

LINN

# KIVOR TUNBOKS/INDEX

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## Installation Guide

### Introduction

The KIVOR TUNBOKS/INDEX now incorporates a RAID (Redundant Array of Independent Disks) hard drive system, along with a new motherboard, Intel processor and improved CD-ROM. The addition of RAID will improve data reliability by protecting the stored audio data from the consequences of hard drive failure.

Redundancy is built-in to the system by using a group or 'array' of four drives to store the audio data. All data is written onto two independent drives, ensuring there is always a good copy of the data if one drive should fail. If a single hard drive fails then the KIVOR will continue to function normally. The failed drive should be replaced promptly as the redundancy protection will not be restored until a replacement drive is installed and rebuilt into the array.

The KIVOR offers a built-in notification system that sends an e-mail alert when a drive fails and the RAID array has lost redundancy. This allows a replacement drive to be installed before any audio data is lost. Once the replacement is installed the KIVOR will automatically re-build the 'lost' drive using the back-up data from the other drives, restoring the array to its original condition and ensuring that no audio data is lost.

### E-mail Notification Requirements:

1. The KIVOR must be connected to an Ethernet network or be configured with a working dial-up connection
2. The KIVOR must have working Internet access for sending e-mails outside the local network
3. The KIVOR must be configured with a working e-mail address and server account settings

### Items Required

- Ethernet connection (ADSL / cable) or dial-up connection for CDDB (Compact Disc DataBase) lookup
- Standard RJ45 network patch cable
- RS232 null modem cable
- A PC connected to the network (wireless or cable connection)
- LinnTek control software running on a PC
- E-mail settings for customer's ISP account – e-mail address and SMTP server required to use e-mail notification feature

### Environmental Considerations

Care should be taken to ensure sufficient ventilation is provided to the KIVOR unit to allow efficient operation of its cooling systems. KIVOR units should be installed in climatically controlled spaces – operation outside of the limits below may shorten the lifespan of internal components and invalidate the product warranty.

The KIVOR units are designed to be mountable in a 19" rack. Ensure that the ventilation areas at the front and rear of the unit are not covered when fitting the KIVOR into a rack, and that the unit is securely mounted. For optimal operation, do not place the KIVOR system near any other rack-mounted item that may subject the KIVOR to excessive heat or interference.

### Temperature limits:

- System powered on: 10° C to 35° C (50° F to 95° F)
- System powered off: 10° C to 50° C (50° F to 110° F)

### Humidity:

- System powered on or off: maximum 80%

## Ethernet Configuration

The KIVOR TUNBOKS/INDEX should be connected to a network by a qualified network technician. Since different network configurations will vary considerably, we can not cover all possible variations within the scope of this document. However, the following instructions will apply to most mainstream residential routers and provide enough information for any network to be configured:

1. Before powering on, connect the KIVOR to your network switch, router or access point using a standard RJ45 network cable.
2. Switch on the KIVOR. If the KIVOR is powered on before the Ethernet is connected it will not recognise a valid Ethernet connection until it has been power cycled.
3. Confirm that the KIVOR Ethernet connection LED illuminates to show that it is connected to the network. This is the yellow LED located on the right side of the Ethernet port on the back panel. The LED on the left side indicates the network speed: orange = 1000 Mbps (Gigabit); green = 100 Mbps; not illuminated = 10 Mbps.
4. Check the router configuration and ensure it has a valid range for static IP addresses on the local network. Consult the network administrator if you are unsure of this.
5. Allocate and assign a static IP address to the KIVOR. A static IP address must be used to ensure correct user interface operation. The use of DHCP is not recommended or supported.
6. Now connect the KIVOR to your PC serial port using a null modem cable. The cable should be connected to a spare RS232 port on the back of the KIVOR and the other end should connect to a serial port on your PC.
7. If you have not already done so, install the Linntek utility on your PC. Run Linntek. The first time Linntek is run it will try to connect to the KIVOR using **COM 1** – if you are using a different com port then please let the application time out before selecting the correct port number within **Settings** (right-click on Linntek title bar and choose **Settings** from the menu). If you have any problems using the PC com port please consult the network administrator.
8. Once the application has successfully connected via RS232 you should see at least one album (normally Linn Records sampler) that has been pre-installed on the unit. Check that basic functions such as **Play** and **Stop** are working correctly – if you have already connected the KIVOR to your entertainment system but can't hear any audio when you play an album then check that the KIVOR has been correctly wired up within the entertainment system.
9. Right-click on the Linntek title bar, choose **Configuration** from the menu and select the **Ethernet Settings** tab (see fig. 1).

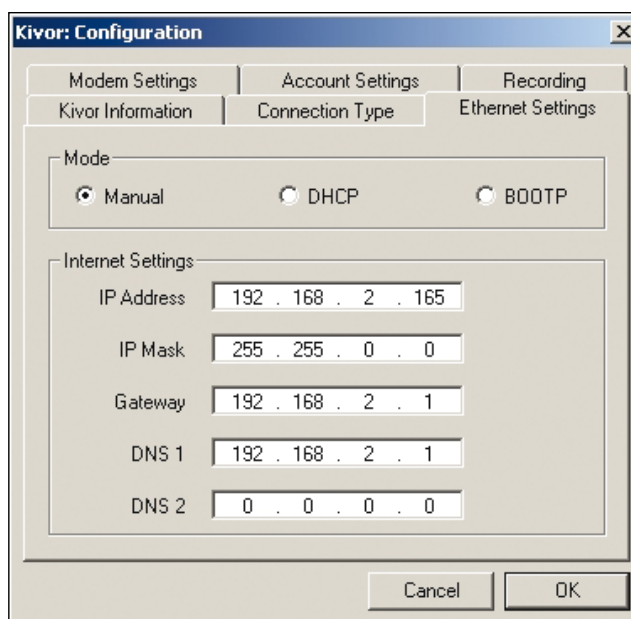


Fig. 1 - Linntek, KIVOR: Configuration – Ethernet Settings

10. Ensure **Mode** is set to **Manual**.
11. Complete the **Internet Settings** for your network configuration (sample settings shown in fig. 1):
  - **IP Address:** enter the designated static IP address assigned to the KIVOR.
  - **IP Mask:** enter the network IP Mask (also known as subnet mask).
  - **Gateway:** enter the Gateway (usually the router IP address)
  - **DNS:** Enter the DNS settings as supplied by your ISP or, alternatively, use the **Gateway** address here and the router will resolve DNS for you (recommended in most cases)
12. If you are using the Ethernet connection for the CDDDB lookup you must also select **Ethernet** under the **Connection Type** tab.
13. Click **OK** to confirm the new settings for the KIVOR Ethernet card.
14. Now the KIVOR Ethernet port is configured it should be possible to connect the Linntek control utility to the KIVOR by using the network connection. To do this, right-click on the Linntek title bar and select **Settings** (see fig. 2).
15. Click **OK** and then exit the **Linntek** utility by closing the window completely (click on the X in the top right corner of the application).
16. Open the application again by clicking on the **Linntek** desktop icon. Linntek should now be connected via Ethernet (you may disconnect the null modem cable to verify this).

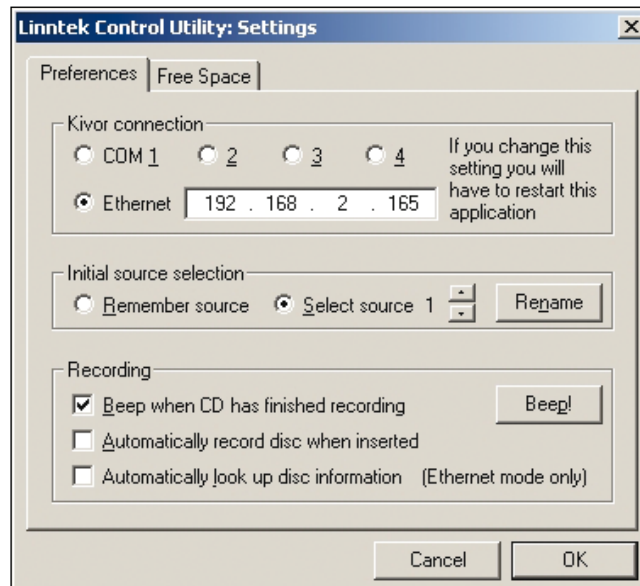


Fig. 2 - Linntek Control Utility: Settings

## E-mail Notification Configuration

To configure the e-mail notification, the KIVOR TUNBOKS/INDEX must first be put into **Standby**.

1. Open the **Linntek** utility, right-click on the title bar and select **Close and KIVOR: Standby** (the unit will remain powered up and you will still hear fan and hard disk activity).
2. Open Internet Explorer or a web browser on a PC connected to the same network as the KIVOR. Within the browser address bar type the IP address of the KIVOR and press **Return** to open the KIVOR web interface (see fig. 3).

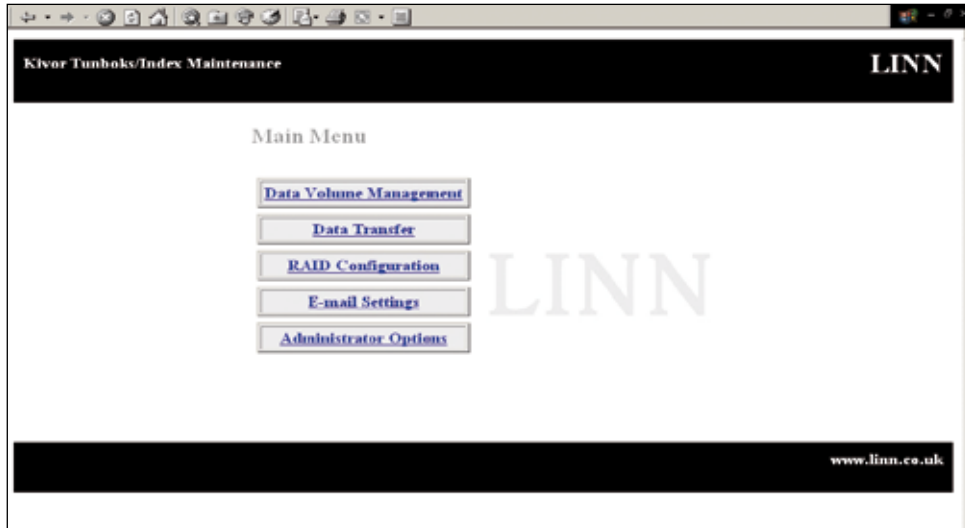


Fig. 3 - KIVOR Web Interface

3. Click on the **E-mail Settings** link to configure the e-mail account to be used (see fig. 4).
  - Linn recommend that the customer's own e-mail account (as provided by their ISP) be configured as the sender of any e-mail notifications. Linn cannot troubleshoot e-mail configuration problems where the e-mail account used to send notifications does not correspond to the customer's own account.

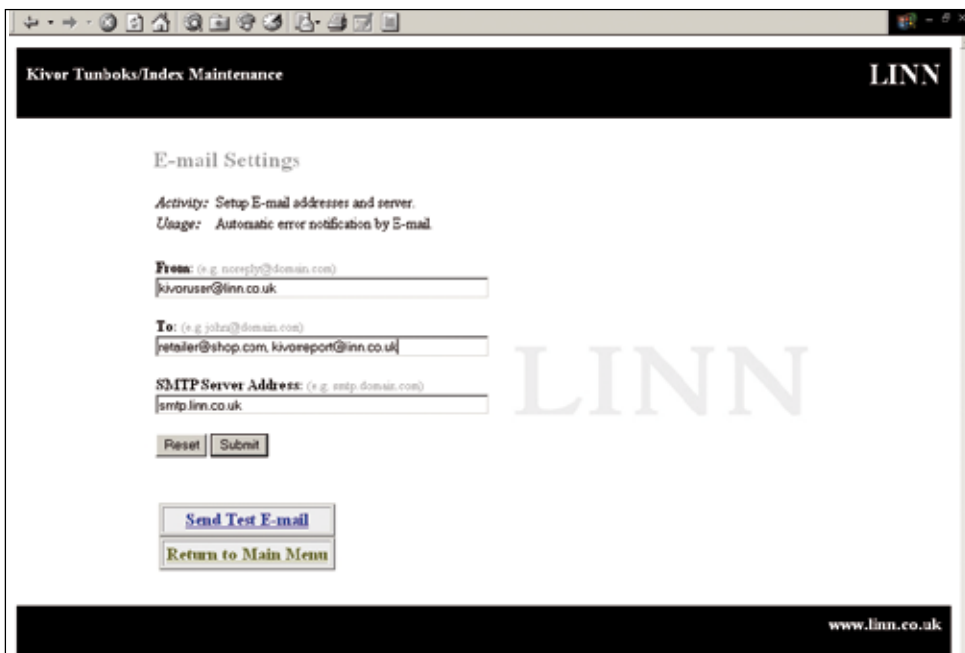


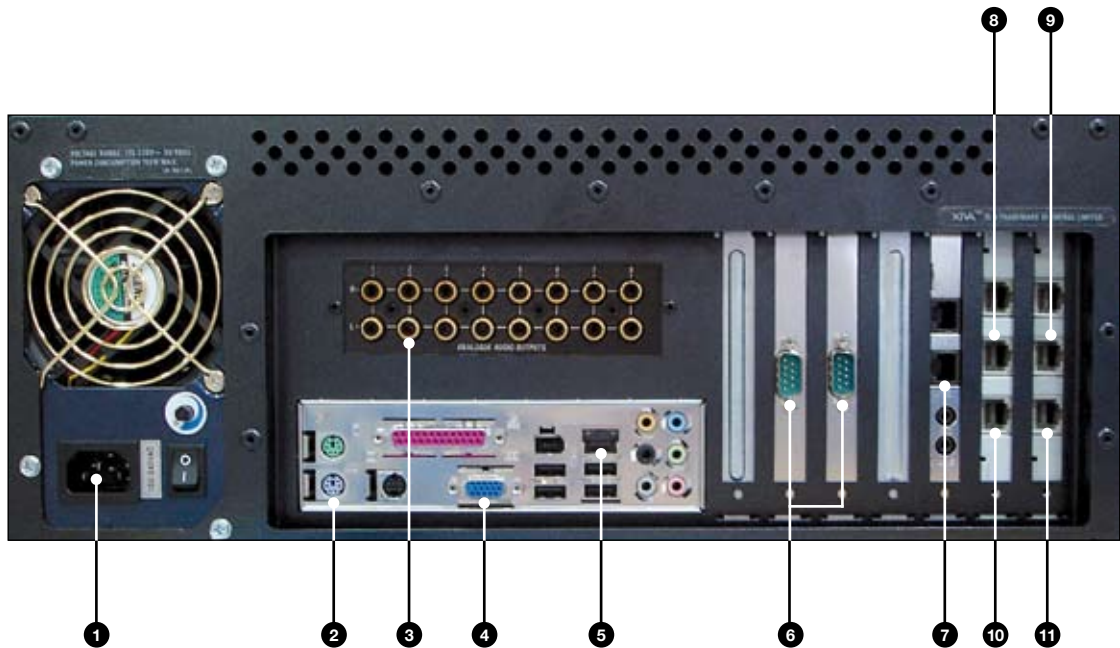
Fig. 4 - KIVOR web interface: E-mail Settings

4. Enter details for the e-mail accounts to be used to send and receive error notifications:
  - **From:** enter the email address of the account to be used to send notifications from (normally the customer's ADSL or cable account).
  - **To:** enter the recipient's e-mail address (normally the installer's own account). Multiple recipients can be entered using a comma to separate individual e-mail addresses. Linn recommend that you add an additional e-mail address rather than replacing the default [kivorreport@linn.co.uk](mailto:kivorreport@linn.co.uk), ensuring that Linn receive a copy of any e-mail notification indicating a failed drive.
  - **SMTP Server Address:** enter the address for the SMTP server that holds the sender's e-mail account (normally the SMTP server used by the customer's ISP account).
5. Click the **Submit** button to save the settings.
6. Click the **Send Test E-mail** link to send a test e-mail. Confirm that this is received at the destination.
7. Power cycle the KIVOR to complete installation.

### **Drive replacement**

See <http://info.linn.co.uk/> for detailed instructions on replacing drives in your KIVOR TUNBOKS/INDEX.

## Back Panel



- ❶ **Mains power input / power switch** Connect to the mains supply using the mains lead provided
- ❷ **Keyboard** For Linn installer or Linn dealer use
- ❸ **Analogue audio outputs** Only available on KIVOR INDEX – 8 pairs of line outputs for connection to a pre-amplifier
- ❹ **VGA monitor output** For Linn installer or dealer use
- ❺ **Ethernet** For connection to an Ethernet (Broadband / ADSL) network (use 10/100/1000 BASE-T cable)
- ❻ **Comm 1 & 2** For connection to a Linn KIVOR LINNK\*, PC or third-party control device (see Getting Started guide)
- ❼ **Modem** For Internet connection to a telephone line (use supplied RJ-11 cable)
- ❽ **Sources 1-4 to Linn OKTAL** Only available on KIVOR TUNBOKS
- ❾ **Sources 9-12 to Linn OKTAL** Only available on KIVOR TUNBOKS
- ❿ **Sources 5-8 to Linn OKTAL** Only available on KIVOR TUNBOKS
- ⓫ **Sources 13-16 to Linn OKTAL** Only available on KIVOR TUNBOKS

\* If you wish to use your KIVOR TUNBOKS or INDEX in a Linn KNEKT system, the unit must be connected via a Linn KIVOR LINNK

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