



# 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.



Add a PC card for the greater portability of wireless LAN connectivity.

#### 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 cart and monitors

#### 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 optional DuoVideo or H.239 on single or dual monitor
- Firewall traversal with TANDBERG Expressway™
- URI Dialing

#### PERFORMANCE FEATURES

- Up to 2 Mbps H.323 / 2 Mbps SIP / optional 512 kbps H.320 / 2.3 Mbps total MultiSite
- PC card slot for wireless LAN connection
- Highest level of standards-based embedded encryption (AES) is included
- True CD-quality audio
- Protection against network interruptions in point-to-point and multipoint calls with automatic Downsampling and IPLR
- Superior video quality incorporating the H.264 standard

#### 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

Firewall traversal with TANDBERG Expressway™  
Auto NAT

#### 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 (POP)  
Side by Side  
PC Zoom  
Intelligent Video Management

#### VIDEO INPUTS (4 INPUTS)

Built-in main camera  
1 x MiniDin, S-video: auxiliary / document camera  
2 x RCA / Phono, composite: document camera / aux  
1 x RCA / Phono, composite: VCR  
1 x DVI/SXGA: PC  
Input: 800 x 600 (@ 60, 72, 75, 85 Hz), 1024 x 768  
(@ 60, 70, 75 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  
1 x DVI/XGA: main or second monitor  
XGA Output  
800 x 600 @ 75 Hz, 1024 x 768 @ 60 / Hz, 1280 x  
768 (WXGA) @ 60 Hz  
VESA Monitor Power Management

#### VIDEO FORMAT

NTSC, PAL, VGA, SVGA, XGA, W-XGA, or SXGA

#### LIVE VIDEO RESOLUTIONS

##### NATIVE NTSC:

4SiF (704 x 480 pixels), Digital Clarity  
Interlaced SiF (352 x 480 pixels), Natural Video  
SiF (352 x 240 pixels)

##### NATIVE PAL:

4CiF (704 x 576 pixels), Digital Clarity  
Interlaced CiF (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)

#### 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 MPEG4 AAC-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

#### 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  
1 x RCA / Phono, Line Level: VCR

#### FRAME RATES

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

#### DUAL STREAM

DuoVideo & 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)  
SoftMux  
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  
Dial in / Dial out  
MultiSite (H.243) Cascading on ISDN & IP  
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

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

#### 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 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, Leased Line  
or data triggered mode\*\*  
1 x USB

#### 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, 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 RS-232, Telnet or Web

#### PRESENTATIONS AND COLLABORATION

Natural Presenter Package including:  
PC Presenter (DVI-I, SXGA In)  
PC SoftPresenter  
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, XML, SOAP and FTP  
Remote software upload: via web server or FTP server  
1 x RS-232 local control and diagnostics  
Remote control and on-screen menu system

#### DIRECTORY SERVICES

Support for Local, Global and Dynamic Server Directories  
Unlimited entries using Server directory\* supporting  
LDAP and H.350  
400 number global directory  
100 number local directory  
16 dedicated MultiSite entries  
Last Number Called  
Missed Calls  
Directories in Local Languages

#### 13 SELECTABLE MENU LANGUAGES

Simplified Chinese, Traditional Chinese, English,  
French, German, Italian, Japanese, Korean, Norwegian,  
Portuguese, Russian, Spanish and Swedish

#### CUSTOMIZED WELCOME SCREEN AND COMPANY LOGO

#### 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)

#### 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

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

*\* Requires TANDBERG Management Suite 9.0 or newer*

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

*All photographs and images contained in these materials  
are for general, representational purposes only. Actual  
products may differ based upon component availability.*

*TANDBERG is a registered trademark or trademark  
of TANDBERG in the U.S. and other countries.*

*Cisco, Cisco Systems, the Cisco Systems logo, and the  
Cisco Arrow logo are registered trademarks or trademarks  
of Cisco Systems, Inc. and/or its affiliates in the U.S.  
and certain other countries.*

*RealPlayer is a trademark or a registered trademark  
of RealNetworks, Inc.*

*QuickTime is a registered trademark of Apple Computer,  
Inc., registered in the U.S. and other countries.*

*Microsoft and NetMeeting are either registered trade-  
marks or trademarks of Microsoft Corporation in the  
United States and/or other countries.*

*All other trademarks are property of their respective owners.*

*Contains iType™ from Agfa Monotype Corporation.*

## TANDBERG

# 990

MPX

TANDBERG WORLD HEADQUARTERS  
Philip Pedersens vei 22  
1366 Lysaker, Norway  
Tel: +47 67 125 125  
Fax: +47 67 125 234  
Video: +47 67 117 777  
E-mail: tandberg@tandberg.net

200 Park Avenue, Suite 2005  
New York, NY U.S.A. 10166  
Tel: +1 212 692 6500  
Tel: +1 800 538 2884 (toll free in the U.S.)  
Fax: +1 212 692 6501  
Video: +1 212 692 6535  
E-mail: tandberg@tandbergusa.com

February 2005