GENERAL

Period of Testing
The testing of the Emblaze-VCON xPoint was carried out in the VCC between October 10, 2007 and October 31, 2007. Our testing system realized video conferences in LAN with a speed of up to 4096 kbps.

SW-Version
The system was tested with the software version 7500055-1.1.0.10.

Device class
The compact system Emblaze-VCON xPoint is a HD-compatible cluster system with a video resolution of up to 720p (1280x720 pixels) and a picture frame rate of 30 fps from 256 kbps on.

Scope of delivery
Included in delivery are the xPoint Box (measurements: amplitude x altitude x depth in cm: 30x5x22,5), an external camera (resolution: 4CIF@704x576 pixels), remote control with an external infra-red receiver and various connection cables for audio (Cinch), video (DVI), camera Sony EVI-100p (p for PAL) and current. A tabletop pod for purposes of notebook-connection for data presentation as well as an ISDN-module can be ordered optionally. It is to be assessed as good that the camera’s lens is protected by a glass plate. Anyhow, this plate is integrated into the body which does not allow the end user to change the plate by himself in case of average. Thus, a separate plastic protective cover would be cheaper (scratches without effect on optical camera quality, easier to replace).

Bandwidth
The video conference system facilitates IP-based video conferences with a maximum speed of 4 Mbps. Additionally, device configurations may facilitate ISDN-based video conferences with a maximum speed of 512 kbps.
INSTALLATION

Additionally to the scope of delivery, it is necessary for the video conference device to have at least one extra monitor which can convert the video signal via VGA, Cinch-video, S-video or DVI connection. The connection of all necessary components can be carried out quickly. The connections are clearly arranged and between each pair, there is a gap of a finger’s breadth mostly. It is of particular interest to inexperienced users that the Emblaze VCON also has a well-designed graphic connection survey. The software was already installed on the testing gear. No installations of upgrades or servicepacks were put on. The camera Sony EVI-D100p, the VCON-microphone model PHM 959 II was connected unidirectionally, as well as a iiyama-TFT-monitor with a resolution of 1280x1024@5:4. The ventilator produces an audible but in comparison to older VCON-devices a less disturbing noise.

TEST

Operation

From the moment on in which the current supply of the device is switched on, a melody is played three times in a row. This does bridge the time of booting, however, after repeated engaging, one can do without it. After the first start it is highly recommended to speakers of German to select "German" for the operator interface in [Settings/ General/ Admin/ Language]. Emblaze-VCON has equipped the xPoint-devices with a new remote control. The operation comfort has increased highly in comparison to older remote controls. The entries are received precisely and there is no need to aim at the device exactly. The infra-red receiver is connected via a cable and can be positioned comparatively freely. In case the remote control is aimed in the direction of the receiver, the VC-device can be operated from any point in the ambit. Even if the remote control is positioned parallel to the receiver, the signal identification starts at about 0,7 m in front of the receiver and 1 m next to it! Both USB-junctions at the back of the device are arranged very close to each other. Hence it is to be regarded as positive that an USB extension cable is included in the scope of delivery. Therefore, it is perfectly possible to connect even two larger USB-devices without having to deform the USB-junctions. The program interface is appreciated because it is clearly arranged and operation is self-explanatory.

Audio/Video

The tests ran with good or very good audio and video quality with the in the VCC available devices. Nevertheless it is important to mention that the HD-format 720p can be received only, sending is impossible. As a result of the ongoing transition period from the operating system MS XP to MS Vista, two versions of the PC-video conference system Polycom PVX are in use. For this reason, the xPoint was tested with several PVX-operating system combinations. The strongly varying results of the negotiated video codecs and video resolutions in connection with the PVX-versions 8.0.2@XP / 8.0.4@XP / 8.0.4@VISTA at maximum bandwidth are noteworthy. The differing reactions are apparently produced by the Polycom device.
comparison of video quality: PVX versions with xPoint

<table>
<thead>
<tr>
<th>PVX-Version</th>
<th>Codec</th>
<th>Resolution</th>
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<tbody>
<tr>
<td>8.0.2@XP</td>
<td>Sending</td>
<td>H.264</td>
</tr>
<tr>
<td></td>
<td>Receiving</td>
<td>H.264</td>
</tr>
<tr>
<td>8.0.4@XP</td>
<td>Sending</td>
<td>H.264</td>
</tr>
<tr>
<td></td>
<td>Receiving</td>
<td>H.264</td>
</tr>
<tr>
<td>8.0.4@VISTA</td>
<td>Sending</td>
<td>H.263+</td>
</tr>
<tr>
<td></td>
<td>Receiving</td>
<td>H.264</td>
</tr>
</tbody>
</table>

H.264
The device Emblaze-VCON xPoint is capable of sending and receiving the video format H.264 up to a maximum bandwidth of 4 Mbps. This was proven successfully during the tests, provided the remote station had implemented this codec and was able to convert this bandwidth. The characteristics of the system Polycom PVX Version 8.0.4@MS VISTA resulted to be rather troubling. This particular PVX version was not able to send in H.264 compression when a calling bandwidth of 1920 kbps was provided. However, H.264 recipience was possible. On the other hand, it was possible to establish H.264 connections with 1920 kbps simultaneously in sending and receiving processes with the PVX versions 8.0.2@XP / 8.0.4@XP.

H.239
Data transfer according to the standard H.239 is called Dual Stream by the system Emblaze-VCON. It is possible to display an arbitrary file which is presented on the remote station after selection from the own PC or from an USB-stick. A list for selecting the source is prepared in the menu (deactivated entries), the option of selecting is only provided when the according external device is connected. A comfortable method of operation arises from the fact that the Emblaze-VCON x-Point already features many viewers for various types of data (e.g. doc, pdf, ppt, jpg, gif) and the respective conjunctions are inserted in embedded Windows. The presentation of a file is thus effected by a simple positioning in the data directory and the activation of the ok-button. However, the file viewers do not feature German versions. Their operation functionality is furthermore heavily limited (even the displayed menu tasks are not useable).

H.239 is not satisfactory realized in interaction of Polycom PVX 8.0.4@MS VISTA and Emblaze-VCON xPoint. Contents sent in XGA-resolution are received in CIF-resolution by Emblaze-VCON xPoint. The reception at xPoint is additionally heavily delayed (process may last longer than two minutes or may remain undone). It is observable in addition that the picture reload does not work and successive slides overlie. Hence, xPoint is not recommended for use in this combination. In case the device xPoint is connected with Tandberg 990 MXP it is observable that the menus of xPoint are not accessible during active presentation. In order to be able to rank the transmission of H.239, a PowerPoint presentation with various test slides was applied. It became apparent that the xPoint system is able to display font sizes from eight pixels on. It also displays conveniently determined graphics. In both cases, the xPoint system was the receiving station in the process of data transmission. The quality of the displayed images was also perceived as well-determined by the used remote stations. Data presentations to Polycom PVX 8.0.2./8.0.4. should at least feature a font size of ten pixels.

In case H.239 is applied with only one monitor and the PIP image is switched on with the presenter, the PIP image is sent in the data current in an integrated mode, but is not displayed in the local area. During H.239 transmission, it is not possible to fade in a status window.

Remote Control
The remote control always operated well in both directions, provided the required preconditions were set.

H.235 (AES)
In case the option AES-auto was switched on, Emblaze-VCON xPoint established AES-encoded connections with all remote stations. However it is to be detected reprocessibly that during collaboration with the device Sony PCS-G70 bandwidth collapses, i.e. the available bandwidth is reduced to 50% of original bandwidth compared to uncoded connection.
**MCU**

Very good audio and video qualities were achieved during the test with the Codian MCU 4500. While sending a H.239 data stream, the moving image was displayed heavily delayed. Very good audio qualities were achieved with the RADVision viaIP 400. The video quality was moderate, the video was partly diffuse and quick movements were displayed blurry. The poor CIF resolution is to be blamed for these characteristics. Emblaze-VCON had promoted an internal MCU (see product description xPoint) which was not at hand in the testing gear. A device equipped with an internal MCU for about up to six participants will presumably be available from beginning of the first quarter of 2008.

**Gatekeeper**

Collaboration with the gatekeepers GNU-GK 2.0.7 and CISCO MCM worked fluently.

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**CONCLUSION**

The system Emblaze-VCON xPoint is a truly compact VC-system. It can be recommended for use as a working station system (1-5 people) with PC- or TV monitor for video and audio conferences with H.239 functionality. If connected to a beamer, the system might also be used by middle-sized or larger groups. The audio and video quality were perceived as good or very good. The claims the device was "HD-ready" could only be approved in the sense of the device being capable of receiving the video format 720p.

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**TECHNICAL DATA**

Producer: Emblaze-VCON  
Distributor: MEYTEC GmbH Informationssysteme

<table>
<thead>
<tr>
<th>Supported Standards</th>
<th>H.323, H.239</th>
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<tbody>
<tr>
<td>Sound Coding</td>
<td>G.711, G.722, G.722.1, G.723.1, G.728, G.729, AMR(3G), ACC-LD</td>
</tr>
<tr>
<td>Video Compression</td>
<td>H.261, H.263, H.263++, H.264 (bis 4 Mbps)</td>
</tr>
<tr>
<td>Video format</td>
<td>CIF, SIF, QCIF, QVGA, HDTV 720p (1280x720; nur Empfang)</td>
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Thanks to MEYTEC GmbH Informationssysteme und Emblaze-VCON for supporting the test.