Orion XC Digital KVM Switch

► Fully featured digital KVM matrix switch for small and mid-sized installations supporting 1080p, 1920x1200, 2K/HD, and 4096x2160@60Hz

► Enables instant HD and 4K UHD switching between computers and remote consoles

► Supports DVI, HDMI, DisplayPort, VGA and SDI video, with USB-HID, USB2.0, USB3.0, analog, or digital audio and serial support

► Software packages for on-screen display and Java enabled management, multi-screen control, switch cascading, and SNMP/Syslog maintenance

Features and Benefits

■ A compact 1U or 2U chassis available with fixed port configurations of 8, 16, 32, 48, 64 or 80 ports, and with CATx, fiber, mixed CATx and fiber, or coaxial I/O interfaces

■ Dynamic port assignment for connected transmitter and receiver devices which come as 2, 4, 6 or 21-card modular chassis.

■ Instant delay-free switching of devices with the same resolution, and visually lossless video quality with no frame dropping up to 4K/60Hz

■ IP management control port and RS232 control supported by a comprehensive API for integration with media controllers

■ Matrix-Grid automates the connection of multiple Orion XC switches in a decentralised network, using either a CATx or fiber links

■ Java based management tool for remote device configuration and management

■ Intuitive OSD is presented on each user display for ease of use and simplified switching

■ Allows mixing of different single-link video formats such as DVI, HDMI, and DisplayPort with a video scaling option between VGA input and DVI output.

■ Optional redundant power supply for added resilience, and rackmountable chassis

■ Supports matrix redundancy for mission critical installations

Product Overview

The Orion XC delivers exceptionally crisp and clear video that is visually lossless on a platform that is used to establish connections between users and computing resources. A range of Orion XT transmitter and receiver devices with mixed signal formats facilitates I/O access to the switch, which automatically recognizes and configures each device when it is connected.

The Orion XC switch and external extender devices can be all CATx, all fiber, or a mix of CATx and fiber depending on the switch port density. SDI/SD/HD/3G is also supported with a coaxial interface. A range of common user and PC peripherals can be switched and extended through the Orion XC depending on the transmitter and receiver interfaces selected. The range includes full-speed and high-speed USB2.0 peripherals up to 480Mbps, USB3.0 up to 5Gbps, serial RS232/RS422, analog or balanced audio and digital audio. USB-HID for keyboard and mouse, USB touchscreen and other USB pointing devices is automatically supported.

Expanding an Orion XC installation is not a problem. The included Matrix Grid software automates multi-matrix connections through CATx or fiber tie-lines. In this way, more I/O ports can be added to an existing system or remote users and resources can be connected back to the central system.

ROSE ELECTRONICS

WWW.ROSE.COM

Applications

The Orion XC is suitable for any application requiring digital KVM matrix support with either single or mixed video interface formats, and the integration of different peripheral devices.

Common applications include industrial control desk environment, broadcast studios, outside broadcast vans, concert and theatre venues, AV distribution, medical imaging and other industrial/military applications.
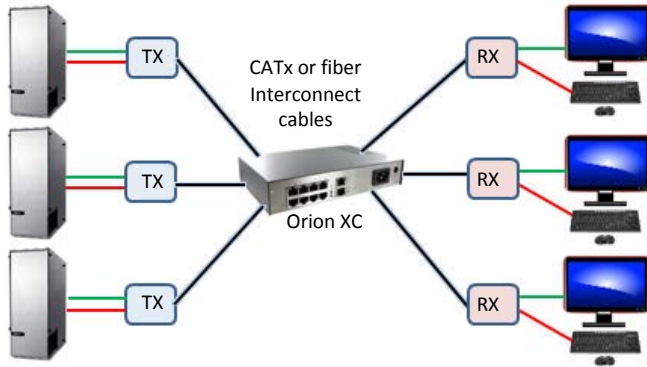
Standard Orion XC configuration

Video interfaces supported   The Orion XC provides a switching and management function as it receives and transmits digitized signals between the connected transmitter and receiver devices. The video signals switched through the Orion XC include the following;

- VGA up to 1920x1200@60Hz (via DVI-I interface)
- DVI-D single-link and DVI-D dual-link up to 1080p, 1920x1200 and 2048x1152, 2K/HD
- HDMI video with embedded audio up to 1080p, 1920x1200 and 2048x1152, 2K HD
- DisplayPort video with embedded audio up to 4096x2160@30Hz (2K/4K) and 4096x2160@60Hz (4K/60)
- SDI SD/HD/3G of 720p/50/60, 1080i/50/60 and 1080p/50/60

Peripheral interfaces supported   The following peripherals signals are supported and switched through the Orion XC switch

- USB-HID for keyboard, mouse, touchscreen, and other pointing devices
- USB2.0 up to 480Mbps
- USB3.0 up to 5Gbps
- Analog audio and balanced audio
- Digital audio
- Serial RS-232 and RS-422 up to 115,200 baud
- PS2 keyboard and mouse

Models available   The Orion XC switch is available as a range of 1U and 2U chassis with a fixed port configuration. The available link interface formats are CATx, single-mode fiber, 3Gbps high speed fiber and Universal port.

Ports	CATx	Fiber	CAT/F	3G	UNIV	RPS
8	✔	✔	✕	✔	✔	✔
16	✔	✔	✕	✔	✔	✔
32	✔	✔	✕	✔	✔	✔
48	✔	✔	✕	✔	✔	✔
64	✔	✔	✕	✔	✔	✔
80	✔	✔	✕	✔	✔	✔
48C16F	48	16	✔	✔	✕	✔
48C16U	48	✕	✕	✔	16	✔
48C32F	48	32	✔	✔	✕	✔
48C32U	48	✕	✕	✔	32	✔

CAT/F = CATx and SM fiber mixed

3G   = 3G fiber

UNIV = Universal port for SDI or USB3.0

RPS   = Redundant Power Supply option

Operation, Management and Control   There are several industry standard methods for managing and controlling the Orion XC switch. Inband hot-key keyboard switching is the standard access method, and an intuitive on-screen display can be viewed from any workstation console. For management control, the Java GUI tool is used for configuration and security settings, and system maintenance access. The Orion XC switch can also be controlled through an external media controller, using the Orion API for integration via either TCP-IP or serial interface. SNMP and Syslog monitoring comes as standard with the Orion XC switch.

Methods of operation The Orion XC is frequently configured as a single head KVM matrix switch with up to 80 I/O ports. Non-blocking access is the default selection for all users to all connected PC's. The management software facilitates priority access rights settings and assigning PC's as full access, video access or no access to regular users. Video sharing between users is also allowed.

The parallel stacking operation features two Orion XC switches linked via the network RJ45 ports. Switching commands issued on the primary switch are replicated and both switches switch in tandem. The parallel operation can also be used as a redundant path for user access to all resources. For all configurations, the switching command mode is activated by keyboard hot-keys that provide direct OSD access at any user monitor.

Multi Screen control The MSC feature enables a single USB keyboard and mouse to control 2, 3 or 4 adjacent PC's, By moving the mouse to the vertical edge of the monitor, a user can pass the mouse cursor to the next monitor and simultaneously activate switching to the next PC. The monitors can be arranged side-by-side or in a grid pattern.
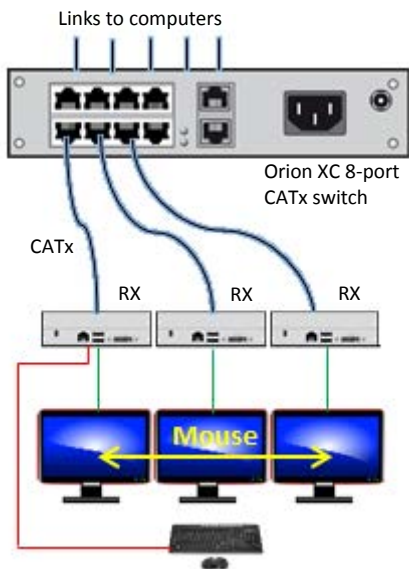
One keyboard and mouse controlling 3 computers

Matrix Grid operation To expand the number of I/O ports, to locate two or more Orion XC switches in different buildings, or to implement a structured redundancy, the matrix grid can be arranged using a number of different cabling topologies, for example, a ring setup, a hub-and-spoke setup or a fully connected setup using multiple grid lines. The grid lines, using either CATx or fiber optic cable, interconnect the Orion XC switches to build the matrix grid. One full KVM session can be connected on each grid line and the data flow can be bidirectional. The matrix grid can be configured using either the OSD or Java tool.
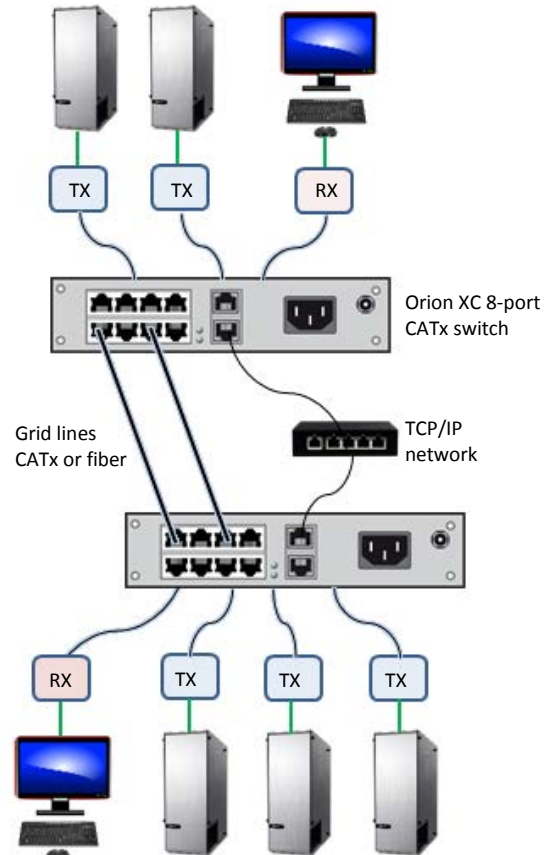
Structure of a matrix grid network

Virtual CPU and Virtual Console The Virtual CPU provides a simplified and convenient method of switching several users to the same CPU simultaneously, by assigning the real users to a virtual console. When changing the selected CPU, the real users connected to a virtual console will simultaneously receive the same video signal. The virtual console function updates changed permissions to the real users via the virtual console.

Specifications

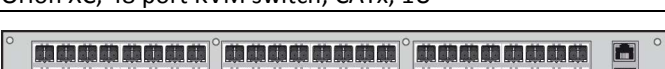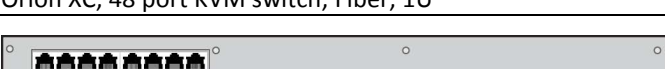| Dimensions (W x D x H) and weight	8 port chassis 8.7" x 5.7" x 1.8" 220 x 146 x 45 mm Weight: 1.9lb, 0.9Kg	16 port chassis 17.4" x 17.1" x 1.8" 443 x 435 x 45 mm Weight: 10.8lb, 4.9Kg
	32 port chassis 17.4" x 17.1" x 1.8" 443 x 435 x 45 mm Weight: 11.0lb, 5.0Kg	48 port chassis 17.4" x 17.1" x 1.8" 443 x 435 x 45 mm Weight: 11.2lb, 5.1Kg
	64 port chassis 17.4" x 17.1" x 3.5" 443 x 435 x 90 mm Weight: 18.1lb, 8.2Kg	80 port chassis 17.4" x 17.1" x 3.5" 443 x 435 x 90 mm Weight: 18.5lb, 8.4Kg
	48C16F port chassis 17.4" x 17.1" x 3.5" 443 x 435 x 90 mm Weight: 18.1lb, 8.2Kg	48C32F port chassis 17.4" x 17.1" x 3.5" 443 x 435 x 90 mm Weight: 18.5lb, 8.4Kg
	48C32U port chassis 17.4" x 17.1" x 3.5" 443 x 435 x 90 mm Weight: 18.5lb, 8.4Kg	
Chassis rack space	1U high: 8, 16, 32, 48 port switches 2U high: 64 and 80 port switches	
Power	8 port chassis 100-240V, 50/60Hz, 0.7A, Max 13W	16, 32, 48 port chassis 100-240V, 50/60Hz, 1.4A 16 port max 40W 32 port max 65W 48 port max 90W
	64, 80 port chassis 100-240V, 50/60Hz, 2.3A 64 port max 105W 80 port max 125W	48/16, 48/32 port chassis 100-240V, 50/60Hz, 2.3A 48/16 port max 105W 48/32 port max 125W
	6 card chassis 2xPSU 100-240V, 50/60Hz	21 card chassis 2xPSU 100-240V, 50/60Hz
Link cable	CATx: 460ft (140 meters) solid core UTP/STP, wired to EIA/TIA 568-B, AWG24, 1000Base-T Fiber optic 1.25Gbps: Multimode 62.5µm, 650ft (200 meters) Multimode 50µm, 1,300ft (400 meters) Multimode 50µm OM3, 3,280ft (1,000 meters) Singlemode 9µm, 32,800ft (10Km) Fiber optic 3.125Gbps: Multimode 62.5µm, 325ft (100 meters) Multimode 50µm, 650ft (200 meters) Multimode 50µm OM3, 1,640ft (500 meters) Singlemode 9µm, 16,400ft (5Km) Coaxial: 0.360Gbp bandwidth 1,312ft , 400m 1.485Gbps bandwidth, 460ft (140m) 2.970Gbps bandwidth, 395ft (120m)	

Specifications (continued…)

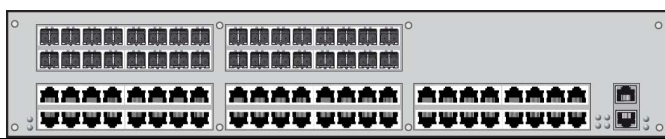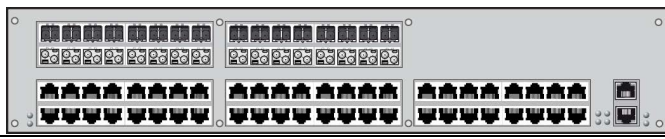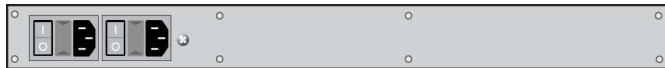| Indicator LED's	Standard LED's (all cards): CATx and fiber link (2): Initialization and connection status Internal CPU (2): Registration and operation LAN (2): Network connection and data traffic PSU(2): Operating, On/Off Fans (2): Operating/Error
Connectors	CATx ports: 8, 16, 32, 48, 64, 80 × RJ45 Fiber ports: 8, 16, 32, 48, 64, 80 Fiber SFP Type LC duplex fiber connector Network: 1 × RJ45, 100Base-T, EIA/TIA 568-B for full duplex operation RS232 Serial: 1 × RJ45, speeds up to 115.2KBaud, 8, one, none Coaxial: Mini coaxial cable AWG18, RG6, 75Ω, HD-BNC connector 0.360Gbps, SD-SDI, SMPTE 259M 1.485Gbps, SD-SDI, SMPTE 292M 2.97Gbps, 3G-SDI
Environment	Operating temp: 41°F – 113°F (5°C – 45°C) Storage temp: -13°F – 140°F (-25°C – 60°C) Rel. humidity: max 80% non-condensing
Noise emission	16/32/48 port chassis: max 42 dBA per fan 64/80 port chassis: max 52dBA per fan
Approvals	FCC Class A Part 15, IEC,EN, UL, WEEE, RoHS/RoHS2

System software   The Orion XC switch includes full software for switch management, switching control, CPU and user naming, password and access control and a matrix view showing all active connections. Operation of the Orion XC switch is primarily through the OSD windows at each user station, and the java tool which is accessible through the RJ45 network port. For additional software including SNMP, Syslog and API for integration with external media controllers, please contact Rose Electronics.

ROSE ELECTRONICS

Orion XC chassis models

Orion XC, 8 port KVM switch, CATx, 1U

Orion XC, 8 port KVM switch, Fiber, 1U

Orion XC, 8 port KVM switch, Fiber and BNC, 1U

Orion XC, 16 port KVM switch, CATx, 1U

Orion XC, 16 port KVM switch, Fiber, 1U

Orion XC, 32 port KVM switch, CATx, 1U

Orion XC, 32 port KVM switch, Fiber, 1U

Orion XC, 48 port KVM switch, CATx, 1U

Orion XC, 48 port KVM switch, Fiber, 1U

Orion XC, 64 port KVM switch, CATx, 2U

Orion XC, 64 port KVM switch, Fiber, 2U

Orion XC, 80 port KVM switch, CATx, 2U

Orion XC chassis models (continued)

Orion XC, 80 port KVM switch, Fiber, 2U

Orion XC, 64 port KVM switch, 48 × CATx, 16 × Fiber, 2U

Orion XC, 64 port KVM switch, 48 × CATx, 8 × Fiber, 8 × BNC

Orion XC, 80 port KVM switch, 48 × CATx,32 × Fiber

Orion XC 80 port KVM switch, 48 × CATx, 16 × Fiber, 16 × BNC

Orion XC, 1U height, back panel PSU connectors

Orion XC, 2U height, back panel PSU connectors

Since so many variations of the Orion XC product are available, not all chassis models are listed. Please contact Rose for more information.

Part numbers

Orion XC chassis with RJ45 I/O connectors	
OXS-XC008-TP	Orion XC, 8 port matrix switch, CATx, with IEC power and redundant +5V power jack
OXS-XC016-TP	Orion XC, 16 port matrix switch, redundant PSU, CATx
OXS-XC032-TP	Orion XC, 16 port matrix switch, redundant PSU, CATx
OXS-XC048-TP	Orion XC, 16 port matrix switch, redundant PSU, CATx
OXS-XC064-TP	Orion XC, 16 port matrix switch, redundant PSU, CATx
OXS-XC080-TP	Orion XC, 16 port matrix switch, redundant PSU, CATx

Orion XC chassis with fiber SFP Type LC I/O connectors	
OXS-XC008-FS	Orion XC, 8 port matrix switch, Fiber SM, with IEC power and redundant +5V power jack
OXS-XC016-FS	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM
OXS-XC032-FS	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM
OXS-XC048-FS	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM
OXS-XC064-FS	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM
OXS-XC080-FS	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM

Orion XC chassis with fiber SFP Type LC I/O connectors for high speed 3.125Gbps	
OXS-XC008-F3	Orion XC, 8 port matrix switch, Fiber SM, 3.125Gbps, with IEC power and redundant +5V power jack
OXS-XC016-F3	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM, 3.125Gbps
OXS-XC032-F3	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM, 3.125Gbps
OXS-XC048-F3	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM, 3.125Gbps
OXS-XC064-F3	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM, 3.125Gbps
OXS-XC080-F3	Orion XC, 16 port matrix switch, redundant PSU, Fiber SM, 3.125Gbps

Orion XC chassis with Universal slot for BNC (SDI) or USB3.0 connectors. Installed in groups of 4/8 connectors	
OXS-XC008-UNI	Orion XC, 8 port matrix switch, Universal, with IEC power and redundant +5V power jack
OXS-XC016-UNI	Orion XC, 16 port matrix switch, redundant PSU, Universal
OXS-XC032-UNI	Orion XC, 16 port matrix switch, redundant PSU, Universal
OXS-XC048-UNI	Orion XC, 16 port matrix switch, redundant PSU, Universal
OXS-XC064-UNI	Orion XC, 16 port matrix switch, redundant PSU, Universal
OXS-XC080-UNI	Orion XC, 16 port matrix switch, redundant PSU, Universal
/SDI	Add to UNI part number to indicate SDI interface
/U3	Add to UNI part number to indicate USb3.0 interface