TANDBERG
990
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.

The TANDBERG MXP Profile Set-top Package option provides integrated, streamlined design for your office environment.

DESIGN FEATURES

- Designed for medium to small meeting rooms and shared office environments
- Elegantly designed all-in-one set-top unit that fits easily on any standard television monitor
- Integrated wide angle view camera with extensive zoom, pan and tilt
- Optional MXP Profile Set-top Package available

APPLICATION FEATURES

- Join up to 4 video and 3 audio sites with optional embedded MultiSite functionality
- Best possible call for each MultiSite participant with rate matching and transcoding
- Powerful live presentations through one-step PC plug-in or LAN connection
- View presentations and presenter simultaneously with DuoVideo and H.239 Dual Stream
- TANDBERG Expressway™ Technology
- URI Dialing

PERFORMANCE FEATURES

- Choice of Network: up to 512 kbps ISDN or external network (H.320)/2 Mbps IP (H.323 or SIP)
- PC card slot for wireless LAN connection
- Standards-based embedded encryption (AES & DES)
- True CD-quality audio
- Protection against network interruptions in point-to-point and multipoint calls with automatic Downspeeding and IPLR
- Superior video quality incorporating the H.264 standard

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UNIT DELIVERED COMPLETE WITH:
Wireless remote control, W.A.V.E II camera,
  microphone and cables

BANDWIDTH
H.320 up to 512 kbps
H.323 up to 2 Mbps
SIP up to 2 Mbps

FIREWALL TRAVERSAL
TANDBERG Expressway™ Technology
Auto NAT
H.460.18, H.460.19 Firewall Traversal

VIDEO STANDARDS
H.261, H.263, H.263+, H.263++ (Natural Video), H.264

VIDEO FEATURES
Native 16:9 Widescreen
Advanced Screen Layouts
Picture in Picture (PIP)
Picture outside Picture & Large POP
Side by Side
PC Zoom
Intelligent Video Management
Simultaneous videoconference & local PC mode
Local Auto Layout

VIDEO INPUTS (4 INPUTS)
Built-in main camera
1 x MiniDin, S-video: auxiliary/document camera
1 x RCA/Phono, composite: document camera/aux
1 x RCA/Phono, composite: VCR
1 x DVI-I: PC
Input: 800 x 600 (@ 60, 72, 75, 85 Hz), 1024 x 768
 (@ 60, 70, 75 Hz), 1280 x 720 (HD720P) (@ 50, 60 Hz),
 1280 x 1024 @ 60 Hz
Extended Display Identification Data (EDID)

VIDEO OUTPUTS (4 OUTPUTS)
1 x MiniDin, S-video: main monitor
1 x RCA/Phono, composite: main monitor or VCR
1 x RCA/Phono, composite: dual monitor or VCR
1xDVI-1/XGA: main or second monitor
XGA Output
800 x 600 @ 75 Hz, 1024 x 768 @ 60 Hz, 1280 x 768
 (WXGA) @ 60 Hz, 1280 x 720 (HD720p) @ 60 Hz
VESA Monitor Power Management

VIDEO FORMAT
NTSC, PAL, VGA, SVGA, XGA, W-XGA, SXGA and HD720p

LIVE VIDEO RESOLUTIONS
NATIVE NTSC:
400p (528 x 400 pixels)
4SIF (704 x 480 pixels), Digital Clarity
Interlaced SIF (iSIF 352 x 480 pixels), Natural Video
SIF (352 x 240 pixels)

NATIVE PAL:
448p (576 x 448 pixels)
4CIF (704 x 576 pixels), Digital Clarity
Interlaced CIF (iCIF 352 x 576 pixels), Natural Video
CIF (352 x 288 pixels)
QCIF (176 x 144 pixels)
SQCIF (128 x 96 pixels) decode only

NATIVE PC RESOLUTIONS:
XGA (1024 x 768)
SVGA (800 x 600 pixels)
VGA (640 x 480 pixels)

WIDE RESOLUTIONS:
w288p (512 x 288 pixels)
w448p (768 x 448 pixels)
w576p (1024 x 576 pixels)
w720p (1280 x 720 pixels)

STILL IMAGE TRANSFER
CIF, SIF, 4CIF (H.261 Annex D), 4SIF, VGA, SVGA, XGA

AUDIO STANDARDS
G.711, G.722, G.722.1, G.728, 64 bit & 128 bit MPEG4AAC-LD

AUDIO FEATURES
CD-Quality 20KHz Mono and Stereo
Telephone add-on via MultiSite
Two separate acoustic echo cancellers
Audio mixer
Automatic Gain Control (AGC)
Automatic Noise Reduction
Audio level meters
VCR ducking
Optional Stereo Package
Packet loss management
Active lip synchronization
GSM/Blackberry interference audio feature

AUDIO INPUTS (4 INPUTS)
2 x microphone, 24V phantom powered, XLR connector
1 x RCA/Phono, Line Level: auxiliary (or VCR Stereo L)
1 x RCA/Phono, Line Level: VCR/DVD (Stereo R)

AUDIO OUTPUTS (2 OUTPUTS)
1 x RCA/Phono, S/PDIF (mono/stereo) or Analogue
 Line Level: main audio or Analogue Stereo L
1 x RCA/Phono, Line Level: VCR or Analogue Stereo R

FRAME RATES
30 frames per second @ 168 kbps and above
60 fields per second @ 336 kbps and above (Point-to-point)

DUAL STREAM
DuoVideo including H.239
Available on H.323 & H.320
Available in MultiSite from any site

NETWORK FEATURES
Auto H.320/H.323 dialing
SIP
Downspeeding
Programmable network profiles
Intelligent Call Management
Maximum call length timer
Automatic SPID and line number configuration
 (National ISDN, GR-2941-CORE)
Soft*Mux*
H.331 Broadcast Mode
NATO standard KG194/KIV-7 encryptor support**
URI Dialing

MULTISITE FEATURES
H.323/H.320/SIP/Telephony/VoIP in the same conference
Audio and Video Transcoding
Video rate matching from 56 kbps - maximum conference rate
CP4 and Voice Switched
Best Impression (Automatic CP Layouts)
H.264, Encryption, Digital Clarity
Dual Stream from any site
ISDN & IP Downspeeding and IPLR
MultiSite (H.243) Cascading on H.320 & H.323
Unicode H.243 Terminal Names
Dial in/Dial out
Chair control for host system
Snapshot of ongoing conference (JPEG)
Snapshot of ongoing DuoVideo/H.239 presentation (JPEG)
Separate welcome page for encrypted conferences
Conference rates up to 2.3 Mbps with optional bandwidth
 upgrade (1.5 Mbps is standard conference rate)
Up to 4 video and 3 audio sites
4 sites @ 768 kbps (+telephone calls)
Mix ISDN-BRI and IP up to maximum conference rate

EMBEDDED ENCRYPTION
H.320 and H.323 point-to-point and multipoint calls
Standards-based: H.233, H.234, H.235 v2&v3, DES and AES
NIST-validated AES
NIST-validated DES
Automatic key generation and exchange
Supported in Dual Stream & MultiSite

IP NETWORK FEATURES
IEEE 802.1x/EAP Network Authentication
H.235 Gatekeeper Authentication
DNS lookup for service configuration
Differentiated Services (DiffServ)
Resource Reservation Protocol (RSVP)
IP precedence
IP type of service (ToS)
IP adaptive bandwidth management (including flow control)
Auto gatekeeper discovery
Dynamic playout and lip-sync buffering
Intelligent Packet Loss Recovery (IPLR)
H.245 DTMF tones in H.323
Cisco CallManager integration using ECS
IP Address Conflict Warning
Date and Time support via NTP

IPv6 NETWORK SUPPORT
Dual Stack IPv4 and IPv6 simultaneous support
Net service support on IPv6: Telnet, HTTP, HTTPS, ftp,
 SNMP, DNS, NTP, DHCP
Media support on IPv6: H.323, Streaming

SECURITY FEATURES
Management via HTTPS
IP Administration Password
Menu Administration Password
Dialing Access code
Streaming password
H.243 MCU Password
VNC password
SNMP security alerts
Disable IP services
MD-5 Challenge
Network Settings protection
SIP Authentication via NTLM
SIP Authentication via Digest

NETWORK INTERFACES
4 x ISDN BRI (RJ-45), S-interface
1 x LAN/Ethernet (RJ-45) 10/100 Mbit
 (LAN/DSL/cable modem)
1 x PC card slot (PCMCIA) for wireless LAN
1 x X.21/V.35/RS-449 with RS-366 dialing, RS-366
 Adtran IMUX, Leased Line, Data Triggered, and Manual**
1 x USB for future usage

WIRELESS LAN SUPPORT
Compliant with IEEE 802.11b, up to 11 Mbit
Support for 64/128 bit encryption (WEP)
Infrastructure or ad-hoc mode

ETHERNET/INTERNET/INTRANET CONNECTIVITY
TCP/IP, DHCP, ARP, FTP, Telnet, HTTP, HTTPS, SOAP and
 XML, MD-5 Challenge
SNMP Enterprise Management
Internal web server
Internal streaming server

OTHER MAJOR STANDARDS SUPPORTED
H.231, H.233, H.234, H.235 v2&v3, H.239, H.241, H.243,
 H.281, BONDING (ISO 13871), H.320, H.323, H.331
RFC 3261, RFC 2237, RFC 3264, RC 3311, RFC 3550,
 RFC 2032, RFC 2190, RFC 2429, RFC 3407

W.A.V.E. (WIDE ANGLE VIEW) II CAMERA
10 x zoom 1/4" CCD +15°/-20° tilt +/-95°pan
61° vertical field of view
96° total vertical field of view
77° horizontal field of view
267° total horizontal field of view
460 (PAL) / 470 (NTSC) TV lines
Min. illumination 2 Lux (F1.8)
Auto or manual focus/brightness/white balance
Far-end camera control
15 near and far-end camera pre-sets
Voice-activated camera positioning

CLOSED CAPTIONING/TEXT CHAT
T.140 text chat available from Telnet, Web and User Interface

PRESENTATIONS AND COLLABORATION
Natural Presenter Package including:
PC Presenter (DVI-I, SXGA In)
PC *Soft*Presenter
Digital Clarity & Native Formats
Advanced Video Layouts
Streaming compatible with Cisco IP/TV,
 Apple QuickTime®, RealPlayer® v8 etc.

SYSTEM MANAGEMENT
Support for the TANDBERG Management Suite
Total management via embedded web server, SNMP,
 Telnet, FTP and SOAP
Remote software upload: via web server, ftp server or ISDN
1 x RS-232 local control and diagnostics
Remote control and on-screen menu system
External Services from TMS

DIRECTORY SERVICES
Support for Local directories (My Contacts),
 Corporate Directory and Global Directory
Unlimited entries using Server directory* supporting
 LDAP and H.350
Unlimited number for Corporate directory (through TMS)
400 number global directory
200 number local directory
16 dedicated MultiSite entries
Received Calls
Directories in Local Languages
Placed Calls
Missed Calls with Date and Time

16 SELECTABLE MENU LANGUAGES
Arabic, Simplified Chinese,Traditional Chinese, English,
 French, German, Italian, Japanese, Korean, Norwegian,
 Portuguese, Russian, Spanish, Suomi, Swedish and Thai
Chinese, Korean and Japanese Input Method Editor

CUSTOMIZED WELCOME SCREEN AND COMPANY LOGO
Picture JPEG (logo.jpg): Recommended maximum size
 is 704x576 for Welcome Screen and 352x288 for
 Encryption Required Screen.

POWER
Auto-sensing power supply
100 – 250 VAC, 50 – 60 Hz
40 watts max.

OPERATING TEMPERATURE AND HUMIDITY
0° C to 35° C (32° F to 95° F) ambient temperature
10% to 90% Relative Humidity (RH)

STORAGE AND TRANSPORT TEMPERATURE
-20° C to 60° C (-4° F to 140° F) at RH 10-90%
(non-condensing)

APPROVALS
Directive 73/23/EEC (Low Voltage Directive)
 - Standard EN 60950
Directive 89/336/EEC (EMC Directive)
 - Standard EN 55022, Class B
 - Standard EN 55024
 - Standard EN 61000-3-2/-3-3
Directive 1999/5/EEC (R&TTE Directive)
 - Standard TBR3
Approved according to UL 60950 and CAN/CSA C22.2
 No.60950
Complies with FCC15B Class B

UNIT DIMENSIONS
Height: 5.1"/13.0 cm
Width: 14.9"/38.0 cm
Depth: 7.9"/20.0 cm
Weight: 5.0 lbs/2.3 kg

* Requires TANDBERG Management Suite 9 or newer

*** Optional equipment, must be specified at the time
 of order, Serial Port replaces ISDN BRI*

*All specifications subject to change without notice,
system specifics may vary.*

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purposes only, actual products may differ.*

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trademarks of TANDBERG in the U.S. and other countries.*

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*MTBF PRODUCT RELIABILITY/MTBF
The predicted reliability is expressed in the expected
random Mean Time Between Failures (MTBF) for the
electronic components based on the Power On Hours:
Power On Hours (POH) > 69 000 hours
Useful Life Cycle > 6 years
ISO 9001 certificate is available upon request*

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