United States Environmental Protection Agency

Office of Technology Operations and Planning

Standard Configuration Document (SCD)

Video TeleConferencing (VTC)

Tandberg Video Systems

TANDBERG

Version 1.0 – August 2005

OFFICE OF ENVIRONMENTAL INFORMATION

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1.0 Purpose

This Standard Configuration Document (SCD) was developed to establish an approved configuration for Tandberg Video TeleConferencing (VTC) equipment that will be attached to EPA's Enterprise network. This SCD will ensure a consistent operational and security configuration for all Tandberg VTC units connected to the EPA network.

This document has been published by the Office of Environmental Information (OEI) to be used as an information source for EPA HQ and field site staff seeking to attach a Tandberg VTC unit to the EPA network. OEI recommends International Telecommunication Union (ITU) standards based approach to VTC and publication of this SCD does not in any way indicate or designate Tandberg as the preferred manufacturer for VTC systems.

This document can also be used by local Information Security Officers (ISO) in development of security plans that include IP attached VTC units.

Conformance to the configuration indicated in this SCD will authorize HQ, Regions and field sites to connect a Tandberg VTC unit to the EPA IP network with a static IP address. This will allow H.323 video and network based maintenance and support functions. Dual IP/ISDN connectivity at the endpoint is specifically not allowed under this SCD.

> ***NOTE 1: Existing dual IP/ISDN connected Tandberg systems connected to the EPA network under the March 2004 wavier may remain connected until transition to ISDN service via IP/ISDN Gateway is established.***
>
> ***NOTE 2: Tandberg systems requiring dual IP/ISDN connectivity at the endpoint* under special circumstances (e.g COOP, EOC, etc) may request a wavier from this limitation from appropriate parties.**
>
> ***NOTE 3: Conformance to this SCD and the IP connectivity achieved is intended to provide IP based VTC functionality WITHIN the EPA enterprise network. IP connectivity to any other IP device for the purpose of H.323 based video or any other IP based maintenance and support function is beyond the scope of this SCD and specifically NOT authorized.***

1.1 Revision History

This document was initially published as Revision 1.0. Significant changes in security requirements or EPA policy will result in revisions to this document.

Revision 1.0 – August 2005

2.0 Scope and Applicability

This SCD applies to all Tandberg VTC systems that are connected to EPA owned and or operated IP networks. This SCD is intended to cover the entire Tandberg product portfolio including the recently introduced MXP and personal video systems.

3.0 Network and System Security Summary

This section is intended to provide a high level summary of potential network security risks and approaches to mitigate these risks with appropriate compensating controls.

Some of the ***potential*** security risks identified with IP attached VTC units are as follows:

1. Unauthorized individuals could access the VTC systems and modify or delete configuration data thus making the VTC unit unavailable for use when needed by authorized EPA users.

2. Unauthorized individuals could access the VTC system and activate streaming video or other similar features to allow interceptions of confidential VTC content.

3. Unauthorized users could access the VTC systems and place unauthorized IP/ISDN video calls that could incur cost to the offices that own the systems.

4. Unauthorized users could access dual ISDN and IP attached VTC systems and utilize the ISDN lines as a modem to access the IP network.

5. Unauthorized users could exploit security vulnerability in the Operating System (OS) or application software to gain "Root" level privileges to the host thus enabling malicious activities to be conducted while masking their identity as the VTC system.

The security risks identified above are mitigated by the following security measures:

A. Primary host security is provided by EPA's production firewall.

- No external public access is required for maintenance or support functions that would require applications like HTTP, Telnet or FTP.
  .
- Video over IP (H.323) to and from destinations outside the EPA enterprise network is currently not supported due to firewall configuration.

- Video over IP (H.323) to destinations outside the EPA enterprise network is desired and under evaluation. Discussion of this topic is outside the scope of this document.

B. All Tandberg systems covered by this SCD are of an "Appliance" architecture that includes a proprietary Operating System (OS) and hardware.

- This architecture makes these VTC appliances virtually immune to viruses, worms and other malicious software programs. (No virus scan software is required or available to run on these appliances.

C. The ISDN interface on Tandberg VTC systems includes no protocols (e.g. SLIP or PPP) that would be required to allow traversal from the ISDN interface to the IP network. Only ITU H.320 protocol is support on the ISDN interface for ISDN based video calling.

D. IP services that are not required for VTC system operation are not included in the OS. An example of this would include Simplified Mail Transfer Protocol (SMTP).

E. IP services that are not used by EPA, such as Simplified Network Management Protocol (SNMP) are not activated on VTC systems.

F. The default IP password that exists when the unit ships from Tandberg is changed to an alphanumeric password of at least 8 characters.

G. All Tandberg VTC systems shall use a static IP address issued via standard operating procedures of the IP Reg group and include DNS registration that reflects Tandberg in the host name.

4.0 Personal and Content Security Summary

This section is intended to provide a high level summary of the personal and content security risk and approaches to mitigate these risks with appropriate compensating controls.

Personal security for the purpose of this document is defined as features and functions that may impact the privacy of the user(s) of the VTC system when a VTC call is active or inactive.

Content security for the purpose of this document is defined as audio (e.g. speech) and visual (e.g. PC screen image) information exchanged between two VTC systems during an active call.

The potential security risks identified with IP attached VTC units are as follows:

1. Individuals can access the web/HTTP interface of the Tandberg VTC and use the “Web Snapshots” feature to “See” the contents of the office or room in which the VTC system is installed. Note: No audio is available with this feature.

2. Individuals could be interrupted or their privacy compromised by use of the “Auto Answer” feature that allows the VTC system to automatically answer VTC calls with the microphone “mute” function on or off.

3. Audio or visual content of VTC calls could be intercepted through packet sniffing, circuit monitoring and or the use of the Streaming Video feature that could lead to disclosure of confidential information.

The security risks identified above are mitigated by the following security measures:

A. This SCD requires that the “Web Snapshot” feature be disabled. This feature can only be enabled/disabled from the physical VTC unit and cannot be reactivated from the web, Telnet or FTP interfaces.

B. This SCD requires that the VTC systems be configured for Manual Answer.

C. This SCD requires that the streaming video feature be disabled.

D. The Tandberg systems covered in this SCD all have two levels of encryption available for use that include:

- DES – Data Encryption Standard (DES) provides a basic level (56 bit) of content security through standards-based DES encryption of the audio and video data. When this feature is activated on a VTC call a single padlock symbol will appear on the VTC monitor.

- AES - Advanced Encryption Standard (AES) provides a medium level (128 bit) of content security through standards based DES encryption of the audio and video data. When this feature is activated on a VTC call a double padlock symbol will appear on the VTC monitor.

Use of DES or AES is not a requirement of this SCD. Both types of encryption are available and can be utilized by VTC participants who deem their topic of discussion to be confidential. On screen indicators (single or double padlock icons) indicate active encryption and type being used.

5.0 System Requirements and Standards

Before a Tandberg Video system will be allowed to connect to the USEPA network, the following Agency mandated requirements and standards must be met.

1. **Tandberg systems must be at the latest available software release that will run on the particular hardware platform. The current software release is E4. The software release of a Tandberg system can be obtained by selecting System Info from the main menu screen. Refer to section B.2.3 for accessing the main menu.**

2. **Tandberg systems must have either the Presenter Package (PP) or the Natural Presenter Package (NPP) as part of their software package.**

3. **A Tandberg Maintenance Agreement must be included as part of the system purchase. Besides hardware and software support, the maintenance agreement will provide software upgrades as they become available. First year maintenance is recommended to ensure cost effective access to system software updates. Additional maintenance years may be purchased.**

4. **All configuration settings set forth in this SCD must be met.**

5. **The Tandberg video system must be connected to the USEPA LAN with a Static IP address and a minimum port speed of 10Meg Full Duplex (100M/Full is recommended).**

6. **System Checklists at the end of this SCD must be completed and submitted to the NCSC Tier 2 Video Support Center in RTP, NC before completing 7 and 8.**

7. **Originate and receive a successful test video call with the NCSC Tier 2 Video Support Center in RTP, NC.**

8. **Systems with an ISDN connection must receive VTC Bridge Certification with the assistance of the NCSC Tier 2 Video Support Center in RTP, NC.**

6.0 - Network Impact and requirements

The Tandberg VTC systems covered by this SCD utilize the International Telecommunication Union (ITU) standard for video over IP (H.323) for call setup and transport of audio, video and control information over IP based networks. This H.323 is an "umbrella" standard that incorporates several specific G. and H. sub standards. This SCD document is primarily focused on IP network issues and impact, however reference and information related to ISDN network is included for comparison.

H.323 based VTC calls over IP networks requires high quality (low latency, jitter, and packet loss) performance over the Local Area Network (LAN), Metro Area Network (MAN), and Wide Area Network (WAN). IP VTC calls do require more bandwidth than most network applications (e.g. e-mail, web browsing, etc.). To prevent negative impact to the EPA network and other network applications, IP VTC calls may be limited in speed and quantity based on EPA policy.

The de-facto industry standard for business quality video is 384K bit per second (bps) and greater than 95% of EPA's current VTC conferences occur at or below this 384Kbps rate.

Call Rate selected by users	ISDN Bandwidth	Typical IP bandwidth
384K bps	**384K bps** 6 channels @ 64K each (Note: ISDN uses out of band signaling and does not encapsulate payload data, therefore user selected call rate = bandwidth required)	**460K bps** (Payload of 384K + 20% for associated in-band signaling and payload encapsulation overhead)

6.1 Bandwidth Capacities

This section is intended to identify the maximum IP bandwidth that is available on various Tandberg systems. The table in section 6.0 indicates a typical IP video call connected at a rate equivalent to the long standing and widely used ISDN based dial-up video call rate of 384Kbps.

The following table indicates the standard and optional IP and ISDN bandwidth available on various Tandberg systems:

Model #	Standard IP Bandwidth	Optional IP Bandwidth	Standard ISDN Bandwidth	Optional ISDN Bandwidth	MultiSite MCU availability
T8000 MXP	6 Mbps		2M (BRI or PRI)		Yes (5 + Self)
T7000 MXP	6 Mbps		2M (BRI or PRI)		Yes (5 + Self)
T6000 MXP (Includes Director, Maestro and T6000 portable)	2 Mbps	6 Mbps	768K (BRI or PRI)	2 Mbps	Yes (5 + Self)
T3000 MXP	1.5 Mbps	2 Mbps	384 Kbps (BRI)	512 Kbps (BRI)	Yes (3 + Self)
T2000 MXP	2 Mbps			512 Kbps (BRI)	Yes (3 + Self)
T1500	1.5 Mbps	2 Mbps		512 Kbps (BRI)	Yes (3 + Self)
T1000	768 Kbps			384 Kbps (BRI)	No
T990 MXP	2 Mbps			512 Kbps (BRI)	Yes (3 + Self)
T880 MXP	1.1Mbps			384 Kbps (BRI)	Yes (3 + Self)
T770 MXP	768 Kbps			128 Kbps (BRI)	No
T550	768 Kbps				No
T150	512 Kbps				No

The IP bandwidth figures indicated in the above table are maximum bandwidth supported; however as with virtually all H.323 based VTC systems, actual traffic generated is based on video content rather than a steady stream of data at a fixed rate.

The paragraph below is an excerpt from a Tandberg document.

IP adaptive bandwidth management

The codec never produces more traffic than needed, for better utilization of network resources. Most of the data sent in a videoconference is video data. Thus, by incorporating smart video algorithms,

the codec sends no more video data than necessary. Little movement in the picture gives low bit rate; while a lot of movement gives higher bit rate.

6.2 Protocols and Ports

Protocols and Ports used by the Tandberg VTC systems				
Protocol	Port(s)	Usage	Direction	Notes
TCP	1720	Call Setup (Q.931)	⇄	Variable based on VTC system usage and calling patterns
TCP	5555 - 5560	Communications channel between VTC endpoints to exchange capabilities and to open and close dynamic logical channels *(One port used in each direction within the range specified)*	⇄	
UDP	2326 - 2375	Video content *(One port used in each direction within the range specified)*	⇄	
UDP	2326 - 2375	Audio content *(One port used in each direction within the range specified)*	⇄	
UDP	2326 - 2375	Far-end camera control / Control Data *(One port used in each direction within the range specified)*	⇄	
TCP	80 (HTTP)	Web interface for VTC system monitoring and troubleshooting	⇄	Adhoc as required for routine usage and system management
TCP	21 (FTP)	File transfer of system software, directory updates and image files for display on main screen	⇄	
TCP	964 (FTP Data)	File transfer of system software, directory updates and image files for display on main screen	⇄	
TCP	23 (Telnet)	Provides text based command line interface for system maintenance	⇄	
UDP	161 (SNMP)	System Management	⇄	
UDP	962 (SNMP)	System Management	→	Outbound from VTC
UDP	123 (NTP)	System Time	←	Inbound to VTC
UDP	970 - 974	Steaming video, audio and control	→	Outbound from VTC

Note:
- This information is based on Tandberg's documentation of B4 software and above.

7.0 Video Support Responsibilities

- National VTC Manager.
    - EPA-wide point of contact for issues related to VTC usage.
    - Provides management and direction to national Tier 2 support group.
    - Evaluate and recommend new technologies for use within EPA.

- Program Office
    - Video Systems Administrators.
        - Video Systems Selection.
        - Video Systems Acquisition.
        - Establish procedures to locally reserve video conference rooms

- Tier 1 (Local video support)

    - Assists in installation of video systems.
    - Setup the video units in compliance with the Standards Configuration Document.
    - Participate with the bridge certification process.
    - Provide first level of user assistance and troubleshooting.

- Tier 2 (National Video Operations Support)
    - Provide info to assist in video systems selections.
    - Answer questions concerning the Standard Configuration Document.
    - Add revisions and corrections to the Standard Configuration Document.
    - Provide technical assistance to Tier 1 support staff.
    - Update the EPA Video Database.
    - Coordinates certification on the STG Video Bridge.

Appendix A

Summary of SCD requirements
For connection of Tandberg
Video Teleconference (VTC) Endpoints

Appendix A - Requirements Summary

Summary of SCD Requirements for Tandberg VTC units			
Parameter / Issue		Standard setting	Notes
Prerequisites	**Compliance with this SCD**	Program offices and regions are required to configure the Tandberg VTC units in compliance with the configuration set forth in the document prior to "production" use. A non-compliant Tandberg VTC unit shall not be connected to the EPA network for time longer than is required to complete configuration and test calls.	Comments or suggestions regarding this SCD should be directed to: Jason Kaldani – EPA/OEI Kaldani.Jason@epa.gov
	Training	To ensure successful use of the Tandberg VTC equipment, EPA strongly advises that the Video System Administrator (VSA) attend the Tandberg Technical Certification Course at a Tandberg authorized training center. EPA strongly advises that the VSA for the system ensure that the users have been trained on the system and that accurate user's guides are available.	The Tandberg web site can be found at WWW.Tandberg.net and contains training course descriptions and schedules
	Registration with the EPA National Tier 2 VTC support Center.	Complete Appendix F of this document (EPA VTC System Registration Form) and send to National Tier 2 support center to schedule VTC unit registration, consisting of: - Complete inbound and outbound test calls to the National Tier 2 VTC support center. - Complete inbound and outbound test calls to EPAs designated VTC bridging service provider.	This registration will ensure quality support and listing in the EPA VTC system listing. * Sites may request that the ISDN or IP addresses not be listed in the internal EPA Codec listing and will result in a listing of a room system type and contact information.
Network Connectivity	**Connection type**	***Switched Ethernet (TCP/IP)*** ***100Base-T (100 Mbps over UTP)*** Full Duplex – Fixed settings *(No "Auto" settings in VTC unit or Ethernet switch)*	Shared media "Hubs" are NOT acceptable. 10Base-T / Full Duplex may be used in the absence of 100Base-T in cases where the MultiSite software feature is NOT installed.
	IP address type	Public Static e.g. 134.67.101.11	Although the Tandberg VTC units support DHCP, and it may be used as a diagnostic tool, production VTC units are to use static addressing.
	DNS Host naming convention	**V XXXX YYYYYY** V = Used to designate VTC equip. XXXX = WCF/Org Code YYYYYY = User name or room name	Examples: V1818JDOE V1818DCWest6303
	Wireless	All wireless related parameters are to be ***DISABLED***	Some models of Tandberg VTCs are capable of wireless network connectivity via a PCMCIA card slot that can accommodate a wireless NIC adapter.

	SNMP (Simplified Network Management Protocol)	All settings ***BLANK***	Used for VTC system management via Tandberg TMS application. These parameters are subject to change based on approval and implementation of a VTC management platform
	Streaming Video	All streaming video related parameters are to be DISABLED	This allows a PC client with QuickTime or Cisco IPTV software installed to view a one-way broadcast from a Tandberg VTC unit.
Security / Privacy Settings	**IP access password for system administration**	Minimum 10 characters with a mix of both alpha and numeric characters	Used for HTTP, Telnet, FTP access to VTC unit for maintenance purposes.
	Auto Answer	***OFF*** The VTC unit will ring and users must press a key on the unit or remote to answer the call.	VTC systems used for Tier 1 or Tier 2 maintenance and support purposes may be set for auto answer with mute to allow for unattended test call reception.
	Web Snapshot	***OFF*** (Note this feature can only be turned on from the Tandberg unit, this setting is not available to remote Http or Telnet users)	This would allow a user with HTTP/Web access to the VTC unit to view a camera image of the VTC unit (No Audio)
	Menu Password	***Optional***	This feature allow system owners to limit via password, access to VTC system settings
VTC System Settings	**Far End Camera Control**	ON	This allows the far end VTC system to control your camera
	Welcome Menu	ON	This feature provides information such as IP and ISDN numbers on the screen of the Tandberg unit.
	MCU status Line	ON	This provides information to the VTC users during a multi-site call.
	System name	See DNS host naming in network section	
	Auto-Request Floor	ON	This allows your site to be seen by other sites automatically when you active you OPC content.

IP Video (H.323) Settings	**E.164 Alias Address**	***Blank***	Upon approval and installation of H.323 infrastructure elements (Gateway / Gatekeeper), these parameters are subject to change. For example, E.164 Alias Address would be populated with a numeric address to facilitate VTC calling with an email address format
	Use gatekeeper	***OFF***	
	Gatekeeper IP address	***Blank***	
	Call Manager IP address	***Blank***	
	NAT	***OFF***	These parameters when configured can assist the VTC unit in traversing network connection that includes Network Address Translation (NAT)
	Nat Address	***Blank***	
	H.323 Ports	***STATIC***	This allows for smaller range of dynamically allocated UDP ports to be used
	RSVP	***OFF***	These parameters are subject to change upon approval of a network wide QOS plan.
	QOS Type	***Leave all settings at default settings***	
	IP Presence		
	DiffServe		
ISDN Video (H.320) Settings	**Dual ISDN and IP Connectivity**	Allowed*	This allows IP connected Tandberg VTC units to also have ISDN BRI/PRI lines connected simultaneously to support connectivity require to both IP and ISDN destinations. * Long range strategy is to establish centralized ISDN line access through use of H.320 Gateway infrastructure elements, thereby reducing the need for "Dual Connected" VTC units.
	ISDN Line Access arrangement	Program offices and regions should utilize the most cost effective ISDN line access (On-site PBX, GSA or LEC) available inclusive of EPA approved long distance carrier (Currently FTS2001/Sprint) Unused ISDN line ports on the VTC unit must be disabled	
	ISDN BRI / PRI line protocol	National ISDN – 1 (NI-1) Or AT&T Point-to-Point	

Note:

Parameters not specifically listed here can be set at the descression of the VTC unit owner or VSA. These parameters would not affect the overall security, managbility or privacy of the unit or the participants using the VTC unit.

Appendix B

TANDBERG Product Line Summary

Tandberg VTC systems include a wide range of products and applications from the value priced T150 personal in-office systems to the T8000 “Boardroom” model. Tandberg systems share a common hardware and software architecture. This architecture includes proprietary hardware as well as proprietary “closed” non-Windows based operating system for many reasons including security.

For more in-depth information concerning Tandberg Video Conference systems, please visit Tandberg’s website, www.tandberg.net.

The following two pages provide a brief summary of Tandberg’s products.

TANDBERG

Product Portfolio

TANDBERG
8000 MXP

For the boardroom. Sleek, elegant design combined with state-of-the-art engineering. 50" plasma screens and a best-in-class audio system provide the ultimate video experience.

- Dual 50" plasma monitors with 16:9 widescreen format
- Join up to 6 video and 5 audio sites with embedded MultiSite functionality
- Up to 4 Mbps H.323 / 4 Mbps SIP / 2 Mbps H.320 / 6 Mbps total MultiSite
- Easily share PC presentations

TANDBERG
7000 MXP

For the boardroom and executive conference room. Shares the performance features of the TANDBERG 8000, but with a smaller profile.

- Dual 30" LCD monitors with 16:9 high resolution format
- Join up to 6 video and 5 audio sites with embedded MultiSite functionality
- Up to 4 Mbps H.323 / 4 Mbps SIP / 2 Mbps H.320 / 6 Mbps total MultiSite
- Easily share PC presentations

TANDBERG
6000 MXP

For medium- to large-sized meeting rooms. High-end performance features, large monitors and precision audio create a collaborative meeting environment for even the largest groups.

- Dual or single monitors (32" NTSC or 33" PAL)
- Join up to 6 video and 5 audio sites with optional embedded MultiSite functionality
- Up to 4 Mbps H.323 / 4 Mbps SIP / 2 Mbps H.320 / 6 Mbps total MultiSite
- Easily share PC presentations
- Codec and Portable versions

TANDBERG
3000 MXP

For medium-sized meeting rooms. A complete video system in a compact, mobile package.

- Single or dual monitors (27" NTSC or 29" PAL)
- Join up to 4 video and 3 audio sites with optional embedded MultiSite functionality
- Up to 2 Mbps H.323 / 2 Mbps SIP / 512 kbps H.320 / 2.3 Mbps total MultiSite
- Easily share PC presentations
- Codec and Portable versions

TANDBERG
2000 MXP

Designed for small groups and offices. Mobile, wireless system features CD-quality audio and superior presentation capabilities.

- Integrated 23" widescreen LCD
- Join up to 4 video sites and 3 audio sites with optional embedded MultiSite functionality
- Up to 2 Mbps H.323 / 2 Mbps SIP / optional 512 kbps H.320 / 2.3 Mbps total MultiSite
- Easily share PC presentations

TANDBERG
1500 MXP

Wireless, secure video communication for executive offices. LCD can replace PC monitor saving valuable workspace.

- Integrated 17" widescreen LCD
- Join up to 4 video sites and 3 audio sites with optional embedded MultiSite functionality
- Up to 2 Mbps H.323 / 2 Mbps SIP / optional 512 kbps H.320 / 2.3 Mbps total MultiSite
- Easily share PC presentations

TANDBERG
1000 MXP

For offices and small groups. Fully integrated system delivers style and performance in equal measure.

- Integrated 12.1" LCD
- Up to 768 kbps H.323 / 768 kbps SIP / optional 384 kbps H.320
- Easily share PC presentations
- **Video telephony version available for Cisco® CallManager**

TANDBERG
150 MXP

Business quality video for the individual workspace. Cost-effective, easy to use and provides embedded security for reliable communications.

- Integrated 8.4" LCD
- Up to 512 kbps IP
- Handset option available
- View presentations

TANDBERG
990 MXP

For medium- to small-sized meeting rooms, and shared office environments. Provides high bandwidth capabilities for excellent quality point-to-point and multipoint calls in a flexible set-top system.

- Fits easily on any standard television monitor
- Join up to 4 video sites and 3 audio sites with optional embedded MultiSite functionality
- Up to 2 Mbps H.323 / 2 Mbps SIP / optional 512 kbps H.320 / 2.3 Mbps total MultiSite
- Easily share PC presentations

www.TANDBERG.net

TANDBERG

TANDBERG

Product Portfolio

TANDBERG
880 MXP

For medium- to small-sized meeting rooms as well as shared office environments. Incorporates the features and functions of larger systems in a portable, high performance set-top unit.

- Fits easily on any standard television monitor
- Join up to 4 video sites and 3 audio sites with optional embedded MultiSite functionality
- Up to 1.1 Mbps H.323 / 1.1 Mbps SIP / optional 384 kbps H.320 / 1.1 Mbps total MultiSite
- Easily share PC presentations

TANDBERG
770 MXP

For offices and small meeting rooms. This compact unit conveniently transforms any standard TV into an interactive meeting place, providing users with an outstanding business tool.

- Fits easily on any standard television monitor
- Up to 768 kbps H.323 / 768 kbps SIP / optional 128 kbps H.320
- Easily share PC presentations
- **Video telephony version available for Cisco® CallManager**

TANDBERG
550 MXP

For offices and small meeting rooms. Provides essential video features for face-to-face meetings with the quality and reliability found in all TANDBERG equipment.

- Compact set-top can be used with any standard television set
- Up to 768 kbps H.323 / 768 kbps SIP / optional 384 kbps H.320
- View presentations
- **Video telephony version available for Cisco® CallManager**

TANDBERG
Director* MXP

Rich media presentation tool for corporate, military and education applications. Based on the TANDBERG 6000 MXP Codec, the Director MXP turns an interactive whiteboard and video system into a powerful communication tool.

- 67" display with on-screen controls
- Join up to 6 video sites and 5 audio sites with optional embedded MultiSite functionality
- Up to 4 Mbps H.323 / 4 Mbps SIP / 2 Mbps H.320 / 6 Mbps total MultiSite

TANDBERG
Maestro MXP

For medium- to large-sized meeting rooms. Built on the TANDBERG 6000 MXP Codec, the Maestro turns existing monitors and displays into interactive video systems.

- Leverages existing large screen displays and projectors
- Join up to 6 video sites and 5 audio sites with optional embedded MultiSite functionality
- Up to 4 Mbps H.323 / 4 Mbps SIP / 2 Mbps H.320 / 6 Mbps total MultiSite

TANDBERG
Intern MXP*

Video systems designed for healthcare applications including consultations, clinical studies and CME. Connect healthcare professionals and patients across the globe.

- Multiple mobile healthcare products available to meet specific application needs and room sizes
- Add peripheral medical and non-medical devices
- High resolution monitor for viewing clinical and non-clinical images side-by-side

TANDBERG
Tactical MXP*

Portable and compact video communication tool for use in even the most remote and extreme conditions. Fully integrated and wireless system is ideal for off-site communication such as construction sites, manufacturing floors, defense operations and in-field media correspondence.

- Fully integrated video system in a heavy-duty watertight case
- Meets most airline carry-on requirements
- Complete TANDBERG 3000 MXP core technology
- Ability to integrate Type 1 encryption devices

TANDBERG
Education Series*

Going beyond traditional needs of both instructors and students, the TANDBERG Education Series offers extensive options for corporate training, school classrooms and higher education.

- Multiple education products to meet specific application needs and room sizes
- Designed with input from educators to meet the demands of the education environment

TANDBERG
Judicial Series*

Video systems designed to specifically meet the needs of judicial applications including video arraignment, video visitation and remote testimony.

- Multiple judicial products available to meet the specific application and environment needs of the facility
- Intuitive controls for fully interactive video proceedings
- Durable video package for communication to and from prisons and jails
- Simple video visitation solution for easy administration of correctional visitations

www.TANDBERG.net

TANDBERG

TANDBERG

Product Portfolio

TANDBERG

Multipoint Control Unit

Easily deployable and scalable, the TANDBERG Multipoint Control Unit (MCU) is designed specifically for the distributed enterprise.

- Compact size: 1U tall and 19" rack mountable
- Join up to 16 video and 16 audio sites
- Bandwidth: 56 kbps – 2 Mbps on choice of network (IP, ISDN).

TANDBERG

Gateway

A gateway that offers unparalleled simplicity. Provides seamless integration between IP and ISDN networks with complete feature transparency and protection from network interruptions.

- Compact size: 1U tall and 19" rack mountable
- Provides seamless integration between packet-based network services (i.e. IP) and ISDN
- Complete multipoint transparency
- Bandwidth per call: 56 kbps – 2 Mbps.

TANDBERG

Gatekeeper

The TANDBERG Gatekeeper is a high-performance, reliable, secure, and easy-to-use gatekeeper designed to complement TANDBERG's infrastructure solutions.

- Compact size: 1U tall and 19" rack mountable
- Secure management and lock-down support
- Embedded setup wizard for easy installation
- Scalable up from 25 to 200 concurrent calls.

TANDBERG

Border Controller

As part of the Expressway firewall traversal solution, the TANDBERG Border Controller is designed to simplify dialing and firewall traversal for all H.323 devices.

- Compact size: 1U tall and 19" rack mountable
- Easy setup and installation
  Full multi-vendor support
- Allows URI dialing for massive scalability.

TANDBERG

Media Processing System

The TANDBERG Media Processing System (MPS) is a reliable, scalable multipoint control unit. A centralized solution with low life cycle costs and feature-rich support for video endpoints.

- 19" rack-mountable chassis
- Modular and expandable with multiple media processing boards and network interface boards
- Join up to 128 video sites and 48 audio sites
- Bandwidth: 56 kbps – 2 Mbps on choice of network (IP, ISDN, V.35).

TANDBERG

Management Suite

A web-based application for administrators, the TANDBERG Management Suite (TMS) streamlines the management, maintenance and scheduling of an entire video network.

- Intuitive user interface with graphics
- Detailed system-by-system and conference-by-conference details
- Manage endpoints and infrastructure directly
- Multiple vendor support

TANDBERG

Scheduler

An intuitive, web-based scheduling tool for anyone in the organization. Quick, point-and-click steps simplify scheduling and increase usage.

- For use with an unlimited number of users on a video network
- Schedule video, audio, web and data conferences
- Schedule multiple meetings simultaneously
- Intuitive interface available in multiple languages.

TANDBERG

Constant Care Services

Protect your technology investment. Extend the lifetime of your products. TANDBERG's Constant Care Services fulfill customers' support needs from decision through deployment and beyond.

- Finance Services
- Core Services
- Global Deployment
- Professional Services
- Training
- Installation

** Available in North America and other selected countries. Please visit www.tandberg.net for more information.*

System features may vary depending on network selection and software package. All specifications subject to change without notice.

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April 2005

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Appendix C

C.0 System Configuration Example

This section is intended to provide assistance to users of the SCD in configuring the “Classic” (Non-MXP) series of Tandberg VTC systems. Configuration requirements for the Tandberg MXP series of VTC units are the same. However, menu structure and organization are different. No MXP series configuration example is included for the sake of brevity.

C.1 Conventions

Conventions used throughout this document:

If being instructed to select and click on a menu item using the Tandberg remote control, it will be indicated in ***italics and bolded.***

The majority of the navigation through the different menus will be accomplished by using the arrow keys and the OK key.

Unless noted, ***select*** will equate to pressing the OK button on the Tandberg remote control.

USEPA required menu entries will be indicated in **BOLD and CAPS.**

C.2 Configuration Procedures

C.2.1 Overview

As stated earlier, this document is intended to be a complete configuration guide for Tandberg video systems in the USEPA. It is not intended to be a complete installation and/or users guide. Installation and users guides are shipped with each system in a CD format and should be followed while assembling and installing the Tandberg video system. Unless noted, all procedures and configurations in this document pertain to all of the Tandberg video systems listed and described in section 2.0. Before proceeding with this document, the following steps should be completed.

1. The correct circuits must be ordered, installed, and tested.
   - For IP only installations a LAN connection (drop) is required.
   - For IP/ISDN installations a LAN Drop and 3 (three) BRI circuits are required.
   - For ISDN only installations, 3 (three) BRI circuits are required.

Note: A LAN Drop would consist of one (1) four-pair Unshielded Twisted Pair (UTP) CAT – 5 or CAT-5E cable. Each BRI circuit would require the same. For example, an IP/ISDN installation would require four (4) CAT-5 or 5E four-pair UTP cables. One (1) cable would be for the LAN connection and the other three (3) for the BRI circuits.

2. All pertinent information regarding the circuits has been provided and is readily available.
   a.) For IP installations refer to section C.2.2.
   b.) For BRI-ISDN installations refer to section C.2.7.

3. The Tandberg video system has been properly assembled and connected to the LAN and or ISDN-BRI circuits.

4. Before placing the Tandberg video system into production (everyday) use, the system configuration must be correct, documented, and tested with the Tier 2 Video Support Center in RTP, NC.

C.2.2 IP (LAN) Configuration

Before a Tandberg video system can be configured for connection to the LAN, the LAN administrator will be required to supply the following:

1. Ethernet Connection to the USEPA LAN with the following port configuration.

   - 10MB/Full duplex if the Tandberg unit is not equipped with a MCU.
   - 100MB/Full duplex if the Tandberg unit is equipped with a MCU.

Note: If 100MB is available, it is recommended that Tandberg units without a MCU be connected at 100MB.

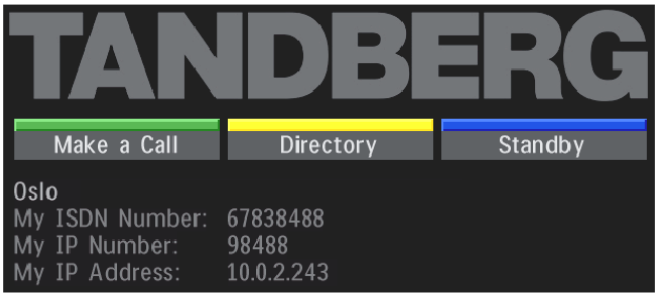
2. Static IP Address (i.e. 10.0.5.151)
3. Subnet Mask (i.e. 255.255.0.0)
4. Gateway (i.e. 10.0.0.1)

Once these requirements are met, configuration procedures may proceed.

- Turn the system on by activating the power switch on the system Codec. The Codec is the heart of the system and is the piece of equipment into which all of the system cables are connected to. The power switch is located on the right hand side at the rear of the Codec.

    - The Codec for the T880 is built into the base of the Camera unit.
    - The Codec for the T1000 is built inside the unit. Power is applied to the T1000 when the power connection is made and the power transformer is plugged into an AC outlet.

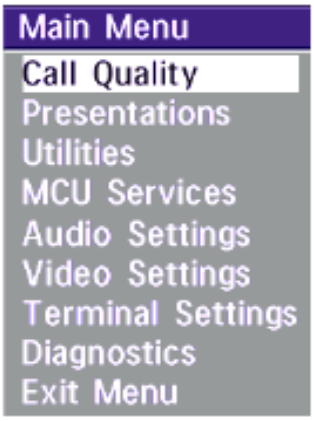
- Once power has been applied, the Tandberg video system will perform a self-test routine. When the self-test routine has been completed, a product logo and a 'welcome' menu will be displayed on the monitor as shown below.



C.2.3 Access the Main Menu

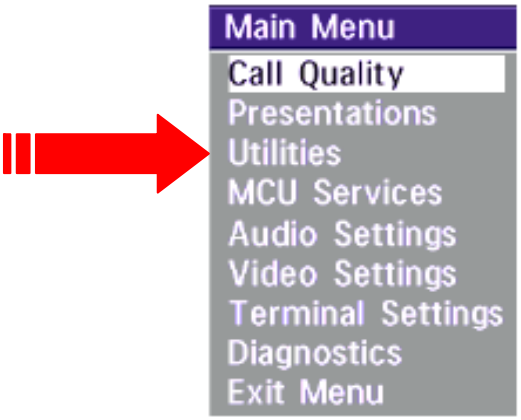
- The menu system can be used to select available functions and utilities for the system.
- To enter the menu system and the Main Menu, ***press the Menu Key on the Tandberg Remote Control.***

- The Main Menu screen will appear on the video monitor. This will vary, depending on the Tandberg system.

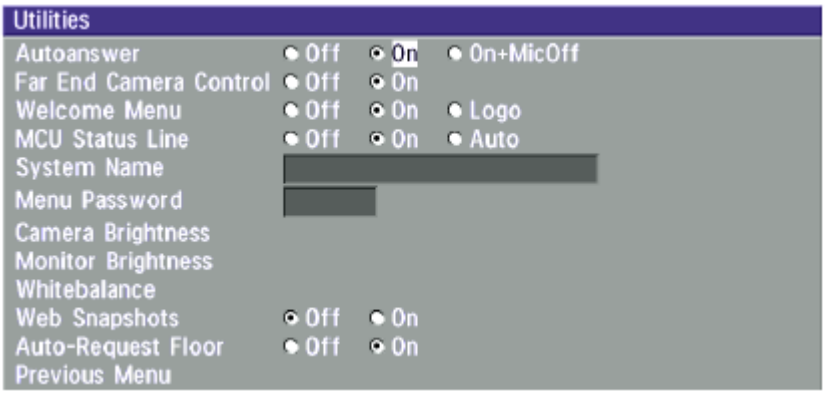


C.2.4 Utilities Menu

- Using the arrow keys on the Tandberg remote control, ***scroll down and highlight Utilities. Press the OK key on the remote control.***



- The Utilities menu will appear on the video monitor.



- Each entry in the Utilities menu is required to be set as follows:

  - Autoanswer-**OFF**

  - Far End Camera Control-**ON**

  - Welcome Menu-**ON**

  - MCU Status Line-**ON**

  - System Name- Identifies the system for various video over IP functions, all systems must have a system name. The system name will be comprised of: Type-Org Code-Name or Building Name

  - For video systems the type will be a "V", the Org Code will depend on each organization, and the name will either be the specific user's Novell name or the building/room if a specific user is not specified. For example:

    - **V1818JDoe = A video unit assigned to OEI used by John Doe.**

    - **V1818EPAWest6303 = A video unit assigned to OEI used in Room 6303.**

  - Menu Password- **OPTIONAL –** Prevents local users from unauthorized access to **ALL MENUS.**

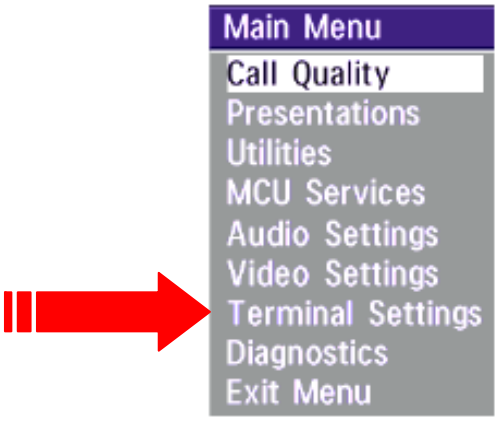
  - Web Snapshots-**OFF**

  - Auto-Request Floor-**ON**

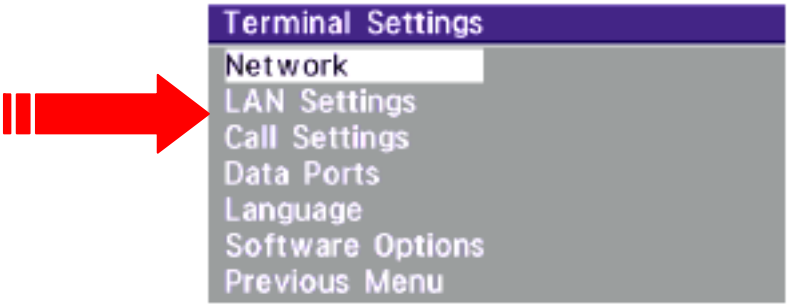
- After all of the entries have been made, ***Highlight Previous Menu and press the 'OK' key on the remote control*** and return to the Main Menu screen.

C.2.5 LAN Settings

- From the Main Menu ***highlight and select Terminal Settings.***

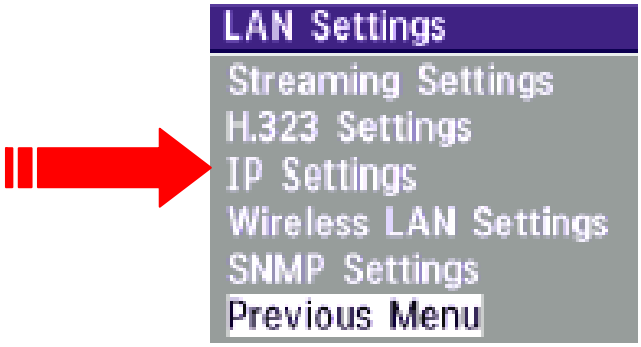


- The Terminal Settings menu will appear on the video monitor. ***Highlight and select LAN Settings.*** The LAN Settings menu will appear on the video monitor.

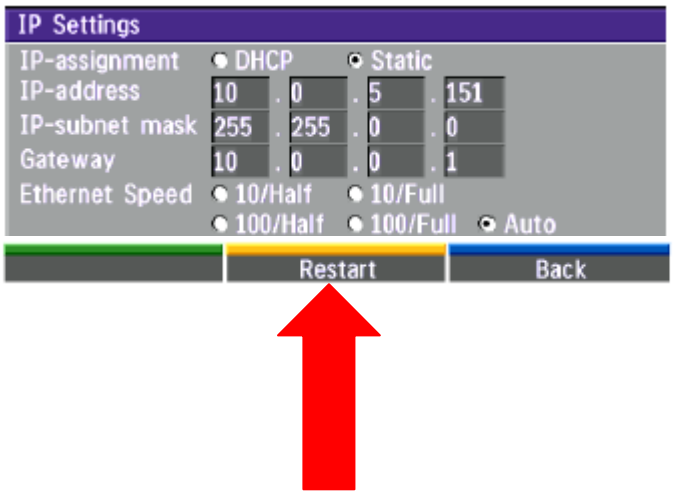


C.2.6 IP Settings

- ***Highlight and select IP Settings.***



- The IP Settings menu will appear on the video screen.



Changes in this menu will not take effect until the system is restarted. To restart the system, ***press the yellow 'Quick Key' located at the top of the remote control that corresponds with the Restart button on the monitor screen.***

- ***Select STATIC under IP-assignment.*** **ENTER THE IP ADDRESS, IP SUBNET MASK, AND THE GATEWAY**, using the information supplied by the LAN Administrator.

- If the Tandberg unit is not equipped with a MCU (Multi Point Control Unit) ***set the Ethernet Speed to 10/Full.***

    - ***If 100/Full is available, set the Ethernet Speed to 100/Full.*** *The local LAN administrator should know if 100/Full is available.*

- If the Tandberg unit is equipped with a MCU ***set the Ethernet Speed to 100/Full.***

- ***Enter the IP Password*** – **REQUIRED –** The password shall be a ten digit Alpha/Numeric combination. (i.e. 12345678DC). **THIS PASSWORD MUST BE SUPPLIED TO THE NCSC TIER 2 VIDEO SUPPORT CENTER IN RTP, NC.**

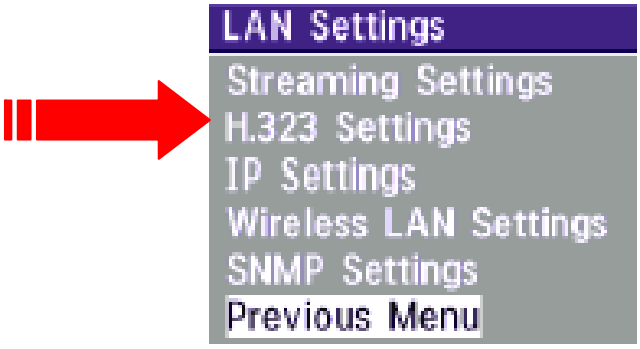
- ***Restart the system***

- The Tandberg 'Welcome' screen will appear once the restart is completed.

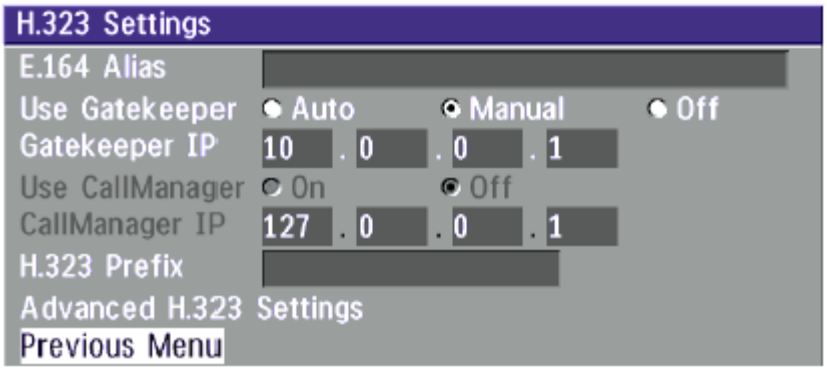
- ***Return to the LAN Settings Menu.***

C.2.6.1 H.323 Settings

- ***From the LAN Settings menu, highlight and select H.323 Settings***.



- The H.323 Settings menu screen will appear on the monitor screen.



At the present time, the USEPA has elected not to use a gatekeeper when making video conferencing calls. Most of the menu items in this menu and in the Advanced H.323 Settings menu will be “Future Settings” and will not be made until future plans include the use of a gatekeeper when making video conferencing calls. Until then, all dialing will be accomplished by dialing the IP Address of the called system.

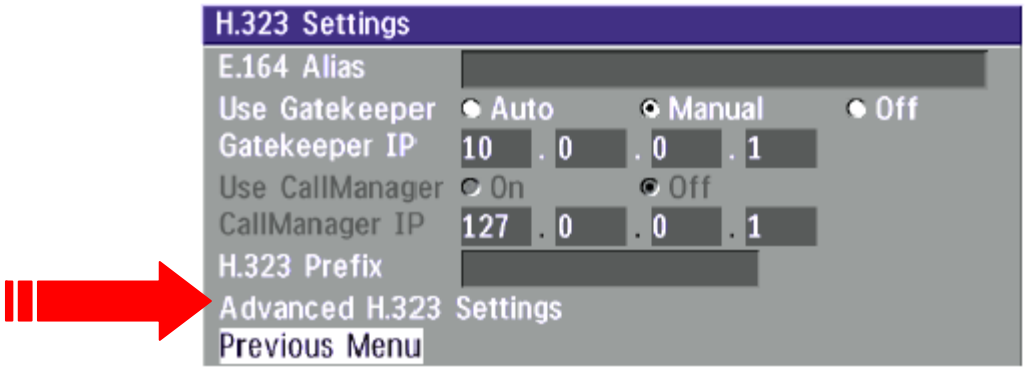
However, it is required that certain menu items are either blank, or set to off.

- ***Ensure that the following is true in the H.323 Settings menu.***
    - E.164 Alias – **BLANK**
    - Use Gatekeeper – **OFF**
    - Gatekeeper IP – **BLANK**

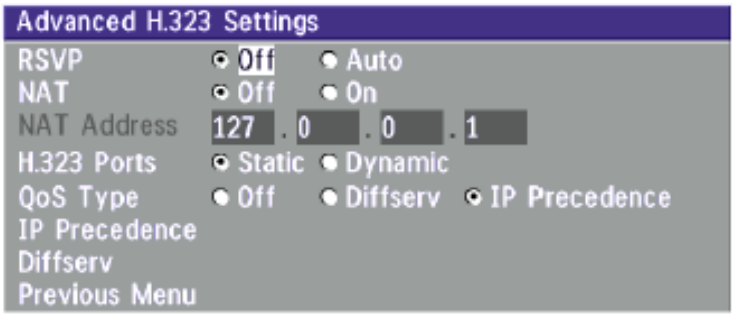
- Use Call Manager – **OFF**
- Call Manager IP – **BLANK**
- H.323 – **BLANK**

- After confirming that all entries have been made and/or changed, ***scroll down to Advanced H.323 Settings.***

- ***Highlight and select Advanced H.323 Settings.***



- The Advanced H.323 Settings menu will appear on the monitor screen.



- ***Ensure that the following is true in the Advanced H.323 Settings menu.***

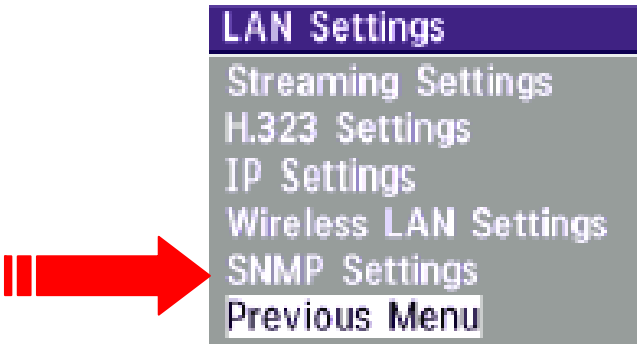
  - RSVP – **OFF**
  - NAT – **OFF**
  - NAT Address – **BLANK**
  - H.323 Ports – **STATIC**
  - QoS Type – **OFF**
  - IP Precedence – No entry is required since QoS Type is set to OFF.
  - Diffserv – No entry is required since QoS Type is set to OFF.

- After confirming that all entries have been made and/or changed, ***scroll down to Previous Menu and press the OK button on the remote control*** and return to the H.323 Settings menu.

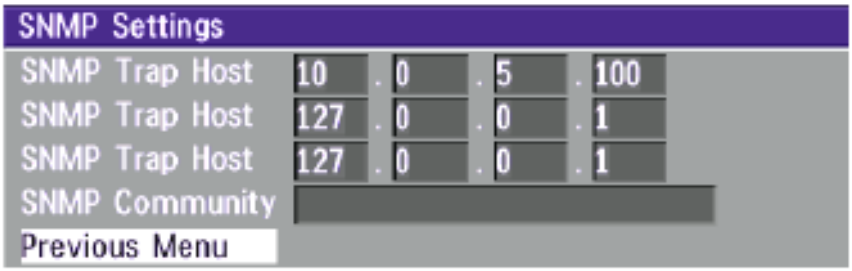
- ***Highlight and select Previous Menu and return to the LAN Settings menu.***

C.2.6.2 SNMP Settings

- ***Highlight and select SNMP Settings.***



- The SNMP Settings menu will appear on the monitor screen.



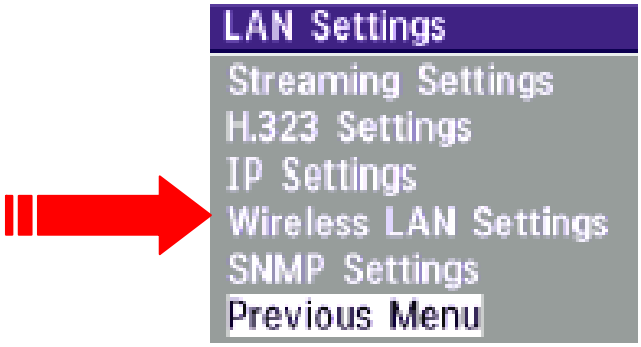
- SNMP (Simple Network Management Protocol) will currently not be used for Tandberg Video units attached to the USEPA network. **ENSURE THAT ALL ENTRIES ARE BLANK OR LEFT TO DEFAULT.**

- ***Highlight and select Previous Menu and press the 'OK' on the remote control and return to the LAN Settings menu.***

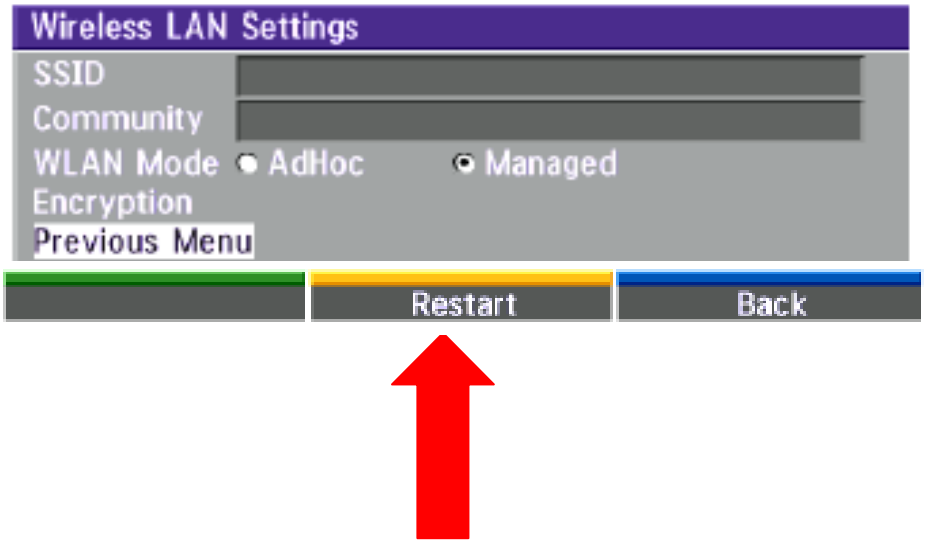
C.2.6.3 Wireless LAN Settings

Some units being configured will have a Wireless LAN Settings selection in the LAN Settings menu, and should proceed with this step; all others skip this step and go to C.6.2.3.5.

- ***Highlight and select Wireless LAN Settings.***



- The Wireless LAN Settings menu will appear on the monitor screen.



Changes in this menu will not take effect until the system is restarted. To restart the system, ***press the yellow 'Quick Key' located at the top of the remote control that corresponds with the Restart button on the monitor screen.***

While Wireless LAN networks are currently not in place within the EPA, they are being developed and will one day be rolled out for production use on a site-by-site basis. Before a Tandberg video system can be connected to a Wireless LAN, it must be compliant with this SCD and approval must be obtained from the local Information Security Officer (ISO). As different types of LANs are approved and implemented by the EPA, this SCD will be modified accordingly.

Until Wireless LANS are approved and implemented by the EPA, the Wireless LAN Settings requirements are as follows:

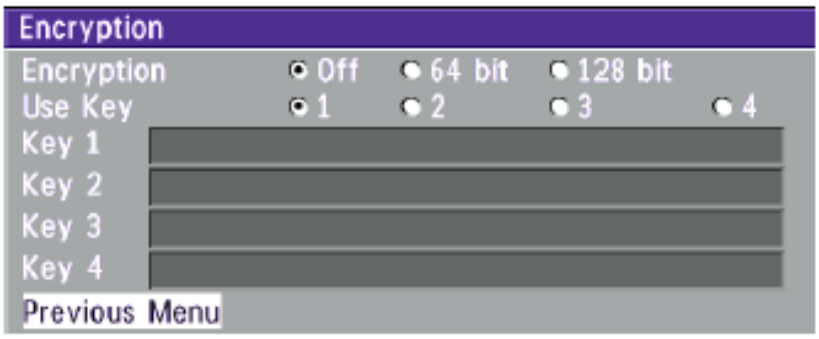
- SSID – **BLANK**
- Community – **BLANK**
- WLAN Mode – **MANAGED**

Once Wireless LANS are approved and implemented by the USEPA, Tandberg systems must meet all US EPA requirements for wireless access prior to use on wireless networks. After all requirements are met, the Wireless LAN Settings requirements are as follows:

- SSID (Service Set Identification) – **SUPPLIED BY THE LOCAL ISO.**
- Community (Optional) – **SUPPLIED BY THE LOCAL ISO.**
- WLAN Mode – **MANAGED**

- ***Press Restart in order to activate the settings.***

- ***Once the system restarts, return to the Wireless LAN Settings menu and select Encryption.***



The type of Encryption to use is dependant on the set up of the Wireless Access Points (Antennas) within the Wireless LAN. The local ISO will need to determine the type (64 or 128 bit), the Key to use, as well as the hexadecimal digits to be entered. At a minimum, 64-bit encryption should be used. The hexadecimal digits for the Key to be used should consist of a leading star (*) and 5 hexadecimal digits. 64-bit keys can consist of 10 hexadecimal digits; 128-bit keys can consist of 26 hexadecimal digits. It should be noted that an increased encryption level may result in a decrease of the performance of the video unit.

The following should be followed for Wireless LAN Settings:

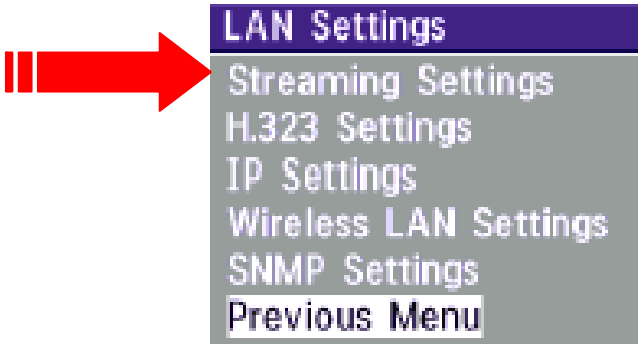
- Encryption – **OFF IF NOT CONNECTING TO A WIRELESS LAN.**
- **IF CONNECTING TO A WIRELESS LAN CONSULT THE LOCAL ISO.**
- Use Key – **CONSULT THE LOCAL ISO.**
- Key 1-4 – **CONSULT THE LOCAL ISO.**

- ***Press the OK button on the remote control.***

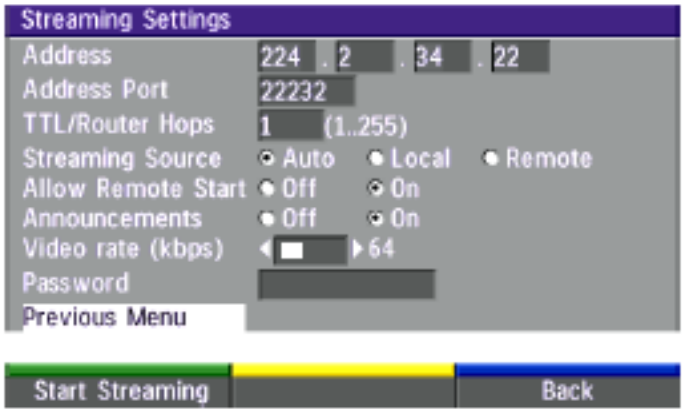
- ***Highlight and select Previous Menu, press the 'OK' button on the remote control and return to the LAN Settings menu.***

C.2.6.4 Streaming Settings

- ***Highlight and select the Streaming Settings menu.***



- The Streaming Settings menu will appear on the monitor screen.



Video streaming applications within the USEPA are currently being developed and are not ready for deployment at this time. Ensure that the following settings are made:

- **ADDRESS – BLANK**
- **ADDRESS PORT – BLANK**
- **STREAMING SOURCE – AUTO**
- **ALLOW REMOTE START – OFF**
- **ANNOUNCEMENTS – OFF**
- **VIDEO RATE – BLANK**
- **PASSWORD – NO ENTRY**

- ***Highlight Previous Menu and press 'OK' on the Tandberg remote control.***

- ***Return to the Main Menu by highlighting and selecting Previous Menu at the bottom of each menu screen.*** Once the Main Menu is reached proceed with other set up entries as

directed by the Tandberg User Guide and/or exit the Main Menu by ***highlighting Exit Menu and pressing the 'OK' button on the remote control.***

If the system being configured is an IP/ISDN-BRI system, proceed with 6.3.

If the system being configured is an IP only system, complete the System Checklist in section 8.0 and fax to the NCSC Tier 2 Video Support Center in RTP, NC @ 919-685-3016.

The NCSC Tier 2 Video Support Center will make arrangements to complete the System Test Verification.

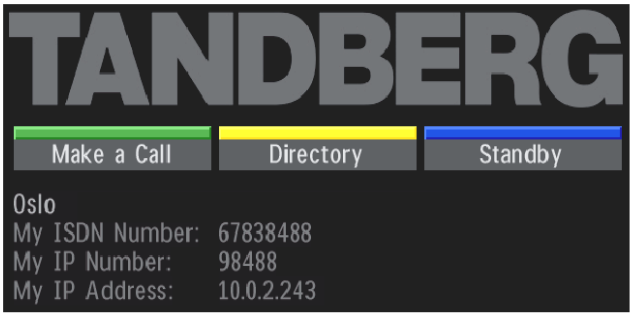
C.2.7 ISDN – BRI Configuration

This configuration is used when the Tandberg video system is to be connected to an ISDN-BRI as well as the USEPA LAN.

Three (3) ISDN-BRI circuits are required for a Tandberg video system, providing 384K of bandwidth. Follow existing TSR procedures for ordering the BRI circuits.

The BRI circuit provider will provide the ISDN telephone numbers and SPID numbers (if required) associated with each particular BRI Line as well as the ISDN-BRI Switch Type (ISDN Network).

- Turn the system on by activating the power switch on the system Codec. The Codec is the heart of the system and is the piece of equipment into which all of the system cables are connected to. The power switch is located on the right hand side at the rear of the Codec.
    - The Codec for the T880 is built into the base of the Camera unit.
    - The Codec for the T1000 is built inside the unit. Power is applied to the T1000 when the power connection is made and the power transformer is plugged into an AC outlet.
- Once power has been applied, the Tandberg video system will perform a self-test routine. When the self-test routine has been completed, a product logo and a 'welcome' menu will be displayed on the monitor as shown below.

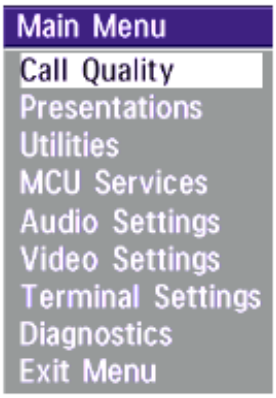


C.2.7.1 Access the Main Menu

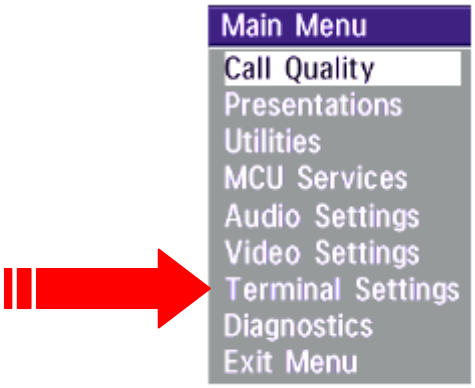
- The menu system can be used to select available functions and utilities for the system.

- To enter the menu system and the Main Menu, ***press the Menu Key on the Tandberg Remote Control.***

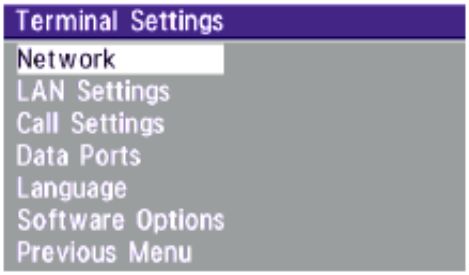
- The Main Menu screen will appear on the video monitor



- Using the arrow keys on the remote control, ***scroll down and highlight Terminal Settings. Press the OK key on the remote control.***

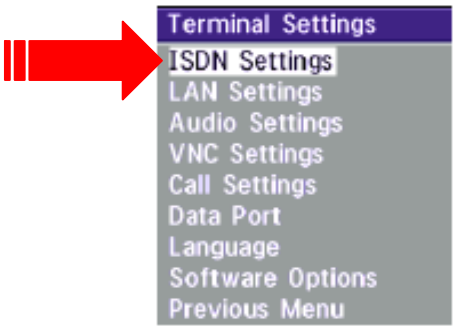


- The Terminal Settings menu will appear on the video monitor.

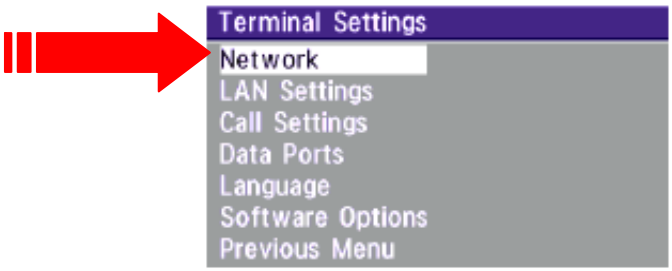


- ***For the T1000 only, highlight ISDN Settings and press 'OK' on the remote control.***
- ***For all other models, highlight Network Settings and press 'OK' on the remote control.***

T1000



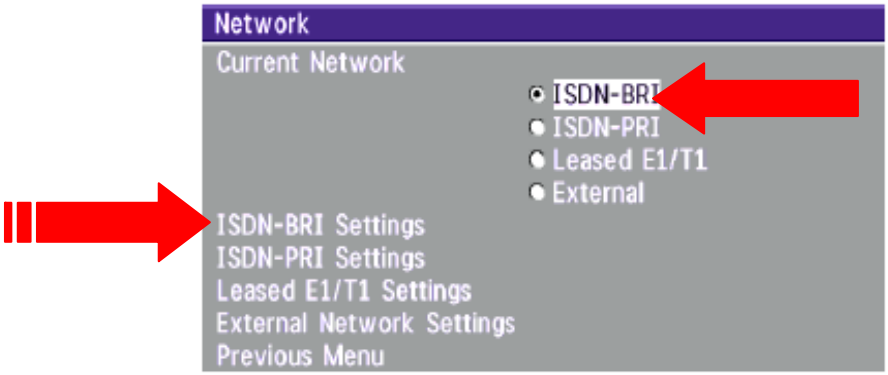
ALL OTHER MODELS



C.2.7.2 Network Settings

THIS STEP IS FOR ALL TANDBERG MODELS WITH THE EXCEPTION OF THE T1000, T1000 USERS SHOULD PROCEED TO SECTION C.6.3.2.1.

- Under Current Network, ***highlight and select ISDN-BRI. Scroll down, highlight, and select ISDN-BRI Settings and proceed to section C.6.3.2.1.***

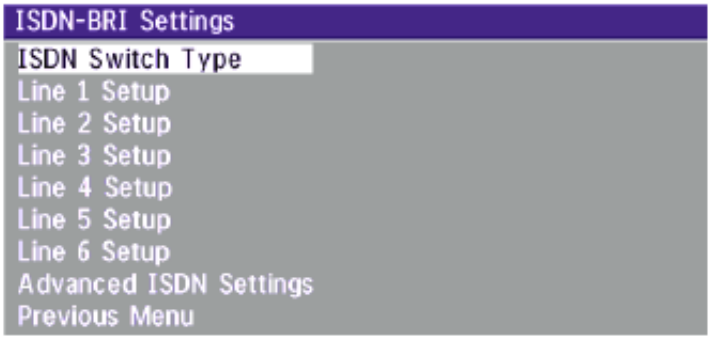


C.2.7.3 ISDN-BRI Settings – ALL MODELS

Mandatory ISDN-BRI Settings

1. **Set ISDN Switch (Network) Type**
2. **Enter ISDN Line Numbers (+ SPIDs if required)**
3. **Disable Unused Lines**

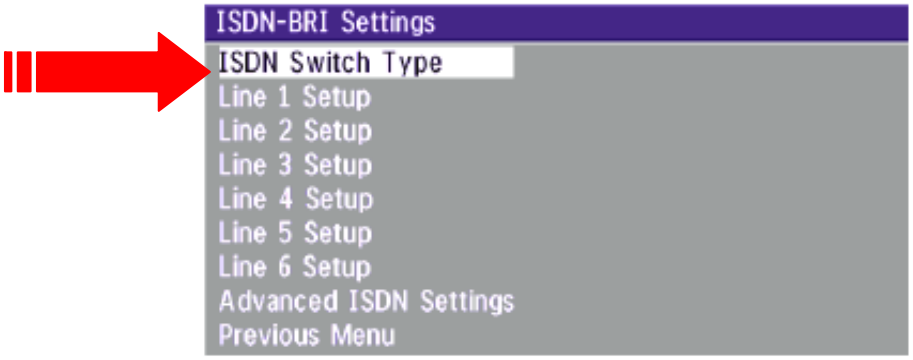
For T1000 users, the ISDN-BRI Settings menu should have been chosen from the last step in section C.6.3.2. For all other models, the ISDN-BRI Settings menu was chosen in C.6.3.2.1. The following menu will be displayed on the video monitor.



NOTE: Some software versions do not support 6 ISDN Lines; therefore some of the Line Setup entries may be grayed out or may not appear.

C.2.7.4 ISDN Switch Type Settings

- ***Highlight and select ISDN Switch Type.***



- ***Highlight and select the correct type of ISDN Switch Type that is connected to the Tandberg video system.*** The BRI circuit provider will provide this information.

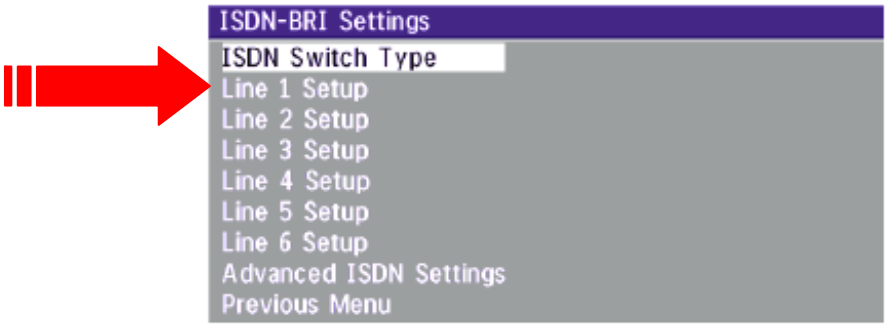
Note: For USEPA installations, either National ISDN or AT&T Custom ISDN will be chosen.

- Once the ISDN Switch Type has been selected, *highlight previous menu*, ***press 'OK' on the Tandberg Remote Control and return to the ISDN-BRI Settings menu.***

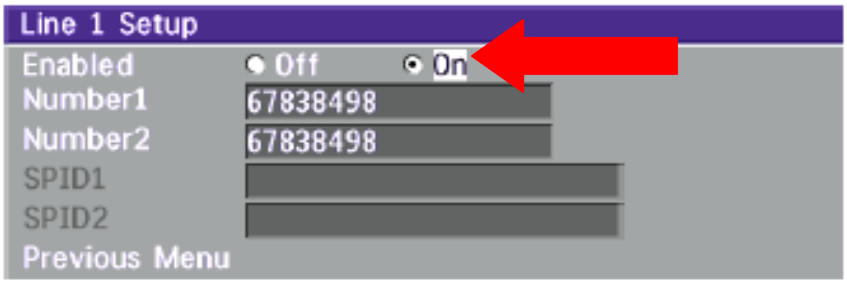
C.2.7.5 Line Setup

Typical installations will involve three BRI Lines for the Tandberg video system. The lines will be used in ascending order, beginning with Line 1. An entry for each Line will be required whether it is in use or not in use.

- ***Highlight and select Line 1 Setup from the ISDN-BRI Settings menu.***

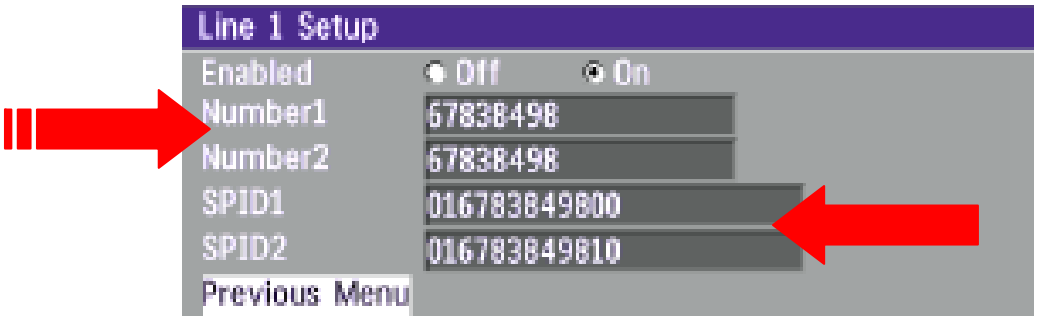


- Since Line 1 is required for proper operation of the Tandberg video unit, ***set Enabled to ON.***



- ***Enter each ISDN telephone number associated with Line 1.*** The BRI circuit provider will provide this information.

- National ISDN and AT&T Custom ISDN sometimes require SPID numbers that are associated with the ISDN telephone numbers. The BRI circuit provider will provide the SPID numbers and their associated ISDN telephone number if they are required. ***Enter SPID numbers for Line 1.***



- ***Highlight Previous Menu and press the 'OK 'button on the Tandberg remote control and return to the ISDN-BRI Settings menu.***

- ***Select the next Line to be programmed and repeat the previous procedures.***

- All BRI Lines that will not be used (if any) will need to be disabled. ***In the Line Setup menu for the BRI Lines not in use set Enabled to OFF.***

- When entries have been completed for all BRI Lines, ***return to the Main Menu by highlighting and selecting Previous Menu at the bottom of each menu screen.*** Once the Main Menu is reached ***proceed with other set up entries as directed by the Tandberg User Guide or exit the Main Menu by highlighting Exit Menu and pressing the 'OK' key on the remote control.***

Complete the USEPA VTC System Registration Form in Appendix E and fax the completed form to the NCSC Tier 2 Video Support Center in RTP, NC @ 919-685-3016.

The NCSC Tier 2 Video Support Center will make arrangements to complete the System Test Verification and the Bridge Certification.

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Appendix D

D.0 QUICK CONFIGURATION GUIDE

D.0.1 LAN SETTINGS

FROM THE MAIN MENU, SELECT UTLILITES

D.0.1.1 UTILITIES

A. **Autoanswer – OFF**
B. **Far End Camera Control – ON**
C. **Welcome Menu – ON**
D. **MCU Status Line – ON**
E. **System Name = Type (always "V")–Org Code–Name or Building Name**
   1. **V1818JDoe**
   2. **V1818EPAWest6303**
F. **Menu Password – Optional –** Keeps local users from unauthorized access to **ALL MENUS.**
G. **Web Snapshots – OFF**
H. **Auto-Request Floor – ON**
I. **Return to Main Menu**

FROM THE MAIN MENU, SELECT TERMINAL SETTINGS

FROM TERMINAL SETTINGS SELECT LAN SETTINGS

D.0.1.2 IP SETTINGS

A. **IP-Assignment – STATIC**
B. **IP-Address –*Supplied by LAN administrator* (i.e. 10.0.5.151)**
C. **IP-Subnet Mask – *Supplied by LAN administrator* (i.e. 255.255.0.0)**
D. **Gateway – *Supplied by LAN administrator (*i.e. 10.0.0.1)**
E. **Ethernet Speed**
   1. **Not connected to a MCU – 10/FULL**
   2. **Connected to a MCU – 100/FULL**
F. **IP-Password – REQUIRED – THE PASSWORD SHALL BE A TEN DIGIT ALPHA NUMERIC COMBINATION (i.e. 12345678DC) The IP password must be supplied to the NCSC Tier 2 Video Support Center in RTP, NC.**
G. **Restart System**
H. **Return to LAN Settings when system restarts.**

D.0.1.3 H.323 SETTINGS

- **A. E.164 Alias – BLANK**
- **B. Use Gatekeeper – OFF**
- **C. Gatekeeper IP – BLANK**
- **D. Use Call Manager – OFF**
- **E. Call Manager IP – BLANK**
- **F. H.323 – BLANK**
- **G. Advanced H.323 Settings**
  1. **RSVP - OFF**
  2. **NAT - OFF**
  3. **NAT Address - BLANK**
  4. **H.323 Ports - STATIC**
  5. **QoS Type - OFF**
  6. **IP Precedence – No Entry Required**
  7. **Diffserv – No Entry Required**
- **H. Return to LAN Settings**

D.0.1.4 SNMP SETTINGS

- **A. All entries – BLANK**
- **B. Return to LAN Settings**

D.0.1.5 WIRELESS LAN SETTINGS (Read Section 6.2.3.4)

- **A. SSID – BLANK**
- **B. Community – BLANK**
- **C. WLAN Mode – MANAGED**
- **D. Encryption**
  1. **Encryption – OFF**
- **E. Return to LAN Settings**

D.0.1.6 STREAMING SETTINGS

- **A. Address – BLANK**
- **B. Address Port – BLANK**
- **C. Streaming Source – AUTO**
- **D. Allow Remote Start – OFF**
- **E. Announcements – OFF**
- **F. Video Rate – BLANK**
- **G. Password – No Entry**
- **H. Return to Main Menu**

If the system is a LAN connection only, complete the USEPA System Checklist in 8.0 and fax the form to the NCSC Tier 2 Video Support Center in RTP, NC @ 919-685-3016. The Video Support Center will make arrangements to complete the System Test Verification.

If the system is a LAN/ISDN connection go to C.0.2

D.0.2 ISDN SETTINGS

FROM THE MAIN MENU, SELECT TERMINAL SETTINGS

FROM TERMINAL SETTINGS, T1000 USERS SELECT ISDN SETUP, ALL OTHERS SELECT NETWORK

D.0.2.1 NETWORK SETTINGS – ALL MODELS EXCEPT FOR THE T1000

A. Current Network – ISDN-BRI

B. ISDN-BRI Settings – ALL MODELS

1. ISDN Switch Type

a. ***Supplied by BRI provider. Typically it will be either National ISDN or AT&T Custom.***

b. Return to ISDN-BRI Settings

2. Line 1 Setup

a. Enabled – ON

b. Number 1 – ***Enter number supplied by BRI provider.***

c. Number 2 – ***Enter number supplied by BRI provider***

d. SPID 1 – ***If required, enter number supplied by BRI provider***

e. SPID 2 – ***If required, enter number supplied by BRI provider***

3. Line 2 thru Line 6 Setup

a. Repeat steps outlined under Line 1 Setup for each line to be used. Disable all lines not being used.

C. Return to Main Menu

Complete the USEPA VTC System Registration Checklist in Appendix E and fax the completed form to the NCSC Tier 2 Video Support Center in RTP, NC @ 919-685-3016. The Video Support Center will make arrangements to complete the System Test Verification and the Bridge Certification.

C.0.3 Remote Control Basics

REMOTE BASICS

Quick Keys

Preset Keys

Video Source Keys

Camera Controls

Menu Navigation Keys

Preset Keys

Dialing Keys

To place a call:
Press the GREEN quick key. Enter the number of the unit you wish to call using the dialing keys.

To make a call via the LAN, enter an IP address by using a *as the 'dot' in the IP address.
Press the "connect" button.

To use the directory:
Press the YELLOW quick key, scroll to the desired entry by using the arrows, press the "connect" button

To answer a call:
Press the "connect " button.

To end a call:
Press the "disconnect" button.

Camera Controls and Menu Keys:
Control your own camera and the far end camera, control your volume, select and move self-view, switch your microphone off and on and navigate in the menu system.

Appendix E

EPA
National Tier 2
VTC Support Center

EPA VTC System
Registration Form

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EPA VTC System Registration Form

SITE INFORMATION

PROGRAM OFFICE/DIVISION: _____

ADDRESS: _____

_____

SYSTEM ADMINISTRATOR: _____

CONTACT NUMBER: _____

SYSTEM INFORMATION

Note: The majority of the information in this section can be gathered from the System Info screen of the Tandberg unit. To access System Info, go to the Main Menu screen and press the yellow' Quick Key' located at the top of the remote control that corresponds with the System Info button that appears on the monitor screen. Not all will be applicable.

SYSTEM NAME: _____

MY ISDN NUMBER: _____

MY IP ADDRESS: _____

MULTI SITE NUMBER: _____

SOFTWARE VERSION: _____**IP:** _____**ISDN:** _____

OPTIONS INSTALLED: _____

NETWORK: _____

LINES ACTIVE: _____

HARDWARE SERIAL NUMBER: _____

MAC ADDRESS: _____

ETHERNET SPEED: _____

IP PASSWORD: _____

FOR DUAL IP/ISDN SYSTEMS

LINE 1: _____ SPID 1: _____

LINE 2: _____ SPID 2: _____

LINE 3: _____ SPID 3: _____

LINE 4: _____ SPID 4: _____

LINE 5: _____ SPID 5: _____

LINE 6: _____ SPID 6: _____

NCSC TIER 2 VIDEO SUPPORT CENTER PERSONNEL USE ONLY

TEST VERIFICATION DATE: _____ INITIALS: _____

BRIDGE VERIFICATION DATE: _____ INITIALS: _____