Swires Research. 40 Hornsby Sq, Southfield Industrial Park,
Laindon, Essex. SS15 6SD
Tel: +44(0)1268 417584. Fax: +44(0)1268) 419083.
Email: sales@swires.com
Website :- www.swires.com

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Operators Manual For Cable TV **A**nalogue/**D**igital Installers Meter type - ***2001AD - C***

Jan.2k1 Master
(rev. Nov.2K4)

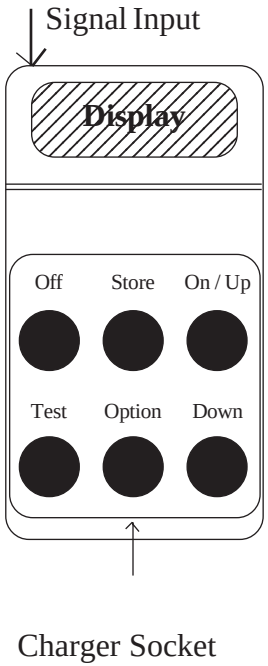
Using the Meter

After the start up screen when the instrument initialises itself the display shows a channel number, ie 1, on the top line. The meter automatically senses the TV standard and displays either ANALOG or DIGITAL on the second line of the screen. The signal level is measured according to the requirements of the detected standard. Should the signal be very low the meter will display SIG LOW. The channels are on a continuous loop. Each press of the "Up" or "Down" will select the next preset channel. To reach a preset channel quickly, hold either button down, and after a couple of seconds, the meter will scan the channels more quickly.

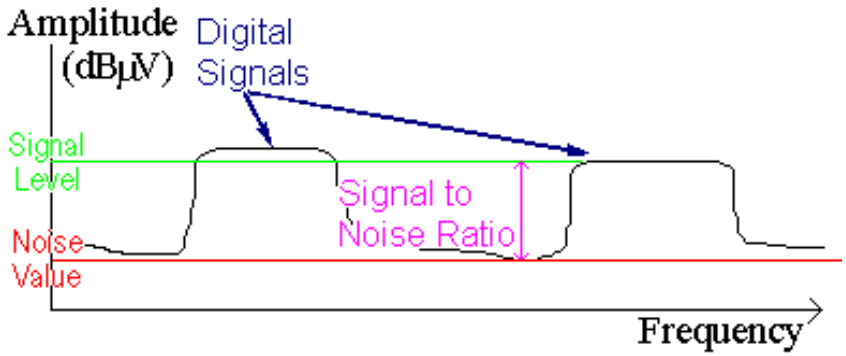
Meter Layout

The meter has six buttons:

- **"Off"** switches it off.
- **"On/Up"** switches it on, and steps up the frequency plan.
- **"Down"** steps down the preset frequency plan.
- **"Test"** performs the SNR quality test.
- **"Option"** Used when programming slave units. - Also for setting SNR comparison point (factory set at 328 MHz.)
- **"Store"** key to confirm change to a preset frequency or changing the Noise comparison point



Technical Background



The ***2001AD-C*** quickly and accurately tests Analogue & digital signals. When measuring *Analogue* signals the RF level is all that is displayed. When measuring *Digital* it gives three pieces of information, which together will allow the installer to be confident that pictures will be received in all situations:

1. Signal Level
2. Signal-to-Noise Ratio (SNR)
3. Pass/Marginal/Fail indication

The Set-Top Box (STB) will only accept a certain range of signals. These should be obtained from your Network Supervisor If the meter reads outside these value there could be a fault with the system .

Once the signal is in the range of the STB, the **S**ignal to **N**oise **R**atio (SNR) must be checked. The SNR indicates how high the signal is, in comparison to the noise on the cable network.

As a final check, the meter assesses the SNR and flashes up "Pass" or "Fail". Occasionally the signal could be close to failing, then "Marginal" will appear.

Specifications

• Frequency range:	25 to 860 MHz.
• Number of presets:	Up to 99 preset frequencies. Units are pre-programmed with an 8 MHz channel plan. Cloning of 'slave' units via a 'master' unit.
• Level accuracy:	Typically ± 1 dB. Guaranteed < ± 2 dB.
• Input range:	-45 to +20 dBmV.
• Input connector:	'F' type, 75ohm female
• Weight:	0.5 kg.
• Dimensions:	275 mm × 115 mm × 63 mm.
• Power source:	Rechargeable NiCad batteries.
• Power sources:	Charging from either the mains or 12 V dc car battery. Full charge gives 5 hours continuous use.
• Included with:	Mains charger, connection lead for cloning (master unit only), instruction sheet.
• **'Optional'** extras:	Ever-ready case, car charging lead.

Testing an Installation

The procedures set out below assume you have the correct preset frequencies and the 'Noise' comparison point is acceptable (see page 4)

With the meter switched on, select the first preset frequency you wish to check. Look at the signal level, **measured in dBmV.** It needs to be in the range acceptable to the set-top box. If it is outside this range or if the display shows "High" or "Low" then there is a fault with the installation, which must be remedied first.

For Digital Only, Press the "Test" button, to check the signal to noise ratio (SNR). The unit will measure the selected noise frequency. The display will show the SNR value in dB's. The number is important for fault finding so you may be asked to write it down.

nb. If >32 appears this indicates a SNR of 'greater than' 32dB (which is a good pass figure).

After a slight pause the display shows "Pass", "Fail" or "Marginal".

- If it indicates "Pass", the signal is acceptable (SNR 'greater than' > 26 dB). The test should then be repeated for each Multiplex signal.
- If it indicates "Marginal" (SNR 23 - 25 dB) or "Fail" (SNR less than < 23 dB) then further work needs to be done on the installation.

Charging the *2001 AD-C*

An overnight charge will fully charge the meter, giving approximately 5 hours of continuous use. The meter can also be charged from a car cigar lighter socket using the **optional** lead. To conserve the batteries, the meter switches off automatically after 5 minutes.

Programming the Master & Slave units

There are four stages to programming the units:
1. Nominate the Amount of preset Frequencies to be used (Master only)
2. Change the frequencies of your 'Selected' presets.(Master only)
3. Switch the Slave unit into receive mode
4. Switch the Master unit into transmit mode

1. Nominate the number of 'presets' to be programmed

With the Master unit off, press and hold the "Store" key, press the "On" key. The display will change to show the amount of Preset frequencies in the Top line. Select the amount you require with the "Up" and "Down" keys. (1 to 99 valid) Switch OFF instrument.

2. Changing the Frequency of your 'Selected' presets .

1. Switch ON the instrument. Using the UP/Down keys select the preset to be altered. Press **'Option'** key Once.
2. Use the UP/Down keys to move to a new frequency.
3. Press the **'Store'** key once.

To continue with the next 'preset' use the UP/Down keys to select the next preset to be altered in frequency. Press the **'Option'** Key once again. Follow from step 2 above. Continue the above until all your selected amount of preset frequencies are changed to the new desired frequencies.

Switch off the Master unit and connect the power sockets of the Master and Slave units with the special programming lead.

3. Switch the Slave unit into receive mode

Press and hold the **"Down"** key then press the **"On"** key. Continue to hold both keys until "Rx" appears on the screen after 2-3 seconds. Release both keys.

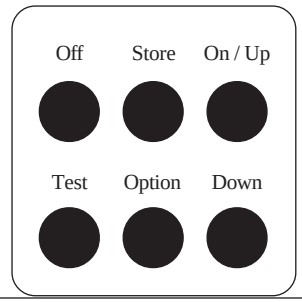
4. Switch the Master unit into transmit mode

Press and hold the **"Option"** key and press the **"On"** key. Continue to hold both keys until "TX" appears in the screen (approx 2-3 sec's). Release both keys and the unit will start transmitting. The progress of the transmission can be seen on both screens by the end two digits counting up to 2025. This will take approximately 1 minute.

When the transmission is complete both displays will show "finished". Unplug the units and to ensure the transfer has been successful scan through the frequencies stored in the Slave unit. *nb. This feature is only required if you have several engineers and want the same channel plan in each instrument.*

Setting the Noise floor frequency

This is the point in the frequency band the instrument looks at to find the noise floor of the network.
Its frequency can be changed if the factory set position ,usually 404 MHz (which should be a guard band frequency) is not clear. To change it follow the procedure below:-

1. switch on instrument
2. press the down key once - Top line of display should read S/N 404.00MHz
3. press the **OPTION** key once.
4. Use the **UP/Down** keys to change to new desired frequency.
5. Press the **STORE** key once.

your new comparison point frequency is now stored in the instrument.