

High Definition Software Development Kit



Development of customized videoconferencing applications

The Emblaze-VCON High Definition Development Kit (HDDK) is a set of software libraries and tools which enable application developers to add standards-based, customized, high definition visual communications to their own software and hardware platforms.

Transmitting and receiving up to 720p resolution and with full-feature functionality, the HDDK is the optimum choice for developers seeking to easily integrate videoconferencing into existing or new applications. To meet conferencing and collaboration requirements, developers have access to Emblaze-VCON's high definition video and audio codecs, compression technology, Quality of Service transmission, data sharing capabilities and more. The results are integrated conferencing application in which initiating and receiving conferences is easy, yet also delivers the robust performance required for everyday business and enterprise communications.

Advantages of Developing with HDDK

- Supports high definition resolution
- H.264 video support up to 4MB and ISDN up to 512 Kbps (4xBRI)
- CD-quality audio with ultra-wide band, 20 kHz audio
- Incorporates H.239, HD DualStream™ for simultaneously sending and receiving video + data streams
- Supports encrypted conferences using the H.235 encryption standard
- Emblaze-VCON PacketAssist™ architecture for advanced Quality of Service (QoS) over IP
- Remote management and upgrades available when used with Emblaze-VCON's MXM
- Fully compatible with Windows Vista SP1
- Floating and permanent licensing models

Who uses HDDK?

- In-house software developers
- Original electronic appliance manufacturers
- System integrators
- Independent software vendors
- End-user organizations

* Developers do not require previous knowledge of videoconferencing

Which sectors benefit from HDDK?

- Security and surveillance
- Banking, financial services, and e-Commerce
- Telemedicine, remote consultations and diagnoses
- Distance learning
- Help desks and call centers

HDDK OCXs

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|---------------|--|
| LAN OCX | Controls point-to-point IP telephony connection and videoconferencing synchronization based on the H.323 standard. The LAN OCX also includes Interactive Multicast chair control, participant list management, and broadcast viewing (SDP listening) capabilities. |
| Video OCX | Controls the display mode (Local/Remote), display settings (contrast/brightness/color), video quality, and video input list selection. |
| Camera OCX | Controls Local and Remote Pan/Tilt/Zoom (PTZ) cameras. |
| Audio OCX | Controls the speakers' volume level, microphone input gain, audio quality, and audio input and output device lists selection. |
| Config OCX | Controls general system parameters and enables the MXM server to control the end point characteristics and allows the end point to send requests to the MXM server for online configuration changes. |
| Network OCX | Includes PBX functionality such as call transfer, call forward, call pickup, and ad-hoc conferencing (Invite). |
| Record OCX | Enables recording, playback, and e-mailing of WMV files. |
| Directory OCX | Provides connection and registration support for multiple online LDAP directory servers. |

Minimum PC Requirements

- Pentium IV ≥ 4 GHz PC
- Windows 2000, XP, Vista
- H.264 4CIF and above requires Core 2 Duo or Dual Core 3
- 25 MB available disk space
- GHz or faster CPU or AMD equal or faster than Athlon 64x2
- 256 MB memory
- Dual
- Graphic display that supports DirectX 9.0

Note: For 4CIF resolution and above, H.264-capable PC with USB 2.0 support is required for optimum performance. Two available USB ports (one for video device and one for a USB protection key is used).

Emblaze-VCON, Inc., Americas
 2 University Plaza, Suite 201
 Hackensack, NJ 07601
 USA
 Tel: +1-201-883-1220
 Fax: +1-201-883-1229

Emblaze-VCON China
 Unit 1321, Tower B, COFCO Plaza
 8 Jianguomennei Avenue
 Beijing, 10005
 China
 Tel: +86-10-6526-9791
 Fax: +86-10-6526-9790

Emblaze-VCON CE, NE, WE and Russia
 mmg Multimedia GmbH
 Akazienstr. 1
 16356 Wemeuchen
 Germany
 Tel: +49-333-98-78530
 Fax: +49-333-98-78539

Emblaze-VCON Italy
Satnet S.r.l
 Via Abegg, 43-10050-Borgone Susa (TO)
 Italy
 Tel: +39-01-196-41375
 Fax: +39-01-197-62802

Emblaze-VCON Eastern Europe
Ramiris Communications Ltd.
 H-1139 Budapest, Frangepan, u.46
 Hungary
 Tel: +36-1-889-7607
 Fax: +36-1-889-7601

Emblaze-VCON UK and Middle East
 27 Old Gloucester St.
 London, WC1N 3XX
 United Kingdom
 Tel: +44 (0)207 0317 255
 Fax: +44 (0)207 0316 256

Emblaze-VCON Ltd. Headquarters
 Beit Rakefet
 1 Emblaze Square
 POB 2220
 Ra'anana 43662
 Israel
 Tel: +972-9-7627800
 Fax: +972-9-7627801

Specifications

Video Specifications

Transmission Speed
 H.323: 64 Kbps - 4Mbps
 ISDN: 64 Kbps - 512 Kbps (4xBRI)

Video Standards
 H.261, H.263, H.263+/++
 H.264: up to 4 Mbps

Live Video Resolution
 Up to 720p (1280 x 720 pixels)
 4CIF (704 x 576 pixels)
 VGA (640 x 480 pixels)
 CIF (352 x 288 pixels)
 SIF (352 x 240 pixels)
 QVGA (320 x 240 pixels)
 QCIF (176 x 144 pixels)

Video Frame Rate
 Up to 15 fps: 64 - 128 Kbps
 Up to 20 fps: 192 Kbps
 Up to 30 fps: 256 Kbps +

Video Features
 Video device discovery
 Automatic NTSC/PAL detection
 Unlimited number of video devices supported

HD Simulcast™
 Chair or Participant in any Interactive Multicast session
 Broadcast Viewer (SDP listening) support
 Uses bandwidth-efficient IP multicast

Audio Standards

20 KHz: AAC-LD
 14 KHz: G.722.1 Annex C
 7 KHz: G.722, G.722.1
 3.4 KHz: G.711, G.723.1, G.728, G.729
 AMR (3G)

Audio Specifications

Audio Features
 Full duplex echo cancellation
 Automatic noise suppression (ANS)
 Automatic gain control (AGC)
 Audio device discovery
 Audio tuning wizard
 Unlimited number of audio devices supported
 Headset and speaker profiles
 Voice Activity Detection (VAD)

Data Specifications

HD DualStream™
 File, region, and window sharing
 Windows desktop sharing
 H.239 support
 Tandberg DuoVideo support
 Sending and receiving capability
 1 live video source + 1 data source
 Resolutions supported:
 XGA, SVGA, 4CIF, VGA, CIF, QVGA, QCIF

Data Sharing includes:

External laptop (VGA IN)
 Desktop sharing, Internet, documents, graphics files, movie files, audio files
 (most common file formats)

Networking Specifications

Standards Supported
 ITU-T: H.323 v4.2
 H.281 Annex Q (FECC)
 ISDN: H.320, H.221, H.242, H.230

H.323 QoS Features

DiffServ
 IP Precedence
 Firewall port sync
 NAT IP address mask
 Port pinholing
 Adaptive Bandwidth Adjustment
 Packet loss recovery (FEC)
 Packet ordering
 Packet duplication control
 Jitter correction
 Lip sync correction
 Overhead prediction
 Max packet size adjustment

Other Specifications

Security
 Encryption using H.235 (AES)
 Supports Emblaze-VCON SecureConnect
 – DES, 3DES and AES support
 – AES is NIST validated
 Supports Emblaze-VCON Frontier
 – Firewall traversal
 – Network address translation
 Supports restricted access users

Directory Services

1000+ local number directory
 10,000+ global number directory
 H.350 support (MXM mode)
 LDAP online directory support
 – OpenLDAP
 – Microsoft ILS, SiteServer, Active Directory and Exchange
 – Sun iPlanet
 – Netscape Directory
 Search and filter queries