# FMSD-1
## VHF FM STEREO DEMODULATOR

The FMSD-1 is a high quality VHF FM Stereo demodulator with precision metering on the front panel.

The FMSD-1 is used for FM signal monitoring on-site or for testing the audio and modulation quality of studio encoding systems, (Stereo encoders or transmitter equipment). The unit can be used in conjunction with other test equipment such as the Lindos test set or on its own.

The Unit includes an Audio Test Meter section and a Peak Modulation Test Section on the front panel. The features include selection of L/R and Mono / Stereo measurement (displayed audio on the Front panel PPM meters). The audio level can be tested by the selection of the various scales, if a low audio signal has been demodulated.

RF input is optional from the rear or from the front of the unit. The RF input is designed for -20dBm signal level or more to obtain the correct input measurements. The front end includes a Bandpass Filter, Mixer and PLL to lock onto the strongest signal. A low RF Input LED on the front panel indicates when the RF input level is below the measurement threshold.

**FMSD-1 VHF FM Stereo Demodulator**

## Features

- Superior audio performance High quality audio O/P (L&R)
- Built-in Stereo Decoder (<60dB separation)
- Measurement with MPX input or FM RF signal
- Headphone socket for audio monitoring
- De-emphasis measurement selection
- Modular design
- Indication of audio Left and Right audio levels

# TECHNICAL SPECIFICATIONS

## STEREO DECODER SECTION

| | | |
|---|---|---|
| MPX input | 6k ohm unbalanced | BNC |
| Input level | 3.5V p-p to 8V p-p | |
| Bal. Left output | +10dBm nom (XLR) | Internally adjustable |
| Bal. Right output | +10dBm nom (XLR) | Internally adjustable |
| Bal. Mono output | +10dBm nom (XLR) | Internally adjustable |
| S/N unweighted | ≥80dB (50uS) | 20Hz - 20kHz |
| S/N weighted | ≥ 75dB (50uS) | CCIR 468-1 |
| Stereo separation | ≥ 60dB | L into R |
| Stereo crosstalk | ≥ 50dB | L+R into L-R |
| Pilot tone suppression | ≥70dB | 50uS de-emph |
| SCA suppression | ≥ 70dB | 50uS de-emph |
| Harmonic distortion | ≤0.1% | Filtered 20Hz - 20kHz |
| Audio Response | ≤ 0.25dB | 30Hz to 15kHz |

## DEMODULATOR SECTION INCLUDING DECODER (TESTED AT ± 75kHz DEVIATION)

| | | |
|---|---|---|
| RF input | ≥ -20dBm (87.5 - 108MHz) | 50 ohm BNC |
| I.F. Frequency | 10.7MHz | Tracking PLL |
| Output levels | +10dBm nom | Left, Right and Mono |
| S/N unweighted | ≥ 75dB (50uS) | 20Hz - 20kHz |
| S/N weighted | ≥ 65dB (50uS) | CCIR 468-1 |
| Stereo separation | ≥ 55dB | 30Hz - 15kHz |
| Stereo crosstalk | ≥ 50dB | 30Hz - 15kHz |
| Harmonic distortion | ≤ 0.25% | 30Hz - 15kHz |
| Audio response | ≤ 0.25dB | 30Hz - 15kHz |

## ENVIRONMENTAL

| | | |
|---|---|---|
| A/C power | 230V ± 10% 50Hz | (120V, 60Hz optional) |
| Operational Temp | 0° to 45° C | |

## PEAK MODULATION METER

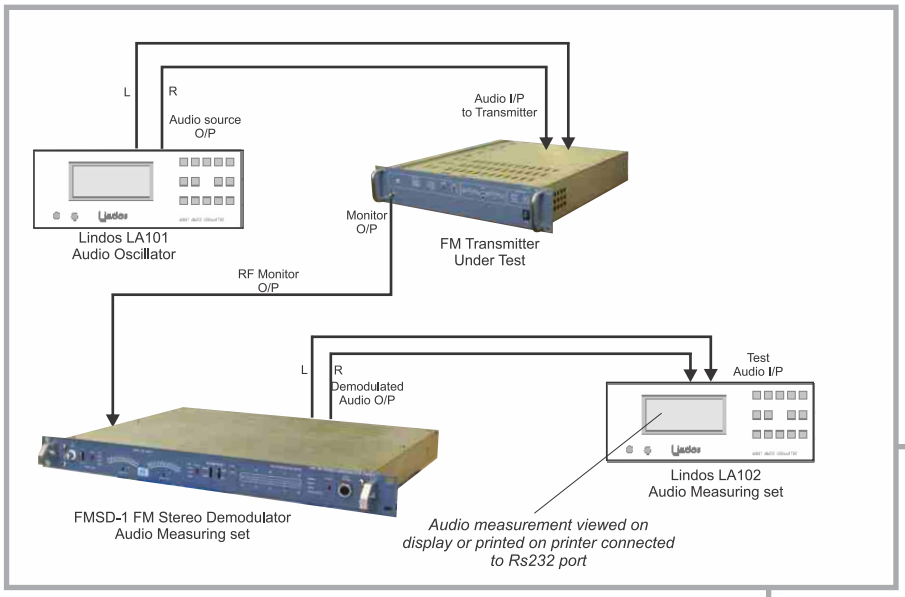
| | |
|---|---|
| Scale Select: | 0 - 100kHz peak deviation<br>60 - 80kHz peak deviation<br>0 - 10kHz peak deviation (SCA calib.)<br>0 - 10kHz peak deviation (Pilot only) |
| Meter type: | Full wave peak detection with 20 dot led display |
| Headphone: | Stereo jack socket, 600ohm. OdBm nom. (50uS de-emph). |
| RF input: | BNC female ≥-20dBm (50ohm) |

## FRONT PANEL FEATURES
## AUDIO TEST METERS (DUAL V.U. SCALE)

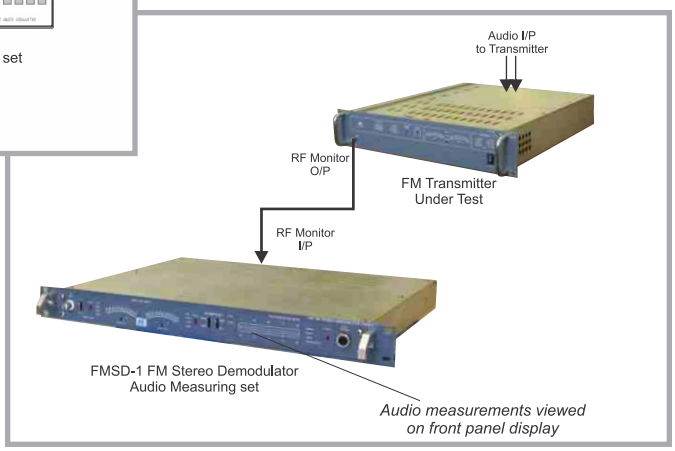
| | |
|---|---|
| Scale Select: | 0dB, -20dB, -40dB and - 60dB |
| Meter Options: | Left and right or mono and stereo (via front panel switch) |
| Meter Cal.: | Dual potentiometers to set calibration points |
| De-emphasis: | Switch "OUT" or "IN"<br>Switch 50uS or 75uS |

## REAR PANEL FEATURES

| | | |
|---|---|---|
| Audio outputs: | 600 ohm XLR male (balanced) | Left, Right and mono |
| Decoder input: | BNC female (6k ohm) | Unbalanced (MPX input) |
| RF input | BNC female (50 ohm) | Optional rear Panel input |




APPLICATION 1 - PRECISION MEASUREMENT WITH EXTERNAL MEASURING SET




APPLICATION 2 - ON-SITE MEASUREMENT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