



# TANDBERG Codec C90

C90 er det kraftigste og mest fleksible videokodeken på markedet i dag. Systemet har et krystallklart HD-bilde med en oppløsning på 1080p og høykvalitets lyd. Utstyret har mange inn- og utganger og dermed en lang rekke integreringsmuligheter.



C90 er også tilgjengelig som en integrasjonspakke med et PrecisionHD-kamera med 1080p-oppløsning og to mikrofoner.

**FÅ MEST MULIG UTBYTTE AV INVESTERINGEN MED PROFESSIONAL SERVICES; EKSPERTER FRA TANDBERG SOM TILBYR NETTVERKSANALYSE, DESIGN, INSTALLASJON OG OPPLÆRING. BESØK [WWW.TANDBERG.NO](http://WWW.TANDBERG.NO)**

#### DESIGNFUNKSJONER

- Den beste og kraftigste kodeken som er tilgjengelig, med ypperste kvalitet på bilde og lyd
- Montérbar i komponenthyller (2U høy) med et patentert rack-monteringssystem inkludert
- Standardbaserte tilkoblinger for integrasjon med profesjonelle systemer
- Overlegen kvalitet og fleksibilitet
- Baserer seg på standard protokoller og tilkoblinger
- Kompatibel med standard videoløsninger uten at man går glipp av funksjoner

#### BRUKSFUNKSJONER

- 720p 30 individuell HD transkodning med innebygd Multisite
- Kan håndtere 5 samtidige kamera/videoinputs
- Høykvalitets samhandling med UXGA-oppløsning
- Nærmest ubegrensede integreringsmuligheter
- Idéell for videokonferanse i styrerom, store kontorer, auditorier, undervisningsrom og telemedisin-applikasjoner

#### YTELSESFUNKSJONER

- Optimal oppløsning på opptil 1080p
- H.323/SIP opp til 6 Mbps fra punkt til punkt; opp til 10 Mbps MultiSite-båndbredde totalt
- Kan koble opp til 12 HD-kilder og 8 mikrofoner direkte til grensesnittet
- Full duplex lyd med svært god stereolyd
- Tilgang til alle API'er
- Utnytter TANDBERGS totalløsning med brannmurtraversering, flerparts-konferanser, opptak- og avspillingsløsninger etc.

## UNIT DELIVERED COMPLETE WITH:

Videoconferencing codec, wireless remote control, rackmounting rails, LAN cable, power cable

## BANDWIDTH

H.323/SIP up to 6 Mbps point-to-point  
Up to 10 Mbps total MultiSite bandwidth

## FIREWALL TRAVERSAL

TANDBERG Expressway™ Technology  
H.460.18, H.460.19 Firewall Traversal

## VIDEO STANDARDS

H.261, H.263, H.263+, H.264

## VIDEO FEATURES

Native 16:9 Widescreen  
Advanced Screen Layouts  
Intelligent Video Management  
Local Auto Layout

## VIDEO INPUTS (13 INPUTS)

### 4 X HDMI INPUTS, SUPPORTED FORMATS:

1920 x 1080@60 fps (1080p60)  
1920 x 1080@50 fps (1080p50)  
1920 x 1080@30 fps (1080p30)  
1920 x 1080@25 fps (1080p25)  
1280 x 720@60 fps (720p60)  
1280 x 720@50 fps (720p50)  
640 x 480@60 fps (480p60)  
800 x 600@60 fps (SVGA)  
1024 x 768@60, 70, 75, 85 fps (XGA)  
1280 x 1024@60, 75 fps (SXGA)

### 4 X HD-SDI INPUTS, SUPPORTED FORMATS:

1920 x 1080@30 fps (1080p30)  
1920 x 1080@25 fps (1080p25)  
1280 x 720@60 fps (720p60)  
1280 x 720@50 fps (720p50)  
1280 x 720@30 fps (720p30)  
1280 x 720@25 fps (720p25)

### 2 X DVI-I INPUTS, SUPPORTED FORMATS:

Analog (VGA):

1024 x 768@60, 70, 75, 85 fps (XGA)  
1280 x 1024@60, 75 fps (SXGA)

Digital (DVI-D):

1920 x 1080@60 fps (1080p60)  
1920 x 1080@50 fps (1080p50)  
1920 x 1080@30 fps (1080p30)  
1920 x 1080@25 fps (1080p25)  
1280 x 720@60 fps (720p60)  
1280 x 720@50 fps (720p50)  
640 x 480@60 fps (480p60)  
800 x 600@60 fps (SVGA)  
1024 x 768@60, 70, 75, 85 fps (XGA)  
1280 x 1024@60, 75 fps (SXGA)

### 2 X YPBPR INPUTS, SUPPORTED FORMATS:

1920 x 1080@60fps (1080p60)  
1920 x 1080@50fps (1080p50)  
1920 x 1080@30fps (1080p30)  
1920 x 1080@25fps (1080p25)  
1280 x 720@60fps (720p60)  
1280 x 720@50fps (720p50)  
1280 x 720@30fps (720p30)  
720 x 576@50fps (576p50)  
720 x 480@60fps (w480p60)

### 1 X S-VIDEO/COMPOSITE INPUT (BNC CONNECTORS)\*

PAL/NTSC

Extended Display Identification Data (EDID)

## VIDEO OUTPUTS (5 OUTPUTS)

### 2 X HDMI OUTPUTS, 2 X DVI-I OUTPUTS,

#### SUPPORTED FORMATS:

1920 x 1080@60fps (1080p60)  
1280 x 720@60fps (720p60)  
1366 x 768@60fps (WXGA)  
1280 x 768@60fps (WXGA)  
1024 x 768@60fps (XGA)  
1280 x 1024@60fps (SXGA)  
640 x 480@60fps (VGA)  
800 x 600@60fps (SVGA)

### 1 X COMPOSITE OUTPUT (BNC CONNECTOR),

#### SUPPORTED FORMATS:

PAL/NTSC

VESA Monitor Power Management

## LIVE VIDEO RESOLUTIONS (ENCODE/DECODE)

176 x 144@30fps (QCIF)  
352 x 288@30fps (CIF)  
512 x 288@30fps (w288p)  
576 x 448@30fps (448p)  
768 x 448@30fps (w448p)  
704 x 576@30fps (4CIF)  
1024 x 576@30fps (w576p)  
640 x 480@30fps (VGA)  
800 x 600@30fps (SVGA)  
1024 x 768@30fps (XGA)  
1280 x 1024@30fps (SXGA)  
1280 x 720@30fps (HD720p30)  
1920 x 1080@30fps (HD1080p30)\*\*

## AUDIO STANDARDS

G.711, G.722, G.722.1, 64 bit & 128 bit MPEG4 AAC-LD, AAC-LD Stereo

## AUDIO FEATURES

CD-Quality 20KHz Mono and Stereo  
Eight separate acoustic echo cancellers  
8-port Audio mixer  
Automatic Gain Control (AGC)  
Automatic Noise Reduction  
Active lip synchronization

## AUDIO INPUTS (14 INPUTS)

8 x microphone, 48V phantom powered, XLR connector  
each with separate echo cancellers and noise reduction,  
all microphones can be set for balanced line level  
2 x RCA/Phono, Line Level: Stereo PC input  
2 x RCA/Phono, Line Level: Stereo auxiliary/DVD input  
2 x HDMI, digital: Stereo PC/DVD inputs

## AUDIO OUTPUTS (8 OUTPUTS)

2 x XLR, balanced line level, stereo main audio  
2 x RCA/Phono, line level, stereo main audio, configurable  
to S/PDIF  
2 x RCA/Phono, line level, stereo to recording device  
1 x HDMI, digital, stereo main audio  
1 x HDMI, digital, stereo to recording device

## DUAL STREAM

H.239 (H.323) dual stream  
BFCP (SIP) dual stream  
Available in MultiSite from any site  
Support for resolutions up to 1080p30 in both main stream  
and dual stream simultaneously

## MULTISITE FEATURES

4-way High Definition SIP/H.323 MultiSite  
Full individual audio and video transcoding up to 1080p30  
Individual layouts in MultiSite CP (Takes out SelfView)  
H.323/SIP/VoIP in the same conference  
Best Impression (Automatic CP Layouts)  
H.264, Encryption, Dual Stream from any site  
IP Downspeeding  
Dial in/Dial out  
Conference rates up to 10 Mbps

## PROTOCOLS

H.323  
SIP

## EMBEDDED ENCRYPTION

H.323/SIP point-to-point and multipoint calls  
Standards-based: H.235 v2 & v3 and AES  
Automatic key generation and exchange  
Supported in Dual Stream & MultiSite

## IP NETWORK FEATURES

DNS lookup for service configuration  
Differentiated Services (QoS)  
IP adaptive bandwidth management (including flow control)  
Auto gatekeeper discovery  
Dynamic playout and lip-sync buffering  
H.245 DTMF tones in H.323  
Date and Time support via NTP  
Packet Loss based Downspeeding  
URI Dialing  
TCP/IP  
DHCP

## SECURITY FEATURES

Management via HTTPS and SSH  
IP Administration Password  
Menu Administration Password  
Disable IP services  
Network Settings protection

## NETWORK INTERFACES

2\*\*\* x separate LAN/Ethernet (RJ-45) 10/100/1000 Mbit

## OTHER INTERFACES

USB host for future usage  
USB device for future usage  
GPIO\*

## PRECISIONHD 1080P CAMERA

1/3" CMOS  
12 x zoom  
+15°/-25° tilt, +/- 90° pan  
43.5° vertical field of view  
72° horizontal field of view  
Focus distance 0.3m-infinity  
1920 x 1080 pixels progressive @ 60fps  
Other formats supported (configurable through Dip-switch):  
1920x1080@60fps (HDMI only)  
1920x1080@50fps (HDMI only)  
1920x1080@30fps  
1920x1080@25fps  
1280x720@60fps  
1280x720@50fps  
1280x720@30fps  
1280x720@25fps  
Automatic or manual focus/brightness/whitebalance  
Far-end camera control  
Daisy-chain support (Visca protocol camera)  
Dual HDMI and HD-SDI output  
Upside-down mounting with automatic flipping of picture

## SYSTEM MANAGEMENT

Support for the TANDBERG Management Suite  
Total management via embedded SNMP, Telnet,  
SSH, XML, SOAP  
Remote software upload: via web server, SCP, HTTP, HTTPS  
1 x RS-232 for local control and diagnostics  
Remote control and on-screen menu system

## DIRECTORY SERVICES

Support for Local directories (My Contacts)  
Corporate Directory  
Unlimited entries using Server directory supporting  
LDAP and H.350  
Unlimited number for Corporate directory (through TMS)  
200 number local directory  
Received Calls  
Placed Calls  
Missed Calls with Date and Time

## POWER

Auto-sensing power supply  
100–240 VAC, 50/60 Hz  
175 watts max. for codec and main camera

## 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 2006/95/EC (Low Voltage Directive)  
– Standard EN 60950-1  
Directive 2004/108/EC (EMC Directive)  
– Standard EN 55022, Class B  
– Standard EN 55024  
– Standard EN 61000-3-2/-3-3  
Approved according to UL 60950-1 and CSA 60950-1-07  
Complies with FCC15B Class B

## DIMENSIONS

Length: 17.36" / 44.1 cm  
Height: 3.67" / 9.3 cm  
Depth: 11.8" / 30 cm  
Weight: 11.22 lbs / 5.1 kg

\* not supported in version 1

\*\* requires option

\*\*\* only one LAN/Ethernet interface supported in version 1

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

All images in these materials are for representational purposes only, actual products may differ.

TANDBERG and Expressway are registered trademarks or trademarks of TANDBERG in the U.S. and other countries.

All other trademarks are property of their respective owners.

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

## TANDBERG

# Codec C90

TANDBERG WORLD HEADQUARTERS

Philip Pedersens vei 20  
1366 Lysaker, Norway  
Tel: +47 67 125 125  
Fax: +47 67 125 234  
Video: +47 67 126 126  
tandberg@tandberg.com

1212 Avenue of the Americas,  
24<sup>th</sup> Floor  
New York, NY USA 10036  
Tel: +1 212 692 6500  
Fax: +1 212 692 6501  
Video: +1 212 692 6535  
tandberg@tandberg.com

November 2008