The kvm-tec development team has set itself another goal: To give each KVM extender a very special touch and thus develop innovative features that enrich the KVM world. Through our own developments in the field of video compression, video transmission and USB transmission, we have managed to perfectly match these 3 factors and thus we have the greatest possible flexibility in the USB area and can therefore also offer the shortest mouse monitor latency on the market with perfect video compression. (<2ms) for our new generation of Full HD Extender FLEXline and EASYline the latency is 1.38 ms.
kvm-tec wording  products and technical insights

**analog VGA** transmitted as DVI - means better transmission quality

**API - Interface** programming interface for integration in any software

**baudrate** Baud, Bd is the unit for the symbol rate in communications engineering and telecommunications. 1 Baud is the speed when 1 symbol per second is transmitted. Baud rate of a data transmission must be the same on the transmitter and receiver side.

**refresh rate 60 Hz** Refers the numbers of frames which are transmitted per second. Only at 60Hz is professional work possible

**bandwidth** for ULTRAline and media4Kconnect 10Gbit bandwidth in the network are needed, all other kvm-tec products need 10Gbit

**capturing** 4K Ultraline - uncompressed screen shot A single image from the screen can be recorded as an image up to a 4K resolution (even with moving images) The image can be saved as an uncompressed bitmap.

**color coding 4:4:4 @bit per color** the image is divided into brightness and color, at 4:4:4 each pixel has just the right color. For example, with a color coding of 4:2:0, a green line will appear as red line and fonts will appear as sharply depicted

**dedicated network** separate network, this offers more security, as no access from outside is possible

kvm-tec wording  products and technical insights

**downscaling** 4K Bild is downscaled on a full HD monitor(UVX)

**FLEXline units in the rack** through the ultraslim housing 4 SINGLE or 4 DUAL units can be mounted in a 19” Rack

**fiber SFP module - multimode or single mode** all kvm-tec Fiber Extenders are delivered with multimode modules as standard, alternatively the order can be changed to single mode

**gateway** Access to virtual machines additional to your real time switching system The gateway has the function of a thinclient and in combination with MX Local Extender it is the ideal combination with virtual machines in the switching system.

**gateway2go** the Windows App is an innovative software solution that allows users to connect to the kvm-tec switching network at any time and display a live image of a specific local unit. User application in real time for all laptop or desktop - devices with windows 10

**KVM over IP** The video, USB, sound and RS232 signals are sent in real time over the local network. All KVM extenders can be connected to a standard network switch. It can also be a structured topology. Mixing with a PC network is not recommended because of the high bandwidth in the video system.

**kvm-tec upgrades** upgrades are pre-installed and upgradable with code
kvm-tec wording  products and technical insights

**kvm-tec customized system**

FLEXline - the different versions of this product line

**kvm-tec engineered system**

media4Kconnect - 4K Displayortexten 1.2 + redundant + uncompressed

**latency time**

Delay time - this parameter is responsible for a delay-free transmission of the video signals. From 15ms the delayed transmission is clearly noticeable. Persons with a good perception can perceive the delay much earlier. kvm-te products have a delay time < 5ms.

It is also important that the video compression and latency are perfectly tuned in time.

**line to line transmission**

With kvm-tec image transmission each line of an image is transferred immediately. As a result, the monitor display is flicker-free, no longer stutters and lip sync is perfect. The user has no delay with keyboard and mouse and therefore real-time transmission

**MST HUB**

The built-in MST/HUB splitter allows the transmission of two different image contents via one cable up to a max. resolution of 2560 x 1600@60Hz. The CPU (local) and the CON (remote) part has two video outputs with splitter / multistream function.

**network security - stay secured with kvm-tec**

By using standard network switches, kvm-tec Extender uses the highest security standard used in professional networks.

The PC technology offers the highest security in the network and therefore the Switching 2000 network benefits from the high security standard of the PC technology.

**one cable for USB and Video**

With kvm-tec USB transmission, the video compression and latency time are optimally coordinated and USB transmission is possible with only one cable (the cable is also used for video transmission).

**redundant**

If one port fails, the second port immediately takes over the transmission.

for high security in critical applications - FLEXline, media4K connect

**preview**

In addition to displaying the name, the Extender can also display a preview of the source (PC). The preview is updated 10x/sec.

**RS 232**

serial interface, which is reliable for control systems in the industrial sector. This interface was developed in the 1960s by the US-American standardization committee Electronic Industries Association and the English designation is COM-Port.
USB upgrade
The transparent USB 2.0 interface already supports tablets and touch screens, sound modules in the standard version, printers and much more. USB upgrade is available for memory sticks and USB hard drives.

USB Transmission rate
480 MBit the nominal USB transmission rate. The actual transfer rate depends on the devices.

USB 2.0 in-house development
offers maximum flexibility with all USB devices and enables innovative features - mouse glide & switch, emulation mode, USB Sharing.

USB transmission
with the kvm-tec USB transfer, the video compression and latency time are optimally tuned and the USB transmission is possible with only one cable (the cable is also used for video transmission).

USB-Save feature
The kvm-tec feature „USB save“ prevents the intrusion of viruses via the USB interface by deactivating mass storage devices. Unauthorized copying of files is prevented.

sound embedded
the sound transmission is embedded in the video data stream and no extra line for sound is necessary

switching manager - switch up@work
The intelligent software solution for kvm-tec for managing all KVM extenders connected in a matrix switching system up to 2000 endpoints.

Super fast switching up to 2000 endpoints
Thanks to kvm-tec in-house developed switching technology, there is almost no limit to the number of endpoints in the switching system and the individual endpoints (PC, monitor, etc) can behave passively when controlled via the software.

switching system with standard network - components
With the switching upgrade, all extenders can be upgraded to the perfect KVM matrix switch in combination with a standard network switch.

sound analog in CD Qualität
the sound is digitized at the source and thus transmitted losslessly.

4k transmission
the signal is regenerated by a re-driver and brought to the correct level to enable perfect transmission. This process is comparable to a ZIP file.
**kvm-tec wording**  
**products and technical insights**

**USB Emulation Mode**  
on the PC is a permanent USB connection with an emulated mouse and keyboard and this has the advantage that the data can be switched without delay from one PC to another.

**USB Sharing**  
Multiple users can control one PC and it is possible to take over USB control in sharing mode. To use this feature you need a firmware from MX 3.15 and a Switching Manager 1.1.5. There are two possibilities: HID-Mode USB 2.0. For the HID-Mode USB-Sharing you activate the function in the Switching Manager software. After activation, all remote units have been shared. Access the USB control in HID mode of the shared computer. Keyboards and mice can be shared in HID mode.

**Real uncompressed**  
for the transmission of extreme bit patterns

**Transmission without artefacts for applications requiring high precision**

**Videocompression**  
is used to reduce the data rate of a digitized video signal to make it easier to store or transmit. The transmission is compressed by a factor of 4. Full HD has a bandwidth of 3.5 Gbit uncompressed. kvm-tec compresses with a factor of 4 and therefore can be transmitted over 1 Gbit with visual lossless with low latency (< 5ms).

**kvm-tec wording**  
**features**

**freeze last image**  
if the connection to the computer is interrupted, then this feature keeps the last image on the screen and is displayed with a red flashing frame to avoid confusion with a live image.

**mouse glide & switch**  
With this software feature several PCs can be operated with only one mouse and one keyboard from one workstation. Mouse moves seamlessly across displays. Delay-free mouse operation and automatic switching of mouse and keyboard from one PC to another. Free arrangement of monitors comparable to a virtual desktop.

**4K Multiview commander**  
The 4K Multiview Commander is an additional feature for the 4K KVM Extender. This feature allows video signals from different PCs to be displayed simultaneously on only one 4K screen. With the kvm-tec innovation, the PCs can also be controlled and operated via the kvm-tec transparent USB 2.0 transfer. This feature is unique worldwide. Thanks to the skillful management of USB transmission, kvm-tec has succeeded in making every screen content individually usable. Depending on the mouse position, the USB signals can be routed to the corresponding PC to make the screen content usable. With the 4K Multiview Commander, up to 4 different PCs can be controlled and operated with one 4K monitor, depending on the resolution. Also with different operating systems. This kvm-tec feature enables ergonomic and space-saving work with four applications in control and monitoring rooms.

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**kvm-tec wording - functionality**

**point to point**

Point-to-point connection from the PC to the monitor, with connection via one cable. USB and video are transmitted via only one cable.

**Matrix Switching System**

Kvm-tec Extender can be installed in a dedicated network

**redundant**

For high security, if a switch fails, the redundant system continues immediately to take over the full function.

**decentralized**

With several local and remote units, one switch on the remote side and one switch on the local side can be connected via uplink cable. 10 PCs and 10 monitors can be connected with one single uplink cable.

**Videosharing**

With the command PUSH the own screen content can be displayed on another monitor. With GET the contents of a PC can be shared on one screen.

**Videosharing CROSS**

A video signal can be shared by the local unit on different screens.

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**kvm-tec wording - functionality**

**Videosharing GET & MULTISHOW**

From a supervisor, the content from one PC can be shared to many screens and are displayed simultaneously.

**USB sharing High speed modus**

One USER has full USB control, if this USER does not use USB for a some time, then another USER can take over the USB control.

**USB Sharing Emulation mode**

All shared USER have USB control with mouse and keyboard at the same time.

**Mouse glide & switch**

One mouse and one keyboard for up to 10 screens.

**Mouse Glide & Switch Sharing**

The mouse glide & switch configurations can be shared to a videowall.

**4K Multiview Commander**

4 PC contents can be operated and controlled on one 4K monitor and more 4K Multiview Commander can be shared on a video wall.