

EQUIPMENT : MICROPHONE TYPE HXIR  
FCC Identifier : NRKHXIR  
CTMS FCC Registration Number : 93385

TEST REPORT NUMBER: CTMS 2001/1128a

**TEST REPORT ON  
AUDIO LTD.**

Microphone Type HXIR

FCC Authorization Procedures  
Part 2 subpart J and part 74

**TEST REPORT NUMBER  
CTMS 2001/1128a  
March 2001**

**Prepared for:**

**Audio Ltd.  
Audio House  
Progress Road  
High Wycombe  
Bucks. HP12 4JD  
England**

The results in this report refer to the tested unit only

## **Certificate of Application**

Cambridge Test and Measurement Services Ltd., certifies that the product tested was fully compliant with the requirements of Parts 2 & 74 of the FCC Code of Regulations 47CFR, the results of which are contained in this test report No: CTMS 2001/1128a

I certify that the application was prepared under my supervision and that to the best of my knowledge and belief, the facts set forth in this application and technical data, are true and correct.

Signature :

Date :

Name : David Fisher

Title : Radio Technical Manager

**General Test Information**

Date Test Sample Received : 20<sup>th</sup> March 2001

Date Testing Started : 20<sup>th</sup> March 2001

Date Testing Finished : 27<sup>th</sup> March 2001

Equipment Serial Number : 13160-05

CTMS Project Number : 2001/1128a

Test Engineer : K. D. Barker

Report Copy No 1

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## 2.1033 Application for Certification

For use in accordance with FCC Rules and Regulations 47 CFR parts 2 and parts 74.

|                                                            |   |                                                                       |
|------------------------------------------------------------|---|-----------------------------------------------------------------------|
| 2.1033 (c) (1) Name of applicant                           | : | Audio Ltd.                                                            |
| Address of applicant                                       | : | Audio House,<br>Progress Road,<br>High Wycombe,<br>Bucks.<br>HP12 4JD |
| Contact                                                    | : | Mr. Kishore Patel                                                     |
| 2.1033 (c) (2) FCC Identifier                              | : | NRKHXR                                                                |
| Model Type Number                                          | : | HXIR                                                                  |
| 2.1033 (c) (3) Installation and operating instructions     | : | See attachments.                                                      |
| 2.1033 (c) (4) Type(s) of emission                         | : | Frequency Modulated<br>200KF3E                                        |
| 2.1033 (c) (5) Frequency range                             | : | 683.10 - 706.90 MHz                                                   |
| 2.1033 (c) (6) Output power range                          | : | 10 mW                                                                 |
| 2.1033 (c) (7) Maximum power rating (part 74)              | : | 250 mW                                                                |
| 2.1033 (c) (8) dc voltage applied to power amplifier       | : | 3.0 V                                                                 |
| dc current to power amplifier                              | : | N/A                                                                   |
| 2.1033 (c) (9) Tune-up procedure for RF power              | : | See attachments.                                                      |
| 2.1033 (c) (10) Schematic and description of circuit       | : | See attachments.                                                      |
| 2.1033 (c) (11) Photograph of identification plate / label | : | See attachments.                                                      |
| 2.1033 (c) (12) Photographs of equipment                   | : | See page 19                                                           |
| 2.1033 (c) (14) Measurement data                           | : | This report                                                           |

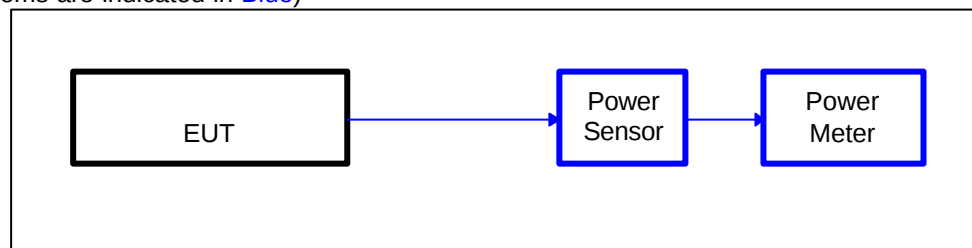
#### 47 CFR Part 2.1033 (c) (14) MEASUREMENT DATA.

##### RF Power Output at terminals - 47 CFR 2.1046

The transmitter is operated under standard test conditions, using the standard test voltage from a single AA internal battery. The transmitter is fitted with a temporary 50 ohm antenna socket to allow conducted measurements to be made. The transmitter, tuned by the manufacturer in accordance with the stated procedure, was keyed in an unmodulated condition and the output was connected to a RF Power Meter via a matching Power Sensor. The RF Power Output was observed and recorded.

The RF Power Output was measured in accordance with the following test configuration, using the test instruments listed, on the lower, mid and upper frequencies of the switching range.

(Calibrated items are indicated in Blue)



**Ambient Conditions.**      Temperature = 25°C      Relative Humidity = 24 %

##### Test instruments used :

RF Power Meter      :      Hewlett Packard Type HP 435B, S/N 2005A03070.  
RF Power Sensor    :      Hewlett Packard Type HP 8481B, S/N 1801A01640

##### Results in accordance with Part 2.1046 and 74.861. e.(1) Unmodulated Power

| TRANSMITTER POWER (mWatts) |            |            |
|----------------------------|------------|------------|
| 683.10 MHz                 | 695.00 MHz | 706.90 MHz |
| 9.8 mW                     | 6.32 mW    | 3.8 mW     |

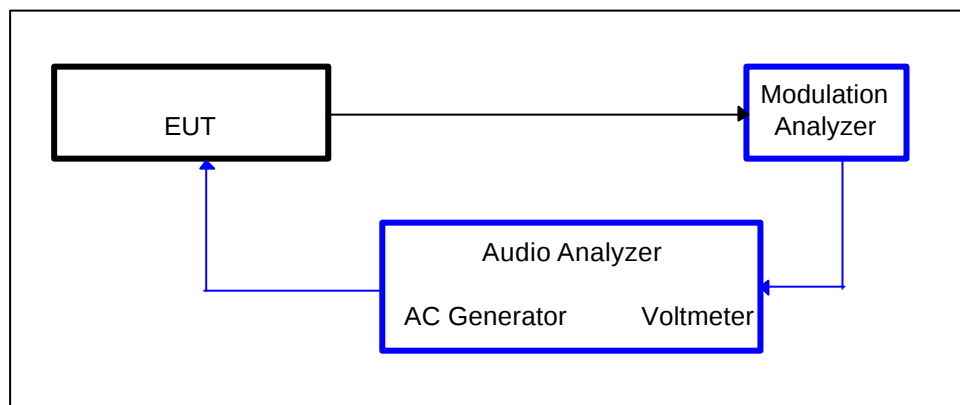
|                              |        |
|------------------------------|--------|
| LIMIT in 74.861 (e) (1) (ii) | 250 mW |
|------------------------------|--------|

### Modulation Characteristics - 47 CFR 2.1047 (a)

The transmitter is operated under standard test conditions and the output monitored with a modulation analyzer of normal impedance matching that of the transmitter. A test signal of 1000Hz sine wave is applied to the normal input of the modulation circuit via a dummy capsule to the audio processing circuits, the level adjusted to give  $\pm 20\text{kHz}$  deviation. Ensuring the audio input level is maintained constant, the modulation frequency is varied from 50Hz to 25,000Hz. The variation in the depth of modulation is observed and recorded.

The modulation characteristic was measured in accordance with the following test configuration, using the test instruments listed.

(Calibrated items are indicated in Blue)



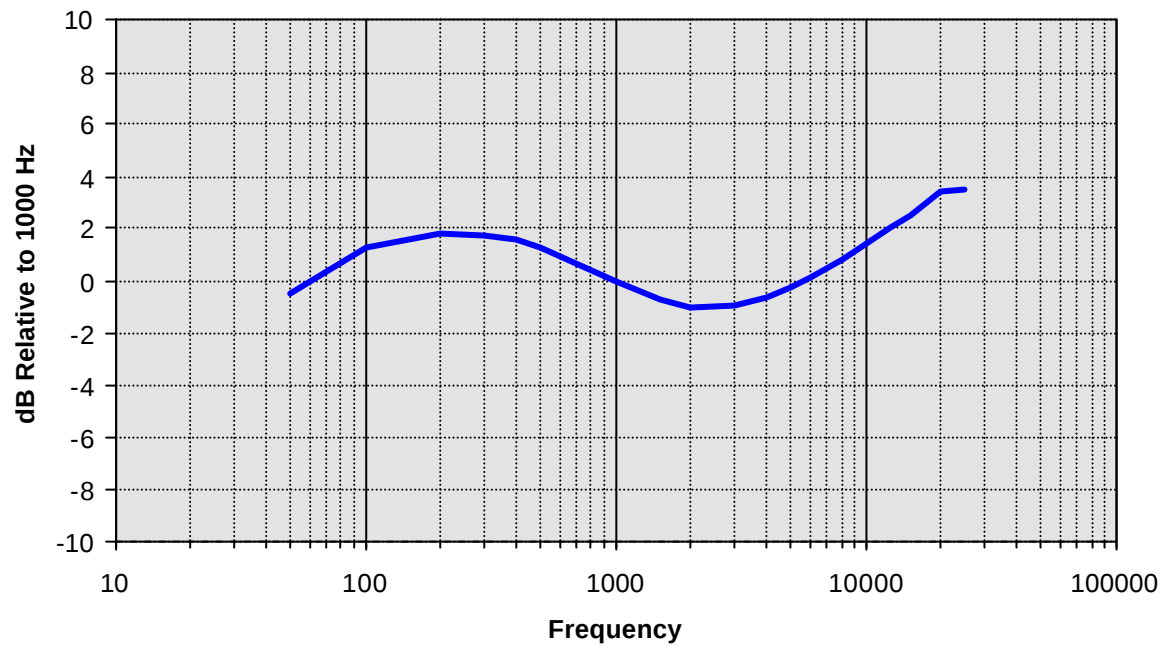
**Ambient Conditions.**      Temperature = 25°C      Relative Humidity = 24 %

### Test instruments used :

Audio Analyzer : Hewlett Packard Audio Analyzer Type HP 8903B, S/N2836A05420  
Modulation Analyzer : Hewlett Packard Mod Analyzer Type HP 8901B, S/N2642A01009

**Results in accordance with Part 2.1047(a) and 74.681 (e) (3) Modulation Characteristic.**

**MODULATION CHARACTERISTIC**



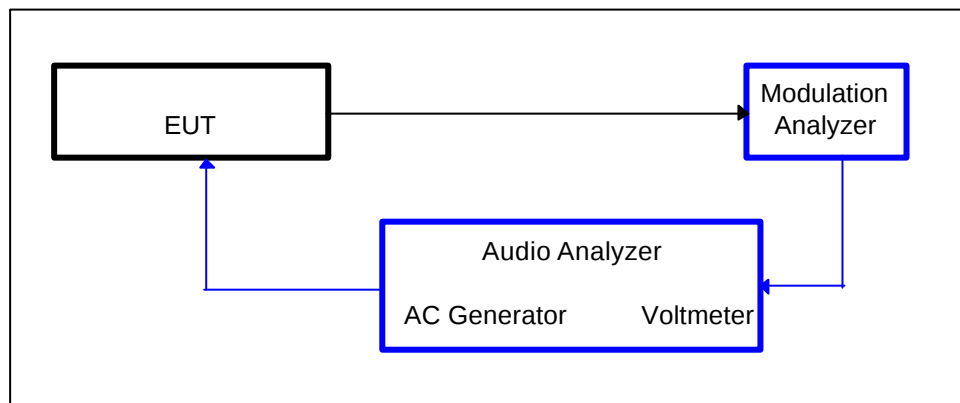
### Modulation Limiting Characteristics - 47 CFR 2.1047 (b)

The transmitter is operated under standard test conditions and the output monitored with a modulation analyzer of normal impedance matching that of the transmitter. A test signal of 1000Hz sine wave is applied to the normal input of the modulation circuit via a dummy capsule to the audio processing circuits, the input level is varied between -50dBm to +0dBm and the variation in the frequency deviation is observed and recorded.

The test was repeated with the test modulation frequencies of 300Hz and 15000Hz.

The modulation limiting characteristic was measured in accordance with the following test configuration, using the test instruments listed.

(Calibrated items are indicated in Blue)



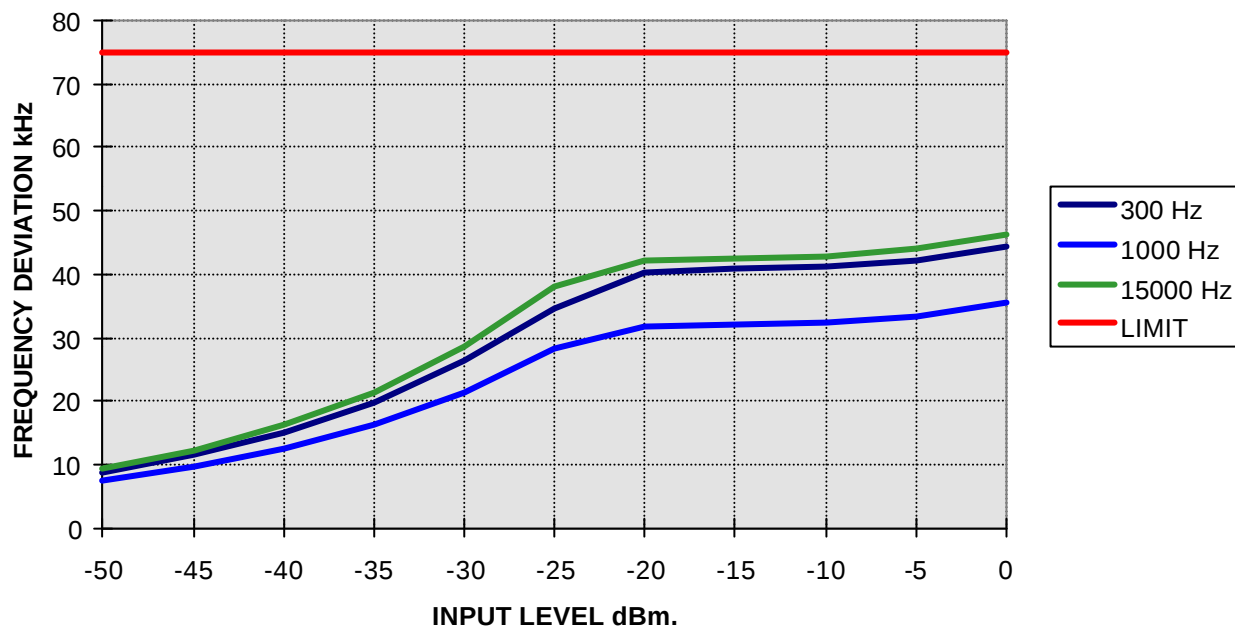
**Ambient Conditions.**      Temperature = 25°C      Relative Humidity = 30 %

#### Test instruments used :

Audio Analyzer : Hewlett Packard Audio Analyzer Type HP 8903B, S/N2836A05420  
Modulation Analyzer : Hewlett Packard Mod Analyzer Type HP 8901B, S/N2642A01009

**Results in accordance with Part 2.1047 (b) and 74.861 (e)  
Modulation Limiter Requirements.**

**Modulation Limiting Characteristic.**



LIMIT in 74.861 (e) (3)

Maximum Deviation 75 kHz

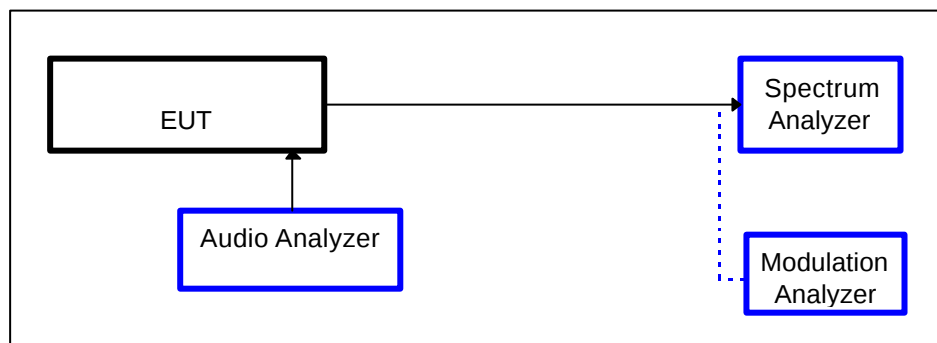
## Occupied Bandwidth - 47 CFR 2.1049 (e)

The transmitter is operated under standard test conditions. A test signal of 15000Hz sine wave is applied to the normal input to the modulation circuit, via a dummy capsule to the audio processing circuits, the input level is at a level of +16dB above that which produces a modulation depth of 25 kHz deviation.

The output of the transmitter is connected to a spectrum analyzer of normal impedance matching that of the transmitter. The occupied bandwidth is observed and recorded.

The occupied bandwidth was measured in accordance with the following test configuration, using the test instruments listed.

(Calibrated items are indicated in Blue)

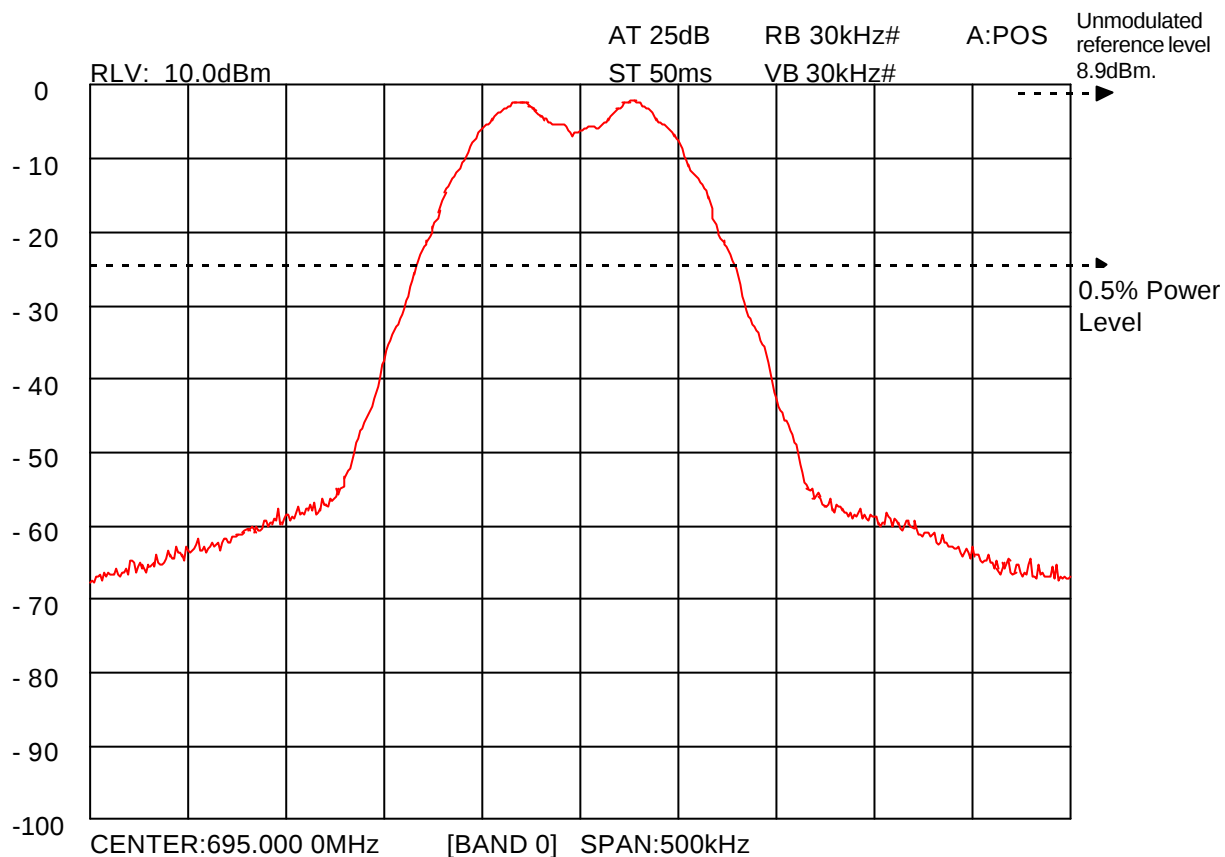


**Ambient Conditions.**      Temperature = 25°C      Relative Humidity = 30 %

### Test instruments used :

Audio Analyzer : Hewlett Packard Audio Analyzer Type HP 8903B S/N2836A05420  
Modulation Analyzer : Hewlett Packard Mod Analyzer Type HP 8901B S/N2642A01009  
Spectrum Analyzer : Anritsu Type MS 2602A S/N MT88057

**Results in accordance with Part 2.1049 and 74.861 (e) (5).**



|                                 |             |
|---------------------------------|-------------|
| Frequency of lower -23dB point  | 694.916 Mhz |
| Frequency of higher -23dB point | 695.079 MHz |
| Measured Occupied Bandwidth     | 163 kHz     |
| Occupied Bandwidth Limit        | 200 kHz     |

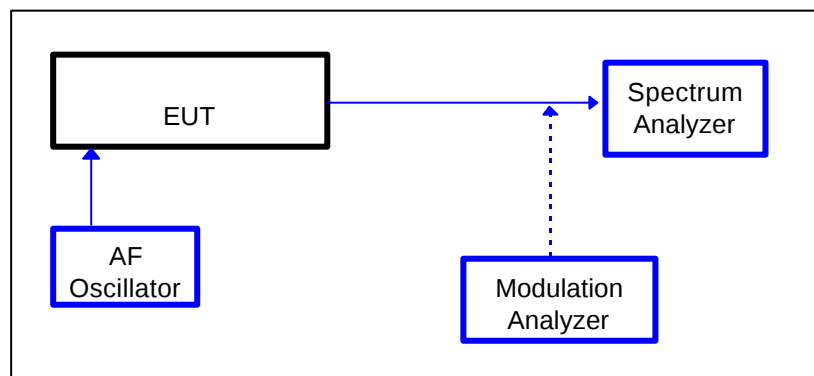
## Spurious emissions at antenna terminals - 47 CFR 2.1051

The transmitter is operated under standard test conditions. The transmitter was modulated with normal test modulation being a sine wave of 15000Hz and a modulation depth of 50%. The output of the transmitter was connected to a spectrum analyzer of normal impedance matching that of the transmitter. The spurious emissions, including harmonics of the fundamental carrier frequency, were observed.

A carrier notch filter was not necessary when the attenuator of the spectrum analyzer was adjusted to ensure the spectrum analyzer was not overloaded and maintaining linearity. The spurious emissions, including harmonics of the fundamental carrier frequency, were measured and recorded.

The responses found on the wide band scan of the spectrum analyzer were analysed in detail to determine correct power level. The level on the spectrum analyzer was recorded as being the level of the spurious emission.

(Calibrated items are indicated in Blue)



**Ambient Conditions.**      Temperature = 25°C      Relative Humidity = 30 %

### Test instruments used :

Audio Analyzer : Hewlett Packard Audio Analyzer Type HP 8903B S/N2836A05420  
Modulation Analyzer : Hewlett Packard Mod Analyzer Type HP 8901B S/N2642A01009  
Spectrum Analyzer : Anritsu Type MS 2602A S/N MT88057

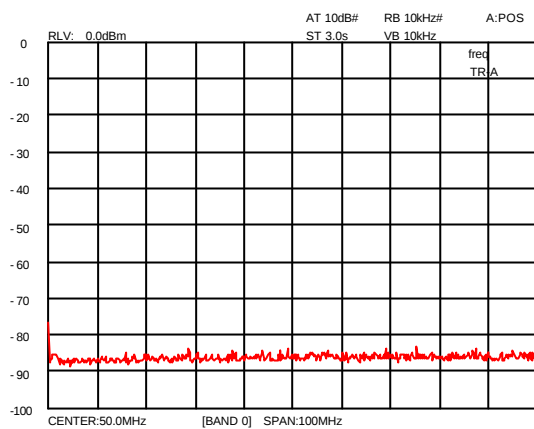
## Results in accordance with Part 2.1051 and 74.861 (6) Emission Limits

Note: Emissions 20dB below limit are not required to be listed

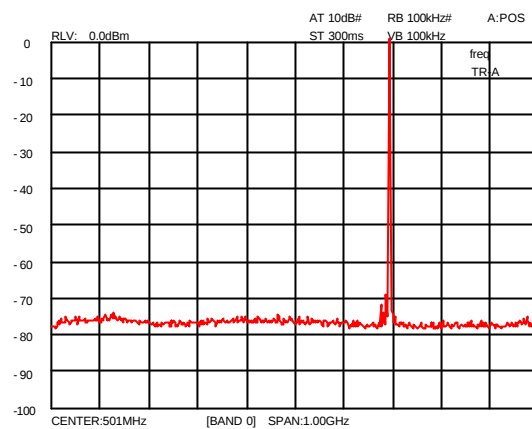
Carrier Frequency (Fc) : 695.00 MHz

|           |          | Absolute Level | Level dB w.r.t limit of<br>43+10 log power |                                                            |
|-----------|----------|----------------|--------------------------------------------|------------------------------------------------------------|
| Frequency | Identity | dBm            | dBc                                        | Remarks                                                    |
| (MHz)     |          | limit - 13     | limit - 21                                 |                                                            |
| 1390      | 2Fc      | -56.0dBm       | -64.0dBc                                   | All greater than<br>20dB within<br>Specification<br>Limit. |
| 2085      | 3Fc      | -62.0dBm       | -70.0dBc                                   |                                                            |
| 2780      | 4Fc      | -57.0dBm       | -65.0dBc                                   |                                                            |
| 3475      | 5Fc      | -68.0dBm       | -76.0dBc                                   |                                                            |
| 4170      | 6Fc      | -63.5dBm       | -71.5dBc                                   |                                                            |
| 4865      | 7Fc      | -63.0dBm       | -71.0dBc                                   |                                                            |
| 5560      | 8Fc      | -51.5dBm       | -59.5dBc                                   |                                                            |
| 6255      | 9Fc      | -49.5dBm       | -57.5dBc                                   |                                                            |
| 6950      | 10Fc     | -66.0dBm       | -74.0dBc                                   |                                                            |

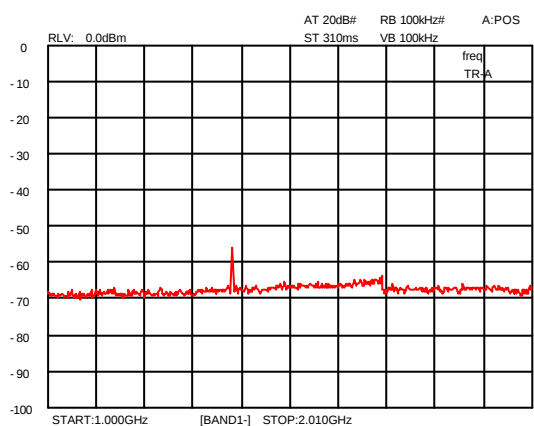
## Plots of Spectrum Scans.



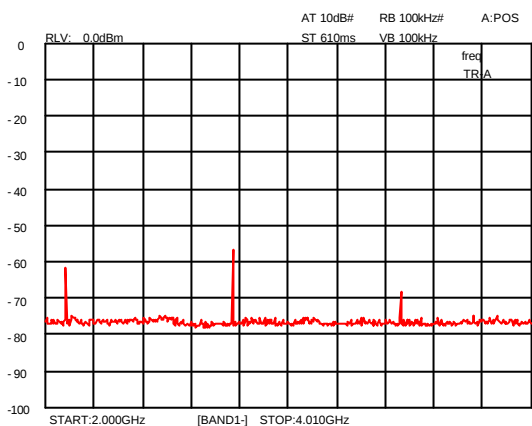
0 - 100MHz Scan



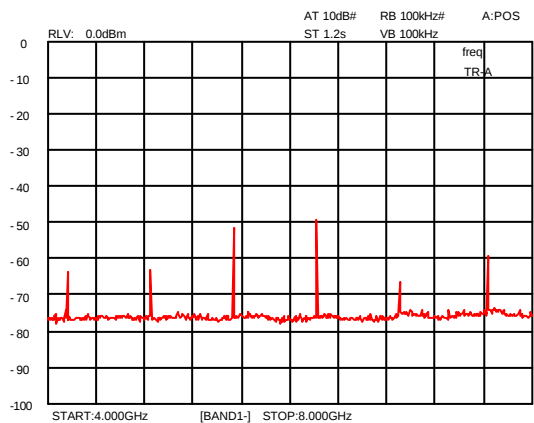
1 - 1001 MHz Scan



1.00 - 2.01 GHz Scan



2.00 - 4.01 GHz Scan



4.00 - 8.00 GHz Scan

### Frequency Stability - 47 CFR 2.1055 (a) (1) (d) (2)

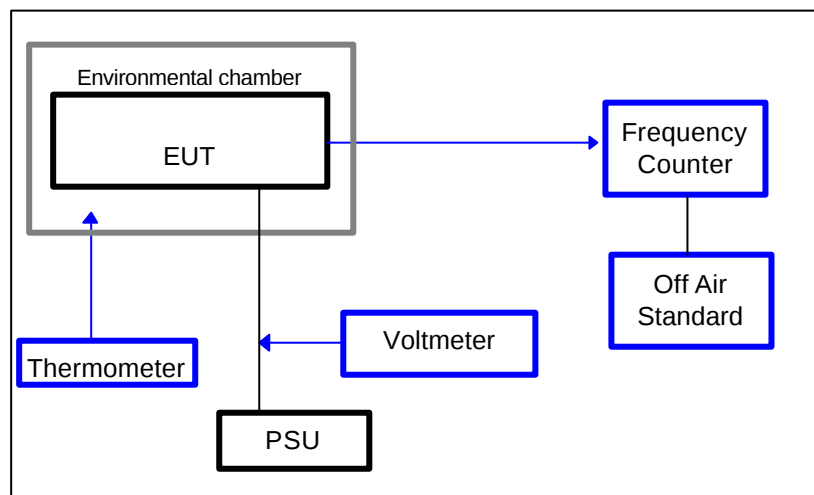
The transmitter is operated under standard test conditions, using the standard test voltage, the transmitter, tuned in accordance with the procedure described in the accompanying documentation, was keyed in an unmodulated condition and the output was connected to a RF Frequency Counter via an attenuator of normal impedance matching that of the transmitter.

The temperature was measured over the range of -30° C to + 50 ° C in steps of 10°

The Frequency drift of the EUT was observed and recorded.

The frequency drift was measured in accordance with the following test configuration, using the test instruments listed.

(Calibrated items are indicated in Blue)



The attenuator was at the nominal impedance of the transmitter.

### Test instruments used :

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| RF Frequency Counter | : H. P. Modulation Analyzer Type HP 8901B, S/N2642A01009 |
| Off Air Standard     | : Quartzlock Type 2A S/N41125                            |
| Climatic Chamber     | : Heraeus Votsch Type VMT/04/30 S/N 24558                |
| Thermometer          | : R S Type 206-3722, S/N 831016600                       |
| Voltmeter            | : Hewlett Packard Type HP34401A S/N US36090783.          |
| Power Supply Unit    | : Kingshill Type18V10C S/N 561                           |

**Ambient Conditions.**      Temperature = 23°C      Relative Humidity = 35 %

**Results in accordance with Part 2.1053 (a) (1) (d) (2) and 74.861 (e) (4)  
Frequency Stability.**

| Temperature<br>°C | Tx Frequency MHz<br>normal Volts = 1.5 V | Tx Frequency MHz<br>low Volts = 1.0 V |
|-------------------|------------------------------------------|---------------------------------------|
| -30               | 695.002529                               | 695.002520                            |
| -20               | 695.005544                               | 695.005547                            |
| -10               | 695.006705                               | 695.006702                            |
| 0                 | 695.006464                               | 695.006460                            |
| +10               | 695.005153                               | 695.005139                            |
| +20               | 695.002749                               | 695.002796                            |
| +30               | 695.000647                               | 695.000606                            |
| +40               | 694.997682                               | 694.997641                            |
| +50               | 694.995102                               | 694.995097                            |

| Frequency Error                   | kHz   |
|-----------------------------------|-------|
| Minimum                           | 4.910 |
| Maximum                           | 6.705 |
| Limit specified in 74.681.(e) (4) | 34.75 |

**Frequency spectrum to be investigated - 47 CFR 2.1057**

The level of frequency search was from the lowest radio frequency generated to the 10<sup>th</sup> Harmonic of the fundamental frequency, the highest carrier frequency.

## **General Information and Attachments.**

### **Equipment Under Test (EUT).**

The EUT is a hand held Microphone containing a battery powered transmitter designed to operate as a low powered auxiliary station in the frequency band allocated to "Auxiliary Broadcasting".

The FCC technical requirements for this equipment are specified in CFR 47 part 74 subpart H.

Primary Supply Voltage : 1.5 V Alkaline AA Cell.

Battery end point Voltage : 1.0 V

Transmitter can be switched on locally and all other control is via a infra red link remote control unit.

The Transmitter is programmed on three channels at the top, middle and bottom of the band, (706.90, 695.00 and 683.10 MHz).

The EUT Power Amplifier was fitted with a temporary 50 ohm output cable in place of the internal antenna, to enable conducted measurements to be performed.

For the power and emissions tests a dummy (deaf) capsule was fitted to the microphone to give an unmodulated signal.

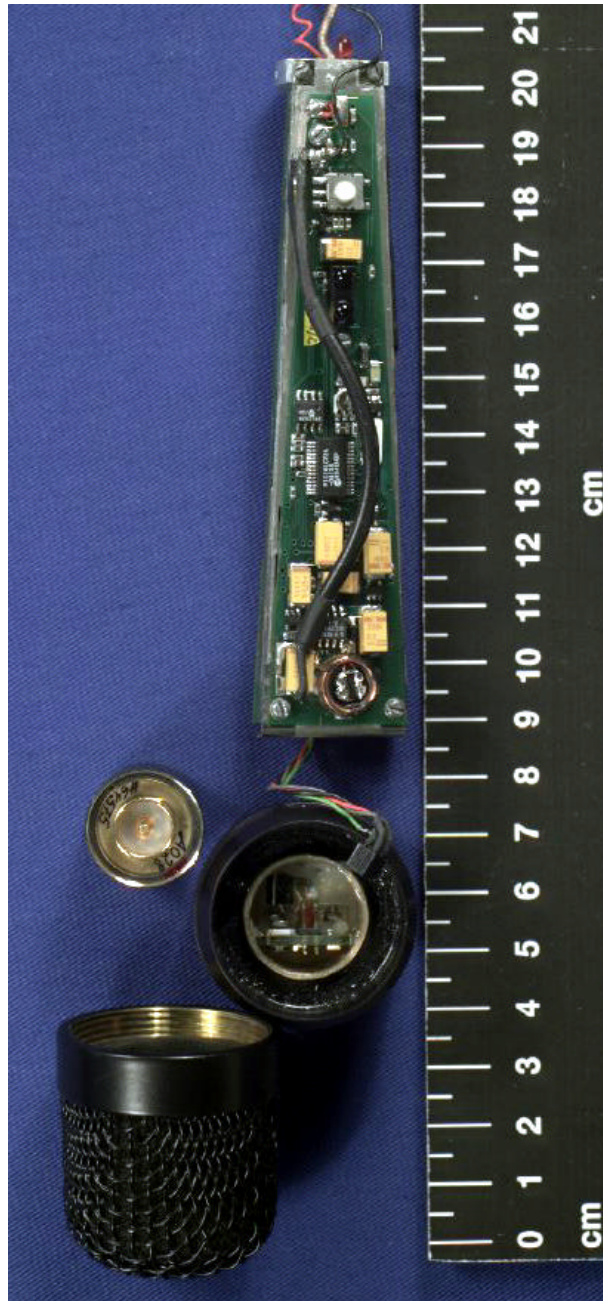
## PHOTOGRAPHS OF EQUIPMENT

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| Microphone Front View, without battery cover | 20      |
| Microphone Internal View with head assembly  | 21      |
| Power and processor PCB components           | 22      |
| RF and Audio PCB components                  | 23      |
| RF and Audio PCB with Comander removed       | 24      |

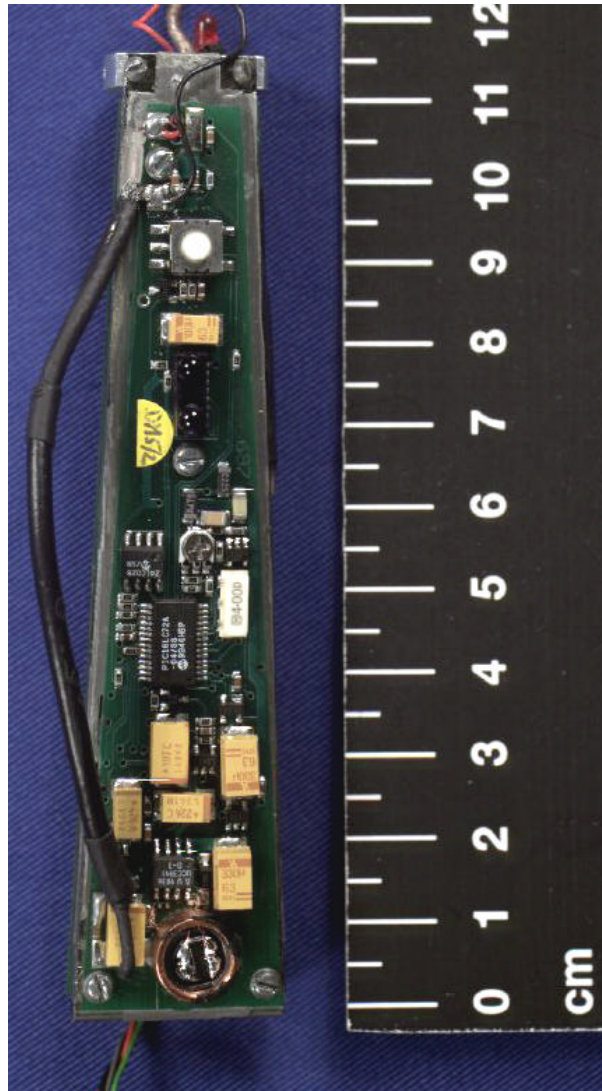
**Microphone Front View, without battery cover**



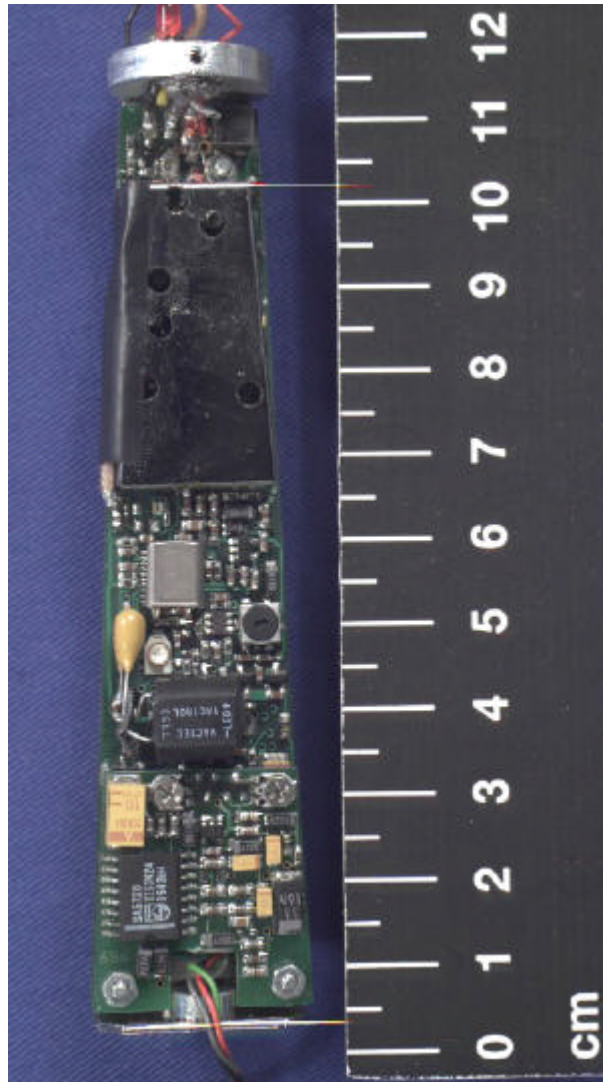
### Microphone Internal View with head assembly



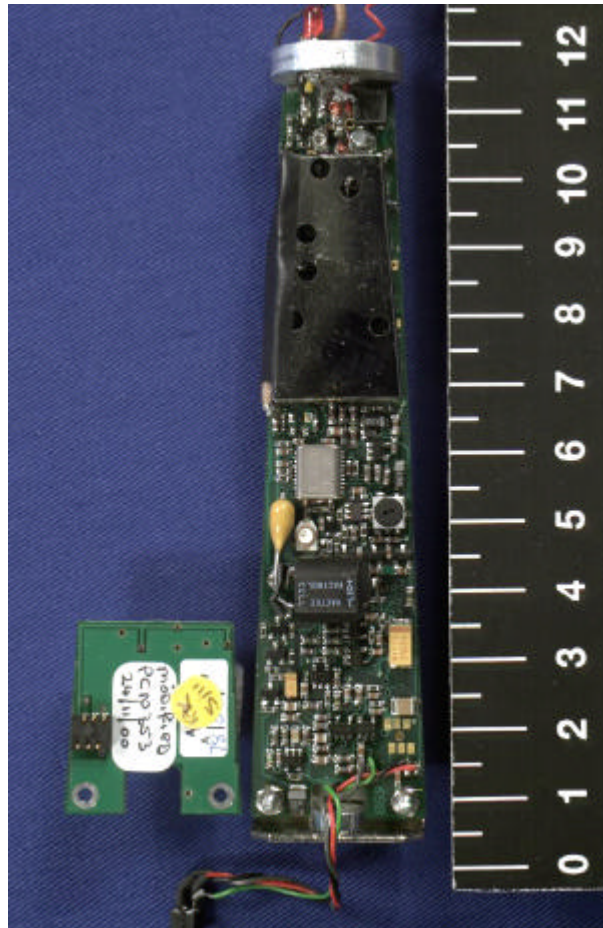
### Power and processor PCB components



### RF and Audio PCB components



**RF and Audio PCB with Compander removed**



### **CTMS LTD, Company Accreditation's & Credentials**

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| UKAS Certificate       | 26   |
| ISO 9002 Certification | 27   |
| UKAS Schedule          | 28   |

## United Kingdom Accreditation Service

### ACCREDITATION CERTIFICATE



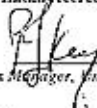
TESTING LABORATORY  
No. 1831

Cambridge Test and Measurement Services Ltd  
PO Box 465  
St Andrews Road  
Cambridge  
CB4 1ZJ

is accredited to undertake tests as detailed in the schedule bearing the accreditation number above. From time to time this schedule may be revised and reissued by the United Kingdom Accreditation Service.

This Accreditation shall remain in force until the expiry date printed below, subject to continuing compliance with United Kingdom Accreditation Service requirements. Accredited organisations meet the requirements of EN 45001, ISO/IEC Guide 25 and the relevant requirements of the BS EN ISO 9000 series of standards, including those of the model described in BS EN ISO 9002 when acting as suppliers producing test results.

Initial Accreditation 11 June 1997

  
Accreditation Manager, United Kingdom Accreditation Service

This certificate issued on 16 June 2000

Expiry date 31 May 2001

The Department of Trade and Industry (DTI) has entered into a memorandum of understanding with the United Kingdom Accreditation Service (UKAS) through which UKAS is recognised as the national body responsible for assessing and accrediting the competence of organisations in the fields of measurement, testing, inspection and certification of systems, products and personnel.



SGS Yarsley  
International Certification Services Limited

Certificate Number

**Q10171**

This is to certify that the  
Quality Management systems of

**Cambridge Test and Measurement  
Services Limited**

have been assessed and registered as meeting the  
requirements of ISO 9002

The scope of registration is detailed on the Assessment  
Schedule bearing this certificate number.

SGS Yarsley International Certification Services Ltd  
Signed by

**30 June 1997**

This certificate remains valid subject to  
satisfactory maintenance of the system



Registered Office:  
SGS Yarsley  
International Certification Services Limited  
SGS House, 217/221 London Road,  
Camberley, Surrey GU15 3EY, United Kingdom.

While all due care and skill was exercised in carrying out this assessment, SGS Yarsley ICN accepts responsibility only for proven gross negligence. This is not a legal document and cannot be used as such. The use of the Accreditation mark shown on this certificate indicates accreditation in the respect of those activities covered by that Accreditation Authority. This certificate remains the property of SGS Yarsley ICN to whom it must be returned on request.



## United Kingdom Accreditation Service

TESTING LABORATORY  
No. 1831

# SCHEDULE



### Testing Performed at Permanent Laboratory

|                                                                                                                                           |                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Address of permanent laboratory<br><br>Cambridge Test & Measurement Services Ltd<br>PO Box 465<br>St Andrews Road<br>Cambridge<br>CB4 1ZJ | Laboratory contact: Mr D Fisher<br><br>Telephone: +44 (0) 1223 876876<br>Fax: +44 (0) 1223 876851<br>Email:<br><br>Issue No: 7<br><br>Date: 16 June 2000 |
|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|

| Materials/Products Tested                                                                                                                                                                                                                                                                                        | Type of Test/Properties Measured<br>Range of Measurement                         | Standard Specifications<br>Equipment/Techniques Used                                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Computers and peripherals<br>Domestic appliances<br>Electrical/Electronic components<br>Electrical/Electronic products<br>Telecommunications equipment<br>IT equipment<br>Pager and pager devices<br>Mobile/Portable radio - PMR<br>PMR and ancillary equipment<br>Fixed/Link PMR equipment<br>Low power devices | <b>1 EMC TESTS</b>                                                               |                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                  | 1.1 Conducted Emissions<br><br>150 kHz to 30 MHz                                 | EN 55011:1997<br>EN 55014:1993<br>Discontinuous emissions<br>EN 55022:1994<br>CISPR 14-1:1997<br>Disturbance power<br>CISPR 22:1993<br>FCC Part 15:1996<br>ANSI C63.4:1992 |
|                                                                                                                                                                                                                                                                                                                  | 1.2 Radiated Emissions - Electric Field<br><br>30 MHz to 1 GHz                   | EN 55011:1997<br>EN 55022:1994<br>CISPR 22:1993<br>FCC Part 15:1996<br>ANSI C63.4:1992                                                                                     |
|                                                                                                                                                                                                                                                                                                                  | 1.3 Mains Harmonics and Flicker                                                  | EN 61000-3-2:1995<br>EN 61000-3-3:1995                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                                  | 1.4 Discontinuous Emissions (Clicks):<br>10 kHz to 30 MHz                        | EN 55014-1:1997                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                  | 1.5 Power Absorbing Emissions<br>Measurements (Power Clamp)<br>30 MHz to 300 MHz | EN 55014-1:1997                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                  | Continued on Sheet 2                                                             |                                                                                                                                                                            |

## United Kingdom Accreditation Service

|                                                                                    |                                                       |
|------------------------------------------------------------------------------------|-------------------------------------------------------|
| TESTING LABORATORY<br>No. 1831<br><br>Testing Performed at Permanent<br>Laboratory | SCHEDULE<br><br>Issue No: 7<br><br>Date: 16 June 2000 |
|------------------------------------------------------------------------------------|-------------------------------------------------------|



| Materials/Products Tested | Type of Test/Properties Measured<br>Range of Measurement                           | Standard Specifications<br>Equipment/Techniques Used                                                     |
|---------------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| As listed on Sheet 1      | <b>1 EMC TESTS (cont'd)</b>                                                        |                                                                                                          |
|                           | 1.6 Electrostatic Discharge<br>Up to 15 kV                                         | IEC 801-2:1991<br>IEC 1000-4-2:1995<br>EN 61000-4-2:1995                                                 |
|                           | 1.7 Radiated Immunity<br>80 MHz to 1000 MHz,<br>1.4 GHz to 2.0 GHz<br>up to 10 V/m | IEC 1000-4-3:1995<br>EN 61000-4-3:1996<br>Including Amendment 1:1998<br>ENV 50140:1993<br>ENV 50204:1995 |
|                           | 1.8 Fast Transient and Burst<br>Immunity                                           | IEC 801-4:1988<br>IEC 1000-4-4:1995<br>EN 61000-4-4:1995<br>ISO 7637:Part 1:1990                         |
|                           | 1.9 Surge Immunity                                                                 | IEC 1000-4-5:1995<br>EN 61000-4-5:1995<br>ENV 50142:1994                                                 |
|                           | 1.10 Conducted Radio Frequency<br>Disturbance                                      | IEC 61000-4-6:1996<br>EN 61000-4-6:1996<br>ENV 50141:1993                                                |
|                           | 1.1 Mains Dips and Interruptions                                                   | IEC 1000-4-11:1994<br>EN 61000-4-11:1994                                                                 |
|                           | 1.12 Magnetic Field Immunity                                                       | EN 61000-4-8:1994                                                                                        |
|                           | Continued on Sheet 3                                                               |                                                                                                          |

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| Materials/Products Tested                                                                                                                                                                                        | Type of Test/Properties Measured<br>Range of Measurement                                                                                                                                                                                                            | Standard Specifications<br>Equipment/Techniques Used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| As listed on Sheet 1                                                                                                                                                                                             | <b>1 EMC TESTS (cont'd)</b><br><br><b>1.13 EMC Tests</b><br><br>These generic and product specific tests are included in this Schedule, but limited to those basic standards that are explicitly listed in Sections 1.1 to 1.10.                                    | Generic and Product Standards<br>EN 50081-1:1992<br>EN 50081-2:1994<br>EN 50082-1:1996<br>EN 50082-2:1996<br>EN 50130-4:1995<br>EN 50199:1995<br>EN 55024:1998<br>EN 60601-1-2:1993<br>EN 60945:1997<br>EN 61000-6-2:1999<br>EN 61326:1997<br>ETS 300 279:1995<br>ETS 300 329:1997<br>ETS 300 339:1994<br>ETS 300 340:1994<br>ETS 300 342-1:1997<br>ETS 300 445:1996<br>ETS 300 446:1997<br>ETS 300 680-1:1997<br>ETS 300 682:1997<br>ETS 300 683:1997<br>ETS 300 684:1997<br>ETS 300 717:1997<br>ETS 300 741:1998<br>ETS 300 826:1997<br>ETS 300 827:1998<br>AS/NZS 2064:1997<br>AS/NZS 3548:1995<br>AS/NZS 4251.1:1994 |
| Fixed, Mobile, Portable radio equipment<br>PMR and ancillary equipment<br><br>Low power telemetry<br>Low power telecommand<br>Low power devices<br>Maritime (VHF) Ship to shore<br>Maritime (VHF) Shore stations | <b>2 RADIO TESTS</b><br><br>Frequency range: 9 kHz to 4 GHz<br>Power Output up to 150 W<br><br>Tests on Radio Transmitters<br><br>2.1 Frequency<br>2.2 RF Power, conducted and radiated<br>2.3 Modulation<br>2.4 Adjacent channel power<br><br>Continued on Sheet 4 | MPT 1250:1978<br>MPT 1251:1973<br>MPT 1305:1996<br>MPT 1308:1978<br>MPT 1312:1993<br>MPT 1314:1994<br>MPT 1325:1998<br>MPT 1328:1997<br>MPT 1329:1994                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| Materials/Products Tested | Type of Test/Properties Measured<br>Range of Measurement                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Standard Specifications<br>Equipment/Techniques Used                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| As listed on Sheet 3      | <b>2 RADIO TESTS (cont'd)</b><br><br>2.5 Spurious Emissions - conducted and radiated<br>2.6 Transmitter intermodulation<br>2.7 Transmitter transient behaviour<br>2.8 Audio response<br>2.9 Audio distortion<br><br>Tests on Radio Receivers<br><br>2.10 Sensitivity - SINAD<br>2.11 Adjacent channel selectivity<br>2.12 Receiver intermodulation<br>2.13 Co-channel rejection<br>2.14 Blocking performance<br>2.15 Spurious emissions - conducted and radiated<br>2.16 Audio response<br>2.17 Audio distortion | MPT 1330:1994<br>MPT 1335:1993<br>MPT 1336:1992<br>MPT 1338:1994<br>MPT 1340:1997<br>MPT 1344:1994<br>MPT 1345:1994<br>MPT 1350:1994<br>MPT 1357:1996<br>MPT 1360:1994<br>MPT 1361:1994<br>MPT 1365:1996<br>MPT 1374:1994<br>MPT 1382:1997<br>MPT 1411:1993<br>MPT 1601:1993<br>ETS 300 086:1991<br>ETS 300 113:1995<br>ETS 300 135:1991<br>ETS 300 162:1998<br>ETS 300 219:1993<br>I-ETS 300 220:1992<br>I-ETS 300 296:1994<br>ETS 300 328:1996<br>ETS 300 330:1990<br>ETS 300 390:1996<br>ETS 300 341:1995<br>I-ETS 300 422:1995<br>ETS 300 440:1999<br>ETS 300 454:1995<br>ETS 300 676:1997<br>ETS 300 719-1:1996<br>EN 300 220-1:1997<br>EN 300 220-2:1997<br>EN 300 422:V1.2.1:1999<br>EN 301 178:1999<br>EN 301 357:V1.1.1:1999<br>EN 301 688:1999<br>AS 4268.2:1995<br>AS 4295:1995 |
|                           | Continued on Sheet 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

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| Materials/Products Tested | Type of Test/Properties Measured<br>Range of Measurement                                                                                                                                                                                                                                                 | Standard Specifications<br>Equipment/Techniques Used |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
|                           | <p>Facilities:</p> <p>Open area test site: 3, 10 and 30 m</p> <p>Screened Room<br/>(Partially Lined RF Absorber)<br/>6.4 m x 4.9 m x 2.8 m</p> <p>Screened Room (unlined)<br/>3.7 m x 2.6 m x 2.5 m</p> <p>Screened Room (unlined)<br/>3.0 m x 2.4 m x 2.4 m</p> <p>Environmental Chambers (various)</p> |                                                      |
|                           | END                                                                                                                                                                                                                                                                                                      |                                                      |