SL93 and *deluxe* carrying case

Swires Research
40 Hornsby Square
Southfields Industrial Park
Laindon
Basildon
Essex. SS15 6SD
England

Tel : (01268) 417 584
Fax: (01268) 419 083

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- Included:
  - SL93 or SL93s.
  - Quick Reference Card.
  - Mains Charging Lead.
  - Carrying Strap.

Operators Manual
For Signal Level Meters
SL93 & SL93s

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• Introducing the SL93

At Swires Research we have now been making instruments for the cable TV industry for over 22 years. More than 80% of the major cable franchise operators in Britain are using our instruments.

The SL93 gives a digital read-out of frequency and channel. The RF level is shown in dBmV or dBµV and as an analogue bargraph on the LCD Display. To speed up finding the values, 500 presets can be programmed into the meter.

As with the Swires range of spectrum analyser the SL93 has enhanced software correction built into Erasable Programmable Memory (EPROM) for greater accuracy; this gives a built in and transparent 'error correction table'.

The SL93s covers the extended satellite IF frequencies and has a continuous frequency range from 10 to 2150 MHz. This model also supplies +14 V to an LNB, thus eliminating the need for a receiver on the initial setting up of the dish.

Battery life is approximately 5 hours of continuous use (excluding use to power an LNB). The meter will switch off after 5 minutes if no key is pressed, to further conserve battery power.

Internal construction of the SL93 uses surface mount technology to the highest standard. Gold plated interconnections are used throughout to avoid oxidisation. The case of the meter is made from extremely strong, glass reinforced polycarbonate material; providing very good protection for the instrument.

The meter has been designed to facilitate quick, efficient servicing, allowing the engineer to be without the instrument for the minimum of time, in the event of it being damage.

• Specifications:

• Frequency Range:	SL93:	10 to 1000 MHz.
	SL93s:	10 to 2150 MHz.
• Response Accuracy:	10 to 1000 MHz:	± 1 dB.
	1000 to 2150 MHz:	± 2 dB.
• Input Level Range:	-25 dBmV to +58 dBmV.	
• RF Input Connector:	75 Ω BNC type.	
• IF Band Width:	360 kHz @ -3 dB point.	
• LNB Supply Voltage: SL93s:	+14 V 250 mA max.	
• RS232 Port:	Used, with *Virtual 2.0*, for up-loading channel plans, down-loading saved screen shots and for remote-control of the instrument.	
• Optional Extras:	Every ready or *deluxe* nylon carrying cases.	
• Battery Pack:	NiCad, giving 5 hours continuous use.	
• Weight:	1.1 kg, including batteries.	
• Dimensions:	275 mm x 115 mm x 63 mm.	

4.0 and 8.5 MHz, by using the cursor keys (a - d), and pressing Enter when finished. The meter will remain on the set S-V ratio until altered.

• Powering an LNB.

The SL93s meter can power an LNB with +14 volts, at a maximum current of 250mA. To operate line powering press the LNB V and '.' keys simultaneously (m + s) - "Wok On" will appear on the display. If the batteries have a low charge, line powering will immediately switch off.

To switch off this facility press the LNB V key again.

• Carrier to Noise ratio (C/N).

An indication of C/N is available on this meter. On pressing the C/N key (e), the meter will momentarily change to a frequency selected by the user as the noise reference and then the C/N level in dB will be displayed for 5 seconds.

To select the frequency which the instrument will use to take the noise measurement;

Select a clear frequency, away from active channels. Press the Option key and select "1 Noise Frq Here". The instrument will use this frequency until altered.

• Changing the signal level units: dBmV or dBµV

Signal levels can be displayed in either dBmV and dBµV, toggle between them with the mV/µV key (t). The bar graph of the display is always in dBmV.

• Saving screen shots

Press the Save key (j) to store the current screen to memory for downloading to a PC later. Up to 99 screens can be saved

• Instructions for Use

• Switching On and Off

The On (s) key switches the instrument on. The start-up screen shows the date as the instrument runs through a series of internal checks, the screen then reverts to the measurement display ready to take readings.

The Off (q) key switches it off.

• Help pages

The Help key (k) followed by any other key will give a brief description of the function of that key in normal use. To exit the help pages press the Help key again time.

• Changing the frequency

To change to any frequency in the band:

Either, press the Freq key (p) then the Shift key (o) and enter the frequency using the key pad, and finishing with Enter (m). If the frequency includes a decimal point, eg 123.5 MHz, there is no need to press Enter; e.g. to examine frequency 123.5 MHz, press keys 1,2,3, "." and 5 keys.

Or, press Freq key (p) and scroll to the desired frequency using the Arrow keys (a - d).

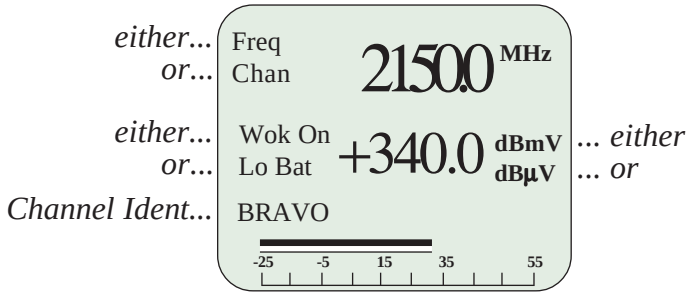
• Changing to a preset channel

The SL93 can store 500 channel. To change to one of these

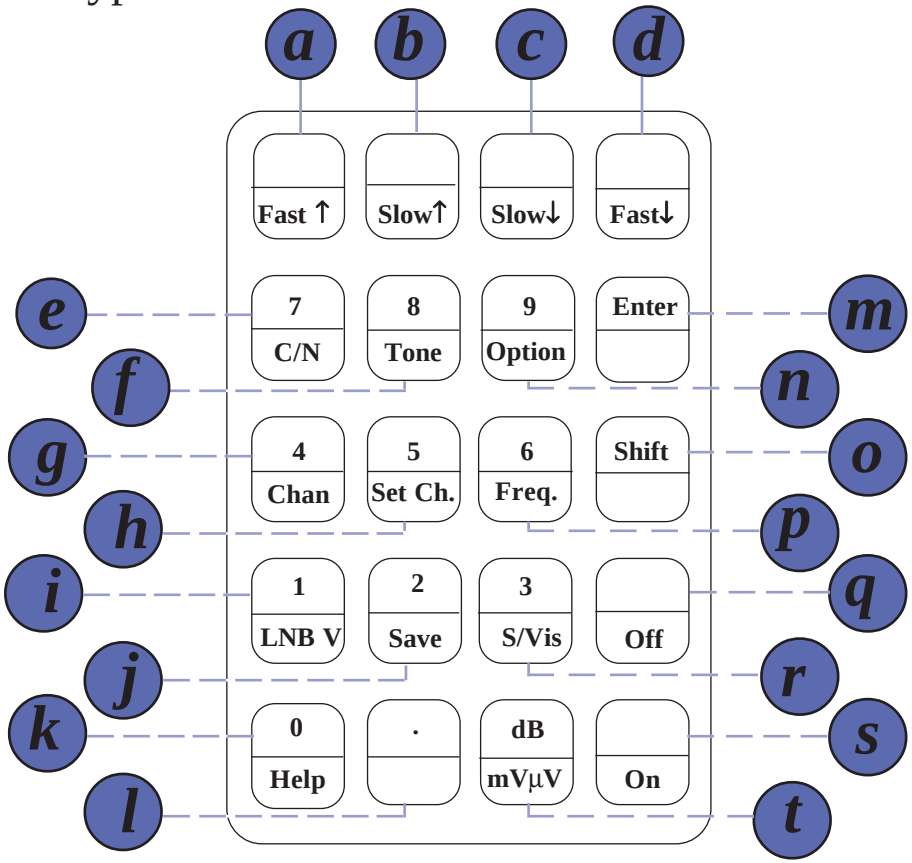
Either, press the Chan key (g) and use the arrow keys (a - d) to select the desired preset.

Or, press the Chan key, followed by the Shift key (g, o), enter the channel at the prompt, using the numerical keys and the Enter key to finish.

• Display



• Keypad



• Allocating a frequency to a channel.

To change the frequency of a presets. Press the Chan key and then the Shift keys (g, o), the prompt will change to "Chan?". Use the numeric keypad to select the channel number to be allocated, eg "0001" and then press the Enter key. To enter the new frequency press the Set Chan key (h) and input the desired frequency, e.g. 1,2,3 & Enter key.

To allocate frequencies to other presets, press the Shift key again and repeat the steps to enter the channel to be allocated and the frequency.

Channels can be locked when a channel plan is uploaded from a PC using the *Virtual* package, then the frequency of the channel cannot be changed.

• Recharging the internal batteries

To recharge the NiCad batteries plug the charger into the 9 pin 'D' connector at the base of the meter. To fully charge the batteries 15 hours is required, while an overnight charge is normally all that is required.

• The Tone Function

When setting up equipment which needs to be accurately aligned, it is not always possible to watch the screen to find the best alignment. In these instance the tone function is very useful.

After pressing the Tone key (f), the instrument will emit a low tone, which varies it pitch in proportion to the strength of the signal.

To turn off this function press the key again.

• Sound to Vision ratio (S/Vis).

The S/Vis key (r) gives the difference between the sound and vision carriers in dB, on the screen for 5 seconds.

The Sound to Vision spacing can be changed by pressing the Option key (n) and then selecting "2 S-V Gap MHz". Enter the spacing required, between