Total Recall Max – Comprehensive Product Specifications

Introduction

In an increasingly security conscious, results driven and litigious world, communications recording is vital to meeting your duty of care, management and legal requirements. You want a professional, easy to use and fully featured recording system, while minimising your ICT expenditure.

Total Recall Max is the total solution to your problem.

Delivering up to 60 simultaneous channels of SIP VoIP and ISDN recording plus 32 channels of analog recording in one self-contained unit, Total Recall Max is the perfect solution for a huge range of telephone and other audio recording requirements.

Supplied as a 19” rack mount model with built-in screen and control panel, Total Recall Max is powerful, flexible, easy to use, and highly affordable – providing secure, accessible storage for your business-critical communications.

Combining intuitive navigation, a powerful search engine, state-of-the-art custom-built hardware and multi-level security, Total Recall Max is the obvious choice for any organisation that understands the value of information.

Total Recall Max – System Specifications

Supported Protocols

VoIP (Up to 60 Simultaneous Channels Recording, combined with ISDN):

Interface - SIP protocol (as per RFC3261\(^1\))
DTMF - RFC 2976 – SIP INFO, RFC 2833 – RTP Telephony Event
Media - RTP protocol as per RFC 3550, Dual Jitter Buffer
Codecs - G.711a, G.711u. Codec change mid-session supported

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\(^1\) For more information see [http://rfc.net/rfc3261.html](http://rfc.net/rfc3261.html)
**Operational Requirements** - Silence suppression must be disabled, Media encryption must be disabled, and Signaling encryption must be disabled

**Supported SIP Services** - Call Hold, Consultation Hold, Music on Hold, Unattended Transfer, Attended Transfer, Call Forward Unconditional, Call Forward on Busy, Call Forward on No Answer, 3-way Conference Add Party, 3-way Conference Party Joins, Find Me, Call Park, Call Pickup, Automatic Redial, Click to Dial.

**ISDN** (Up to 120 E1 / 96 T1 lines connected, and 60 Simultaneous Channels Recording combined with VoIP):

- **Interfaces** - E1, T1 (Hi-Z)
- **Line code** - HDB3, AMI, B8ZS
- **Frame** - D4 (SF), ESF, CRC4. non-CRC4
- **Connector** - RJ45
- **Signaling** - National ISDN Type 1, National ISDN Type 2, Nortel DMS 100, AT&T 4ESS, Lucent 5ESS, EuroISDN
- **Codecs** - G.711a, G.711u

**Analog** (Up to 32 channels recording, regardless of VoIP/ISDN channels installed):

- **Interface** – PSTN Line Interface (2-Wire Line Level Analog)
- **Connector** – 6P4C or 6P6C RJ12 Sockets

**Hardware Configuration**

- **Processor** – Intel Core 2 Duo, 2.40 GHz
- **Display & Controls** – 130mm x 97mm TFT LCD. Custom Keypad Built-In
- **Onboard Storage** – Mirrored, Hot Swap Seagate 200GB SATA HDD. Up to 500,000 Calls
- **Archive Drive** – Sony DVD/CD Drive
- **Power** – Medically Rated Dual Hot Swap PSU, 320 + 320 Watts
- **Network/VoIP Interface** – 2 x 8P8C RJ45 Network Ports
- **CTI Interface (Optional)** – RS232 Socket

**Software / Operating System**

- **Onboard O/S** – Linux Fedora Core 5
- **Onboard Software** – Proprietary Total Recall Server Software
- **PC Client Software** – Remote Manager (Windows 95/98/NT/2K/Me/XP). Supplied license free

**Physical Features**

- **Dimensions** – 45cm x 42cm x 22cm

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Multiple recordings may be generated for what is a single call scenario.
In a VOIP telephony network, voice and signalling are sent over the network in packets. Total Recall needs to be able to “see” these packets so that it can record the conversions. ‘Port Mirroring’ refers to configuring a network switch so that it will copy traffic from one or more of its ports to a ‘mirror port’. Total Recall also attaches to this mirror port in order to ‘see’, record and database SIP VoIP calls. Please note that not all switches support port mirroring, although there are alternatives, e.g. non-switched hubs & multi-port Ethernet repeaters.

Port Mirroring can be cascaded:
VoIP Connectivity Diagram 2 – Port Mirroring in a ‘Shuffled’ VoIP Environment

VoIP Connectivity Diagram 3 – Port Mirroring in a Direct VoIP Environment
Assuming that a given network environment has the necessary available bandwidth, Total Recall Max can be used in conjunction with a small ‘Traffic Collector’ server to record VoIP traffic from multiple locations on one central Total Recall Max server. Users have the advantage of only requiring one TR Max Server, along with one inexpensive Traffic Collector Server per recording location. This minimises the capital expenditure required, while still providing a high quality, reliable and flexible VoIP call recording solution.

If network bandwidth is a problem for the client, it is recommended that they install one Total Recall Max server per recording location.

If your client has a multi-site VoIP telephony environment, and may benefit from a combined Total Recall Max / Traffic Collector call recording system, please contact us for more information.
In this scenario, the client is utilising a hosted VoIP PBX service, a method of call service provision that is becoming increasingly popular. Total Recall Max can record VoIP traffic in this situation by having the call information mirrored from the VoIP provider gateway to a ‘Total Recall’ port on the Ethernet switch.

Total Recall Max SIP VoIP recording solutions rely on being able to ‘see’ voice and data packets on the network in order to store and database the clients calls. As long as there is a method of mirroring this data to the same Ethernet port as Total Recall Max, the system should be able to record it.
In this example, analog extension lines have been connected to Total Recall Max. This would allow the client to record both external and internal (paging) calls. Alternatively, Total Recall Max could be connected on the trunk side of the PBX, which would record incoming and outgoing calls, but not internal calls.

Total Recall Max analog solutions are not limited to telephone recording – 2-Way radio recording is also a popular application, as well as intercoms, microphones, or any other 2-wire line level analog source. Many clients like to take advantage of Total Recall Max hybrid recording capabilities, to capture VoIP and ISDN telephone calls as well as analog 2-Way radio transmissions within the same server.
Total Recall Max records trunk side ISDN signaling, and is connected in parallel with the PBX via a passive tap. Extension information can be recorded via a CDR feed link, which is configured in the included Remote Manager PC software. Full SMDR integration is offered as an option with Total Recall Max ISDN solutions – please contact us for more information.

Total Recall Max supports recording in hybrid telephony environments. Users may combine up to 60 simultaneous channels of VoIP and ISDN, as well as an additional 32 channels of analog recording per server. Like all Total Recall solutions, flexibility isn’t a cost option.
Total Recall Max – Remote Manager and Record on Demand Software

Remote Manager and Record on Demand client PC software is included license free with your Total Recall Max server. Remote Manager provides secure and customisable privileges to monitor, search and manage calls stored on one or multiple Total Recall Max servers – from the convenience of your networked PC. Whether your units are across the room or on the other side of the world, Remote Manager makes searching, replaying and managing your calls even easier.

Remote Manager is much more than a basic recorder access program however. Technical staff are provided with a wide range of setup options, to ensure optimal integration between Total Recall Max and the given telephony and workplace environment. ‘Internal Extensions’ can be configured to easily search and replay internal calls, and complicated raw SIP VoIP addresses may be converted to easily searchable extension numbers or names.

Remote Manager also makes setting up our optional SMDR integration easy – the data we require to set up the integration can be sent directly to our software team with the click of a button! If SMDR integration is of interest to you then please contact us for more information.

For an extra level of security and convenience we also provide Record on Demand software license free with every Total Recall Max. This allows users to select which calls on their extension are to be recorded or not recorded – Record on Demand can even be set up to record only a selected part of a call if so required.

To ensure compatibility with a wide range of environments, we offer Record on Demand controls through two mechanisms. Users may opt for the license free PC software described above, or alternatively use a configurable DTMF\(^3\) code entered into their telephone in order to record or not record calls.

\(^3\) DTMF tone transmission is not supported by all telephony environments
# Total Recall Product Chart

<table>
<thead>
<tr>
<th>Feature</th>
<th>Total Recall Analog Desktop</th>
<th>Total Recall Analog Rack-Mount</th>
<th>Total Recall Max</th>
<th>TR Desktop Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built in TFT Screen</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>Built In Keyboard</td>
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<td>✓</td>
<td>✓</td>
<td>✗</td>
</tr>
<tr>
<td>SIP VoIP Support</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Analog Support</td>
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<td>✗</td>
</tr>
<tr>
<td>PRI ISDN Support</td>
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<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Maximum Channel Capacity</td>
<td>16 Channels</td>
<td>32 Channels</td>
<td>60ch ISDN/VoIP + 32ch Analog</td>
<td>30 PRI ISDN or 30 SIP VoIP</td>
</tr>
<tr>
<td>Processor &amp; Memory</td>
<td>400Mhz, 512 MB</td>
<td>400Mhz, 512 MB</td>
<td>Core 2 Duo 2.4Ghz, 1GB</td>
<td>Core 2 Duo 2.4Ghz, 1GB</td>
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<tr>
<td>Remote Manager Provided License Free</td>
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<tr>
<td>Network Time Synchronisation</td>
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<tr>
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<td>Pending</td>
<td>Pending</td>
</tr>
</tbody>
</table>

Total Recall Analog Desktop  
Total Recall Analog Rack Mount  
Total Recall Max (VoIP, ISDN, Analog)  
TR Server Desktop (VoIP/ISDN)