.: www.totalrecallvr.com :.

Total Recall VR LinX Altus

Quick Start Guide

September, 2019
Guide Issue 25.0
Total Recall VR Release 11.9.0

Prolancer

Related Documents:

[1] Prolancer Pty Ltd, Total Recall VR web site. Available from: http://www.totalrecallvr.com/.

[2] Prolancer Pty Ltd, Prolancer web site. Available from: http://www.prolancer.com.au/.

[3] Prolancer Pty Ltd, Total Recall VR Deployment User Guide, 25.0, September 2019

[4] Prolancer Pty Ltd, Total Recall VR Embedded GUI User Guide, 25.0, September 2019

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1. Preface

1.1. Conventions

Our guides use several conventions to highlight certain words and phrases and draw attention to specific pieces of information.

1.1.1. Notes & Warnings

We use the following visual styles to draw attention to information that might otherwise be overlooked:

Notes are tips, shortcuts or alternative approaches to the task at hand. Ignoring a note should have no negative consequences, but you might miss out on a trick that makes your life easier.

Important boxes detail things that are easily missed: configuration changes that only apply to the current session, or services that need restarting before an update will apply. Ignoring the information will not cause data loss, but may cause irritation and frustration.

Warnings should not be ignored. Ignoring warnings will most likely cause data loss.

1.1.2. Typographic Conventions

We use typographic conventions to call attention to specific words and phrases. These conventions, and the circumstances they apply to, are as follows.

Example	Meaning
Select **Add** to create a new ...	Locate the button or menu item named "Add" on the screen; navigate to it using the [Up] and [Down] keys and then press the [Select] key to initiate the action.
Press [Select] …	Locate the key named "Select" on the control keypad and then press it.
Enter *Commission* ...	Locate the field named "Commission" on the screen; navigate to it using the [Up] and [Down] keys and then enter

	a value.
Choose **Country** ...	Locate the field named "Country" on the screen; navigate to it using the [Up] and [Down] keys and then repeatedly press the [Select] key to select the desired option.
Tick **Active User** ...	Locate the check box named "Active User" on the screen; navigate to it using the [Up] and [Down] keys and then press the [Select] key to place a visual tick in the box.
Un-tick **Active User** ...	Locate the check box named "Active User" on the screen; navigate to it using the [Up] and [Down] keys and then press the [Select] key to remove the visual tick in the box.
Enter *3** ...	Enter "3*" using the keys on the numeric keypad.

1.1.3. Procedures

We use numbered sequence of steps to define procedures for performing certain tasks. For example:

Procedure Title

1. This is the first step of the procedure.

2. This is the second step of the procedure.

    a. This is the first sub-step of step 2.

    b. This is the second sub-step of step 2.

3. This is step three.

1.2. We Need Feedback

If you find a typographical error in this guide, or if you have thought of a way to make this guide better, we would love to hear from you.

Please submit your feedback using the feedback form on our web site: http://www.prolancer.com.au/contact/feedback.

If you have a suggestion for improving the guide, then try to be as specific as possible when describing your suggestion. Otherwise, if you have found an error, please include the section number and some of the surrounding text so we can find it easily.

2. Introduction

2.1. Thank You

Congratulations on your purchase of a Total Recall VR professional audio logging and call recording system. Thank you.

Total Recall VR is a professional audio logging and call recording system which is self-contained, fully featured and cost-effective. Enterprises and governments worldwide use it to create electronic records of many forms of audio communication including telephone, 2-way radio, broadcast radio, public address, room microphones and much more.

2.2. About This Guide

This guide contains information intended to get you recording with your new Total Recall VR as quickly as possible.

However, to enjoy the maximum benefit from your purchase we recommend that you carefully read the following additional documents:

- Total Recall VR Deployment User Guide

- Total Recall VR Embedded GUI user Guide

3.   Pre Installation

3.1.   Unpacking

Please use care and assistance when unpacking, lifting and moving Total Recall VR.

> ⚠️ DO NOT DROP Total Recall VR. It contains sensitive electronic components.

Check the box for damage. A crushed box, holes, or water damage, for example, could indicate that Total Recall VR has been damaged. Open the box and inspect Total Recall VR and associated accessories.

> ℹ️ If Total Recall VR appears damaged then contact your supplier, or us, right away. Save all packaging and if possible take photos that clearly show the damage to all packaging and Total Recall VR.

Check that you have received the following in the box, in addition to the Total Recall VR:

1. Two power on/off keys.

2. Power cord.

3. Cross over network cable.

4. Four cage mounting screws and nuts.

5. USB thumb drive that contains Total Recall VR manuals (including this one) as well as Total Recall VR PC applications.

> ℹ️ If items are missing then contact your supplier, or us, right away to arrange replacements.

> ⚠️ DO NOT misplace the power keys. Keep one in a safe place while using the other.

3.2. Front Panel

The front panel of your Total Recall VR features a built-in LCD screen which is fitted in an adjustable screen flap, built-in control keypad, DVD disc drive and easy access filter.
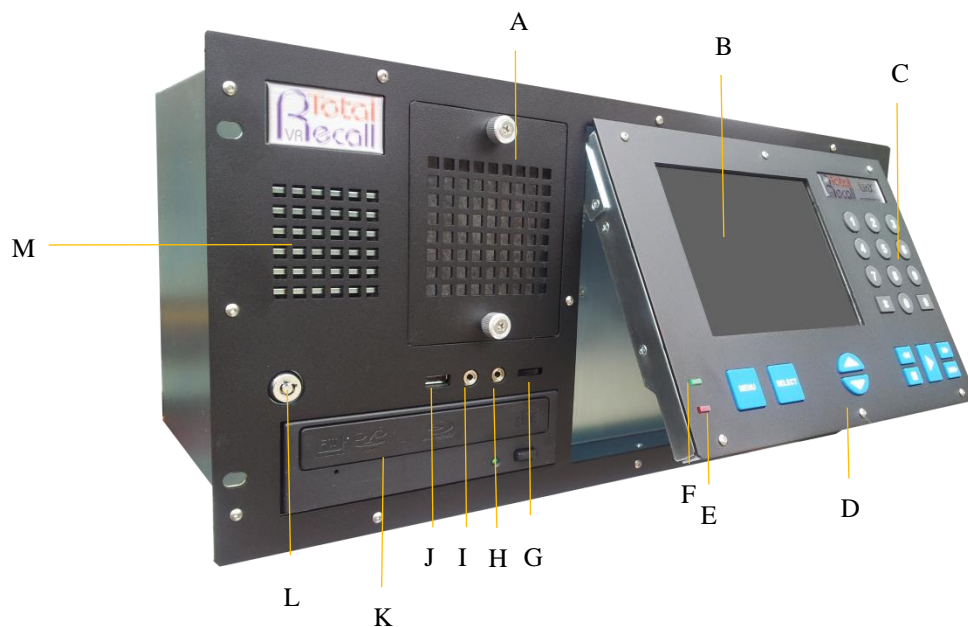
In summary:

Item	Description	Note
A	Air filter	
B	LCD screen	Built-in LCD screen.
C	Control keypad	Built-in custom control keypad.
D	Adjustable flap	Move the flap up/down for better viewing experience.
E	Hard disk activity LED	Flashes when the hard disk is in use.
F	Power LED.	Flashes when the screen is in standby mode. Otherwise, always on.
G	Volume control	Adjust the audio volume while monitoring or re-playing recordings.
H	Line-out connector	3.5mm standard audio line-out connector. Connect this output to an external audio amplifier to listen to audio while monitoring or re-playing recordings.
I	Headphones connector	3.5mm standard headphones connector. Attach headphones to this connector to listen to audio while monitoring or re-playing

		recordings.
J	USB 2.0 port	Connect a standard USB key to use as a Total Recall VR archive device.
K	BluRay R/W disc drive	Use this drive to create archives of recordings on CD, DVD and BD discs.
L	Power on/off key switch	
M	Speaker	Built-in 2W audio speaker.

3.3.   Back Panel

The back panel of your Total Recall VR has a fixed set of standard connectors. In addition, it may have a number of expansion slots which are used, when necessary, to fit hardware for recording audio from different analogue sources.

Back panel for current LinX Altus units:
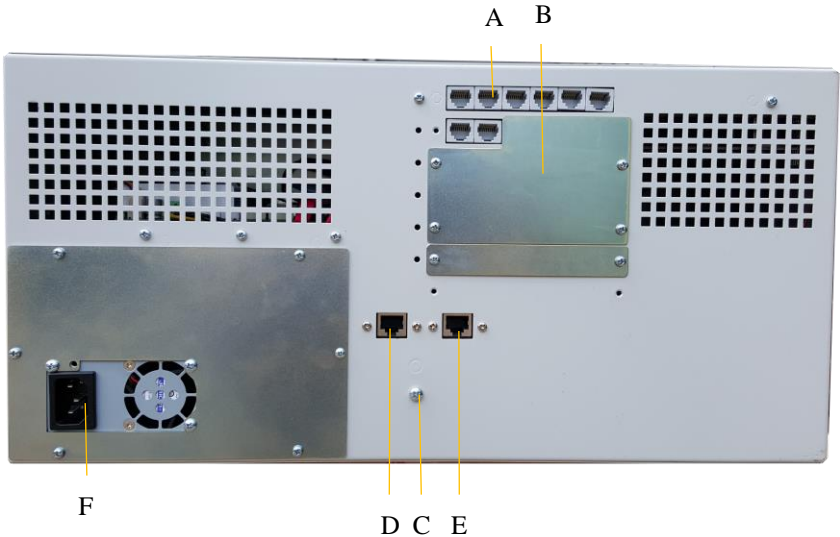
Back panel for older LinX Altus units:
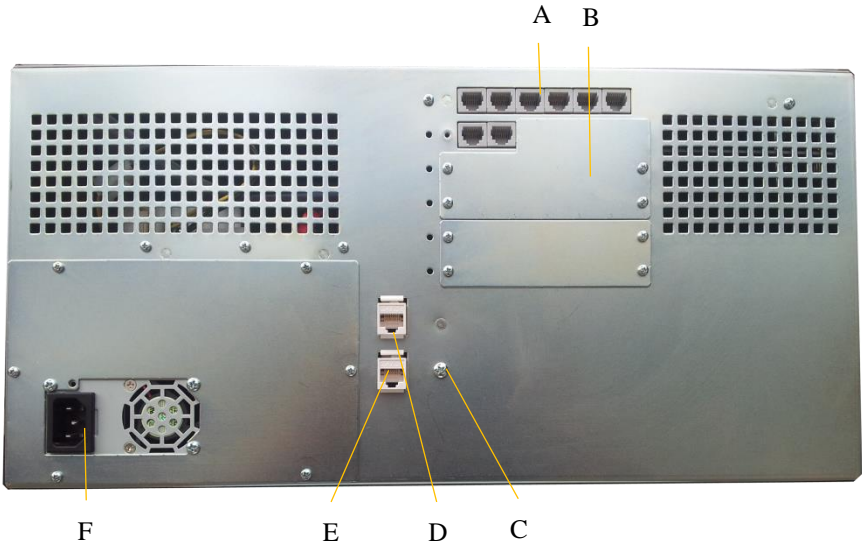
In summary:

Item	Description	Note
A	Analogue channel connectors	Your system supports up to 72 analogue recording channels.
B	Analogue channel expansion slots	Additional analogue recording channels can be fitted.
C	Earthing point	Attach earthing cable to this point.
D	LAN port	Total Recall VR 'LAN 1' port. We recommend you use this port to connect Total Recall VR to you enterprise LAN.
E	LAN port	Total Recall VR 'LAN 2' port. We recommend you use this port to record VoIP calls and RTP streams.
F	IEC power socket	Connect 100-240VAC power.

3.4. Colour LCD Screen

The colour LCD screen is the main display which shows the various screens that are part of the Embedded Graphical User Interface (GUI) [4].

The screen has a built in mechanism that extends the life of the screen. The screen backlight turns off automatically after 5 minutes of inactivity on the control keypad.

> Press any key on the control keypad to turn the screen backlight on at any time.

3.5. Control Keypad

Total Recall VR uses a custom control keypad.

The following table has a complete summary of all key functions:

Key	Context	Function
[Menu]	A main screen	Navigates (cycles) between the three main screens: Logging, Search and Options Menu.
	Dialog window	Automatically moves the cursor to either the **OK** or **Cancel** button, saving keystrokes. Note that it does not actually activate the function that is attached to the button. The [Select] key does this.
[Select]	Button	Activates the function attached to the button.
	Check box	Toggles the state of the check box.
	Input filed	Cycles through the set of pre-defined values if the input field has a set of pre-defined values.
	Recording on the Logging Screen	Toggles (start/stop) live real-time monitoring of a recording in progress
	Recording on the Search Screen.	Starts replay. Same as pressing the **[▶]** key.
[▲]	Recording list	Moves the screen cursor to the recording before the current one.
	Dialogs	Moves the screen cursor to the previous GUI control or button.
[▼]	Recording list	Moves the screen cursor to the recording after the current one.
	Dialogs	Moves the screen cursor to the next GUI control or button.
[▶]	Recording on the Search Screen.	Starts re-play.
	Active re-paly.	Pauses re-play.
[▶▶]	Active re-play.	Fast forwards.
	Recording on the Search Screen.	Shows the next group of 1000 recordings that are younger (start time) than the group already on the display.
[▶▶ ▶]	Active re-play.	Double speed fast forward.
[◀◀]	Active re-play.	Rewinds.

	Recording on the Search Screen.	Shows the next group of 1000 recordings that are older (start time) than the group already on the display.
[■]	Active re-play.	Stops re-play.
	A main screen	Locks the user interface and logs out the current user.
[0] to [9]	Entry field	Inputs the digit specified on the key.
[*]	Entry field	Inputs *.
	Recording on the Logging or Search Screen.	Tags or un-tags the recording.
[#]	Input field	Inputs # or clears (deletes) the current value.
	Active re-play.	Activates "sticky play" mode.
	Recording on the Logging or Search Screen.	Locks and un-locks the recording.

3.6. Hardware Options

Your Total Recall VR may have been fitted with some of the following hardware options to customise it to better fit your environment.

3.6.1. Solid State Disk (SSD)

This option replaces the internal 3.5" AV-GP hard disk with a solid state disk (SSDs).

This option can be combined with the RAID Disk option. If this is the case, then this option replaces the 2.5" AV-GP hard disks with SSDs.

3.6.2. Mobile Hard Disk

This option replaces the internal 3.5" AV-GP hard disk with a 2.5" AV-GP hard disks that is designed to operate in mobile environments (control centre vehicle for example).
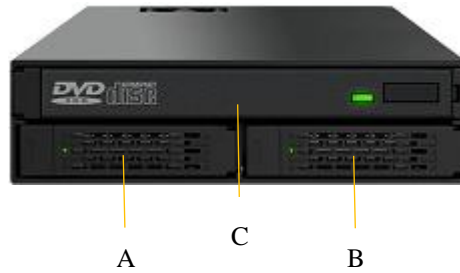
3.6.3. RAID Disk

This option replaces the single internal 3.5" AV-GP hard disk with two externally accessible 2.5" AV-GP hard disks in a hot-swap RAID-1 configuration.

When fitted, the hardware for this option occupies the same space as the standard 3.5" BluRay R/W disc drive.

A slim BluRay R/W disc drive is also part of this option so archiving to BD/DVD discs remains available when this option is fitted. However, archiving to CD discs is not possible.

This option can be combined with the Solid State Disk (SSD) option. If this is the case, then two SSDs in a hot-swap RAID-1 configuration will be fitted instead of the two 2.5" AV-GP hard disks.

In summary:

Item	Description	Note
A	Disk caddy with a 2.5" AV-GP hard disk or SSD.	RAID disk 1.
B	Disk caddy with a 2.5" AV-GP hard disk or SSD.	RAID disk 2.
C	Slim BluRay R/W disc drive.	Use this drive to create archives of recordings on DVD and BD discs. Note: it is not possible to use CD discs with this disc drive. You must use DVD or BD discs.

3.6.4. Double Audio Storage

This option replaces the internal 3.5" AV-GP hard disk with double capacity 3.5" AV-GP hard disk.

This option can be combined with the Solid State Disk (SSD) option. If this is the case, then this option replaces the internal 3.5" AV-GP hard disk with double capacity SSD.

3.6.5. Replicator

This option adds the hardware that is necessary to replicate recordings and metadata to a removable 2.5" hard disk or SSD in real time.

Replication is similar to archiving in that it creates an archive. However, the major difference from archiving is that replication happens continuously and in real time rather than on ad-hoc basis or at regular intervals (for example daily). Further, replication uses a standard 2.5" hard disk or SSD that can be detached from the recorder and attached to a PC via a USB interface to explore the archive on the disk with one of the Total Recall VR PC applications.

When fitted, the hardware for this option occupies the same space as the standard 3.5" BluRay R/W disc drive.

A slim BluRay R/W disc drive is also part of this option so archiving to BD/DVD discs remains available when this option is fitted. However, archiving to CD discs is not possible.
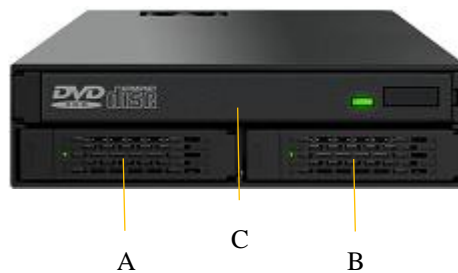
In summary:

Item	Description	Note
A	Disk caddy with a 2.5" hard disk or SSD.	The system will replicate recordings to this disk drive as long as there is space left on it.
B	Empty disk caddy.	This disk caddy is not used and is reserved for future use.
C	Slim BluRay R/W disc drive.	Use this drive to create archives of recordings on DVD and BD discs. Note: it is not possible to use CD discs with this disc drive. You must use DVD or BD discs.

By default, this option comes with a single 2.5" hard disk with 1TB capacity. However you can request a 2.5" hard disk or SSD with different capacity at the time of purchase.

In order to use your own 2.5" hard disk or SSD with this option you must prepare it as follows:

1. Select a disk drive with a SATA interface and maximum capacity of 2TB. Drives with capacity of more than 2TB are not supported.

2. Configure the drive with an MBR partition table. Drives with a GPT partition tables are not supported.

3. Label the drive with label TRVRARCHIVE (all capital letters). Drives with other labels, or no label at all, are not supported.

4. Create a single partition on the drive.

5. Format the partition with the NTFS or FAT32 file system. Drives with the FAT32 file system perform better. You must complete a full format of the drive. Drives that are formatted with the quick format option will not work.

This option includes a single portable enclosure with USB 3.0 interface for a 2.5" disk drive or SSD. You can use it to access the archive on the 2.5" hard disk or SSD with Total Recall VR PC applications.

To explore the archive on the replica disk drive:

1. Stop replication on the recorder and detach the caddy with the replica disk drive from the recorder.

2. Place the caddy with the replica disk drive in the portable enclosure with USB interface.

3. Attach the portable enclosure to a USB port on a PC that is running one of the Total Recall VR PC application.

4. The Total Recall VR PC application will detect the new drive and the archive on it and allow access to the archive.

3.6.6. Dual Hot-Swap Power Supply

This option replaces the standard 250W flex form factor power supply with a 400W dual hot swap power supply.

When fitted, the hardware for this option occupies the same space as the standard power supply.

D   E   F

G

A   B   C
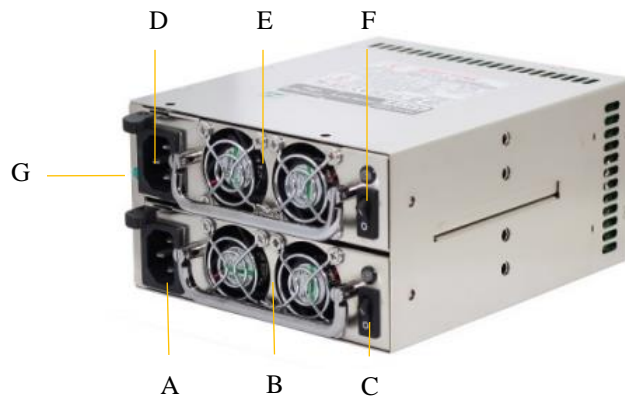
In summary:

Item	Description	Note
A	IEC power socket for power module 1.	Connect 100-240VAC power.
B	Power module 1.	
C	Power on/off switch for power module 1.	Set this switch to the on position (I) to enable power to the system.
D	IEC power socket for power module 2.	Connect 100-240VAC power.
E	Power module 2.	
F	Power on/off switch for power module 3.	Set this switch to the on position (I) to enable power to the system.
G	Audible alarm mute switch.	Press this button to mute the audible alarm (beeping) which is activated by the power supply when one of the power module has failed.

3.6.7. DC Power Supply

This option replaces the standard 250W flex form factor power supply with a 300W 12, 24 or 48VDC DC-DC power supply.

When fitted, the hardware for this option occupies the same space as the standard power supply.

In summary:

Item	Description	Note
A	DC power terminals.	Connect DC power. This can be either 12, 24 or 48VDC based on the power supply – check the label.
B	Power on/off switch.	Set this switch to the on position (I) to enable power to the system.

3.6.8. AMBE Decoder

This option adds 1 or 3 AMBE decoder channels to your recorder.

The option is mandatory if you are recording 2-way radio conversations that use the AMBE codec. Without it, you will not be able to listen to recordings of such conversations on the recorder itself.

In most cases you will need 1 AMBE decoder channel, however there are 2-way call scenarios where more than 1 AMBE decoder channel is necessary to listen to all participants that are part of a conversation. Please discuss your 2-way radios communication with us, or visit our on-line forums, to determine the number of AMBE decoder channels that you will need.

4. Installation

> If a ruling is required on the legality of recording in your country, please seek legal advice.
>
> This product must not be used for illegal or unauthorised recording purposes.

4.1. Safety Information

Always follow basic safety precautions when installing Total Recall VR to reduce the risk of injury from electrical shock and fire.

> WARNING: Potential shock hazard. Total Recall VR must be installed by qualified person.

Observer the following:

1. Read and understand all instructions in Total Recall VR guides.

2. Observe all warnings and instructions marked on the product.

3. Use only grounded electrical outlet when connecting Total Recall VR to a power source. If you are unsure the outlet is grounded, then have a qualified electrician check it.

4. First connect Total Recall VR to grounded outlet, and only then connect the appropriate interface lines.

5. Do not touch the contacts on the ends of any cables used with Total Recall VR. If any cable becomes damaged, then have it replaced immediately.

6. Shut down and unplug Total Recall VR from telephone jacks, and then from power outlets, prior to moving or cleaning.

7. Do not open Total Recall VR. There are no user serviceable parts inside Total Recall VR. Refer all servicing to qualified personnel.

4.2. Notices

Please read the following compliance and warning statements for this product.

EN550022 Warning

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take adequate measures.

FCC Title 47 Part 15 Compliance Statement

The following compliance statement pertains to Federal Communications Commission Rules 47 CFR 15.105:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and

2. this device must accept any interference received, including interference that may cause undesired operation.

CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY **Prolancer Pty Ltd** COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

Note: This equipment has been tested and found to comply to the limits for Class A digital devices pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his or her own expense.

FCC Title 47 Part 68 Registration

The analogue interface of this device complies with FCC Rules, Part 68, and the requirements adopted by ACTA. On this equipment is a label that contains, among other information, the FCC Part 68 registration number. If requested, this number must be provided to the telephone company.

REN

The ringer equivalence number (REN) is used to determine the quality of devices, which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all, areas the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.

NOTE: RENs are associated with loop-start and ground-start ports. It is not used for E&M and digital ports. **The REN assigned to the analogue interface of this device is 1.5B**. If requested, this information must be given to the telephone company.

Service

In the event of equipment malfunction, all repairs should be performed by **Prolancer Pty Ltd** or an authorized agent. It is the responsibility of users requiring service to report the need for service to **Prolancer Pty Ltd** or to one of our authorised agents. Service can be facilitated through our office at:

> *Prolancer Pty Ltd*
> *2/34a Olive Street*
> *Kingsgrove NSW 2208*
> *Australia*
> *Email: trvr@prolancer.com.au*

The telephone company can ask you to disconnect the equipment from the network until the problem is corrected or until you are sure that the equipment is not malfunctioning.

Facility Interface Information

In order to connect registered terminal equipment to the telephone company lines, the terminal equipment must utilize an FCC registered jack. Standardised jacks are used for this equipment. The following table contains Facility Interface Code (FIC), Ringer Equivalence Number (REN), Service Order Code (SOC) and network jack information for the equipment.

Port Identifier	FIC	REN	Network Jack
Line 1 to 72	N/A	1.5B	RJ11C

The **analogue interface** connects to the Public Switched Telephone Network through a FCC registered NCTE that specifies the type of network jack to be used.

Disruption to the Network

If this device *disrupts* the telephone network, the telephone company can discontinue your service temporarily. If possible, the telephone company will notify you in advance. If advance notice is not practical, they will notify you as soon as possible. You are also informed of your right to file a complaint with the FCC.

Electrical Safety Advisory

While this device *is* fully compliant with FCC rules and regulations, it is recommended that an alternating current (AC) surge arrestor of the form and capability suitable for the model purchased be installed in the AC outlet to which the **Prolancer Pty Ltd** products are connected. Consult with your distributor as to the surge protector requirements for your equipment.

PTC200 Warnings

8.1.8 Call logging (automatic set-up).

(b) "The call log incorporated in this equipment does not record all answered calls. The call log, therefore, may not agree with the Telecom account which may include calls not shown on the log."

8.5 Recording functions.

(c) "All persons using this device for recording telephone conversations shall comply with New Zealand law. This requires that at least one party to the conversation is to be aware that it is being recorded. In addition, the Principles enumerated in the Privacy Act 1993 shall be complied with in respect to the nature of the personal information collected, the purpose for its collection, how it is used and what is disclosed to any other party."

Pan-European Approval

The analogue interface of this device has been approved in accordance with Council Decision 98/482/EC for pan-European single terminal connection to the public switched telephone network (PSTN). However, due to differences between the individual PSTNs provided in different countries, the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In the event of problems, you should contact your equipment supplier in the first instance.

This device is designed to work on any network. This device is not dependent on physical and software switch settings. If this device is to be used outside of your area or different network, contact your vendor.

4.3. General

Total Recall VR is computer equipment and in general has the same physical and electrical requirements as computer servers. Attention should be paid to their environment to assure long life and reliable operation.

4.4. Location

When choosing a location for your Total Recall VR, consider the following:

- **Convenience**. Make the unit accessible to operators and service personnel who need to access the embedded display and control keypad.

- **Security**. User with access to the unit can remove power, disconnect other cables, monitor and play recordings, create archives and possibly compromise the recordings on Total Recall VR in other ways. Logins are no protection against determined attackers with physical access to the unit.

- **Operating environment**. Total Recall VR requires adequate cooling, clean and always on power source, vibration and shock free surface and protection from liquids.

⚠️ DO NOT place Total Recall VR in an enclosed cupboard, a damp or dusty room or location with direct exposure to sunlight. Doing so will severely reduce the lifetime of your new Total Recall VR and void the warranty.

4.5. AC Power

Total Recall VR uses "universal" power supplies. This means you can plug Total Recall VR into any line (mains) voltage from 100 Volts to 240 Volts AC nominal.

However, to prevent unplanned shutdowns caused by power glitches or interruptions, we strongly recommend the use of an Uninterruptible Power Supply (UPS) unit.

Use only grounded electrical outlet when connecting Total Recall VR to a power source. If you are unsure the outlet is grounded, then have a qualified electrician check it.

4.6. Local Area Network

Connect Total Recall VR to an Ethernet network by attaching a network cable between the RJ45 jack (with label LAN 1 or LAN 2) on the back of Total Recall VR and a network switch. Use a standard CAT5, or equivalent, straight through cable.

Alternatively, use a crossover cable to isolate Total Recall VR from your network and connect it directly to the network connection of a PC (without using a switch). The default configuration of the Total Recall VR network interfaces is:

Parameter	Default Value for LAN 1	Default Value for LAN 2
IP Address	192.168.1.100	192.168.2.100
Netmask	255.255.255.0	255.255.255.0
Gateway	Not set	Not set
VLAN ID	Not set	Not set

4.7. Analogue Signal Sources

Total Recall VR uses a purpose built interface card to capture audio from different types of analogue sources including:

1. Analogue telephone lines.

2. Outputs of a digital-to-analogue converter (DAC).

3. Analogue signal sources with 2-wire output.

Total Recall VR does not interact with the analogue signal on the lines in any way, unless its configuration specifies to inject a recording 'beep' tone.

The interface cards use RJ11C/RJ12/RJ14 (6P6C) connectors. Your system can have up to 36 connectors, 6 in each row:
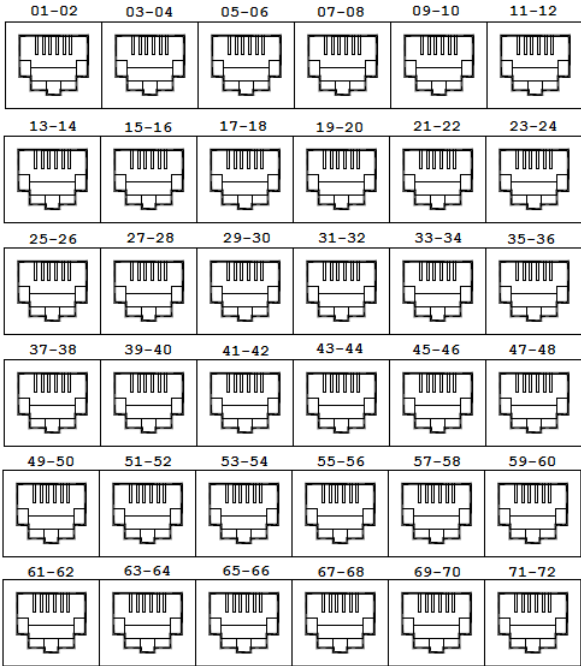

Figure 1: Analogue Channel Connectors

Note that channel numbering start from left on the top card and continues to right and down as shown on the previous image.

Each connector has two input lines, one line on pins 3 and 4 and another on pins 2 and 5 as shown on the following diagram.
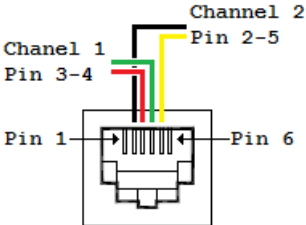

Figure 2: Analogue Connector Pin Assignment

The easiest way to connect Total Recall VR to the analogue telephone lines in order to record telephone conversations is to use module "T" adapters which are readily available from your local cable and accessories store.

The following diagram shows the connections between your telephones and PBX before you connect Total Recall VR.
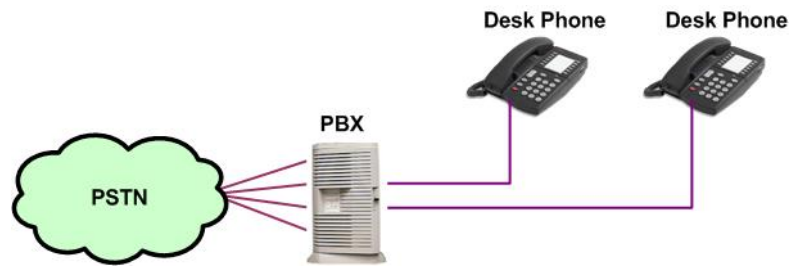

Figure 3: Analogue Telephone Connections (before)

The following diagram shows the connections after you connect Total Recall VR with readily available "T" adapters.
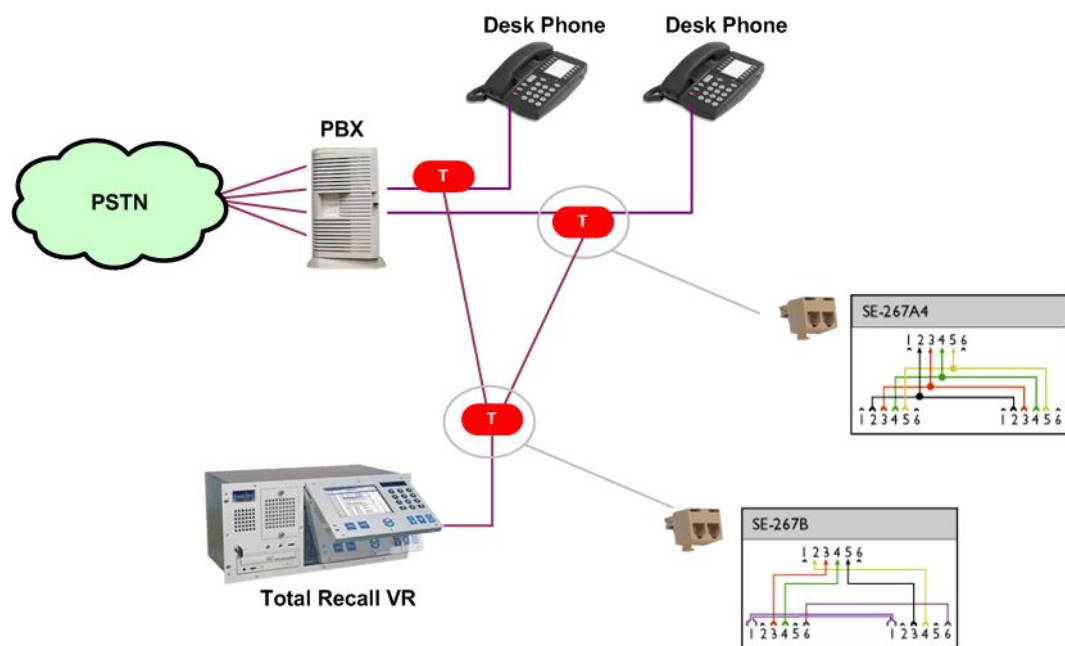

Figure 4: Analogue Telephone Connections (after)

Use a 267B "T" adapter to connect two analogue telephone lines to a single connector on the Total Recall VR. In addition, use a 267A4 "T" adapter to connect every telephone to the PBX as well as the 267B "T" adapter which in turn will connect the telephone line to the Total Recall VR.

There are other ways to connect Total Recall VR to analogue telephone lines and other analogue signal sources as explained in detail in the Total Recall VR Deployment Guide [3].

4.8. VoIP Networks

Total Recall VR uses a software based VoIP packet collector which is capable of detecting, extracting and then processing SIP, H.323 and RTP packets when connected to an Ethernet link.

The packet collector does not interact with the packets on the Ethernet link. It does not add, remove or modify packets. It simply detects and takes a copy of each packet for further processing.

Each Total Recall VR is equipped with single VoIP packet collector capable of collecting VoIP packets from a single Ethernet link.

Ethernet switch SPAN port (or port mirroring as it is otherwise known) is by far the cheapest and easiest way to connect a Total Recall VR to a VoIP network for the purpose of recording. Even if your current Ethernet switch does not support it, myriad other switches, which cost few hundred dollars only, do support it.
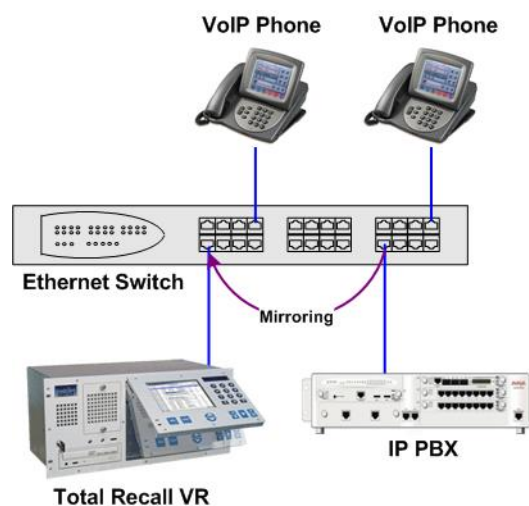
Figure 5: SPAN Port for VoIP Call Recording

SPAN ports may be the cheapest and easiest way to start recording VoIP calls; however in some cases it may be necessary to use other methods in order to record all VoIP calls on the network. The Total Recall VR Deployment Guide [3] explains all techniques in detail.

4.9. RoIP Networks

Total Recall VR is capable of recording audio carried in standard RTP and proprietary protocols (such as Tait VRP) that are extensively used by RoIP and AoIP system in passive and active mode.

In passive mode Total Recall VR uses a software based RTP packet collector which is capable of detecting, extracting and then processing RTP packets when connected to an Ethernet link.

The packet collector does not interact with the packets on the Ethernet link in any way. It does not add, remove or modify packets. It simply detects and takes a copy of each packet for further processing.

Ethernet switch SPAN port (or port mirroring as it is otherwise known) is by far the cheapest and easiest way to connect a Total Recall VR to a RoIP network for the purpose of recording. Even if your current Ethernet switch does not support it, myriad other switches, which cost few hundred dollars only, do support it.
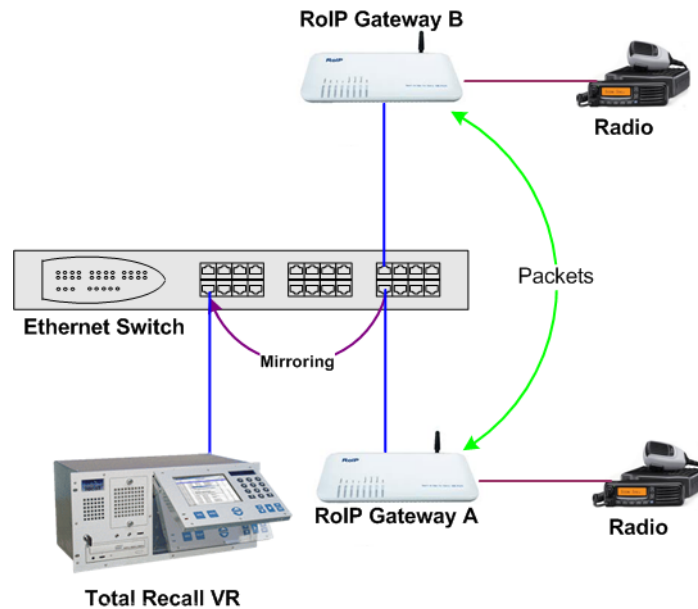

Figure 6: SPAN Port for RoIP Recording

In active mode Total Recall VR accepts RTP and Tait VRP packets on user configurable UDP ports, also known as UDP services. RoIP equipment can send RTP and VRP packets to the UDP services for the purpose of recording.

This interface receives RTP and VRP packets only. It does not send packets to the network.
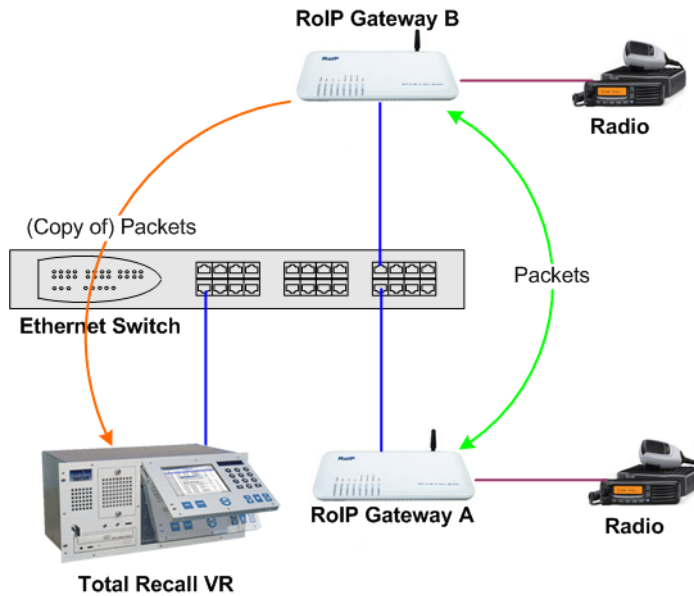
Figure 7: UDP Services for RoIP Recording

4.10. Headphones

Optionally, connect headphones to the standard stereo audio jack (three conductor, 3.5mm jack) on the front panel.

Most headphones that are suitable for your PC will work with Total Recall VR. The volume of the audio can be adjusted to a comfortable level with the front panel volume control.

4.11. Audio Amplifier

A line-level audio output is available from an audio jack (three conductor, 3.5mm jack) on the front panel.

Optionally, connect an external audio amplifier, recorder or your PC audio input to it.

4.12. USB Key

Your Total Recall VR is equipped with a USB 2.0 port located on the front panel. You can connect a USB key to the port and use it to archive recordings.

5.   Configuration

5.1.   Default Configuration

Every Total Recall VR leaves the factory with a default configuration which enables it to start recording the minute it is powered up.

In summary the default configuration is:

- The display language is set to English.

- The ID of the Total Recall VR is set to 1. If you have multiple Total Recall VRs we recommend that you assign a different ID to every Total Recall VR.

- The time zone is set to Australian Eastern Standard Time. The time and date are set to the current time and date in Sydney, Australia. We recommend that you change the time zone before starting to record.

- The default passwords for the administrator and the standard user are set to '0000'. We recommend that you change both to improve the security of Total Recall VR.

- The LAN 1 interface has an IP address of 192.168.1.100/24.

- The LAN 2 interface has an IP address of 192.168.2.100/24.

- The Remote Interface accepts connections from client applications on IP address 192.168.1.100 and TCP port 10010.

- All recordings will be kept when recorded irrespective of their duration.

- Recordings will not be deleted based on their age, but will be deleted when the occupancy of the disks reaches 95% or more, or the number of recordings in reaches 600,000 or more.

- All audio that is recorded on the analogue channels will be kept, irrespective of the duration of recordings. The recording trigger is VOX (audio signal level) with 15 second timeout. DTMF detection is on. Generation of recording "beep" tone is disabled.

- All SIP calls that are detected on the network that is connected to the LAN 2 interface will be recorded and kept.

- Automatic archiving of recordings is not enabled.

The following list is a summary of the default factory configuration.

General Settings

Language	English
Time & Date	
Use NTP	No
NTP Address 1	0.0.0.0

	NTP Address 2	0.0.0.0
	Date	Current date in Sydney, Australia
	Time	Current time in Sydney, Australia
	Time Zone Area	Australia
	Time Zone City	Sydney
User Session		
	Enable Timeout	Yes
	Idle Timeout	2 minutes
Recent Calls		
	Update Period	10 seconds
	Records to Show	50
User Password		0000
Administrator Password		0000

Call Settings

Min. Call Length	Ignore
Max. Call Length	60 minutes
Max. Call Lifetime	Ignore
Recording Period	Not set (always recording)

Network Settings

Name Server (DNS)		Not set
Host Name		Not set
LAN 1		
	IP Address	192.168.1.100
	Netmask	255.255.255.0
	Default Gateway	Not set
	VLAN ID	Not set
LAN 2		
	IP Address	192.168.2.100
	Netmask	255.255.255.0
	Default Gateway	Not set
	VLAN ID	Not set

Extension Settings

Enable Monitoring	Yes
Recording Mode	Record by Default
Enable Phone Keys	No
Start Recording Phone Key	*11
Stop Recording Phone Key	*22

License Settings

The parameters in this group are pre-configured with valid licenses.

Analog Settings

Channel	Unique number as assigned by the system
Trigger	VOX 4
VOX Timeout	15 seconds
Beep	Off
DTMF	On
Extension	Not assigned

ISDN Settings

The ISDN configuration does not apply to your system.

VoIP Settings

Packet Collector

Connection Type	Local
Connector	LAN 2
Port	10020
IP Address	192.168.2.100

VoIP Calls

Signalling Type	SIP
Trace Signalling	No

RTP Endpoints	None specified
RTP Streams	None specified

Tait VRP

Enable	No
IP Address	192.168.2.100
UDP Port	9999

VOX Timeout	15 seconds	
Address Type	MPT 1327	
Fleets	None specified	

SIP Media Server

Enable	No	
SIP IP Address	192.168.2.100	
SIP UDP Port	5060	
RTP IP Address	192.168.2.100	
RTP Base Port	7000	
Trace Signalling	No	
Firewall	Disabled	

RTSP Media Server

Enable	No	
RTSP IP Address	192.168.2.100	
RTSP TCP Port	554	
RTP IP Address	192.168.2.100	
RTP Base Port	13090	
Trace Signalling	No	
Firewall	Disabled	

Archive Settings

Reminder	No
Auto Archive Every	No
Archive Device	Disc

Maintenance

System Information

Recorder ID	1

Remote Manager

Use Dial-up	No
IP Address	192.168.1.100
Base Port	10010
Hostname	Not set
Maximum Sessions	5

Session Duration   2 hours

5.2.   Pre-Recording Configuration

Your Total Recall VR will operate with its default configuration.

> However, we strongly recommend that at minimum you change the following configuration in order to customise Total Recall VR to your business environment BEFORE you start recording.

General Settings

Time & Date

Date	Set it to your current date
Time	Set it to your current time
Time Zone Area	Set it to your time zone area
Time Zone City	Set it to your city

User Password   Change the password to improve security

Administrator Password   Change the password to improve security

Network Settings

Name Server (DNS)   Set it to the IP address of your DNS

LAN 1

IP Address	Set it to an IP address for your network
Netmask	Set it to the netmask for your network
Default Gateway	Set it to the IP address of your gateway
VLAN ID	Set it to the VLAN ID for your network

VoIP Settings

VoIP Calls

Signalling Type   Set to SIP or H.323

RTP Endpoints   If required, specify RTP end-points

RTP Streams   If required, specify RTP streams

RTP Stream Pairs   If required, specify RTP stream pairs

Tait VRP   If required, enable it and specify correct settings

SIP Media Server   If required enable it and specify correct settings

RTSP Media Server   If required enable it and specify correct settings

Maintenance

System Information

Recorder ID   Set it to a unique ID if you have multiple recorders

> ⚠ We recommend that you restart Total Recall VR after completing the pre-recording configuration.

6. Basic Operation

Total Recall VR has an embedded Graphical User Interface (GUI). The Total Recall VR Embedded GUI guide [4] explains this interface in great detail. This section contains a summary.

The GUI has 3 main screens: Logging Screen, Search Screen and Options Menu Screen. Use the [Menu] key to switch from one screen to another as shown on the subsequent figure.

Figure 8: Embedded GUI Main Screens

Access to the Options Menu Screen is restricted to Administrator users. This screen is NOT shown to standard Users.

Total Recall VR shows the Logging Screen by default. By default, this screen displays recordings in progress, in reverse start time order (latest, or most recent, on top).
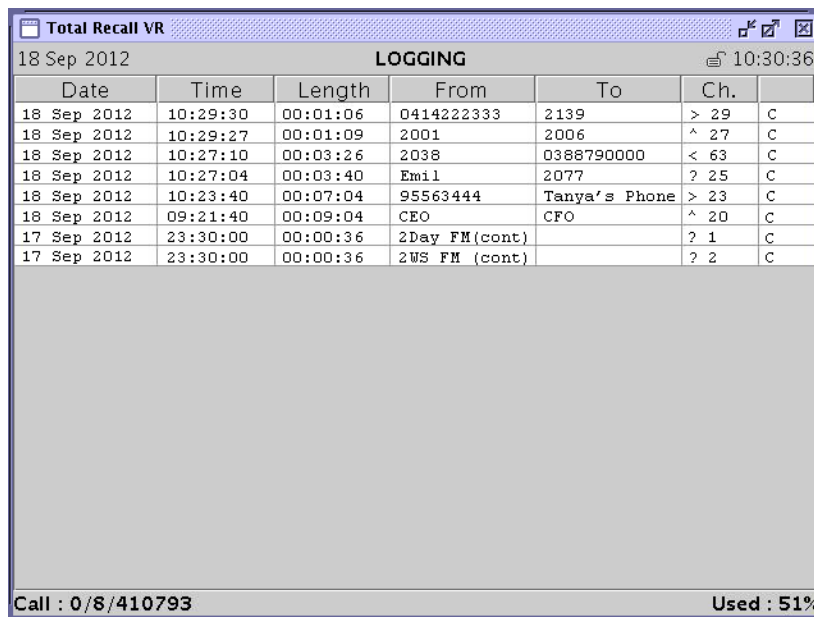
The Search Screen makes provisions for searching, playing and archiving recordings. By default this screen shows the result of the last search, in reverse start time order (latest on top).

The Options Menu Screen makes provisions for system configuration and maintenance. Configuration and maintenance activities are organised in groups, each represented by its own button on this screen.

6.1. Recording

You do not need to interact with the embedded GUI in any way to log audio or record calls. Total Recall VR automatically records as instructed by its configuration.

Recordings that are in progress, and while in progress, are shown on the Logging Screen.

Figure 9: Logging Screen with Recordings in Progress

6.2. Monitoring

To monitor recordings in progress, in real time, first navigate to the Logging Screen with the [Menu] key.

Use the [▲] and [▼] keys to navigate to the row that shows the details of the recording that you wish to listen to.
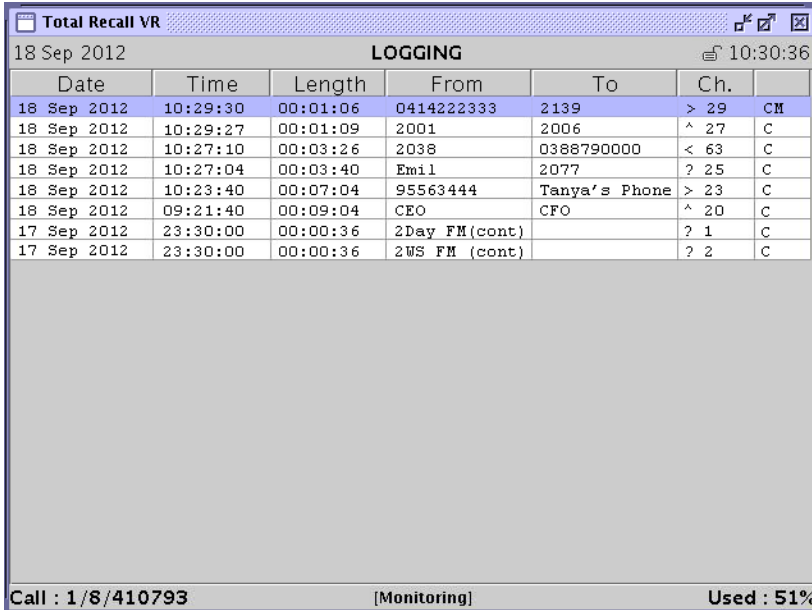
Press the [Select] key to start monitoring.

The following will happen when you start monitoring:

- The row that shows the details of the recording will move to top of the table from its sort position according to start time and it will remain highlight.

- "[Monitoring]" will appear at the centre bottom of the Logging screen.

- Audio will be heard from the built-in speaker, or head phones if connected.

Press the [Select] key to stop monitoring.

Date	Time	Length	From	To	Ch.	
18 Sep 2012	10:29:30	00:01:06	0414222333	2139	> 29	CM
18 Sep 2012	10:29:27	00:01:09	2001	2006	^ 27	C
18 Sep 2012	10:27:10	00:03:26	2038	0388790000	< 63	C
18 Sep 2012	10:27:04	00:03:40	Emil	2077	? 25	C
18 Sep 2012	10:23:40	00:07:04	95563444	Tanya's Phone	> 23	C
18 Sep 2012	09:21:40	00:09:04	CEO	CFO	^ 20	C
17 Sep 2012	23:30:00	00:00:36	2Day FM(cont)		? 1	C
17 Sep 2012	23:30:00	00:00:36	2WS FM (cont)		? 2	C

Call : 1/8/410793   [Monitoring]   Used : 51%

Figure 10: Logging Screen with Monitoring in Progress

Total Recall VR remembers the channel number of the recording channel when you start monitoring, but not stop it while recording is in progress. And if a new recording starts on the same channel, Total Recall VR automatically start monitoring the new recording.

This is not useful for recordings on VoIP recording channels as these recording channels are allocated dynamically to calls. However, it may prove very useful for recordings on analogue channels where one-to-one mapping exists between audio sources and recording channels.

For example, if you start monitoring a recording in progress that is using analogue recording channel 1, and not stop it while it is in progress, then monitoring continues when the next recording starts on analogue recording channel 1.

6.3.   Searching

The embedded GUI makes provisions for searching for recordings that reside on the system itself, recordings that are stored on archive discs (CD, DVD or BD), recordings that are stored in archives located on a USB key or disk drive, and recordings that are stored in a pre-defined network archive.

To locate recordings that have completed first navigate to the Search Screen with the [Menu] key.

Then, select **Search …** to display the Search Criterion dialog and define the search criterion by ticking (to include) and entering values for various search parameters.
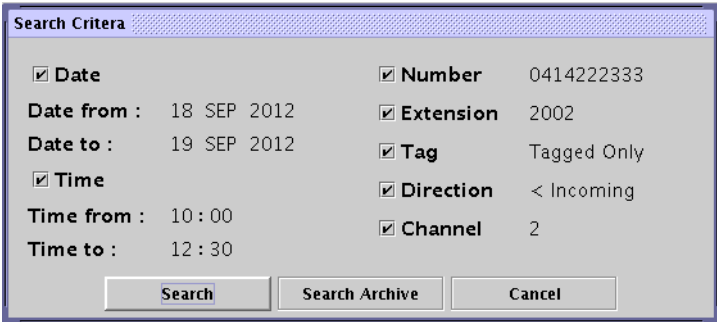
Figure 11: Search Criterion Dialog

Finally, select **Search** to search recordings that reside on the system itself, or select **Search Archive** to search recordings that reside on an archive disc or in a network archive.

The search will identify all recordings that match the search criterion and display them sorted in reverse order of start time, i.e. latest recording on top.
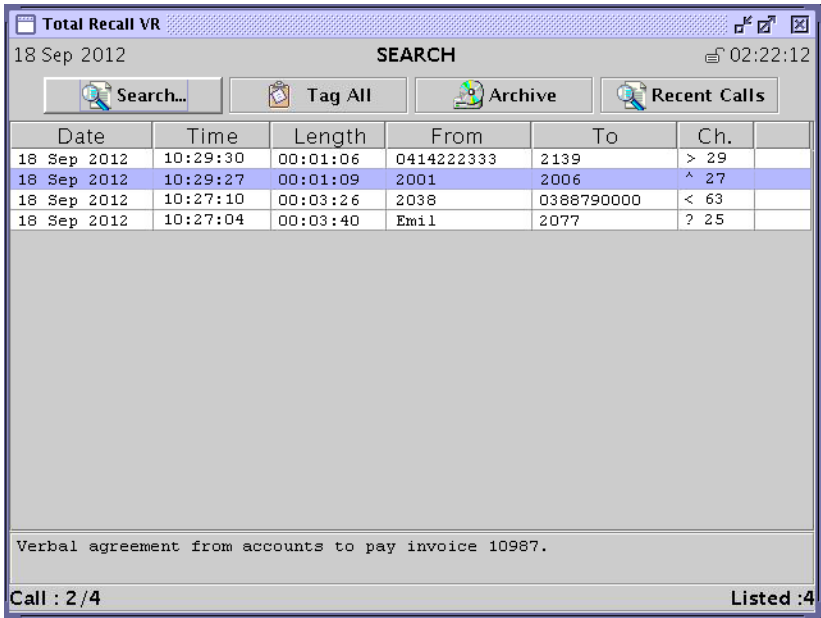

Figure 12: Search Screen with Search Result

If the search results in 1000 recordings or less, then all recordings will be shown. However, due to screen space limits, only the 25 or so will be visible. Use the [▲] and [▼] keys to view rows that are not visible.

6.4. Playing

To play a recording, first navigate to the Search Screen using the [Menu] key and search for it. Section 6.3 Searching explains searching.

Use the [▲] and [▼] keys to position the screen cursor on the row that shows the details of the recording that you wish to play and then press the [▶], or the [Select], key to start playing.
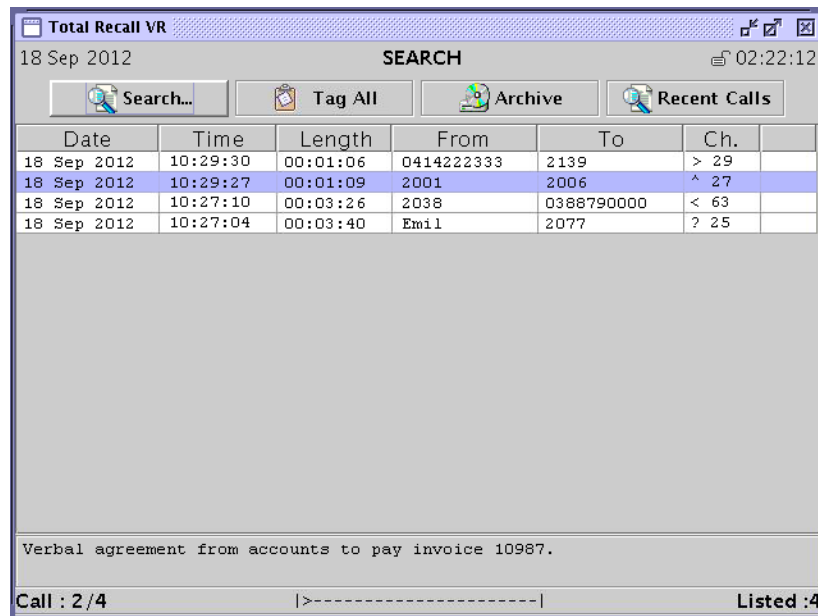

Figure 13: Search Screen when Playing a Recording

While playing is in progress you can use the [▶▶], [▶▶ ▶] and [◀◀] keys to fast forward, fast forward at double speed and rewind respectively. In additions, while playing is in progress you can use the [▶] key to pause and re-start playing.

Press the [■] key to stop playing.

6.5. Archiving

The embedded GUI makes provisions for on-demand and automatic archiving.

6.5.1. On-Demand

To archive a user defined set of recordings on-demand, first navigate to the Search Screen using the [Menu] key.

Optionally, perform a search that identifies the recordings that you wish to archive. Section 6.3 Searching explains searching. You can skip this step if you wish to archive all recordings.

Select **Archive** to display the Manual Archive dialog which makes provisions for specifying the set of recordings that you wish to archive as well as the archive device (disc, network share …).
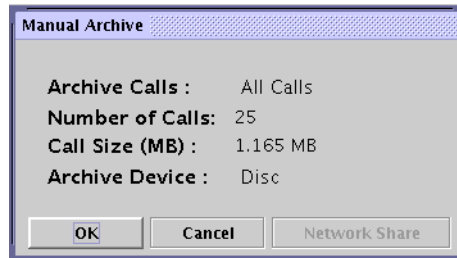
Figure 14: Manual Archive Dialog

Finally, start archiving. If you are archiving to disc, then you may have to insert new discs as archiving progresses.

6.5.2. Automatic

Unlike on-demand archiving, automatic archiving is a "set and forget" operation. Well mostly – you must make sure to replace discs and make space on network disks as they become full.

To start automatic archiving all you need to do is enable and configure automatic archiving using the *Archiving Settings* on the Options Menu Screen.
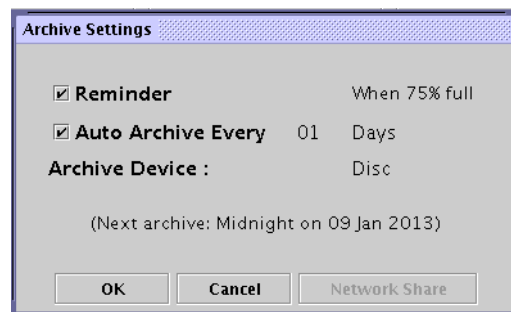

Figure 15: (Automatic) Archive Settings Configuration Dialog

6.6. Configuration

To configure Total Recall VR, use the buttons provided on the Options Menu Screen. Note that you need to log in with the password for the Administrator user to access the Options Menu Screen.

7. Preventative Maintenance

Total Recall VR requires minimal preventive maintenance to ensure maximum performance.

7.1. Air Filter

As with most computing devices, Total Recall VR has a fan that provides air flow through the system to keep it at operating temperature. However, unlike most computing devices, the air that enters the system is kept clean by a filter.

Every 3 months or so the embedded GUI will display a message and start generating an audible beep to alert you to the fact that it is time to check and clean the filter.

Figure 16: Clean Filter Reminder Dialog

Select **OK** to dismiss the dialog. However, at this point in time the filter should be washed in warm soapy water, and then rinsed thoroughly and allowed to dry completely prior to being replaced.

> New filters are available from us or your local Total Recall VR supplier.

7.2. Hard Disks

The hard disks are the hardest working component in Total Recall VR. Information is constantly written to and read from the disks.

The average life expectancy of the hard disks is 5 years. However, as with any electronic and mechanical technology, the disks in your system may last much longer or much less.

We recommend that you replace the disks in your system every 4 years of so. You can purchase suitable disks from us or your local Total Recall VR supplier.

7.3.   Disk Space

Total Recall VR manages disk space automatically.

Total Recall VR has an in-built auto cleaning function which ensures that it has enough free disk space in it to continue recording endlessly.

> ⚠ A working archiving strategy must be implemented to avoid losing recordings as a result of auto-cleaning.

In general, the auto-cleaning function automatically deletes recordings when the number of recordings reaches more than 600,000 or the disk occupancy reaches 95% whichever occurs first. It removes oldest first recordings until the number of recordings reduces to 500,000 or less and the disk occupancy is below 88%.

7.4.   Orderly Shutdown

Total Recall VR must be powered down in an orderly fashion to prevent damage to its electronic components and in particular its hard disks.

To shut down Total Recall VR in an orderly fashion first navigate to the Options Menu Screen using the [Select] button. Then select **System Shutdown**.

The system will stop all recording, then stop all applications and then stop its operating system.

Finally, use the power key to turn power off.

> ⚠ DO NOT turn power off Total Recall VR while it is recording. This will result in damage of its hard disks which may result in total information loss.
>
> In addition it may cause damage to other electronic components.

8. Troubleshooting

8.1. Limited Product Warranty

For full details of the limited product warranty for this product please visit our web site: http://www.totalrecallvr.com/warranty.

8.2. Support Information

If after using this manual, and other Total Recall VR manuals, you still have questions about the operation of Total Recall VR, or you are experiencing problems with your Total Recall VR, then:

1. Please visit the Resources section on our web site http://www.totalrecallvr.com

2. Contact technical support via e-mail: itsupport@prolancer.com.au

8.3. Forums

Our online forums, http://www.totalrecallvr.com/forum, contain answers to common problems that you may experience when installing and using Total Recall VR.

[End of Document]