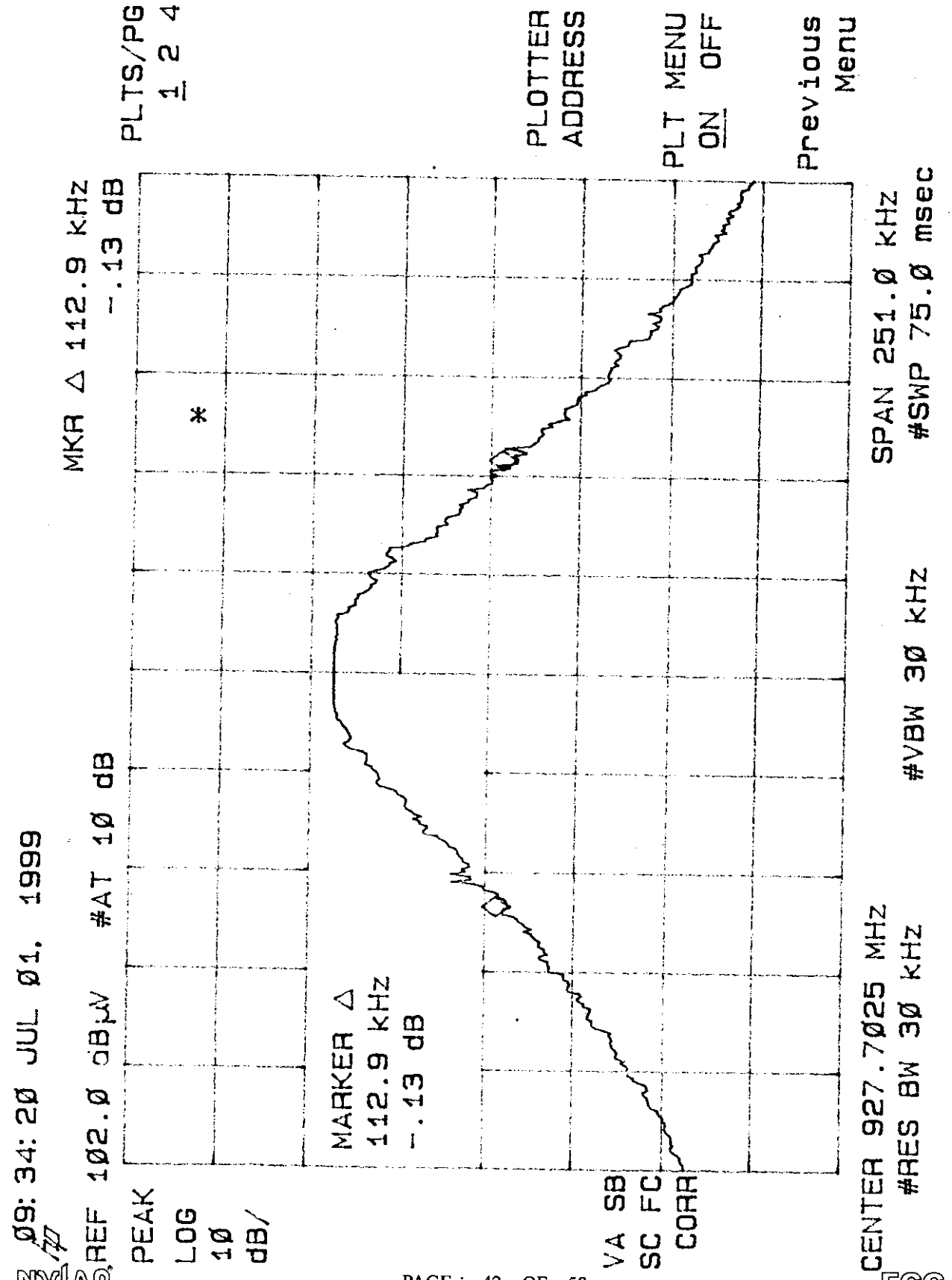
***Handset channel 01**



***Handset channel 10**



***Handset channel 20**



8. VERIFY CHANNELS AND FREQUENCIES

Verify the Frequency Pairs

Channel	Handset (MHz)	Base (MHz)	Channel	Handset (MHz)	Base (MHz)
1	923.901	902.302	14	926.502	904.900
2	924.101	902.501	15	926.701	905.101
3	924.301	902.701	16	926.901	905.302
4	924.501	902.900	17	927.101	905.500
5	924.701	903.100	18	927.302	905.702
6	924.901	903.301	19	927.501	905.901
7	925.101	903.501	20	927.701	906.101
8	925.302	903.701			
9	925.501	903.901			
10	925.701	904.100			
11	925.901	904.301			
12	926.102	904.501			
13	926.301	904.701			

Note : This is for sure that all frequencies are in 902MHz to 928MHz.

Section 15.214(d) The security code is set automatic:

Every time when you place the handset in the base, your cordless will randomly select one of 65,530 possible security codes.

IMPORTANT SAFETY INSTRUCTIONS

Careful attention is devoted to quality standards in the manufacture of your telephone equipment, and safety is a major factor in its design. However, safety is also your responsibility.

When using your telephone equipment, always follow basic safety precautions to reduce the risk of fire, electric shock, and injury to persons. ***Read all the included safety and operating instructions before using your equipment.*** Follow them closely, and retain them for future reference.

Heed Warnings — Follow all warnings on the product and in the operating instructions.

Cleaning — Unplug this product from the wall outlet before cleaning. Use only a damp cloth for cleaning. Do not use liquid or aerosol cleaners.

Water and Moisture — Do not use this product near water (for example, near a bathtub, washbowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool).

Mounting Accessories — Do not place this product on an unstable cart, stand, tripod, bracket, or table. The product may fall, causing serious injury to a child or adult, and serious damage to the product. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product. Follow the manufacturer's instructions for mounting, and use a recommended mounting accessory.

Ventilation — Slots and openings in the cabinet provide ventilation, ensure reliable operation, and protect from overheating. Do not block or cover these openings, and do not place the product on a bed, sofa, rug, or other similar surface. Do not place the product in a built-in installation such as a bookcase or rack unless it provides proper ventilation as specified by the manufacturer.

Heat — The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Power Sources — Operate this product using only the power source indicated on its marking label. If you are not sure of your home's power type, consult your product dealer or local power company.

Power-Cord Protection — Route power-supply cords so they are not likely to be walked on or pinched by items placed on or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

Overloading — Do not overload wall outlets, extension cords, or integral convenience receptacles, as this can result in a risk of fire or electric shock.

Objects and Liquids — Never push objects of any kind into this product through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

Servicing — Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

Damage Requiring Service — Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or plug is damaged.
- If liquid has been spilled or objects have fallen into the product.
- If the product has been exposed to rain or water.

- If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a .qualified technician to restore the product to normal operation.
- If the product has been dropped or damaged in any way.
- When the product exhibits a distinct change in performance.

Lightning — Avoid using a telephone (other than a cordless type) during an electrical storm, as there might be a remote risk of electric shock from lightning.

Gas Leak — Do not use the telephone to report a gas leak in the vicinity of the leak.

CAUTION: To reduce the risk of fire or injury to persons, read and follow these instructions.

- Use only the required size and type of batteries.
- Do not dispose of batteries in a fire. They can explode. Check with local codes for possible special disposal instructions.
- Do not open or mutilate batteries. Released electrolyte is corrosive, can cause damage to the eyes or skin, and can be toxic if swallowed.
- Be careful when handling batteries in order not to short them with conducting materials such as rings, bracelets, and keys. The battery or conductor can overheat and cause burns.
- Do not attempt to recharge the batteries provided with or identified for use with this product. Batteries can leak corrosive electrolyte or explode.
- Do not attempt to rejuvenate the batteries provided with or identified for use with this product by heating them. Sudden release of the battery electrolyte can occur, causing burns or irritation to eyes or skin.
- When replacing batteries, all batteries should be replaced at the same time. Mixing fresh and discharged batteries could increase internal cell pressure and rupture the discharged batteries.
- When inserting batteries into this product, the proper polarity or direction must be observed. Reverse insertion of batteries can cause charging, which can result in leakage or explosion.
- Remove the batteries from this product if it will not be used for several months or more to prevent possible battery leakage.
- Discard dead batteries as soon as possible since they are more likely to leak in a product.
- Do not store this product, or the batteries provided with or identified for use with this product, in high-temperature areas. Batteries that are stored in a freezer or refrigerator for the purpose of extending shelf life should be protected from condensation during storage and defrosting. Batteries should be left at room temperature prior to use after cold storage.

SAVE THESE INSTRUCTIONS

EXHIBIT E TECHNICAL SPECIFICATION, DIAGRAMS, AND PHOTOGRAPHS
DBTEL INCORPORATED
D&B, MODEL: DB-8211

1. BLOCK DIAGRAM

Figure 1 of Exhibit D is a block diagram of the device. All leads that will be exposed to the surges of section 68.302 and the leakage tests of section 68.304 are identified.

2. NON-REGISTERED EQUIPMENT PORTS

There is no connection to non-registered equipment.

3. CIRCUIT SCHEMATIC AND DESCRIPTION

The interface schematic diagram for the telephone is attached as Figure 2. The terminal categories of section 68.304, categories (1) through (8), are indicated for each point of connection.

A description of all electrical circuitry that affects compliance with Part 68 is given below:

The electrical circuitry is that of a standard telephone instrument. It is composed of a high-impedance ringer in series with a capacitor, a network, a switch hook assembly and a receiver and transmitter.

The device is powered solely from the telephone loop to which it is connected, drawing the normal and permissive off – hook current from the serving central office or private branch exchange, when used with a PBX.

A typical industry standard drawing is attached showing all active and passive circuit elements. None can cause non-compliance with subpart D of Part 68.

The instrument consists of a baseplate on which elements are mounted and a cover housing. Photographs are attached showing exterior and interior details.

4. CIRCUIT COMPOMENTS

(a) TELEPHONE INTERFACE

Transient/Surge Absorber, ZNR

Manufacturer:	NA
Type No.:	NA
Varistor Voltage:	NA

(b) DC Current Blocking Capacitor

Manufacturer:	NA
Type No.:	NA
Rated Voltage:	NA

(c) Photo Coupler

Manufacturer:	NA
Type No.:	NA
Dielectric Rating:	NA

(d) Relay

Manufacturer:	ORIGINAL
Type No.:	1KR-109HS-090
Coil to Contact:	1000V

(c) Telephone Coupling Transformer

Manufacturer:	TEN PAO HANG FAI
Type No.:	1LT-04600-242
Dielectric Rating:	1000V

5. OPWER SUPPLLY

This device is powered by AC Adaptor.

6. SIGNAL LEVELS

This device generates the transmission signals are all less then –9dBm.
The network addressing DTMF levels are less than 0.0dBm.

7. SIGNAL POWER LIMITING

This device doesn't provide a signal path from non-registered equipment to central office. The signal power limiting requirements are not applicable to the device.

8. MULTIPORT CIRCUITS

This device is not a multiport circuit.

9. PHOTOGRAPHS

See attachment.

10. MECHANICAL CONSTRUCTION

The device withstood all tests of section 68.302, including drop shock, vibration and temperature & humidity cycling.

11. AUTOMATIC REDIAL

This device does not automatically redial a busy of no-answer number.