



Installation, Tuning and Configuration



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15 Witney Way
Boldon Business Park
Boldon Colliery
Tyne & Wear NE35 9PE
Telephone: 0191 519 1455 (+44 191 519 1455)
Fax: 0191 519 1929 (+44 191 519 1929)

Technical Support E-mail: WVTech@CCConcepts.co.uk

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Throughout this manual various examples of window displays and menus are given. In all cases these show software being used on a computer running RISC OS 3.5. Although the functionality of the software remains unchanged, users of computers running RISC OS 2 or RISC OS 3.1 will observe some visual differences.

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TV Tuner: Tuning and Configuration

1 Installing your card

This Guide describes the installation of the TV Tuner expansion card in an Archimedes (A300/A400/A540 series), A5000 and Risc PC computers. It also explains how to tune and configure your system using any of the range of Acorn computers including the A3000, A3010, A3020, A4000 and A4.

Caution: Handling the expansion card

Your TV Tuner card contains components which are sensitive to static electricity discharge; even a small amount can cause electronic devices to suffer and damage may not always show immediately. Faults caused by static are difficult, time-consuming and expensive to trace.

Store the card in its protective bag until you install it. Touch one of the metal screws on the computer case, or a metal object that you know is earthed, before handling the card.

What you should have received

Please contact your supplier if any of the following is missing:

- this Tuning and Configuration Guide,
- TeleCFax User Guide (Teletext card only),
- TV Tuner card in a protective bag (see note),
- floppy disc containing software,
- half-width blanking plate, 'T'-piece and screws,
- product registration form,
- details of Wild Vision Technical Support.

Note: **TV Tuner expansion unit in an external box**

You should have received a box and a power supply in place of the expansion card.

Teletext variant in an external box – you should also have received a sheet giving details on the teletext output.

What is on the disc?

Scrap, *SysMerge* and *System* are supplied under licence and are the copyright of Acorn Computers Limited. If you are using RISC OS 2 please use *SysMerge* to ensure that your own System folder is up-to-date. Instructions on using *SysMerge* are contained in its help file.

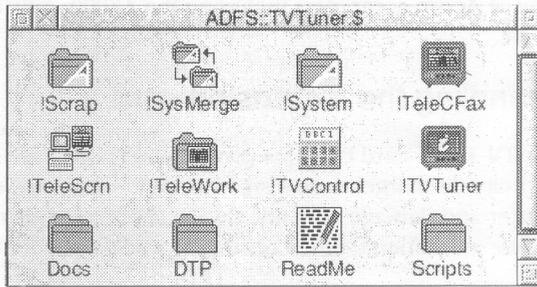


Fig.1 - The directory display of the release disc

Instructions on fitting your expansion card are given below. When you have successfully fitted it, use the disc supplied to tune and configure the software **before** you make any backup copies. Chapter 2 outlines what needs to be done.

Fitting your expansion card

Whilst no special skills are required to fit the TV Tuner expansion card, Wild Vision and your supplier can accept no responsibility for any damage that may result from incorrect installation. If in doubt, consult your supplier.

The only tool required is a No.2 cross-head screwdriver.

Disconnect power

Before installing your expansion card, switch off the power to the computer. Disconnect all other leads to the computer and remove anything that may be on top of the case (a monitor, for example).

Refer to the appropriate fitting instructions for your type of computer.

The Risc PC

After disconnecting the power, remove the cover from the case of the computer by turning and removing the two locking pins at the rear corners of the case. With no expansion cards fitted, the rear panel of the main unit consists of two (or more) chrome blanking plates, each secured by screws at both ends.

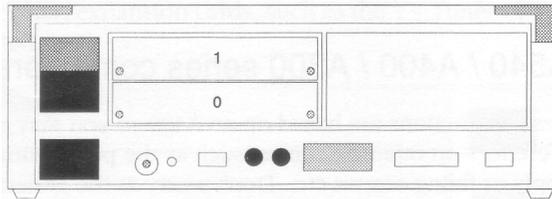


Fig.2 A typical rear panel of the Risc PC

The numbers 0 and 1 in Fig.2 indicate the positions in which expansion cards can be fitted. Other positions may be available if you have other slices fitted.

TV Tuner card positioning

The card contains a tuning unit (the metal box) which occupies a large portion of the card. Because of its size, you **must** ensure that the tuner unit does not touch another card installed immediately above it. Check carefully as it may be necessary to install the TV Tuner card in the top position of a slice.

Caution: if the tuner unit touches other cards, you can damage your computer when you turn on the power.

Remove the rear blanking plate

Unscrew and remove the chosen blanking plate from the rear of the case.

Insert the TV Tuner card (usually from the rear) and, whilst holding it horizontally, push it into the backplane socket. Support the backplane with one hand whilst pushing the expansion card into place. Remember to check on the clearance.

Replace the screws you removed from the blanking plate so as to secure the new card into position. The 'T' piece and screws supplied with the TV Tuner card are not required.

Replace the cover of the computer and refit the locking pins.
Connect your aerial to the socket on the rear of the expansion card.
Your card is now fitted and ready for tuning.

A5000 / A540 / A400 / A300 series computers

These instructions are based on an A400 so you may encounter slight differences on other machines, such as the positioning of the power supply or fixing screws etc. Don't worry as the general procedure for fitting is the same.

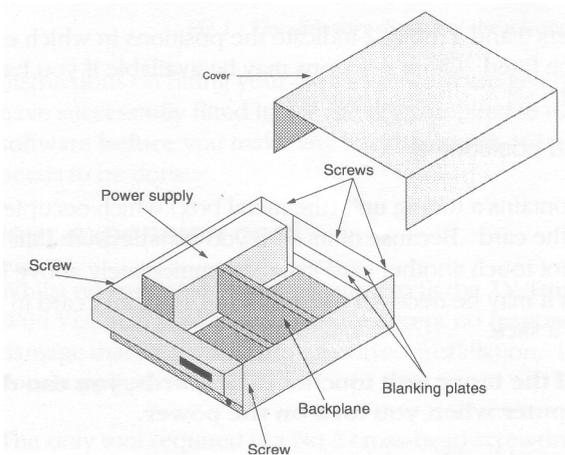


Fig.3 Removing the lid (A400 and A300 series)

After disconnecting the power, remove the cover from the case of the computer. This is secured by five (A540, A400 and A300) or six (A5000) screws. Remove the screws and slide the cover towards the rear of the computer.

If you have an A300 series computer, ensure that a backplane is fitted (Fig.3). This is a vertically mounted circuit board and provides either two or four sockets suitable for expansion cards. If your computer does not have a backplane, you must purchase and fit one before you can install the expansion card.

The A400 series, A540 and A5000 always have a backplane.

With no expansion cards fitted, the rear panel of the main unit consists of three metal blanking plates, each secured to the case by screws at both ends (Fig.4).

The lowest plate (containing various sockets) is secured to the main circuit board and should not be removed during expansion card installation. The upper two plates are temporary fitments that are removed when expansion cards, such as the TV Tuner or Teletext card, are installed.

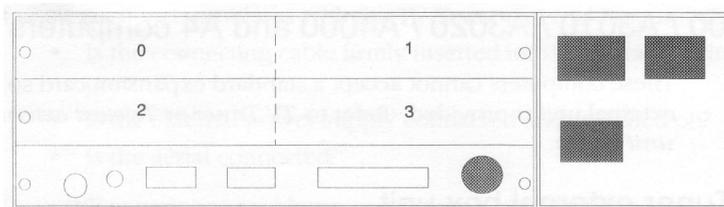


Fig.4 The rear panel of the computer (A300/A400/A540)

One standard width expansion card occupies half the width of the back panel. The numbers 0 to 3 in Fig.4 indicate the positions in which expansion cards may be fitted. A300s fitted with a two-socket backplane only have positions 0 and 2 available.

TV Tuner card positioning

The card contains a tuning unit (the metal box) which occupies a large portion of the card. Because of its size, you **must** install the expansion card in position 0 or 1. (Position 0 for two-socket backplanes.)

Caution: using positions 2 or 3 can damage other cards fitted above the TV Tuner expansion card.

Remove the rear blanking plate

Unscrew and remove the top blanking plate from the rear of the case. Remember, the TV Tuner card may be installed only in position 0 or 1.

Insert the TV Tuner card (usually from the rear) and, holding it horizontally, push it into the backplane socket. Support the backplane with one hand whilst pushing the expansion card into place.

Replace any screws that you removed from the blanking plate. Ensure that the new expansion card is screwed to an adjacent card or to the half-width blanking plate. A 'T' piece and screws have been provided for this purpose.

Replace the cover by sliding it back onto the computer from the rear. Replace the securing screws.

Connect your aerial to the socket on the rear of the TV Tuner card. Your card is now fitted and ready for tuning.

A3000 / A3010 / A3020 / A4000 and A4 computers

These computers cannot accept a standard expansion card so a separate external unit is provided. Refer to *TV Tuner or Teletext external box unit* below.

TV Tuner external box unit

This must be used with A3000, A3010, A3020, A4000 and A4 computers. It can be used with other computer models if you do not want to use an expansion slot for your TV Tuner.

- 1 Plug the connector of the TV Tuner external box unit into the parallel printer port of your computer,
- 2 connect your aerial to the socket on the unit,
- 3 connect and switch on the external power supply.

A note about the power supply

This is a regulated 12v DC power supply rated at 300mA. The 2.1mm power connector has a positive centre pin.

Caution: Wild Vision and your supplier can accept no responsibility for any damage that may result from the use of a third party power supply. If in doubt, consult your supplier or Wild Vision Technical Support.

If problems occur...

All cards are tested before despatch so problems should be rare.

However, if you do experience problems, check:

- Is the computer's backplane correctly installed and working?
- The expansion card is fully inserted into the backplane socket?
- Does the card work in an alternative socket?
- Does the tuner unit (the metal box) touch another card?
- Is the aerial connected?

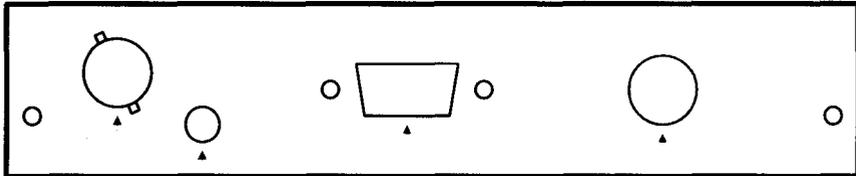
If you experience problems with the TV Tuner external box unit check:

- Is the connecting cable firmly inserted into the parallel printer port?
- Is the external power supply connected and switched on?
- Is the aerial connected?

If you still experience problems, contact your supplier for advice giving details of the tests you have done and the results.

Rear panel connections

Fig.5 shows the connectors on the rear panel of the TV Tuner card. The 9 way D-type connector is used only with the Teletext variant.



mono sound output
(3.5mm jack socket)

aerial input
(female IEC socket)

composite video output
(BNC connector)

teletext output
(9 way female D-type)

Fig.5 - Rear panel connections

Aerial input

Suitable for connection to a UHF television aerial source.

Teletext output

Suitable for connection to a RGB monitor accepting analogue or TTL input signals. Refer to *Changing the link settings for the teletext output*.

Mono sound output

Suitable for connection to a pair of personal-stereo headphones.

Composite video output

Suitable for connection to a video digitiser or a monitor.

2 Connecting a separate RGB monitor

On the rear of the teletext version of the expansion card is a 9-way D' connector suitable for use with an RGB colour monitor. This allows you to display teletext pages on a large screen and can be used to complement teletext reception available via the *TeleCFax* application.

Please note that this is for teletext display only and you cannot watch the TV using a monitor connected in this way. If required, a TV picture is available as a composite video signal via the BNC connector.

Suitable monitors

RGB 'TTL' type

An example of this type of monitor is the Microvitec series (see note), common in schools and on the BBC and Master series computers.

Unfortunately, you cannot use the lead used with the BBCs and Masters as the connector is of the wrong type. You need to purchase a suitable lead.

RGB Analogue type

This type of monitor is likely to be the same as used on your Acorn computer. Common types include the original Acorn AKF11, the Philips CM8833 and the Microvitec series (see note). Multi-sync monitors also fall into this category, examples being the Eizo 9060 and Acorn AKF18.

PC type monitors

These may be referred to as 'VGA' monitors and as such are not compatible with the teletext card. Monitors recommended for use with the Risc PC may also be incompatible.

Note: some Microvitec monitors can be set to accept either a TTL or an analogue RGB input by changing some link settings inside the monitor.

Changing the link settings for the teletext output

There are three links on the Teletext card which may need to be adjusted to suit the monitor connected to the teletext output. These are links LK2, LK5 and LK6. Link numbers are printed in white on the component side of the card. If necessary, consult the diagram in chapter 6, *Technical Information*.

You may need to consult the instruction manual for the monitor (if available) and experiment with the various link setting options described below to find the best setting for your monitor.

If you have an external box version of TV Tuner, then different instructions apply - these are described on a sheet supplied with the box.

LK2 - Select the sync. signal

This link selects the output signal on pin 4 of the Teletext output:

LK2 set 1-2 composite sync. output on pin 4
This makes the teletext output compatible with the video output from the computer. Use this setting if the monitor is known to work with Acorn computers.

LK2 set 2-3 composite video output on pin 4
Use this setting if connecting the teletext output to a SCART connector on your monitor using a suitable lead. Note that the composite video output on pin 4 is then the same as that from the BNC connector on the rear panel; **not** the teletext output as a composite video signal. It is provided on this pin as some SCART inputs expect a composite video signal as a sync. rather than composite sync. itself.

LK5 - Select the polarity of the composite sync.

This link has no effect if LK2 is set to 2-3.

This link selects the polarity of the composite sync. signal on pin 4 of the teletext output. Different monitors expect different polarity sync. signals.

LK5 fitted positive composite sync. signal
LK5 not fitted negative composite sync. signal

LK6 - Select analogue monitor type or TTL monitor type

This link alters the RGB signal levels to suit the monitor type connected to the teletext output.

Caution: if this link is set incorrectly, the signal levels will be incorrect and could damage the monitor. However, you may still obtain a display (although darker or brighter than you would expect).

LK6 set 1-2 for an analogue RGB monitor

LK6 set 2-3 for a TTL RGB monitor

3 Tuning and configuration

Before you can use your TV Tuner you must tune it to receive the television stations available in your area. This process is very similar to that used when you buy a new television or video recorder. If you have purchased the Teletext version, you are also given the opportunity to configure several settings for the *TeleCFax* application.

Using TVTuner

- 1 Check the release disc is not write protected.
- 2 insert it into the disc drive,
- 3 click on the floppy disc icon – this opens a directory display,
- 4 run the *TVTuner* application by double-clicking on its icon,
- 5 click **Select** on the TVTuner icon on the icon bar to open this window:

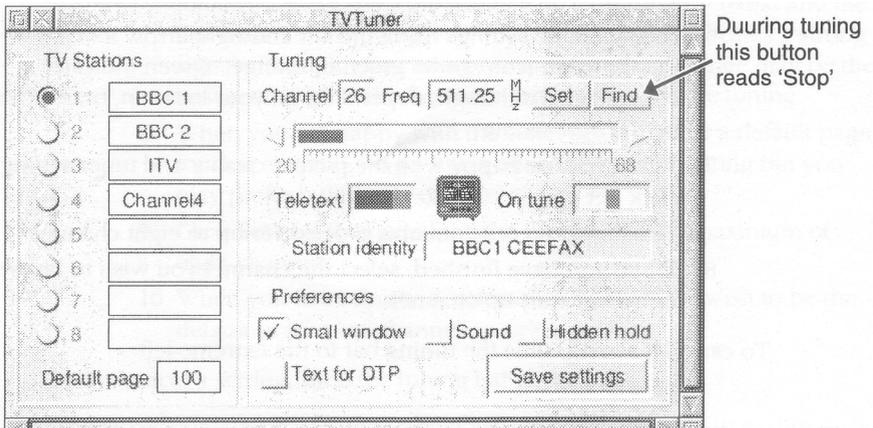


Fig.6. The TVTuner window with four channels tuned

The three sections of this window let you: set the names of the TV channels, set preferences for TeleCFax, and tune your expansion card.

If, when you run TVTuner, a message tells you that a TV Tuner card needs to be fitted, either you have not fitted the card properly or there is a fault. Check that the card is fitted correctly and, if this message continues to be reported, contact your supplier for advice.

Tuning the TV Tuner card (non-Teletext version)

1. Using a suitable lead, connect the video-out socket to your composite video monitor so that you can see a TV picture when it appears.

If you are using a video expansion card (such as Eagle M2 from Computer Concepts), connect the two cards together; that is, video-out to video-in, and run the relevant software so that you can see the TV picture.

2. Select the channel you wish to tune by clicking on the appropriate channel selector in **TV Stations**.
3. Type the channel name into the writable field next to the channel selector; for example, *BBC1* or *ITV*
4. Click **Find** to begin automatic programme searching. Alternatively, drag the tuner bar to a position that corresponds roughly to the channel setting you require and then click **Find**.
5. Keep an eye on your monitor or computer for a picture to appear. You can use the **Find/Stop** button if necessary.
6. Fine-tune the settings using the left and right arrow icons until the **On tune** icon shows green or orange. Green indicates a strong signal although, depending on your location, orange may be the best setting.
7. When you are happy with the picture quality and tuner setting, click **Set**.
You may then continue this process for up to eight channels.
8. When you have finished, select the channel you wish to be the default or start-up channel.

To cancel a setting, slide the tuning bar to the extreme left.

Tuning the TV Tuner card (Teletext version)

1. If you have a suitable RGB monitor, you may wish to plug this into the card before you begin. It is not vital to do this but it can help to obtain the best reception when fine tuning.
2. Select the channel you wish to tune by clicking on the appropriate channel selector in **TV Stations**.
3. Type the channel name into the writable field next to the channel selector; for example, *BBC1* or *ITV*
4. Drag the tuner bar to a position that corresponds roughly to the channel setting you require and then click **Find**.
5. The search stops when a teletext signal is found, however weak. You may need to continue searching for the best signal.
6. When the search finds a valid teletext signal, it displays the station identity to tell you which TV station is being received. Use **Find** to tune into the TV station you require.
7. A TV station is successfully tuned when an uncorrupted station identity is displayed, the teletext TV icon shows teletext and the **On tune** icon shows green or orange. Green indicates a strong signal although, depending on your location, orange may be the best setting. Use the fine tune arrows for accurate tuning.
8. When you are happy with the tuner setting, enter a default page for that channel. Page 100 is often the normal setting but you may prefer a different one.
9. Click **Set** and then continue the process for the maximum of eight channels.
10. When you have finished, select the channel you wish to be the default or start-up channel.

To cancel a setting, slide the tuning bar to the left.

After reading the TeleCFax manual, you may also select any preferences you require.

Saving the tuning configuration

When all the required channels are tuned, click **Save settings** to save the current tuning information. This saves a *!Settings* file in the TeleWork resources folder so ensure that your disc is not write protected when you do this.

It is now advisable to make a backup copy of your release disc and work from that. Keep the original disc in a safe place in case your copy becomes damaged. If you are unsure how to make a copy of a floppy disc, please refer to the *User Guide* supplied with your computer.

If appropriate, you can now install your new applications onto a hard disc or network. If you are happy that the configuration is set correctly you may prefer to leave *TVTuner* on floppy disc as it will only rarely be used and can easily be run from there.

Installing the applications onto a hard disc

If you have a directory reserved for applications, then this would be an ideal place to use. Create a directory called TV or *Teletext* and open its directory display. The applications may be installed by dragging them from the directory display of the release floppy disc to the directory display of your hard disc.

Copy these files from the release disc:

- *!TVControl*
- *!TeleWork*
- *!TeleScrn*
- *!TVTuner* (optional)

If you have the Teletext version, also copy:

- *!TeleCFax*

Docs, *DTP* and *Scripts* do not need to be copied but they do contain information and examples you may find useful to begin with. It is a good idea to copy them to your hard disc now and delete them when you no longer need them.

Note: When you have finished transferring the applications and files, double-click on the hard disc copy of *TeleWork* to ensure that it will be used in preference to the floppy disc version.

Installing the applications to a network

Because these applications rely on an expansion card, installation to a network file server or disc sharer should only be seen as being for your convenience. Files are already set to public access: that is, **WR/r**.

If you do not have the Teletext version, follow the instructions for installing the software to a hard disc.

If you have the Teletext version, installation is again similar to a hard disc with the exception of the *TeleWork* resources folder. If you expect to create scripts that will be automatically run when you run *TeleCFax*, you **must** install the *TeleWork* folder in an area where you have both read and write access. Further information on the use of the *TeleWork* folder is given in the TeleCFax manual.

A note about TV station identities

Most television companies broadcast their name as part of the teletext transmission; this is received and displayed by TVTuner and TeleCFax. However, some companies do not transmit their identity and this may lead to some confusion. Please do not worry if a station identity is not displayed.

4 Using *TVControl*

TVControl is a small application that lets you change channels when using TV Tuner.

TVControl is ideally used when a separate display monitor is connected to the video-out socket or you are using your expansion card in conjunction with a real time digitiser or multi-media expansion card such as the Eagle M2 from Computer Concepts. If you have not connected the video output of the expansion card, this application has little use.

Using *TVControl*

Double-click on *TVControl* load it. The icon on the icon bar shows the currently selected channel:

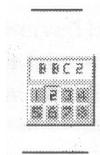


Fig. 7 -.*TVControl* installed on the icon bar, channel 2 selected

Clicking **Select** on the *TVControl* icon opens a window similar to the following:



Fig.8 The *TVControl* window

The window may be moved around the desktop to any suitable position although it cannot be altered in size. The eight buttons allow you to change channels and the channel names appear in an 'LCD' display. (These correspond to those set using TVTuner.)

In the example shown in fig.8, **channel 2** is selected (**BBC 2**) and, of the eight possible alternatives, only four have been tuned.

Click on a button to change channels. Clicking on buttons with no identifying number or on greyed-out buttons has no effect.

You can also change channels by Adjust-clicking on the TVControl icon on the icon bar. (**Adjust** is the right-hand mouse button.) This steps through the channels skipping any untuned channels. This is useful if you wish to save desktop space by not opening the main *TVControl* window.

If you have the Teletext version, you cannot use *TVControl* at the same time as *TeleCFax*.

5 Advice on teletext and TV reception

Because teletext uses a digital signal, it is important that the expansion card receives a good quality signal. Poor signals, and therefore reception, can lead to corruption of the teletext data received by the computer.

Unfortunately, this corruption can occur even when the picture quality displayed on a television is satisfactory. The main cause of problems are reflections of the transmitted signal caused by nearby hills or tall buildings. Reflections can also be caused by poor installation of your aerial and cables.

Reflections caused by hills or buildings

This problem can often be observed by looking closely at your television picture for signs of ghosting or faint secondary images on the screen. This problem may be cured by installing a different aerial/transmitter or adjusting its position but in most cases it is wise to consult a specialist aerial contractor for advice.

Reflections caused by poor installation

Aerial installations feeding a single receiver (a teletext card or television) rarely suffer from this problem but where a single aerial feeds several receivers, care must be taken to avoid problems. These types of reflections can rarely be seen on normal television pictures although you may observe a slight picture 'sharpening'.

A simple rule to apply when connecting more than one receiver to a single aerial feed is **not** to simply join the cables but to use either a 'passive splitter' (where signal strength is strong) or a 'distribution amplifier' (where signal strength is weak). A passive splitter requires a receiver plugged into every socket at all times to minimise reflections. Use 75ohm termination plugs in any unused sockets.

If you use a distribution amplifier, it is not always vital to terminate each unused socket outlet, as in the case of the passive splitter, although it might be wise to do so.

If overall cable runs are long, a distribution amplifier can be helpful as it compensates for signal losses within the cable. It is worth noting, however, that if your installation suffers reception problems due to local tall hills or buildings, a signal amplifier may make things worse.

Very large installations

In large distribution systems such as offices, hotels or flats a problem known as 'pre-imaging' produces ghosting of television pictures. This is because not only does the aerial receive signals but the cable within the building also acts as an aerial producing a secondary signal. If you observe this problem, ensure that the cable connecting the receiver to the wall is short, of the highest quality and that all connections are electrically sound. If problems persist the system may need adjusting and you are advised to seek help from a specialist aerial contractor.

For further information...

Contact:

Engineering Information Department
BBC Broadcasting House
LONDON
W1A 1AA
Telephone: 0181 752 5041

Outside the UK you should contact your equivalent organisation for advice.

6 Technical information

TV Tuner card link settings

The following diagram illustrates the position of various link headers on the TV Tuner card. **Do not alter any of these link jumper settings unless you are sure what you are doing. If in any doubt, first contact Wild Vision Technical Support.**

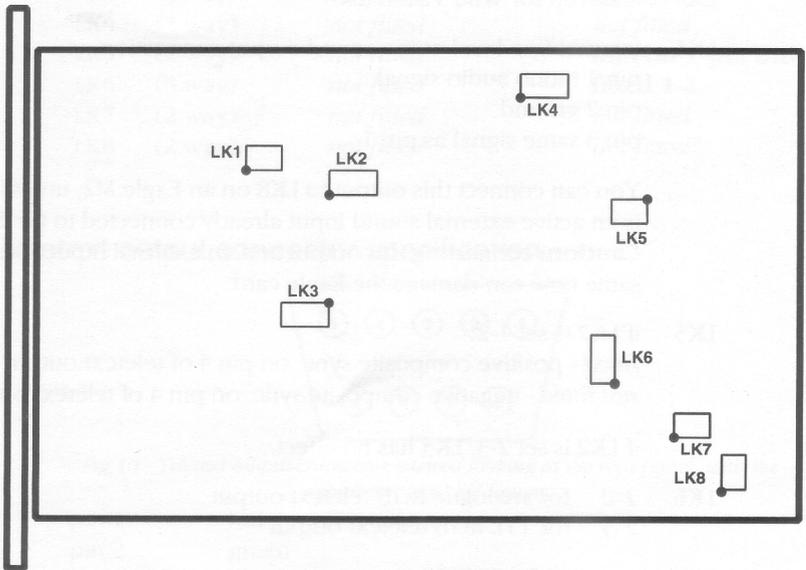


Fig.9 - View of expansion card from component side showing link positions

For all link headers, the white dot on the corner of the white rectangle surrounding each link header indicates pin 1.

- LK1 internal composite video output connection; pin1 = signal Can be used instead of, or as well as, external BNC connector.
- LK2 1-2 composite sync. on pin 4 of teletext output (pin compatible with video output of the computer), polarity of sync. set with LK5.
2-3 composite video on pin 4 of teletext output
This link is intended for use with a 9 way D-type to SCART connector lead.
- LK3 reserved for Wild Vision use
- LK4 internal line-level mono sound output connection.
pin 1 mono audio signal
pin 2 ground
pin 3 same signal as pin 1
You can connect this output to LK8 on an Eagle M2, unless there is an active external sound input already connected to the Eagle. **Caution:** connecting this output and an external input at the same time can damage the Eagle card.
- LK5 if LK2 is set 1-2:
fitted - positive composite sync. on pin 4 of teletext output
not fitted - negative composite sync. on pin 4 of teletext output
if LK2 is set 2-3, LK5 has no effect.
- LK6 1-2 for analogue RGB teletext output
2-3 for TTL RGB teletext output
- LK7 reserved for Wild Vision use
- LK8 reserved for Wild Vision use
- For more information on LK2, 5 and 6 refer to *Changing the link settings for the teletext output.*

Default link settings

The factory settings for links on TV Tuner cards are as follows. This list does not apply to external box units.

Link	standard version without teletext)	teletext version (
LK1 (2 way)	<i>not fitted</i>	<i>not fitted</i>
LK2 (3 way)	<i>not fitted</i>	fitted 1-2
LK3 (3 way)	fitted 2-3	fitted 2-3
LK4 (3 way)	<i>not fitted</i>	<i>not fitted</i>
LK5 (2 way)	<i>not fitted</i>	link on 1 pin only
LK6 (3 way)	<i>not fitted</i>	fitted 1-2
LK7 (2 way)	<i>not fitted</i>	<i>not fitted</i>
LK8 (2 way)	<i>not fitted</i>	<i>not fitted</i>

Teletext output connector specification

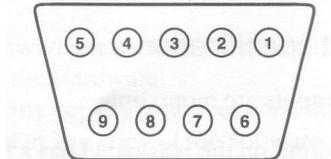


Fig 10 - Teletext output connector, viewed looking at the rear panel, with the expansion card held away.

pin 1	red
pin 2	green
pin 3	blue
pin 4	composite sync. or composite video (refer to LK2)
pin 5	no connection
pins 6,7,8,9	ground

Aerial input specification

9.5mm female 75 ohm IEC socket
maximum insertion force of a plug inserted in this socket = 50 N
withdrawal force between 10 N and 50 N

Tuning frequency range

461.07 MHz to 852.06 MHz (channel 20 to channel 68 inclusive).

Video output specification

Output impedance of composite video output = 75 ohm.

This applies to: the video output on the rear panel; the internal video output via LK1; and the composite video output via pin 4 of the teletext output when LK2 is set 1-2.

Audio output specification

The audio outputs are mono only.

The audio output on the rear panel has a low output-impedance (a maximum of 40 ohm at human audible frequencies) suitable for driving a set of personal-stereo style headphones.

The internal audio output via LK4 is a line-level audio output suitable for driving a line-level audio input, such as that found on the Eagle M2. It has a maximum output impedance of 10 kohm.

End-user agreement

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