TotalRecallVR

.: www.totalrecallvr.com :.

Total Recall VR Infinity Overview

User Guide

February, 2024

Guide Issue 2.0

Total Recall VR Infinity Release 20.5.0

Prolancer

Related Documents:

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

[2] Prolancer Pty Ltd, Total Recall VR Cloud website. Available from: http://www.totalrecallvr.cloud/.

[3] Prolancer Pty Ltd, Prolancer website. Available from: http://www.prolancer.com.au/.

[4] Prolancer Pty Ltd, Total Recall VR Infinity Cockpit User Guide, 2.0, February 2024

[5] Prolancer Pty Ltd, Total Recall VR Infinity VS^{X} Quick Start Guide, 2.0, February 2024

[6] Prolancer Pty Ltd, Total Recall VR Infinity ES^{X} Quick Start Guide, 2.0, February 2024

[7] Prolancer Pty Ltd, Total Recall VR Infinity CS^{X} Quick Start Guide, 2.0, February 2024

[8] Prolancer Pty Ltd, Total Recall VR Audio Mixer Quick Start Guide, 4.0, July 2018

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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 information that makes your life easier.

Important boxes detail things that are easily missed. 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 or incorrect function.

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, then we would love to hear from you.

Please submit your feedback to mailto:feedback@prolancer.com.au.

If you have a suggestion for improving the guide, 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 to help us locate it.

2. Introduction

2.1. What is Total Recall VR?

Total Recall VR designs and manufactures enterprise and telecommunication grade affordable, reliable and feature-rich audio logging and call recording products and applications.

With more than 20 years of history in engineering and supporting professional audio logging and call recording products, it is no surprise that enterprises and governments worldwide use Total Recall VR products to create electronic records of many forms of audio communication, including telephone, 2-way radio, broadcast radio, public address, intercoms, room microphones and much more.

All Total Recall VR products and applications are engineered and manufactured in Australia and are the ideal solution for:

- Recording business telephone conversations;
- Recording agent calls in contact centres;
- Logging emergency response communication;
- Logging business operations communication;
- Logging radio broadcasts;
- Logging public announcements;
- Logging Air Traffic Control communication;
- Creating audio records of meetings, legal proceedings, public enquiries and similar events; and
- Creating compliance records to meet duty of care and legal requirements.

When audio records are critical to your operations, Total Recall VR products and applications deliver. It is a professional, reliable and fully self-contained solution for audio logging and call recording that comes at an affordable price.

2.2. What is Total Recall VR Infinity?

Total Recall VR Infinity is the latest (5^{th}) generation technology that powers Total Recall VR audio logging and call recording products and applications.

Infinity is based on the "*one core, infinite possibilities*" principle. As a result, Total Recall VR uses Infinity to:

- Manufacture the Total Recall VR Infinity range of audio logging and call recording appliances, virtual machines and applications [1].
- Manufacture the Total Recall VR Infinity range of audio archiving appliances [1].
- Power the Total Recall VR Cloud-hosted audio logging and call recording [2].

However, you can use Infinity to create custom audio logging and call recording devices and virtual machines that are either self-contained or fully distributed.

Total Recall VR Infinity is the core audio logging and call recording technology with infinite possibilities.

2.3. Total Recall VR Product Brief

Total Recall VR products capture audio in digital format from different sources (analogue, VoIP, RoIP, AoIP, etc.) in hybrid mode and store the audio in a proprietary, secure, and tamper-proof file format.

The file format preserves the originality of the audio it stores and has several built-in mechanisms that aid quick and reliable tampering detection. However, for ease of access, Total Recall VR applications can generate copies of recordings in several popular and everyday formats, such as Microsoft's Wave (.wav) and MPEG-4 (.m4a).

Storing audio alone does not help when looking for one recording in a media repository that can hold millions of recordings. That is why, in addition to audio, Total Recall VR products capture and then store information related to each recording and audio source, such as start time, end time and duration of recordings, calling and called numbers on telephone calls, DTMF digits during calls, radio IDs, user configurable notes and much more. This information is the backbone of a powerful natural language search capability that can pinpoint a single recording in millions of recordings.

In addition to an audio recorder and an on-board media repository, all Total Recall VR products with a built-in screen have a built-in media player with comprehensive player controls (start, stop, fast-forward, rewind …). In addition to playing individual recordings, the built-in player can reconstruct events (incidents) after the fact and replay all audio of events as a single time-ordered recording. However, the most advanced feature of the player is the ability to construct events (incidents) and play the audio of events in progress in real-time (live event monitoring).

Total Recall VR applications use the same audio player to stream audio, in progress or after the fact, from recorders and archives and then output the sound to the speakers of the device that the applications run on.

In addition to the recorder, storage and player, all Total Recall VR products include many more advanced and professional-grade features that you would expect from a modern audio logging and call recording product. For example:

- Feature-rich archiver that can automatically create searchable recording archives on USB keys or drives, network drives, and Total Recall VR archive appliances or on demand.
- Automated self-cleaning mechanism that removes obsolete recordings automatically and at regular intervals to keep recorders operating endlessly.

- Fully internationalised user interface; all menus and software available in multiple languages.
- Role-based access control.
- APIs for integration with other business and communication systems.

Total Recall VR packages all of this in easy-to-use and affordable appliances and applications that you can start using straight out of the box.

However, you can create custom audio logging and call recording products and add audio logging and call recording to your existing products. This is the latest innovation in call logging and call recording products and applications, and it is available only from Total Recall VR.

2.4. Infinity vs LinX

Total Recall VR Infinity as a recording technology has many advantages over the 4th generation Total Recall VR LinX technologies. For example, and not limited to:

- Infinity is based on the latest generation of Linux-based operating systems and advanced user interface technologies.
- Infinity supports all modern physical and virtual hardware and makes it possible to build appliances that work straight out of the box, fully custom (do-it-yourself) appliances, and distributed recording solutions.
- All Infinity products use the same touch-enabled user interface, the Total Recall VR Cockpit. Traditionally, Total Recall VR products have at least two user interfaces, embedded and PC application(s).
- A comprehensive API and standard Linux services make adding audio logging and call recording capabilities to your existing products easy.

However, LinX products are mature and have proven reliable over the last 15 years in various operational scenarios and operating conditions, while Infinity products are just starting the journey.

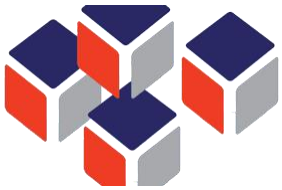
3. Recording Appliances

Total Recall VR manufactures a range of recording appliances based on the Total Recall VR Infinity technology, ready to use straight out of the box.

Each recording appliance combines the latest-generation Linux operating system and a full suite of Total Recall VR Infinity recorder services pre-configured to run on a specific physical or virtual hardware platform.

3.1. Inanity VS^X

The Total Recall VR Infinity VS^X Quick Start Guide [5] comprehensively describes this appliance.



Total Recall VR Infinity VS^X recorder appliance is engineered to run on a virtual machine (virtual hardware). It is designed to run as a virtual guest on top of a hardware virtualisation product such as VMware ESXi or Oracle's VirtualBox.

Total Recall VR Infinity VS^X is ideal for high-capacity VoIP, RoIP and AoIP audio logging and call recording. It is available as a pre-configured OVA and as a do-it-yourself virtual machine.

Recording Channels

As a recording appliance, Infinity VS^X supports only IP (VoIP, RoIP, AoIP, etc.) recording channels and is capable of recording:

- SIP sessions (calls) via UDP/TCP ports.
- SIPrec sessions via UDP/TCP ports.
- Cisco BiB sessions via UDP/TCP ports.
- Unicast and multicast RTP streams via SPAN ports.
- Unicast and multicast RTP streams via UDP ports.
- RTSP sessions via UDP/TCP ports.
- ATC recording via ED-137B/C Part 4.
- RoIP (analogue, MPT-IP and DMR networks) recording via Tait VRP.
- RoIP (DMR networks) recording via Hytera HDAP.

- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Omnitronics RTP.
- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Zetron SIP logging interface.

The channel capacity of this appliance largely depends on the hardware available to the virtualisation layer and the virtual hardware allocated to the Infinity VS^{X} virtual machine. However, this appliance supports:

- 10 to 500 IP recording channels.

The IP recording channels are sold in a pack of 10 channels. The number of IP recording channels can be increased with a new activation license, which activates additional IP recording channels while the appliance is operational.

Repository Capacity

In its default configuration, this appliance has an on-board recording repository that can store:

- Up to 60,000 audio hours of audio (at 64Kbps).
- Up to 2 million individual recordings.

The appliance manages its repository space automatically to ensure perpetual recording.

3.2. Infinity ES^{X}

The Total Recall VR Infinity ES^{X} Quick Start Guide [6] comprehensively describes this appliance.

Total Recall VR Infinity ES^{X} is a recording appliance based on commercial off-the-shelf enterprise-grade server hardware such as the Dell PowerEdge R450 and the HP Enterprise ProLiant DL160.

Total Recall VR Infinity ES^{X} is ideal for high-capacity VoIP, RoIP and AoIP audio logging and call recording, where reliable enterprise-grade hardware is necessary.

Recording Channels

As a recording appliance, Infinity ES^{X} supports only IP (VoIP, RoIP, AoIP, etc.) recording channels and is capable of recording:

- SIP sessions (calls) via UDP/TCP ports.
- SIPrec sessions via UDP/TCP ports.
- Cisco BiB sessions via UDP/TCP ports.
- Unicast and multicast RTP streams via SPAN ports.
- Unicast and multicast RTP streams via UDP ports.
- RTSP sessions via UDP/TCP ports.
- ATC recording via ED-137B/C Part 4.
- RoIP (analogue, MPT-IP and DMR networks) recording via Tait VRP.
- RoIP (DMR networks) recording via Hytera HDAP.
- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Omnitronics RTP.
- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Zetron SIP logging interface.

This appliance supports:

- 10 to 200 IP recording channels.

The IP recording channels are sold in a pack of 10 channels. The number of IP recording channels can be increased with a new activation license, which activates additional IP recording channels while the appliance is operational.

Repository Capacity

This appliance has an on-board recording repository that can store:

- Up to 120,000 audio hours (at 64Kbps).
- Up to 2 million individual recordings.

The appliance manages its repository space automatically to ensure perpetual recording.

Hardware Components

From a hardware perspective, this appliance comprises:

- Latest generation Intel Xeon CPUs.
- Enterprise SAS disks in RAID-1 configuration.

- Redundant hot-swap power supply.
- Enterprise-grade hardware management tools in addition to the Total Recall VR Cockpit.

The previous list details the standard hardware configuration for this appliance. However, the following hardware options are available on request:

- Solid state disks (SSDs) for improved performance.
- RAID-5 disk configuration.

Compliance

This appliance complies with:

- EN60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013
- EN62479:2010
- EN55032:2012/AC:2016
- EN55024:2010
- EN61000-3-2:2014
- EN61000-3-3:2013
- EN50581:2012

3.3. Infinity CS^X

The Total Recall VR Infinity CS^X Quick Start Guide [7] comprehensively describes this appliance.

Total Recall VR Infinity CS^X is a recording appliance based on your chosen hardware that you can create yourself.

Infinity CS^X is the latest innovation in audio logging and call recording products and applications, and it is available only from Total Recall VR.

Total Recall VR Infinity CS^X is ideal for low- and high-capacity VoIP, RoIP, and AoIP audio logging and call recording on hardware that fits perfectly with your communication solution.

Recording Channels

As a recording appliance, Infinity CS^{X} supports only IP (VoIP, RoIP, AoIP, etc.) recording channels and is capable of recording:

- SIP sessions (calls) via UDP/TCP ports.
- SIPrec sessions via UDP/TCP ports.
- Cisco BiB sessions via UDP/TCP ports.
- Unicast and multicast RTP streams via SPAN ports.
- Unicast and multicast RTP streams via UDP ports.
- RTSP sessions via UDP/TCP ports.
- ATC recording via ED-137B/C Part 4.
- RoIP (analogue, MPT-IP and DMR networks) recording via Tait VRP.
- RoIP (DMR networks) recording via Hytera HDAP.
- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Omnitronics RTP.
- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Zetron SIP logging interface.

The channel capacity of this appliance largely depends on the hardware you select. However, this appliance supports:

- 10 to 500 IP recording channels.

The IP recording channels are sold in a pack of 10 channels. The number of IP recording channels can be increased with a new activation license, which activates additional IP recording channels while the appliance is operational.

Repository Capacity

The repository capacity of this appliance largely depends on the hardware you select. However, this appliance supports:

- Up to 120,000 audio hours (at 64Kbps).
- Up to 2 million individual recordings.

The appliance manages its repository space automatically to ensure perpetual recording.

4. Archive Appliances

Total Recall VR manufactures a range of archive appliances based on the Total Recall VR Infinity technology, ready to use out of the box.

Archive appliances house high-capacity repositories for recordings and audit events that you can use to store recordings and audit events long-term. The repositories support multi-user access over a network via the Total Recall VR Cockpit application.

Each archive appliance combines a latest-generation Linux operating system and a set of pre-configured Total Recall VR Infinity services to run on a specific physical and virtual hardware platform.

4.1. Inanity VS^X

The Total Recall VR Infinity VS^X Quick Start Guide [5] comprehensively describes this appliance.

Total Recall VR Infinity VS^X archive appliance is engineered to run on a virtual machine (virtual hardware). It is designed to run as a virtual guest on top of a hardware virtualisation product such as VMware ESXi or Oracle's VirtualBox.

Total Recall VR Infinity VS^X is a high-capacity offline archive of recordings and audit events with multi-user access over a network. It is available as a pre-configured OVA and as a do-it-yourself virtual machine.

Repository Capacity

In its default configuration, this appliance has an on-board recording repository that can store:

- Up to 500,000 audio hours (at 64Kbps).
- Up to 10 million individual recordings.

The appliance may be configured to manage its repository space automatically to maintain the necessary space for new recordings and audit events.

4.2. Infinity ES^X

The Total Recall VR Infinity ES^X Quick Start Guide [6] comprehensively describes this appliance.

Total Recall VR Infinity ES^X is an archive appliance based on commercial off-the-shelf enterprise-grade server hardware such as the Dell PowerEdge R450 and the HP Enterprise ProLiant DL160.

Total Recall VR Infinity ES^X is a high-capacity offline archive of recordings and audit events with multi-user access over a network. It is best for solutions where reliable enterprise-grade hardware is necessary.

Repository Capacity

This appliance has an on-board recording repository that can store:

- Up to 500,000 audio hours (at 64Kbps).
- Up to 10 million individual recordings.

The appliance may be configured to manage its repository space automatically to maintain the necessary space for new recordings and audit events.

Hardware Components

From a hardware perspective, this appliance comprises of:

- Latest generation Intel Xeon CPUs.
- Enterprise SAS disks in RAID-5 configuration.
- Redundant hot-swap power supply.
- Enterprise-grade hardware management tools in addition to the Total Recall VR Cockpit.

The previous list details the standard hardware configuration for this appliance. However, the following hardware options are available on request:

- Solid state disks (SSDs) for improved performance.

Compliance

This appliance complies with:

- EN60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013
- EN62479:2010
- EN55032:2012/AC:2016
- EN55024:2010
- EN61000-3-2:2014
- EN61000-3-3:2013
- EN50581:2012

4.3. Infinity CS^X

The Total Recall VR Infinity CS^X Quick Start Guide [7] comprehensively describes this appliance.

Total Recall VR Infinity CS^X is an archive appliance based on your chosen hardware that you can create yourself.

Infinity CS^X is the latest innovation in call logging and call recording products and applications, and it is available only from Total Recall VR.

Total Recall VR Infinity CS^X is ideal as a high-capacity offline archive of recordings and audit events with multi-user access over a network. It is best for solutions where you need a perfect fit hardware for your communication solution.

Repository Capacity

The repository capacity of this appliance largely depends on the hardware you select. However, this appliance supports:

- Up to 500,000 audio hours (at 64Kbps).
- Up to 10 million individual recordings.

The appliance may be configured to manage its repository space automatically to maintain the necessary space for new recordings and audit events.

5. Client Applications

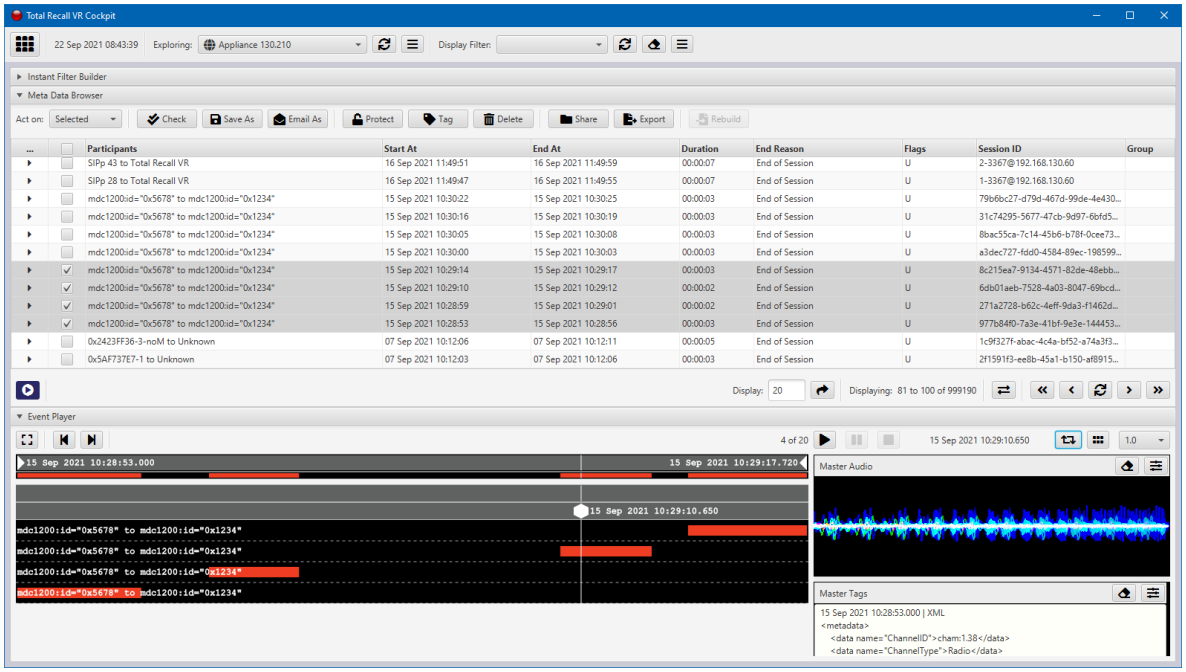
All Total Recall VR Infinity products have the same user interface, the Total Recall VR Cockpit [4].

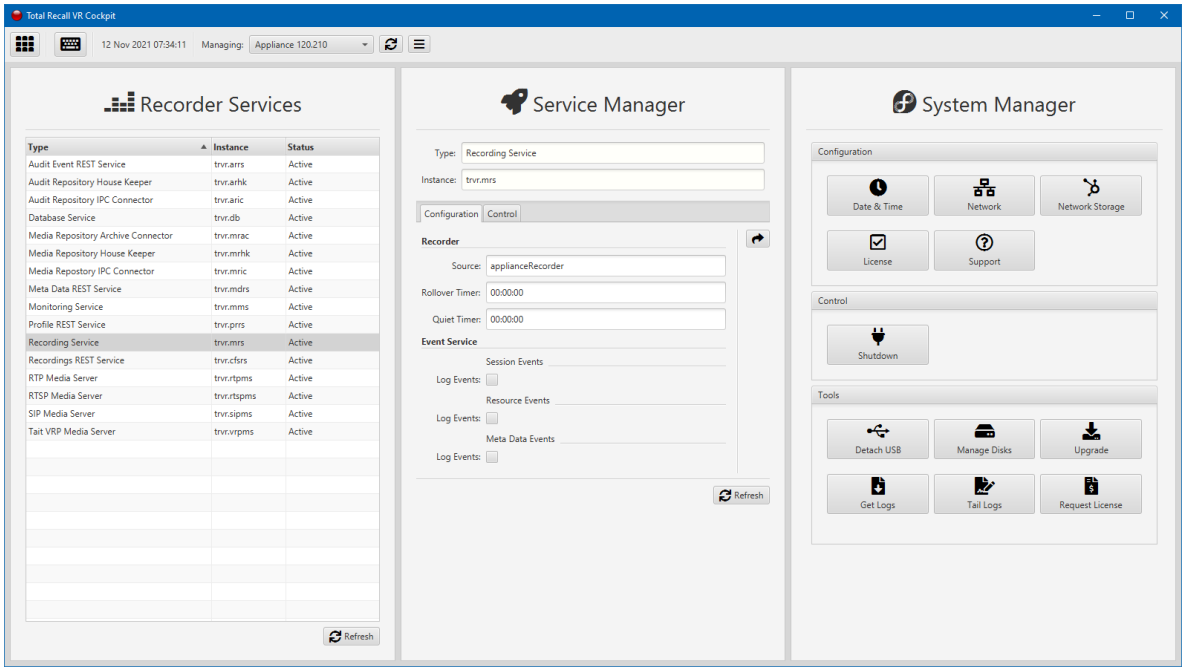
5.1. Total Recall VR Cockpit

The Total Recall VR Cockpit User Guide [4] comprehensively describes this application.

Total Recall VR Cockpit is the user interface for the latest generation Total Recall VR Infinity appliance and custom recorders.

It is based on the "*one interface, infinite possibilities*" principle. As a result, it can be used as a stand-alone application on your Windows and Linux device (PC, tablet ...), as well as an embedded application on Total Recall VR appliances and custom recorders with a built-in screen (touch or traditional).





Total Recall VR Cockpit has all the functions that you would expect from the user interface of a modern audio logging and call recording system. This includes (and not limited to):

- User-configurable and flexible role-based access control for all application features and recordings.
- Multiple working modes to best support standalone, single and multiple-user environments and embedded devices.
- Advanced recording management tools that work on recordings stored in different recording (media) repositories.
- Natural language search and filter query builder for recordings and audit events.
- Event (incident) reconstructions and replay.
- Live event (incident) monitoring.
- Comprehensive audit log.
- Productivity tools include an integrated e-mail client, advanced export tools for recordings (media and metadata), recording integrity verification tools and recording archive repair tools.
- Configuration, control and status monitoring of recording services.
- Appliance recorder system configuration, monitoring and repair tools.

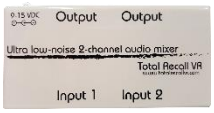
All aspects of Total Recall VR Cockpit are touch-enabled, which makes the application suitable for use with traditional (keyboard/mouse), modern (touch only), and transitional (keyboard/mouse and touch) devices.

Total Recall VR Cockpit is a licensed application. You must purchase an Activation License to use the application.

6. Accessories

6.1. Audio Mixer

The Total Recall VR Audio Mixer Quick Start Guide [8] comprehensively describes this accessory.



Total Recall VR Audio Mixer is a low noise 2-channel audio mixer that can combine two audio sources into one.

You can use Total Recall VR Audio Mixer to:

- Combine (mix) a stereo audio signal into a mono signal.
- Combine (mix) the transmit (Tx) and receive (Rx) audio signal of a 2-way radio, repeater or base station.
- Combine (mix) any two line-level audio signals into a single line-level signal.

Specification:

- 3.5mm TS and RJ12 connector for each input
- Signal level control (gain) for each input
- Redundant line-level output
- 3.5mm TS and RJ12 connector for each output
- 9-15VDC power source centre negative
- Maximum output signal level: +16dBu (with 15VDC power supply)
- Minimum input signal level: -30dBu
- Input impedance: 100Kohm
- Frequency response: 20Hz-20KHz
- Total harmonic distortion: < .005%

Total Recall VR Audio Mixer requires a DC power pack that can produce between 9VDC and 15VDC. This power pack is NOT supplied with the Audio Mixer.

6.2. AMBE Decoder

Total Recall VR AMBE Decoder is a USB device that provides a single channel or a three (3) channel AMBE decoder license.

When installed in a Total Recall VR appliance, the decoder enables monitoring and replay of recordings encoded in the AMBE format. Once installed in a Total Recall VR appliance, the device becomes integral and cannot be removed or shared with other Total Recall VR appliances and applications.

Total Recall VR applications, see section 5 Client Applications, require an AMBE decoder to monitor and replay recordings that use the AMBE format. The AMBE decoder used by Total Recall VR applications can be used by applications on multiple devices but at different times.

7. Support

Total Recall VR appliances and applications are backed by a worldwide network of specialists with advanced technical training who may offer various levels of support. In addition, our direct support service is a fast-response remote support channel operated by experienced technical support engineers.

7.1. Local Support

Please discuss your support options with a representative from the point of purchase. They may and should offer support options that are likely to be tailored to your case compared to the direct support we provide as the manufacturer of Total Recall VR products.

7.2. Direct Support

The Total Recall VR direct support service is a fast-response remote support channel operated by experienced technical support engineers. The service helps customers of all sizes and technical abilities to utilise Total Recall VR appliances and applications successfully.

The Total Recall VR direct support is paid support. You need to provide a valid and active support token when you seek support to receive support directly from us for your Total Recall VR product.

Support tokens are valid for one (1) year. A valid and unexpired support token gives you unlimited access to our direct remote support service for the Total Recall VR product covered by the support token. On expiry, you can renew support tokens on a back-charging basis. Similarly, you can purchase a new support token on a back-charging basis after buying a Total Recall VR product.

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