TANDBERG Unique Features

TANDBERG 880 *MXP* System

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Agenda

- **Improved Video Quality**
- **Best-in-Class Audio**
- **Display Features**
- **Expanded MultiSite**
- **Security**
- **Other Features**

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Extensive H.264 Support

High quality video on low bandwidth calls is a requirement for increasing satisfaction with video deployment

H.264 with:
- MultiSite
- DuoVideo/H.239
- Encryption

And no loss of functionality

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Natural Video and Native Resolutions

- **Broadcast TV mode video quality**
- **60 fields per second true interlaced picture (iCIF)**
- **From 384 kbps**
- **Native resolutions**
  - 4CIF
  - iCIF
  - XGA
- **High Definition (HD) Support on all TANDBERG MXP systems**
- **NEW High quality video and native 16:9 formats**

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The Best Audio in the Industry

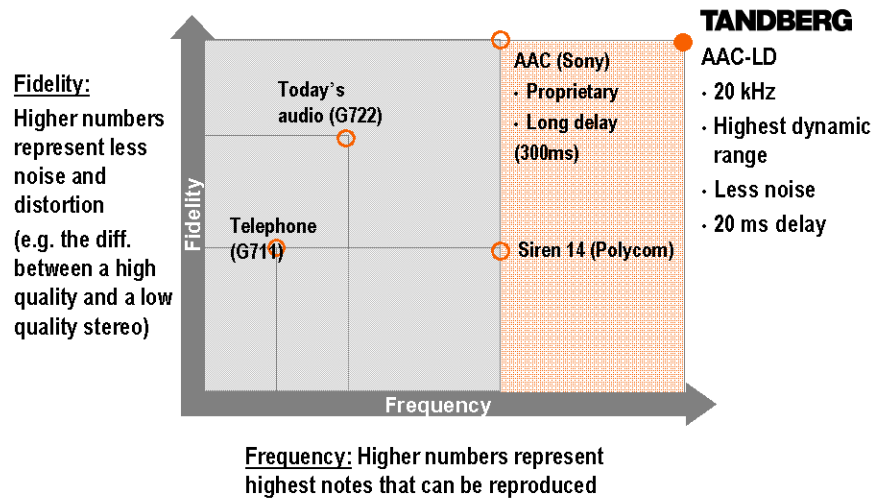High-performance audio provides a richer, more complete visual communication experience

Introducing *MXP* audio:

- **True CD-quality**
  - MPEG4 AAC-LD standard
- **Stereo**
- **Digital output**
- **Digital NAM**
- **High-end Satellite Speaker Upgrade Package**
- **Set Top Stereo Package**

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Best-in-Class Audio: Comparisons

Fidelity:

Higher numbers represent less noise and distortion

(e.g. the diff. between a high quality and a low quality stereo)

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AAC (Sony)
- Proprietary
- Long delay (300ms)

Today's audio (G722)

Telephone (G711)

Siren 14 (Polycom)

Fidelity

Frequency

AAC-LD
- 20 kHz
- Highest dynamic range
- Less noise
- 20 ms delay

Frequency: Higher numbers represent highest notes that can be reproduced

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Audio Technology

Standard	Bandwidth	Bit Rate	Quality	Speech	Music
G.711	Narrowband (3.4 kHz)	48-64kbps	Telephony		
G.728	Narrowband (3.4 kHz)	16kbps	Telephony	🔊	🔊
G.722	Wideband (7kHz)	48-64kbps	AM radio	🔊	🔊
G.722.1	Wideband (7kHz)	24/32kbps	AM radio		
Siren-14*	Extended wideband (14kHz)	24-48kbps	FM radio	🔊	🔊
AAC**	Extended wideband (14kHz)	From 48kbps	FM radio		
AAC-LD	Full HiFi bandwidth (20Khz)	From 64kbps	True CD	🔊	🔊

- New applications require enhanced audio experience including voice, multimedia presentations, movies, music, etc
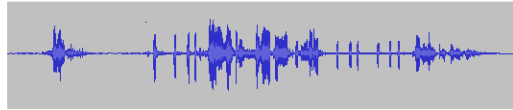- No other manufacturer can offer True CD-Quality audio – *TANDBERG First*

*Proprietary Polycom only, **Proprietary Sony only
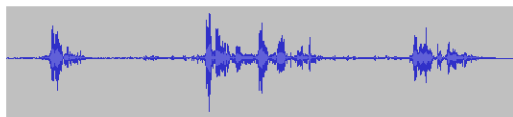
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Audio: Technology Leadership

Do you also find this annoying?

Click on the graph to listen to the audio

With F4 software this is history!

Click on the graph to listen to the audio

GSM/Blackberry Noise Interference is history - TANDBERG First

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Duo Video/H.239

- **Transmit and display two live incoming pictures**
  - E.g. PC presentation and presenter
  - Creates a natural meeting environment
- **H.239 is the new ITU standard for Dual Images**
  - Creates interoperability between all vendors
  - We will continue to have support for our Duo Video
- **Easily activate with remote control**
  - Press blue presentation key on the remote.
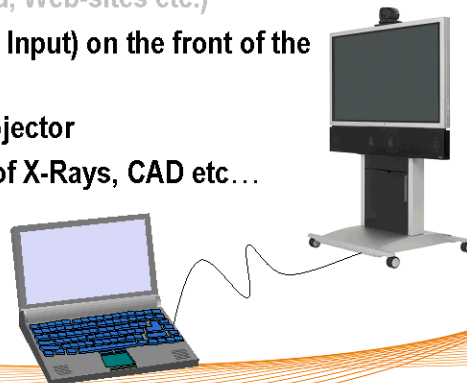 - Press once more to close Duo Video/H.239

Duo Video/H.239 can easily be used
for the these devices

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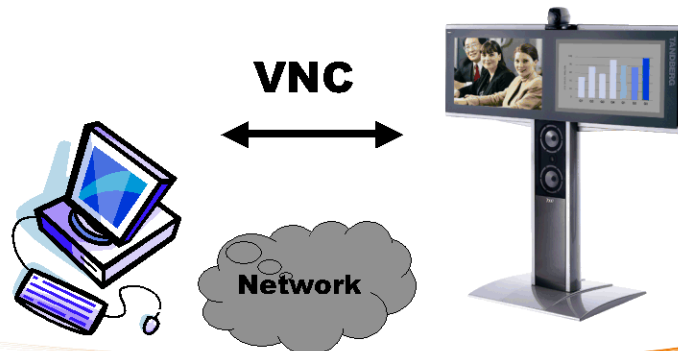# PC Presenter^{TF}: Easy PC connection

- **Make presentations easy to hold**
- **Transmit from any PC program to the video monitor**
  - Use for all types of software and hardware (e.g. Excel, Powerpoint, Word, Web-sites etc.)
- **One step PC plug-in (SXGA Input) on the front of the cabinet**
- **Replaces the need for a projector**
- **PC Zoom – easier viewing of X-Rays, CAD etc…**

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PC *Soft*Presenter[TF]

- **Show live PC presentations (XGA resolution)**
- **Connect any PCs in the network to video system using Virtual Computing Technology (VNC)**

VNC

Network

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Presentations

TANDBERG provides the best quality and format options for sharing presentations – and makes the technology transparent

- **DuoVideo/H.239 capability**
- **Single or Dual monitor solutions**
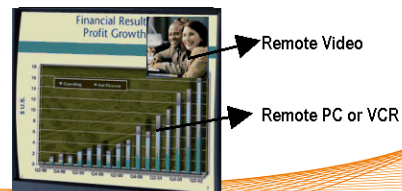- **Advanced screen layouts**
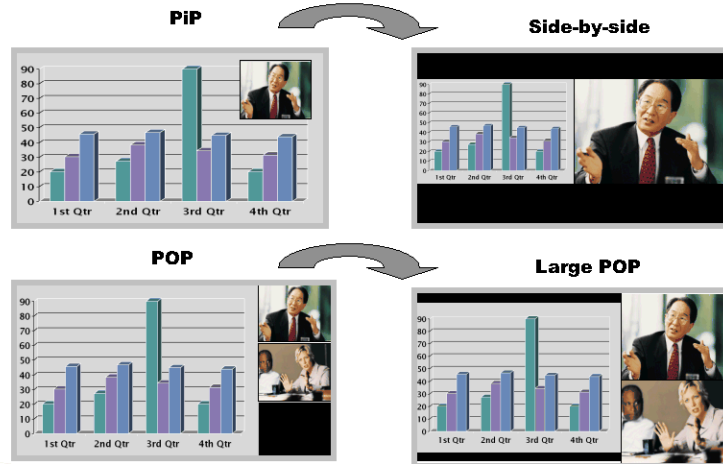- **"Layout" button on MXP remote**

MAIN MONITOR   DUAL MONITOR

Financial Results:
Profit Growth

Dual Monitor system

Financial Result
Profit Growth

Remote Video

Remote PC or VCR

Single Monitor system

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Advanced Picture Layout

Press Layout" button on MXP remote Full screen

PiP → Side-by-side

POP → Large POP

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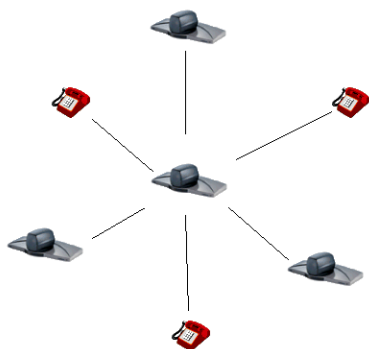- Expanded MultiSite
- Security
- Other Features

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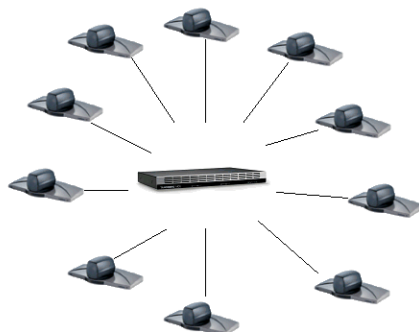# Embedded MultiSite

- Connect up to 4 video and 3 audio sites

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TANDBERG MCU

- Connect up to 10 video sites

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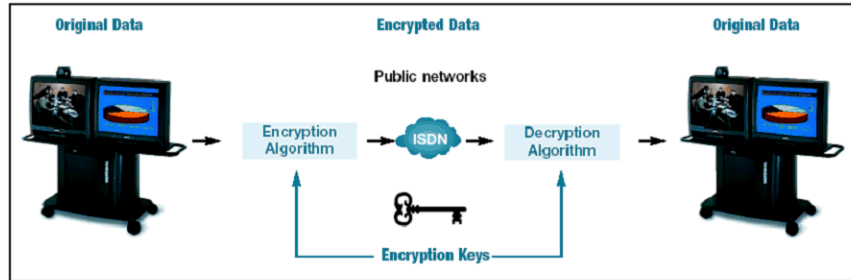- **Other Features**

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Embedded Security

- **Standardization of encryption in ITU supports the latest version of encryption over IP and ISDN**
  - AES and DES
  - Point-to-point and MultiSite
  - On any bandwidth!
- **End-to-end H.235 authentication**
  - Control and authenticate Endpoints on your network to prevent misuse
  - ITU standard H.235 Authentication
  - Supported by TANDBERG Endpoints, Gatekeeper and Border Controller
- **High security network authentication (802.1x)**
  - Authenticate all corporate devices to the network
  - TANDBERG endpoints now meet this security standard
  - The LAN network security standards already understood by IT departments

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Embedded Encryption

Original Data	Encrypted Data	Original Data
	Public networks	

Encryption Algorithm → ISDN → Decryption Algorithm

Encryption Keys

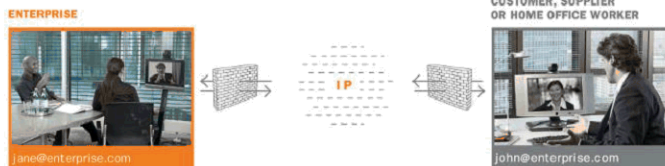| Encryption Level	Standard	Encryption Level	Equipment necessary
High		Military	Custom made external boxes
	AES	Medium-risk enteprises	Full TANDBERG product line with Secure Conference^{TT} AES^1
Medium	DES	Commercial and non-commercial enterprises	Full TANDBERG product line with latest software with embebbed Secure Conference^{TT} DES
None	Unsecure		Other videoconferencing equipment

IP: Technology Leadership

- **IPv6 Support**
  - More addresses available
  - <u>Benefit</u>: TANDBERG is providing solutions TODAY that are enabled for the future.
- **Expressway™ firewall traversal technology for end-to-end IP**
  - Standard-based Expressway Implementation, H460.18 and H460.19

ENTERPRISE

jane@enterprise.com

IP

CUSTOMER, SUPPLIER OR HOME OFFICE WORKER

john@enterprise.com

- **SIP Support**
  - Microsoft & Nortel SIP support

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Downspeeding

- **Connection maintained if network is interrupted during a call**
  - Gives very reliable meetings
- **Call maintained with just one channel**
  - Up to 29 of 30 channels can drop
- **Videoconference is not interrupted**
  - No wasted time on rebooting and redialling

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Quality of Service

- **Quality of service**
  - Provides consistent performance on the (IP) network
- **Many methods to implement QoS**
  - RSVP – Resource Reservation Protocol
    - Single path through network
  - IP Precedence
    - Marks some traffic as more important than the rest
  - ToS
    - Set to minimum delay, maximum throughput, maximum reliability, minimum cost…

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IPLR

Intelligent Packet Loss Recovery

- Ability to recover from major packet loss on IP networks
- Improves both received AND transmitted video
- Standards-based implementation
- Compatible with all H.323 endpoints, terminals, gateways, MCU's…

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Thai Menu Support

แผงควบคุม

➕ ตรวจสอบระบบ   🔤 ส่งข้อความ   🔊 สัญญาณ
                                เสียงสาธิต

🔧 ตั้งค่าผู้ดูแลระบบ   🔄 บูทระบบใหม่   ❓ คู่มือการใช้งาน

❌

TANDBERG *MXP*

· **Easy to use & user friendly**

ทั่วไป
ภาษา
ชื่อระบบ
แสดงผลสองหน้าจอ
ตอบรับสายอัตโนมัติ
ระยะเวลาในการโทร
▶ ตั้งค่าสมุดโทรศัพท์
▶ การเปิดใช้งาน
▶ ตั้งค่าจอภาพ
▶ Software Options

○ English	○ Deutsch
○ Français	○ Italiano
○ Norsk	○ Svenska
○ Español	○ Português
○ Русский	○ Finnish
○ 日本語	○ 简体中文
○ 한국어	○ 繁體中文
◉ ภาษาไทย	

💾 🔄 ❌

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Remote Control

Easier to use than a TV remote to make users more comfortable making ad hoc calls

- **Simplified look and feel**
- **Auto detection**
  - Will wake up the system when you lift it
- **Larger, fewer easy-to-read keys**
- **Adjustable range**
  - Lower/increase sensitivity
  - Useful in open office environment

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Wireless LAN support

- Built-in Wireless LAN (Wi-Fi)
- Compliant with IEEE 802.11b
- Support for 64 / 128 bit encryption (WEP)
- Infrastructure or ad-hoc mode

Wireless Adapter

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Streaming

LAN

- See and hear a videoconference streamed from the local and far-end site
- Chat on streaming: Clients can send messages to streaming system

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Summary of additional features

- Autoanswer
- Last number dialled
- Local clock and time of missed calls
- Do not disturb
- Text chat
- On the fly network selection
- Intelligent call management – auto selection of optimal video/audio quality

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Thank You

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