



Emerald® is a high-performance IP-based KVM platform, developed by Black Box, that supports both point-to-point extension and KVM matrix switching for an unlimited number of users, computers, and virtual machines. The Emerald product family consists of multiple transmitter and receiver units that can directly connect to create a point-to-point extension or connect to an IP switch and the Boxilla® KVM Manager to build a high-performance KVM matrix switching setup. The table below highlights the different Emerald Extenders and provides application examples.

|                                   | Emerald Remote App  | Emerald ZeroU TX                                      | Emerald SE  | Emerald PE   | Emerald 4K  |
|-----------------------------------|---|---|---|--|---|
| Max video resolution              | 1920 x 1200 at 60 Hz  | 1920 x 1200 at 60 Hz (DVI)                            |   |  | 4096 x 2160 at 60 Hz (DisplayPort 1.2)  |
| Video quality                     | High quality ~35fps   | Visually lossless                                     |   | Pixel perfect  |   |
| Dual head version                 | -   | -   | ✓   | ✓  | -   |
| Redundant network ports           | -   | -   | -   | ✓  | ✓   |
| Peripheral support                | USB HID only  |   | All USB 2.0 devices   |  |   |
| Max extension distance            | Unlimited over IP   | CATx: 100 metres<br>IP: unlimited                     |   | CATx: 100 metres<br>Fibre: up to 10 kilometers<br>IP: unlimited  |   |
| VM support                        | RDP/RemoteFX  | -   | RDP/Remote FX   |  | PCoIP, RDP/Remote FX  |
| Bidirectional analog stereo audio | -   | (Speaker only)  | ✓   | ✓  | ✓   |
| KVM setup                         | Point-to-point KVM extension that is scalable to a matrix switching setup with unlimited endpoints            |   |   |  |   |
| Primary applications              | Remote KVM administration, IT administration, or process monitoring where high-quality video is not essential | Environments where rack space is limited or expensive | Entry-level, non-mission-critical point-to-point extension and matrix switching applications that need a migration path to virtual desktop infrastructure | High-end matrix switching that supports VMs, redundant network connections, and video resolutions up to HD | High-end graphical workplaces and operator workspaces that need very-high-resolution video, VM support, or network redundancy |
| Application examples              | Remote (KVM) network administration or maintenance  | Outside broadcast vehicles                            | Broadcast programming and production  | HD video and audio editing   | 4K video editing  |
|                                   | Remote multisystem monitoring and control from a laptop   | (Small) broadcast and post facilities                 | Industrial automation   | Live production environments and broadcast payout  | 3D and graphic design   |
|                                   |   | Military vehicles (for example, planes)               | Basic control room point-to-point extension   | 3D and graphic design  | Public safety control   |
|                                   |   |   | Tech support applications   | Government FTTD (combine with secure KVM)  | High-resolution industrial process monitoring   |
|                                   |   |   |   | Medical imaging  | Traffic control rooms and passenger monitoring  |