



See adaptability.

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

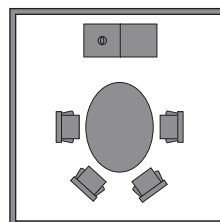
- Join up to 4 video sites and 1 audio site with embedded MultiSite^{TF} functionality
- Powerful live presentations through one-step PC plug-in (PC Presenter^{TF}) or LAN connection (PC SoftPresenter^{TF})
- View presentations and presenters simultaneously with the unique DuoVideo^{TF} feature

Performance features

- Choice of network: IP up to 1.5 mbps, optionally with ISDN up to 384 kbps
- PC card slot for wireless LAN connection
- Superior video quality incorporating the H.264 standard
- Highest level of standards-based embedded encryption (AES) is included
- Protection against network interruptions with automatic Downspeeding^{TF} and IPLR^{TF}



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



The TANDBERG 990 is ideal for medium to small meeting rooms and shared office environments.

The TANDBERG 990 incorporates the features and functions of larger systems in a portable, high performance set-top box. This compact unit conveniently transforms any standard TV into an interactive meeting place, providing users with an outstanding business tool that can be relied on. The intuitive user interface is common to all TANDBERG systems and makes it easy for even new users to make a call.

UNIT DELIVERED COMPLETE WITH:

Wireless remote control, W.A.V.E. II camera, microphone, and cables

BANDWIDTH

H.323 up to 1.5 mbps
H.320 up to 384 kbps

VIDEO STANDARDS

H.261, H.263, H.263+, H.263++ (Natural Video™), H.264

VIDEO FEATURES

Picture in Picture (PIP)
Intelligent Video Management™

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 XGA: PC

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 XGA: main monitor or dual monitor

XGA INPUT / XGA OUTPUT

Input: 640 x 480 – 1024 x 768, 56 – 85 Hz. auto-detection
Output: 640 x 480 – 1024 x 768, 60 Hz

VIDEO FORMAT

NTSC, PAL, VGA, SVGA or XGA

LIVE VIDEO RESOLUTION

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 pixels)
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

AUDIO FEATURES

Telephone add-on via MultiSite™
Audio level meters
Automatic noise reduction
Two separate acoustic echo cancellers
Audio mixer
Automatic gain control
VCR ducking

AUDIO INPUTS (4 INPUTS)

2 x microphone, 11V phantom powered, XLR connector
1 x RCA / Phono, Line Level: auxiliary
1 x RCA / Phono, Line Level: VCR

AUDIO OUTPUTS (2 OUTPUTS)

1 x RCA / Phono, Line Level: main audio
1 x RCA / Phono, Line Level: VCR

FRAME RATES – POINT-TO-POINT & MULTISITE™

15 frames per second @ 56 – 128 kbps
30 frames per second @ 168 kbps and above
60 fields per second @ 336 kbps and above,
Point-to-Point Only (Natural Video™)

MULTISITE™ FEATURES

Support for ISDN or IP telephones
ISDN & IP Downspeeding™ at call set-up
Dial in / Dial out capabilities
Continuous Presence or Voice Switched
Chair control for host system
5 sites including min. 1 telephone call
Built-in MultiSite™ audio bridge for up to 5 sites
Built-in MultiSite™ IP audio bridge for up to 4 sites
DuoVideo™, Digital Clarity™

MultiSite™ (H.243) Cascading over ISDN and IP
Up to 10 video and 4 audio sites
Any combination of IP & ISDN connections (transcoding)

MultiSite™ over IP
4 sites @ 512 kbps + 1 telephone call over ISDN
3 sites @ 768 kbps + 2 telephone calls over ISDN
Point-to-point @ 1.5 Mbps + 3 telephone calls over ISDN

MultiSite™ over ISDN BRI and IP
4 sites (1 on ISDN) @ 384 kbps
4 sites (1 on ISDN) @ 320 kbps + 1 telephone call over ISDN
3 sites (1 on ISDN) @ 256 kbps + 2 telephone calls over ISDN
4 sites (2 on ISDN) @ 192 kbps
4 sites (all ISDN) @ 128 kbps
3 sites (all ISDN) @ 128 kbps + 2 telephone calls over ISDN
Point-to-point (ISDN) @ 192 kbps + 3 telephone calls over ISDN

DUOVIDEO™

Available on all networks
Available from host system in MultiSite™ (over IP & ISDN)
Available in dual monitor systems and in single monitor systems with Natural Presenter

NETWORK FEATURES

Auto H.320 / H.323 dialing
Downspeeding™
Programmable network profiles
Intelligent Call Management™
Maximum call length timer
Automatic SPID and line number configuration (National ISDN, GR-2941-CORE)
SoftMux™

EMBEDDED ENCRYPTION

H.320 and H.323 point-to-point and multipoint calls
Standards-based: H.233, H.234, H.235, DES and AES
NIST-validated AES
NIST-validated DES
Automatic key generation and exchange
Supported in DuoVideo™

H.323 NETWORK FEATURES

Differentiated Services (DiffServ)
Resource Reservation Protocol (RSVP)
IP precedence
IP type of service (ToS)
Network Address Translation (NAT) Support
IP adaptive bandwidth management (including flow control)
Auto gatekeeper discovery
Dynamic playout and lipsync buffering
Intelligent Packet Loss Recovery™ (IPLR™)
IP Address Conflict Warning

SECURITY FEATURES

Encrypted IP Password
Menu Password
Access code
Streaming password
H.243 MCU password
VNC password
SNMP security alert
Encrypted HTTP password
Possibility to disable IP services

NETWORK INTERFACES

3 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

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
SNMP Enterprise Management
Internal web server
Internal streaming server (streams local and far-end site)
10/100 Mbit full / half duplex (manual or auto detect selection)

OTHER MAJOR ITU STANDARDS SUPPORTED

H.231, H.233, H.234, H.235, H.241, H.243, H.281,
BONDING (ISO 13871), H.320, H.323

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

PRESENTATIONS AND COLLABORATION

Natural Presenter Package including:
PC Presenter™
PC SoftPresenter™
Digital Clarity™
DuoVideo™
T.120 Microsoft® NetMeeting® support via RS-232 (9-pin D-sub)
Streaming (compatible with Cisco IP / TV, Apple QuickTime®, RealPlayer® v8 etc.)

CLOSED CAPTIONING/TEXT CHAT

T.140 standards-based

SYSTEM MANAGEMENT

Support for the TANDBERG Management Suite
Total management via embedded web server, SNMP, Telnet and FTP
Remote software upload: during a call over all networks, via webserver or via FTP server
1 x RS-232 for local software upgrades, local control and diagnostics
Remote control and on-screen menu system

DIRECTORY SERVICES

400 number global directory
100 number local directory
16 dedicated MultiSite™ entries

11 SELECTABLE MENU LANGUAGES

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

CUSTOMIZED BOOT UP LOGO (JPEG)**POWER**

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

UNIT DIMENSIONS

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

TF indicates a TANDBERG First

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



The TANDBERG 990 has been tested in accordance with interoperability criteria set by Cisco Systems, Inc. and is compatible with the Cisco IP/VC 35XX product family, Cisco MCM 12.1 (5) XM3 and Cisco Aironet Wireless LAN Adapter 350 series. For full disclaimer see TANDBERG product documentation or the following Web site: www.tandberg.net.

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