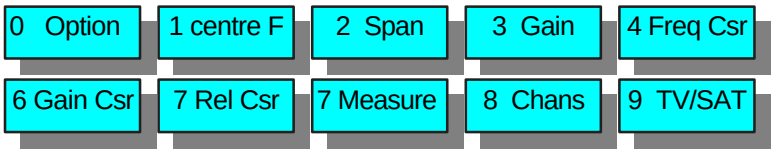
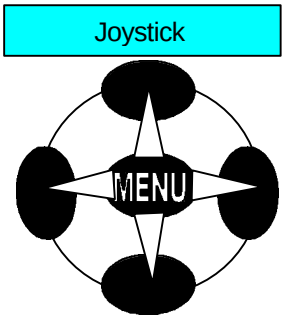


A more comprehensive overview of the many functions available to the engineer.

How to move around the ‘menu’ keys.

You can either Use the left or right keys from the ‘Joystick’ to move around the menu ‘Boxes’, or press the associated number in the Box whose function you want to use.



0 option	1 centre F	2 SPAN	3 GAIN	4Freq.Csr.
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

How to Change range of frequencies (Span) being viewed.

Use either method as described above to rotate round to the ‘No. 2 box’ so that it is highlighted .

0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr.
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

Press the ENTER key, then press the relevant keys for the frequencies you require.

The range of frequencies is 5 to 2150 MHz. For instance to change the SPAN to 500MHz press the ENTER key.

You are prompted for a range of frequencies - press 5,0,0 and ENTER keys.

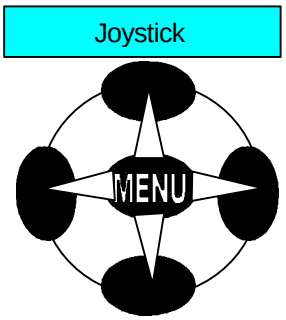
The ‘SPAN’ of frequencies on the screen is now 500MHz. You can see this from the STATUS BAR.

Status Bar → 0005 LNB OFF LR20 ATT1 0495

The range of frequencies the SPAN function accepts is from 1 to 1400MHz.

OR…

Use the UP/DOWN keys from the ‘JOYSTICK’ to increase the on screen range of frequencies (use UP key) or to decrease the range of frequencies being viewed (use DOWN key).

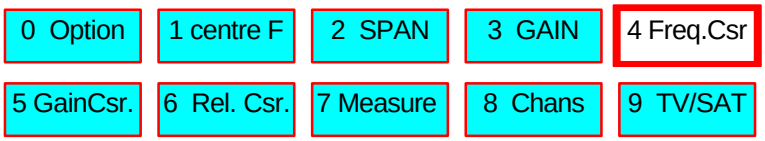


How to Move Cursors around the screen.

There are 3 'on screen' cursors available

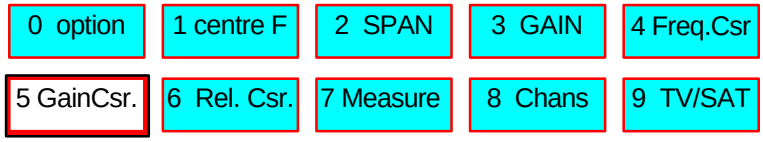
- **The Frequency Cursor** .

This is used to Identify the frequency of a particular carrier signal. Whilst the frequency cursor menu box is highlighted as below. Pressing either the UP or DOWN keys on the 'Joystick' moves the frequency cursor down to go down in frequency, or UP to go up in frequency. If you Hold down either key for more than 5 Seconds the speed the cursor moves accelerates. Nb If the ENTER key is pressed while Freq. Csr box is highlighted as below the cursor moves back to the centre of the screen.



- **The Gain Cursor**

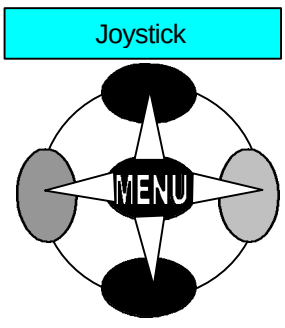
This is used to measure the signal strength of a particular carrier signal.
Whilst the Gain cursor menu box is highlighted as below. Pressing either the UP or DOWN keys on the 'Joystick' moves the Gain cursor down to go down in level, or UP to go up in level. If you Hold down either key for more than 5 Seconds the speed the cursor moves increases - ie accelerates.



- **The Relative Cursor**

This is used to measure the Relative difference between two carriers of different amplitudes ie the difference between the Vision and sound carriers of a particular channel.

Whilst the REL.Cursor menu box is highlighted as on page 4, Pressing either the UP or DOWN keys on the 'Joystick' moves the Gain cursor DOWN to go down in level, or UP to go up in level. To measure the difference between a vision carrier and its sound carrier place the Gain cursor on the top of the Vision carrier, press '6' on the keypad or move round the boxes till you come to No. 6 box as below and press the ENTER key.

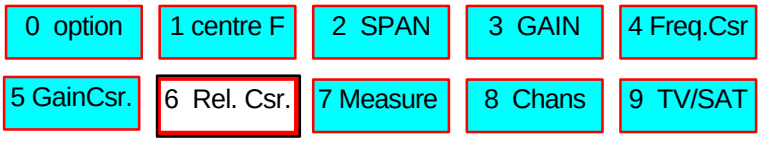


Cont… over

How to use the Relative (*delta*) cursor. *continued*

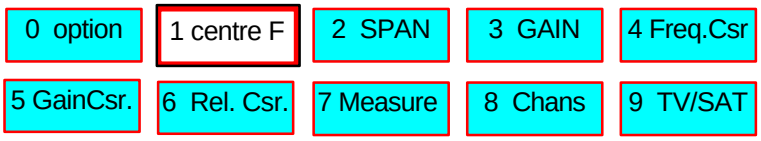
Now a Red ‘delta’ cursor should be apparent on the screen. Place this on top of the sound carrier of a particular channel. The level indicator in the top right hand corner of the screen now becomes the ‘difference ‘ level between the two carriers. It is Always linked to the ‘Gain cursor’ whether it be above the gain cursor or below the gain cursor.
This is indicated by a ‘+dB’ or ‘-dB’ reading.
Carrier to noise measurements can be implemented in the same way -but remember to change the bandwidth of the TVA97 to 280KHz. For terrestrial TV channel measurements. Or see page18 for *Auto measurement*.
If you hold down either key for more than 5 Seconds the speed the cursor moves increases - ie accelerates.
The Enter key will ‘toggle’ the ‘Relative’ cursor OFF and ON as long as the No.6 box on the menu is highlighted as illustrated below.

Use the menu key to return to main screen.



How to Change Frequency viewed

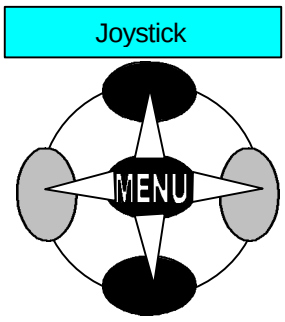
Use either method as described on page 2 to rotate round to the ‘No. 2 box’ so that it is highlighted as below.



Press the ENTER key and you are prompted for a frequency to be entered on the keypad.. For instance type 1,2,8 + ENTER and the frequency cursor is now at 128MHz.

Or…

Pressing either the UP or DOWN keys on the ‘Joystick’ moves the frequency DOWN to go down in frequency, or UP to go up in frequency. Use the menu key to return to main Menu.



How to Change the IF bandwidth.

Select the OPTION box as below and press the ENTER key.

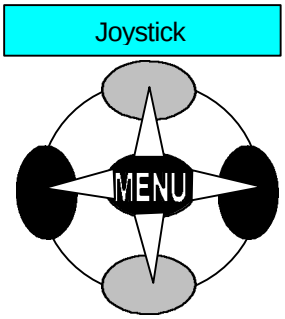
0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

Select the **BW** (bandwidth) box as below and press the ENTER key again.

0 Peak H	1 Save	2 Units	3 Log-R	4 Timeout
5. LNB-V	6. Global	7. BW	3 Fonts	

Select the relevant bandwidth you require which suits your purpose (…see tips below) using the LEFT and RIGHT ⇐ ⇒ keys on the 'JOYSTICK' .

0 Auto	1 2 MHz	2 280KHz	3 30KHz



Press the ENTER key to confirm your selection

Use the menu key to return to main screen - Press 2 times

TIPS.

Use 2MHz IF bandwidth for SATELLITE use.

Either use 2MHz or 280KHz for terrestrial TV.

Use 30KHz. For DATA transmissions (reduce frequency span to a minimum !)

AUTO sets BANDWIDTH to 280KHz for 5 to 900MHz and 2MHz for frequencies from

900MHz to2150MHz. 30 KHz. B/W Is used below a span of 5 MHz ie Nicam carriers.

Use the menu key to return to main screen.

How to Change Gain (Sensitivity . +/-- attenuation)

The Sensitivity (Gain) of the instrument is adjusted by highlighting the GAIN box as below.

0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

The Sensitivity is adjusted by adding / subtracting ATTENUATION - There are 4 levels

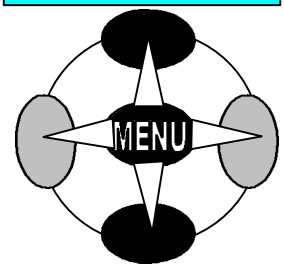
While the GAIN box is highlighted pressing the ENTER Toggles around the 4 settings - The one active is indicated on the STATUS LINE as below.

Att 1 ⇒ Att 2 ⇒ Att 3 ⇒ Att 4 ⇒ Att 1 etc.

Status Bar → 0256 LNB OFF LR20 A tt1 0847

You can also use the 'JOYSTICK' to adjust the position of the displayed waveform within the viewing window on the TVA97 screen using the UP/DOWN Keys.

Joystick



Tip.

While viewing a TV picture remember to adjust the Attenuator. Increase if interference is seen until the viewed picture starts to become 'noisy'. These are the recommended Min & Max levels for achieving best quality TV picture .

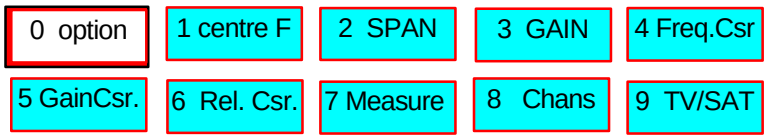
Atten. setting	Min Level	Max Level
Atten. 1	-25dBmV (35dBµV)	+10.1dBmV (70 dBµV)
Atten. 2	0dBmV (60dBµV)	+30dBmV (90 dBµV)
Atten. 3	+18dBmV (78dBµV)	+45dBmV (105 dBµV)
Atten. 4	+30dBmV (90dBµV)	+60dBmV (120dBµV)

NB. Whilst viewing a TV picture Always adhere to guide levels above Otherwise a poor picture will be apparent !

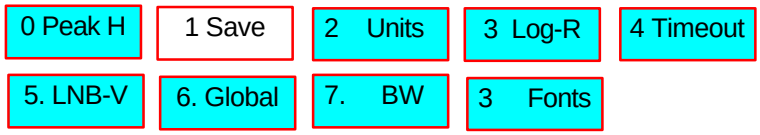
HOW TO 'SAVE' A SCREEN (store a 'snapshot' of the screen)

Screen information can be stored within theTVA97 to be downloaded at a later date onto a PC. This information can then be printed as a hard copy for commissioning purposes.

Rotate around to the OPTION box using the 'joystick' or press '**0**' on the keypad.



Press the ENTER key. Press '1' on the keypad to highlight the 'SAVE' box as shown below

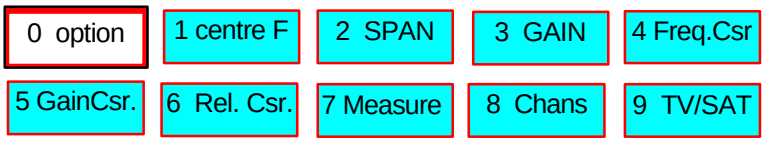


Each press of the **'Enter'** key **saves** the current screen. The TVA97 has a capacity of approximately 60 screen 'snapshots' before the need to download and 'Flush' the instrument ready for the next set of screen stores.

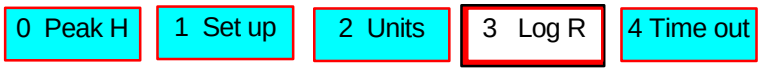
How to Change the Log Range (20dB , 40dB , 80dB)

The dynamic ON SCREEN range - ie from the top to the bottom of the screen in dB's is better referred to as the dynamic LOG RANGE.

The TVA97 has 3 log ranges, 20, 40, and 80dB. To change the range highlight the 'OPT' (options) box by using the left or right ⇐ ⇒ keys on the 'joystick'



(or press the 'O' key on the keypad .) Press the ENTER key.



Highlight the LOG R box as above using the LEFT or RIGHT keys on the 'Joystick'

or press ' 3 ' on the keypad. Press the ENTER key repeatedly. This 'Toggles' the Log range between the settings in the sequence as below :-

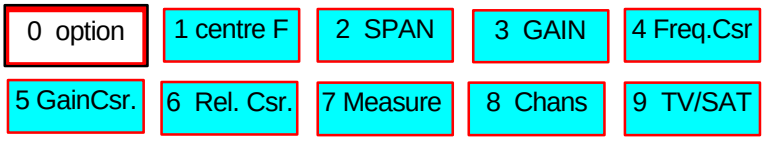
LR 20 ⇒ LR 40 ⇒ LR 80 ⇒ LR 20 Etc.

The Active Log Range is shown on the Status bar as above.

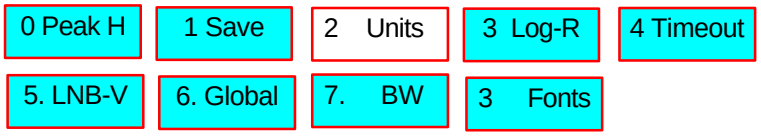
How to Change Units Of Measurement (dBμVolt - dBmVolt - dBmW)

Whether you prefer dB microvolts (dBuV) or dB millivolts (dBmV), both are catered for and the user can set the TVA97 to their preference. There is also a dBmilliwatt (dBmW) setting for measurement of digital carriers, using the Measure function from the main Spectrum Analyser screen.

To change ' Unit of Measurement ' highlight the OPTIONS box as below using the ⇐ ⇒ arrow keys on the 'Joystick' control. Or… press ' 0 ' on the keypad.



Then press the ' 2 ' key to highlight the ' UNITS' box as below .

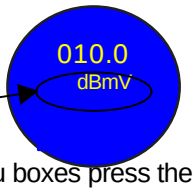


Repeated presses of the ENTER key toggles the unit of measurement as below.

dBμV ⇒ dBmV ⇒ dBmW ⇒ dBμV etc.

It can be seen from the top right hand side of the screen

which unit of measurement is active



To return to the main menu boxes press the menu key.

Make sure the Relative cursor is OFF first!

How to Line Power from RF input socket

Method 1

There is 13volts/ 18volts and 22KHz tone facilities available through the RF input socket.

To switch on these functions highlight the OPTIONS box as below using the ⇐ ⇒ arrow keys from the ‘ joystick ’. Press the Enter ENTER key.

0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

Once in the OPTIONS sub- menu you will see a box marked ‘ LNB-V ‘ Press ‘ 5 ‘ on the keypad or toggle round using the ⇐ ⇒ arrow keys from the joystick to highlight this box as below.

0 Peak H	1 Save	2 Units	3 Log-R	4 Timeout
5. LNB-V	6. Global	7. BW	3 Fonts	

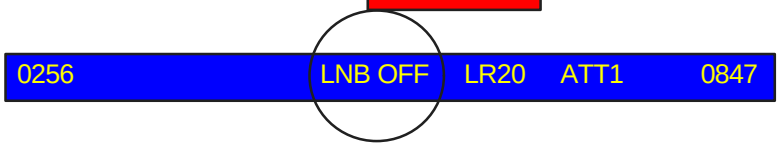
Press the ENTER key. Highlight the ON/OFF box as below.

0 Auto	1 ON/ OFF	2 Hi/Lo	3 22KHz

Press the ENTER key. This switches the line powering ON to the RF input socket.

The LNB OFF on the Status bar now changes to LNB LV ------

Status Bar →



This means there is now 13volts DC coming out of the RF input BNC socket.

To switch to 18 volts press ‘ 2 ‘ on the keypad then ENTER key.

LNB LV ------ becomes LNB H V ------

There is now 18 volts DC coming out of the RF input BNC socket.

To apply the 22KHz Tone highlight the 22KHz. Box as below then press the ENTER key.

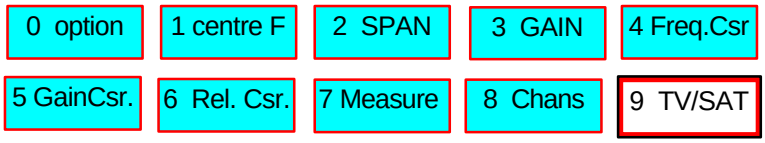
0 Auto	1 ON/ OFF	2 Hi/Lo	3 22KHz

To SWITCH OFF line powering and 22KHz tone press ‘ 1 ‘ on the keypad, then the ENTER key.

How to Line Power from RF input socket

Method 2

Another way to switch on these functions is to highlight the TV/SAT box as below using the ⇐ ⇒ arrow keys from the ' joystick '.

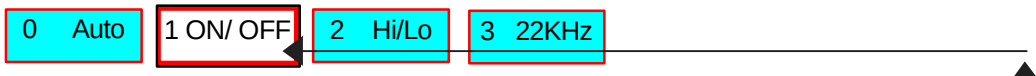


Or.. Press the ' 9 ' button on the keypad. Press the ENTER key.

Highlight the LNB Volts box as below using the ⇐ ⇒ arrow keys from the ' joystick '.

Or.. Press ' 5 ' on the keypad. Press the ENTER key.

Highlight the ON/OFF box as below.



Press the ENTER key. This switches the line powering ON to the RF input socket.

The LNB OFF on the Status bar now changes to LNB LV ------

Status Bar →

This means there is now 13volts DC coming out of the RF input BNC socket.

To switch to 18 volts press ' 2 ' on the keypad then ENTER key.

LNB LV ------ becomes LNB H V ------

There is now 18 volts DC coming out of the RF input BNC socket.

Repeated presses of the ENTER key ' Toggles ' the voltage between 13v and 18v.

LV = 13 volts HV = 18volts

To return to the Spectrum analyser press the menu key twice (X 2).

To switch Line Powering OFF follow instructions above but toggle volts OFF and

return status bar back to LNB OFF

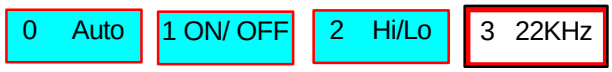
How to Line Power from RF input socket *Continued…*

- Applying a 22 KHz. Tone to Line Powering.

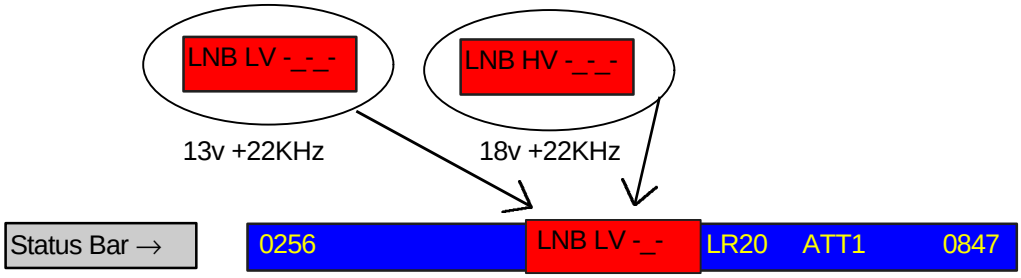
As well as being able to apply 13/18volts to the RF input socket a 22KHz. Tone can also be applied to either the Low or High dc volts. This is required on some Universal LNB's to switch from low to high band.

Continuing on from the point where the line powering was switched on previously overleaf.

Highlight the 22KHz box as below using the ⇐ ⇒ arrow keys from the ' joystick '



Press the ENTER key and the Status Bar LNBL/H Volts becomes either 13volts with a 22KHz tone or 18volts with a 22KHz tone indicated like so.



To switch between the two voltages press ' 2 ' on the keypad and press the ENTER key.

Switching Off the Line Powering and 22KHz tone is done by pressing ' 1 ' on the keypad and then the ENTER Key. To return to the main menu boxes press the menu key.

Or you can simply switch the TVA97 OFF completely.

The next time the instrument is switched ON the line powering is OFF.

How to Use the 'PEAK HOLD' Facility.

A 'PEAK HOLD' facility is used to store the peaks of incoming signals. Useful for capturing Radar interference or mobile radio signals. To switch Peak Hold on highlight the 'OPTIONS' box as below using the ⇐ ⇒ arrow keys from the ' joystick '

0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

Press the ENTER key. Press ' O ' on the keypad this highlights the PEAK HOLD box as indicated below :-

0 Peak H	1 Save	2 Units	3 Log-R	4 Timeout
5. LNB-V	6. Global	7. BW	3 Fonts	

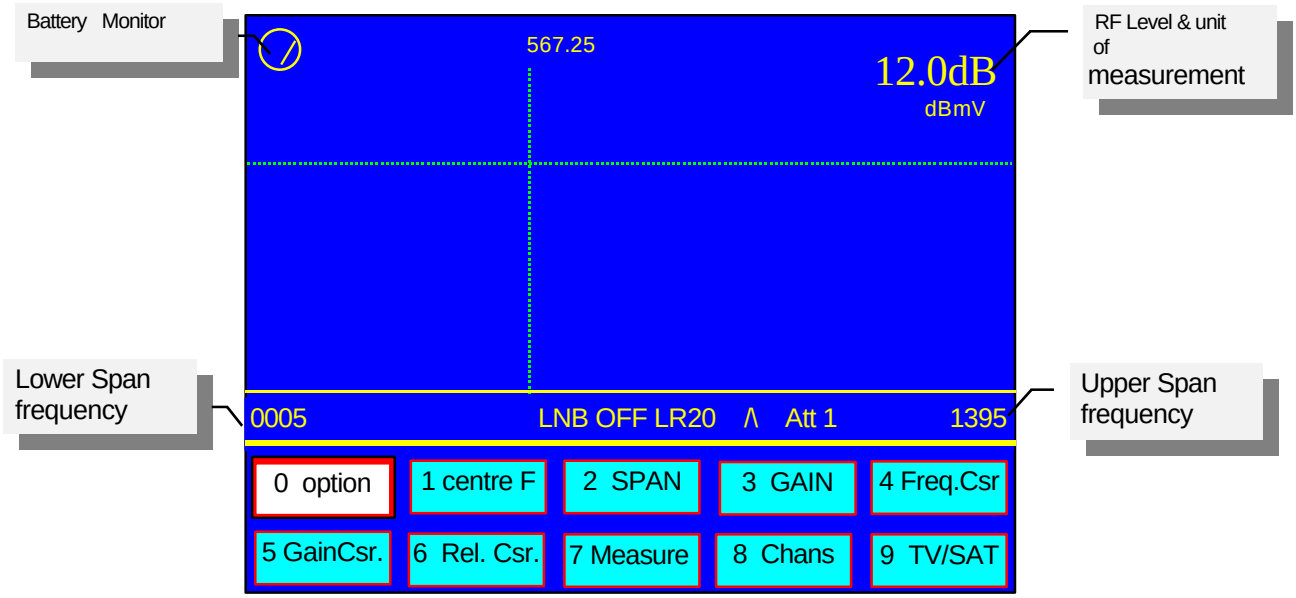
The PEAK HOLD Facility is toggled on/off with each press of the ENTER key indicated on the Status Bar by an Arrow head as below .

Status Bar →

Each subsequent press of the ENTER key switches the peak hold ON / OFF.

Make sure it is OFF when you have finished with the facility.

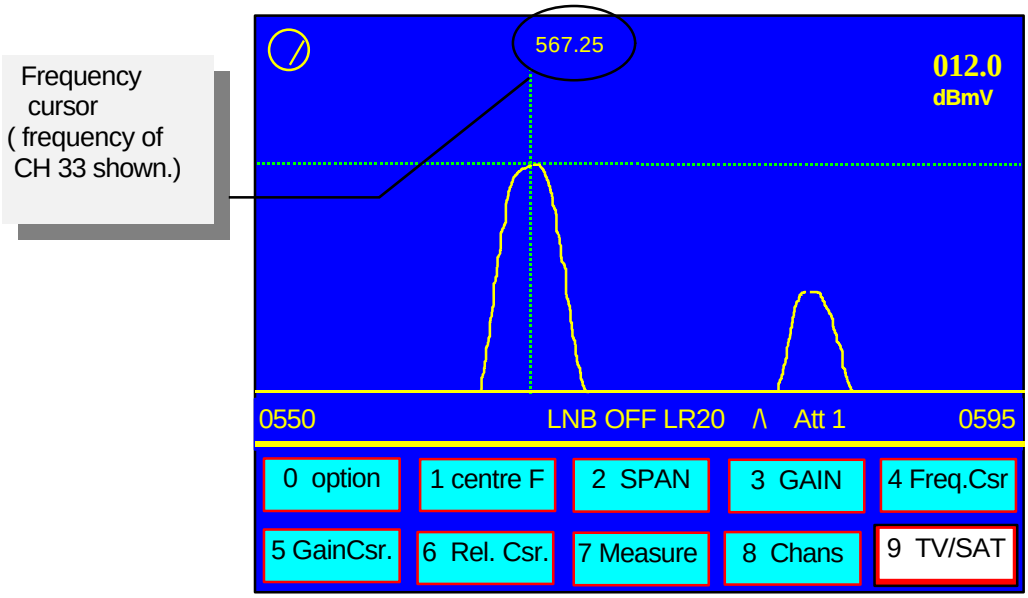
To return to the main menu boxes press the menu key .



How to view a Television picture.

A television demodulator is incorporated into the TVA97 so that the picture of an unscrambled signal can be viewed.

There are two ways to achieve this. The first is from the Spectrum Analyser display. Place the frequency cursor over the carrier to be viewed as below.



Press ' 9 ' on the keypad or use either the ⇐ ⇒ keys to move round the boxes to the TV/SAT box.

Press the ENTER key. The TV picture will appear if it is ' In the Clear '. (a 2nd press may sometimes be required).

To ' Fine Tune ' the picture press ' O ' on the keypad or move round using the joystick control.

Once the FINE box is highlighted as above use the UP/DOWN arrow keys on the joystick to improve the picture quality.

To tune to another channel either…

A/. Use a pre-loaded preset channels by pressing ' 2 ' on the keypad then ENTER key.

You are prompted to enter a preset channel location ie UHF channel 33. Press 3 key twice on the keypad. UHF chan's 21 to 69 have been allocated preset channnel numbers to correspond with their channel number. A full list of the factory loaded presets channels is available on the supplied 31/2" disk. File Name ' PSTCHANS.TXT '

Cont…

How to view a Television picture. *Continued.*

Alternative to the previous method of viewing a TV picture you can directly key in the frequency of a known channel. The method is as follows:-

From within the TV/SAT menu box highlight the box marked ‘ 1’ Freq. As below :-

Once highlighted as above press the ENTER key. You are prompted for a frequency between 5 and 2150 MHz.

For example press keys 1,2, and 8 then the ENTER key. The Screen changes from your current frequency setting to 128MHz. If you want to look at the spectrum display at any time press the menu key .

How to view a Television picture. *Continued.*

- **On Screen Graphics (Toggle On/Off)**

The On Screen graphics boxes can be removed from the display to allow un-hindered viewing of the TV picture. This is implemented by highlighting the MENU box while in TV picture mode as below :-

Pressing the ENTER key removes the menu boxes from the screen .

Pressing any key brings them back. To return to spectrum analyser mode press the menu Key.

How to adjust volume of audio.

- The volume of the Audio from the built in speaker is adjusted from the ‘ Picture mode ‘ sub- menu. Highlight the ‘VOL’ box as previously desribed and use the UP/DOWN arrow keys from the ‘ Joystick ‘

How to use as a video monitor.

- **Video Input Monitor (1Volt Pk-Pk input)**

Within the ' Picture mode ' sub-menu there is a box marked ' Video ' . Highlight this box using ⇐ ⇒ arrow keys on the 'Joystick ' or press ' 4 ' on the keypad as below :-

Press the ENTER key and if a video signal is applied to the'Video Input ' BNC socket it will be seen on the screen. Ideal for monitoring CCTV camera's Etc.

To return to the main menu boxes press the menu key .

How to view video output.

- **Video Output Monitor**

While in ' Picture mode' with a visible picture on the screen of the TVA97, the 'Video Output' BNC socket has a demodulated video signal apparent.

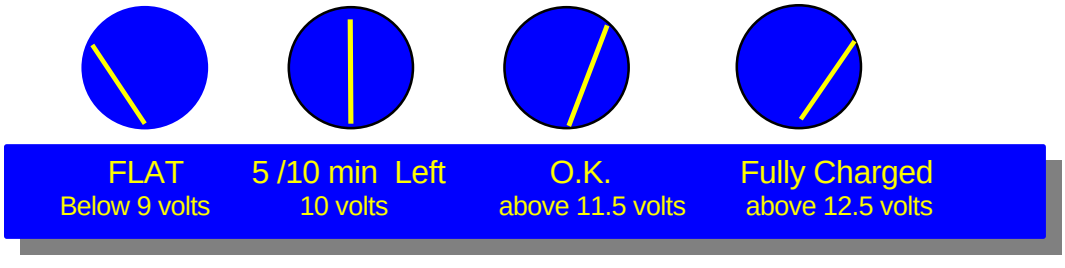
The level is approx. 1 volt Pk-Pk. Into 75 ohms. This signal is ONLY active while a picture is visible on the screen . No video output signal is available while in Spectrum Analyser mode.

Battery Status Monitor (Energy Gauge!)

- **On Screen Battery Status & Its meanings.**

A sort of 'Fuel gauge' is available as an early warning system as to the energy left in the battery.

A word of warning - the monitor acts ***exactly*** the same as a car fuel gauge ie The 'indicated' level of available power left is not linear. Half scale as per diag. Below does not mean you have half of the batteries energy left- What it means more closely is that you have approximately 10 to 15 minutes left.



Time out facility (automatic switch off facility.)

The TVA 97 has the ability to automatically switch off if a key press is not detected within a pre-determined length of time.

The time is entered in 'seconds'. Minimum period being 100 seconds (1min.40) Maximum period being 32000 seconds (over 8 hours). We suggest the best period to be 600 seconds (10mins).

To adjust this time enter it via the 'OPTION' box. Press the ENTER key .

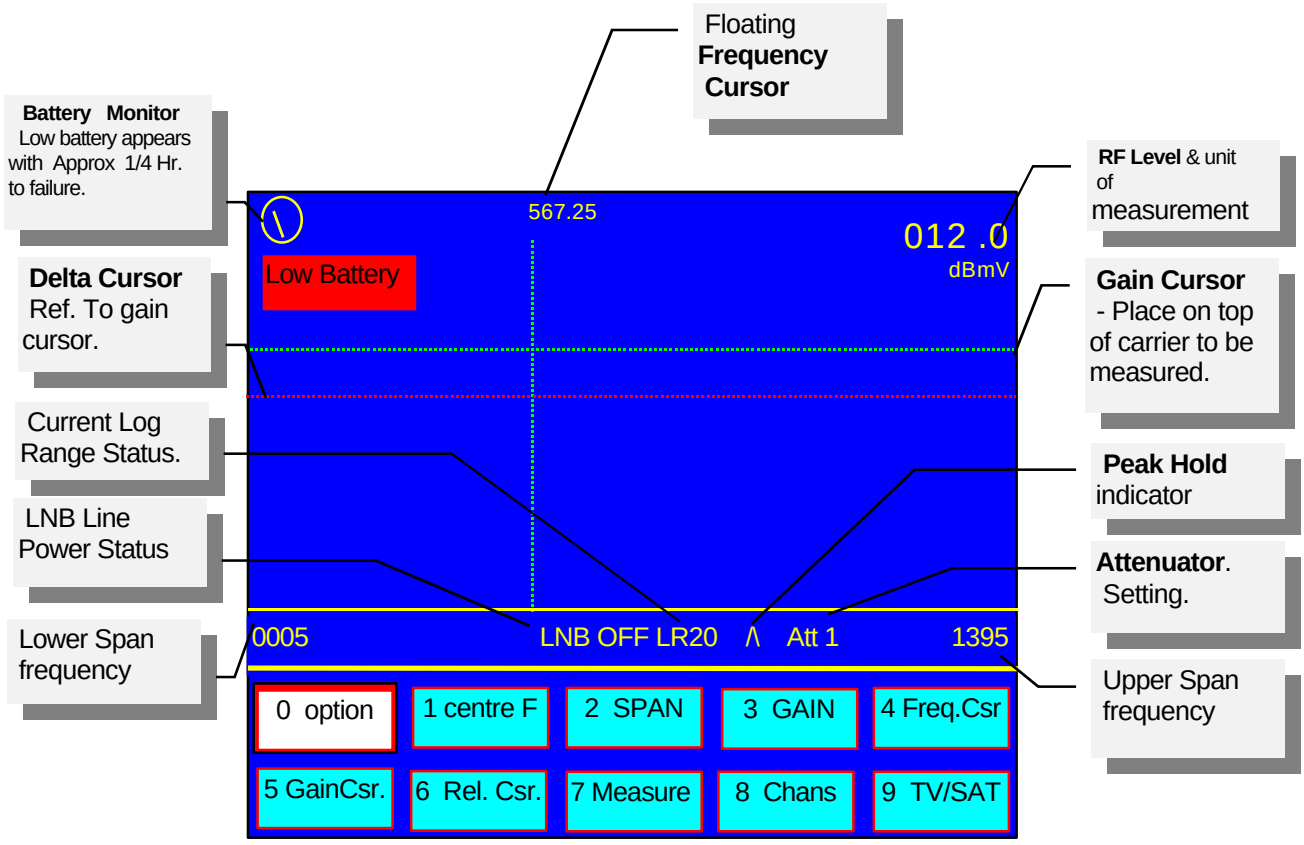
Press '4' on the key pad to highlight ' Timeout' box. Press ENTER again. You are then prompted for a number to be entered.

0 Peak H	1 Save	2 Units	3 Log-R	4 Timeout
5. LNB-V	6. Global	7. BW	3 Fonts	

Enter your preferred switch off delay time(in seconds) and press the ENTER key.

The next time you switch off the TVA97 the delay time is updated.

'ON SCREEN' Symbols and their Meanings



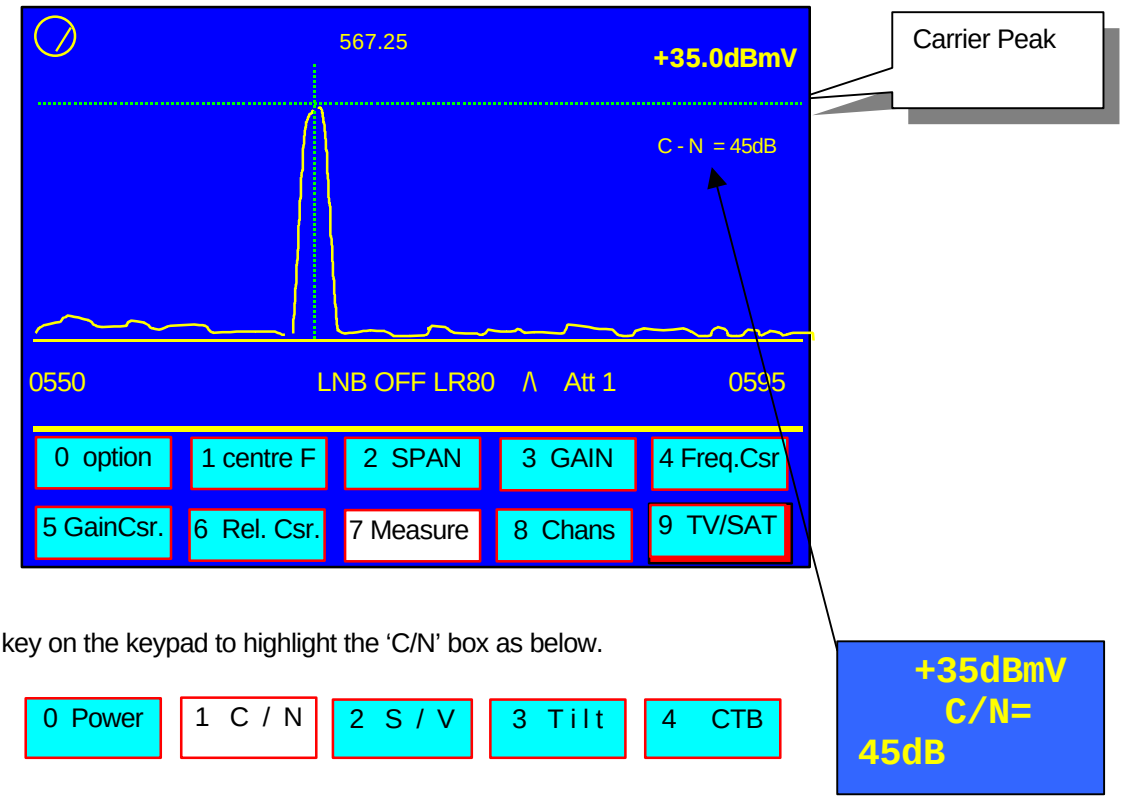
Carrier to Noise measurements – (Analogue only)

- * *See note at the bottom of the page before attempting*

To make a carrier to noise measurement press '**7'** on the keypad to highlight the box as below:-

0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

Press the ENTER key.



Press the **' 1** ' key on the keypad to highlight the 'C/N' box as below.

0 Power	1 C / N	2 S / V	3 Tilt	4 CTB

Press the ENTER key again. You will, after a few seconds get a 'carrier to Noise' figure in the top right hand side of the screen below the RF level reading . If a message ' Not on chan' appears you have not used a preset channel – see below.

Nb. The point at which the TVA97 takes a 'Sample ' of clear bandwidth can be set in the channel plan

It is called " NOISE" and is found at the beginning of the preset channel list.

Default position is 330MHz.

The measurement will not work unless the channel you wish to do the TEST on is part of the downloaded channel plan. Place on a preset before trying to implement this !

Sound toVision Measurements

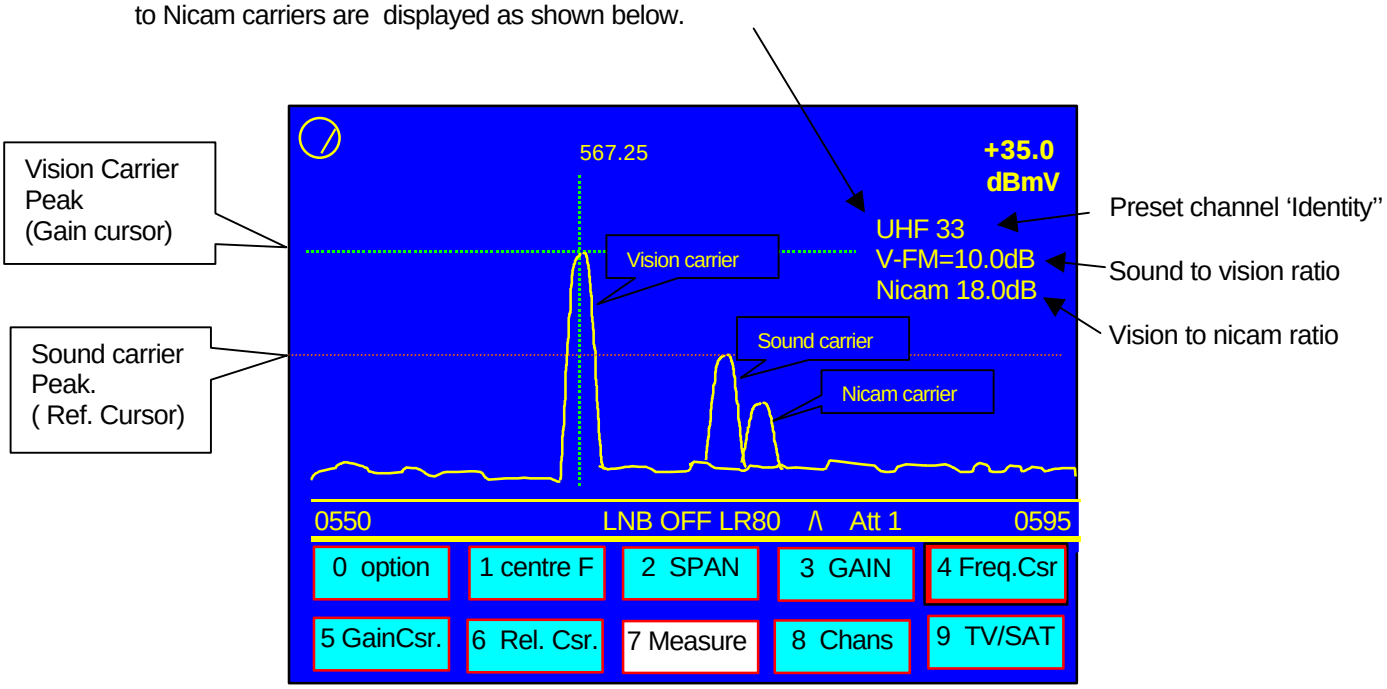
To make an '*Automatic*' Sound to Vision measurement press **' 7 '** on the keypad to highlight the '**Measure** ' box as below:- *See note at the bottom of the page first !*

0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

Press the ' **2** ' key on the keypad to highlight the 'Sound to Vision' (S/V) box as below :-

0 Power	1 C / N	2 S / V	3 Tilt	4 CTB

Then press the ENTER key. After a few seconds the TVA97 Computes the Sound toVision and Vision to Nicam carriers are displayed as shown below.



An alternative method is to place the gain and reference cursors as per diagram above and the sound to vision ratio is given by the figure that will replace the 'Auto' level readings thus :-

To measure the Vision to nicam carrier ratio manually highlight the relative

cursor box.

Press the DOWN arrow key on the 'Joystick' and place the cursor on top of the nicam carrier.

The ratio between the vision and nicam carriers is now given by the dB relative **difference** reading thus :-

The measurement will not work unless the channel you wish to do the TEST on is part of the downloaded channel plan .

Power measurements (Digital carrier analysis)

A Computed Digital Quality Margin (DQM) shown in dB's, is extracted from the Carrier to Noise figure measured by the TVA97 and is available for the following Standards

- QPSK for Satellite TV
- 64QAM for major MSO cable operators
- COFDM for Terrestrial TV

To use the DQM facility it is first necessary to preload a channel plan of 'presets ' using a PC

The measurements will not work unless the channel you wish to do the TEST on is part of the downloaded channel plan .

To make a power measurement on a digital carrier press '**7'** on the keypad to highlight the box as below:-

0 option	1 centre F	2 SPAN	3 GAIN	4 Freq.Csr
5 GainCsr.	6 Rel. Csr.	7 Measure	8 Chans	9 TV/SAT

Press the ENTER key.

Press the **' 0** ' key on the keypad to highlight the 'Power' box as below.

0 Power	1 C / N	2 S / V	3 Tilt	4 CTB	Press ENTER key.

The Sub-menu now looks like this :-

0 Units	1 CTR- F	2 Span	3 Gain	4 BW Tog
5 64 QAM	6 QPSK	7 COFDM		

The 'CTR- F,'Span' and 'Gain' functions act as previously described in this manual.

(See pages 2,4 & 6)

With a digital carrier displayed on the screen as in the diagram 1a.- on the following page make sure you are on the correct Bandwidth for the type of system you are measuring. Ie there are 4 preset bandwidths available and they are:-

6.0 MHz⇒ 7.0MHz ⇒ 8.0MHz (for terrestrial channels) ⇒ 27.5 MHz (for satellite channels)

With the 'Span' box highlighted as above use the UP/DOWN arrow keys on the Joystick to toggle the bandwidth setting in the order as shown above.

• Digital Quality Margin measurements (DQM)

Select the type of system you want to measure ie COFDM etc. In the sample below we show the measurement for a terrestrial COFDM 8.0MHz channel with the TVA97 bandwidth set to 280KHz.

Press the ENTER key. You will, after a few seconds get a Digital Quality Margin figure on the right hand side of the screen as shown :-

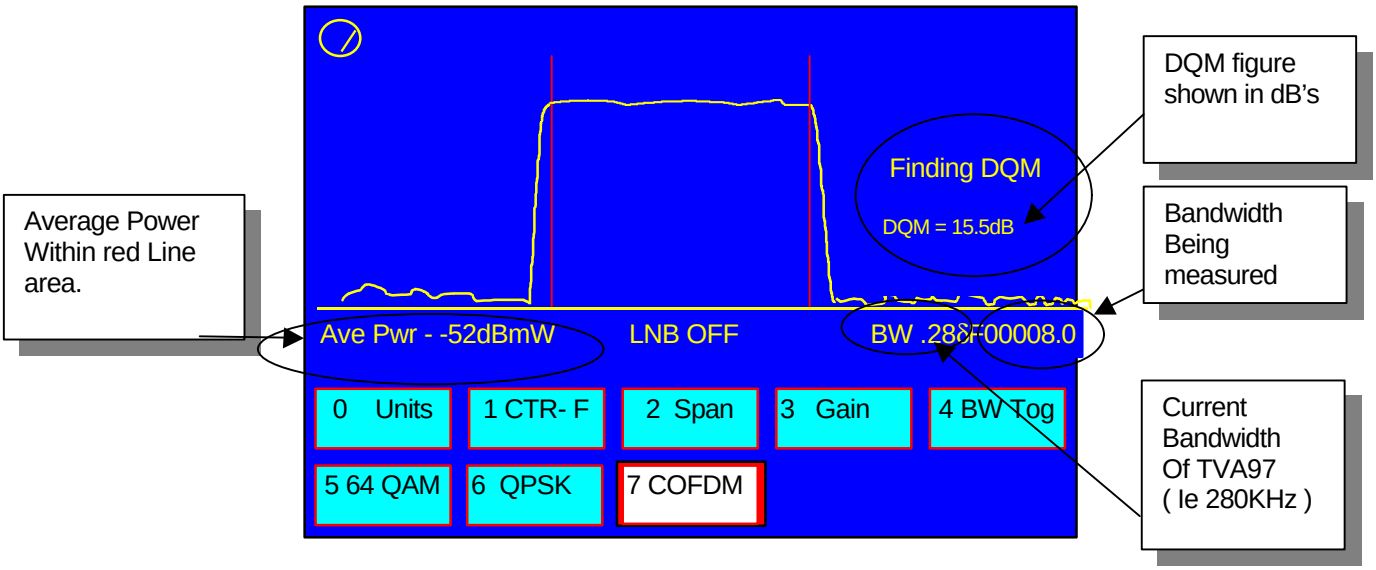


Diagram 1a.

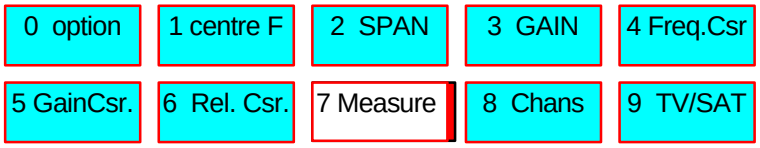
The above sample shows a typical figure from an 'Off-Air ' terrestrial channel.

This means we are in excess by 15.5dB of what is required to obtain a 'good' signal.

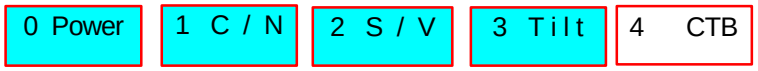
If the DQM was to read 0.00dB our signal would be Poor. With a figure of 15.5dB we would have a safe margin in case of a heavy rain or snow storm. Therefore a figure of only +6.0dB would be very likely to 'Drop out' when there is heavy rain or snow.

Composite Triple Beat Measurements (CTB)

- **Automatic Measurement of the Intermodulation Product of a carrier**.



Press the ENTER Key . From the sub-menu highlight the 'CTB' box as below:-



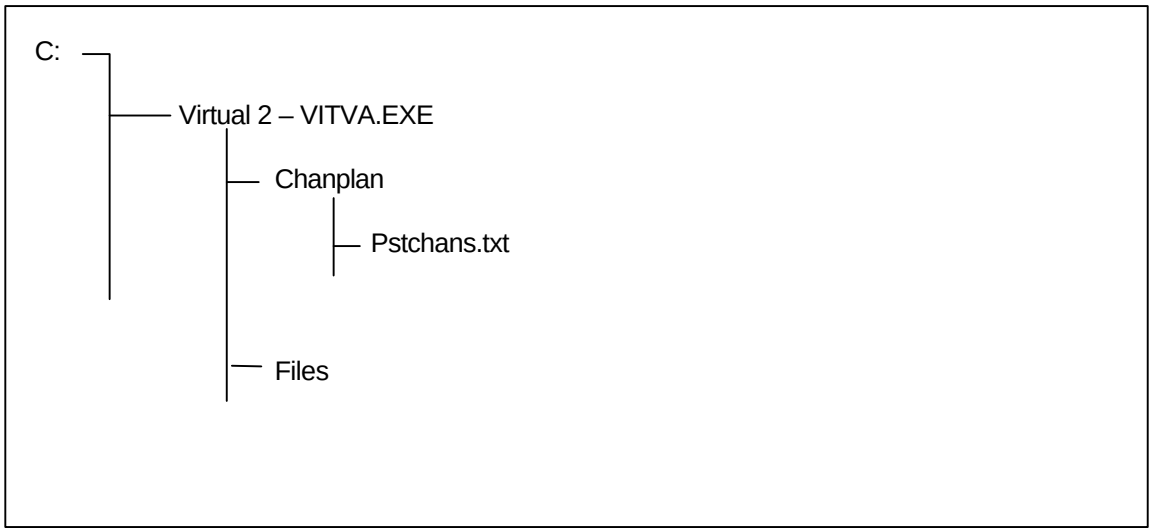
Retrieval of Stored information

- **Downloading Stored screen Information.**

  The TVA97 can store up to 60 'Pages' or screens of the Spectrum Analyser display.

  Load the Software onto your PC by typing 'INSTALL' from the A: prompt.

  The file structure should be the same as shown below:-



Once the programme is loaded Run the programme file - VITVA.EXE

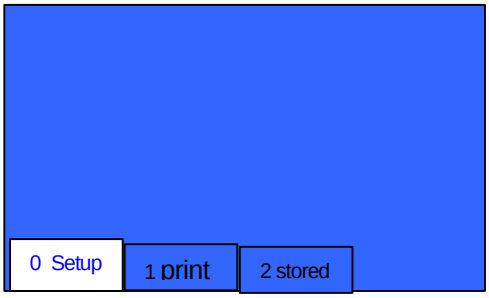
Connect the special RS232 lead which was supplied at the time of Purchase between the TVA97 and either COM 1 or COM 2 whichever is free.

Move to the CONNECT Menu at the top of the screen and press the ENTER key on the computer keyboard.

If the Screen comes up with a duplicate of the screen of the TVA97 you are communicating with the TVA97 !

A Red box will appear if any problem communicating is apparent.

Move to the SETUP Menu press Enter and go down to the Sub-menu called 'COM Port ' Change to the other PORT . Press 'Escape' and try to 'CONNECT' again.



Setup Set clock of TVA97 to that of the PC. So make sure the PC Time is correct !

Print. If you have an old fashioned Dot matrix printer

Once you see a screen as above follow the instructions as necessary.

Instrument Reset

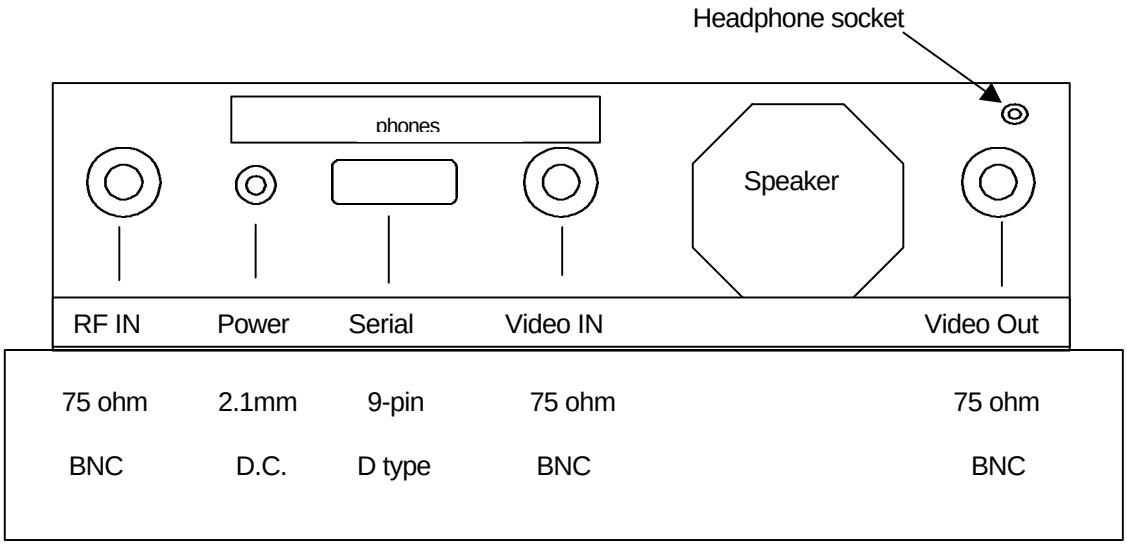
Extraordinary circumstances may cause the TVA97 to Lock all controls and not respond .

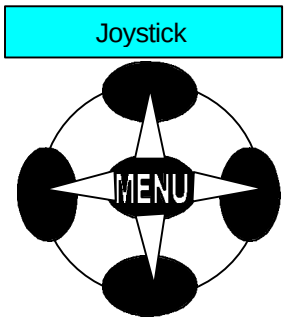
To form a total ‘Hard’ reset press and hold the ‘ON’ key for a few seconds until the instrument switches OFF.

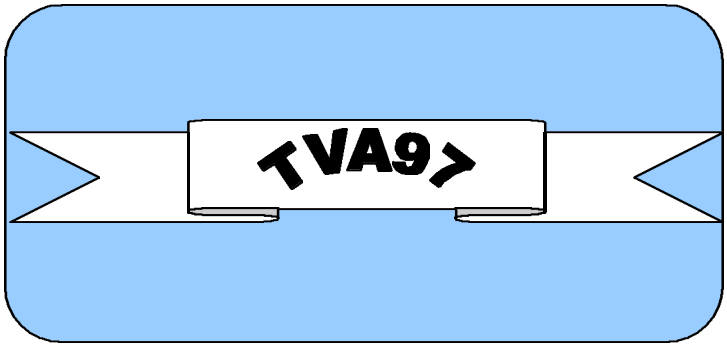
The TVA 97can now be switched back on by once again pressing the ON key and resume as normal.

Connection Interface Panel

• Over view of the connector panel







Technical Specification

- Real-Time Spectrum Analyser:

  - Sweep range: 5 to 2150 MHz.
  - Sweep span: 0 to 1400 MHz. (With 10 presets)
  - Accuracy: <± 1 dB, over whole frequency range and from -10 to +45 °C.
  - Frequency accuracy: < ± 0.01 MHz.
  - Dynamic Log range: 20 dB, 40 dB or 80 dB, user selectable.
  - IF bandwidth: 2 MHz , 280 kHz & 30 kHz, user selectable or automatic.
  - LNB supply: 13volts / 18volts & 22 kHz tone.(any combination)
  - RF input connector: 75 Ω BNC.
  - Input level range: -35 to +60 dBmV.

- Television demodulator

  - Television: Demodulates satellite & terrestrial channels.
  - Video: Demodulates to base-band video & has an input for composite video signals.
  - Sound: Sound is from an in built mylar coned speaker.

- Physical Specification

  - Dimensions: 24 cm × 27 cm × 9 cm.
  - Weight: 3.9 kg.
  - Running time: 3 hours per charge. Charging is from the mains or through a car adapter charging lead.
  - External power supply: The instrument can be run from the mains or from a car using the supplied lead.
  - Temperature range: -10 to +45 °C.
  - Screen: 14.6 cm (6") TFT flat screen.
  - Optical resolution: 750 × 556 pixels.
  - Housing: Glass fibre reinforced, polycarbonate body.
  - Carrying case: Nylon carrying case, incorporating an integral light hood.
  - Comes complete with: Carrying case, batteries, mains charger preset software & RS232 special lead also a car charging lead

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