

# NVISION Compact CQX

## 3G/HD/SD Router with Clean and Quiet Switching



Audio/video routing innovations that simplify your workflows.

The NVISION Compact CQX is a 16x8 router which offers clean and quiet outputs for performing seamless video and audio transitions. The CQX provides two clean and quiet outputs for 3G/HD/SD signals, and six auxiliary outputs are available for preview or monitoring. It also offers support for up to 16 channels of embedded audio.

The CQX's unique design supports  $\pm 3$  line buffer, which reduces the need for costly timing equipment. The line buffer allows the router to realign sources which are grossly out of time, and switch them with minimal delay. This switching is performed without any video artifacts or audio pops that are typically associated with a transition of this nature.

Robust, compact and affordable, the NVISION Compact CQX is ideal for disaster recovery backup and bypass master control applications. It can also be used as a low-cost alternative to a master control system. Several transition types are available, including V-fade, cut-fade, fade-cut and crossbar.

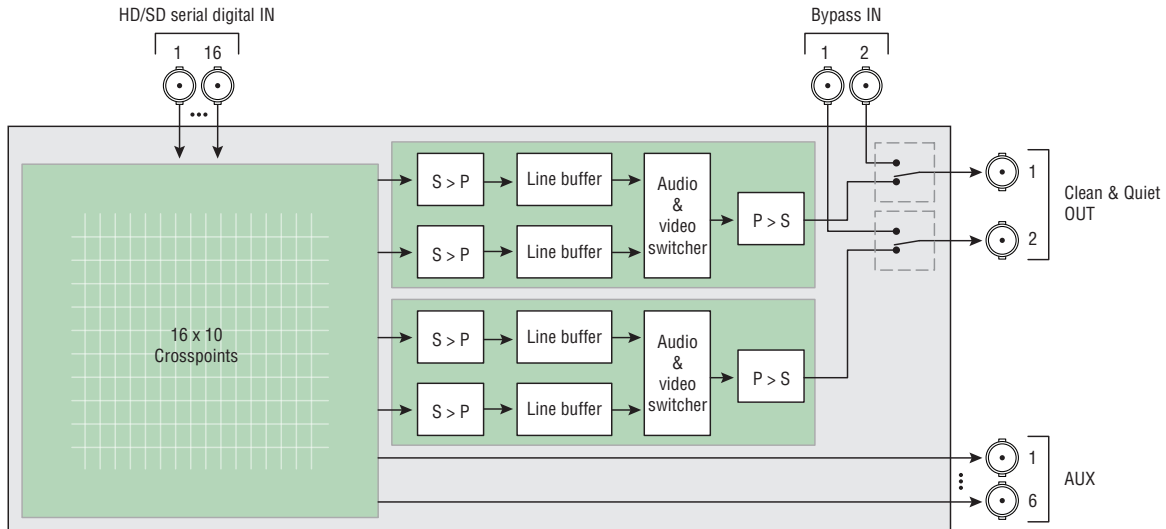
The CQX features two separate emergency bypass inputs with relays to ensure critical signal passage, even in the event of a power outage.

The NVISION Compact CQX is based on the same durable and scalable design as the rest of the NVISION Compact router range. It can operate as a standalone unit, and can also be driven by an external control system.

# NVISION Compact CQX 3G/HD/SD Router with Clean and Quiet Switching

## KEY FEATURES

- Unique design supports a  $\pm 3$  line buffer, reducing the need for costly timing equipment
- 16 inputs, 2 clean and quiet outputs, 6 auxiliary outputs
- Support for 16 channels of embedded audio
- V-fade, cut-fade, fade-cut and crossbar transitions
- Choice of three transition rates
- GPI/O interface for simple external control and alarms
- Two bypass inputs with relays guarantee signal passage in the event of power failure
- Serial port supports NVISION router serial protocol for automation control

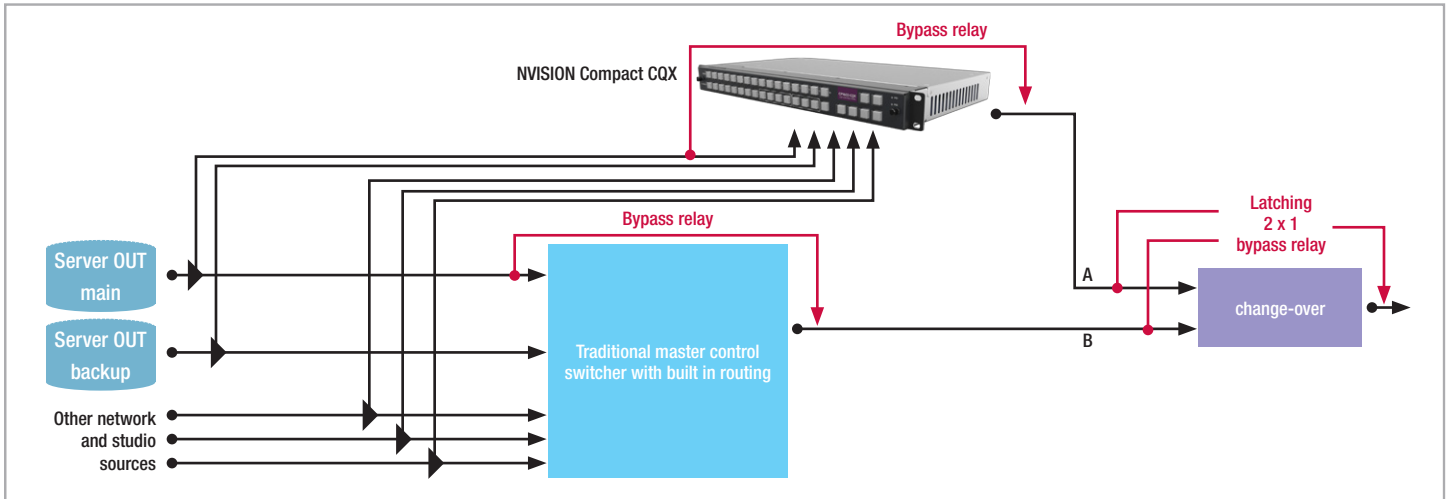


Compact CQX Functional Block Diagram

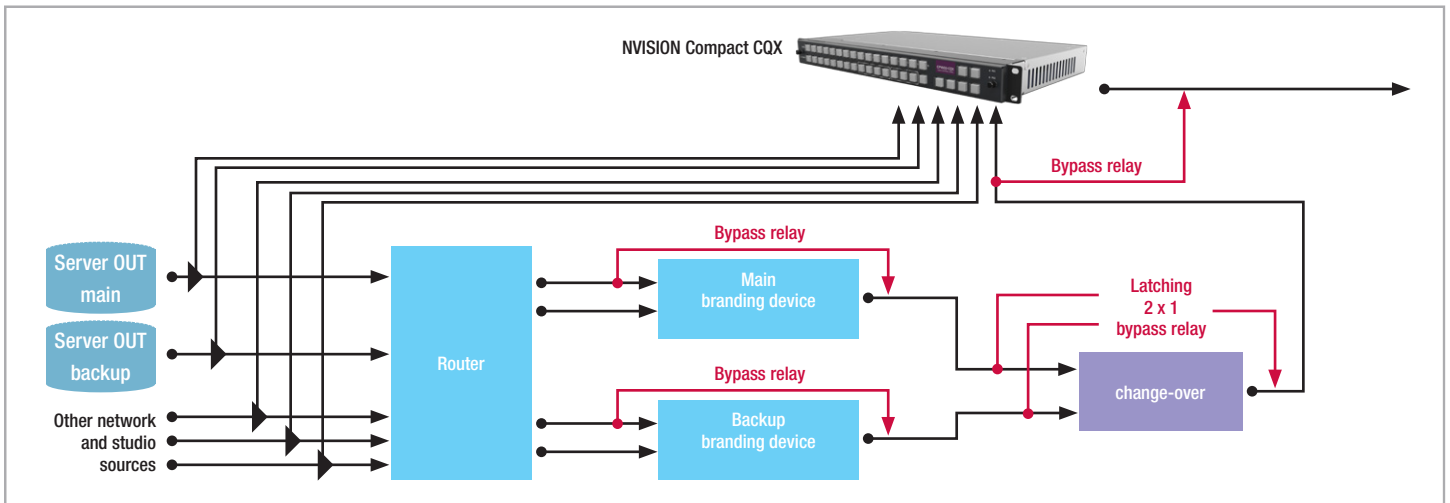


Typical 'clean and quiet' switching applications

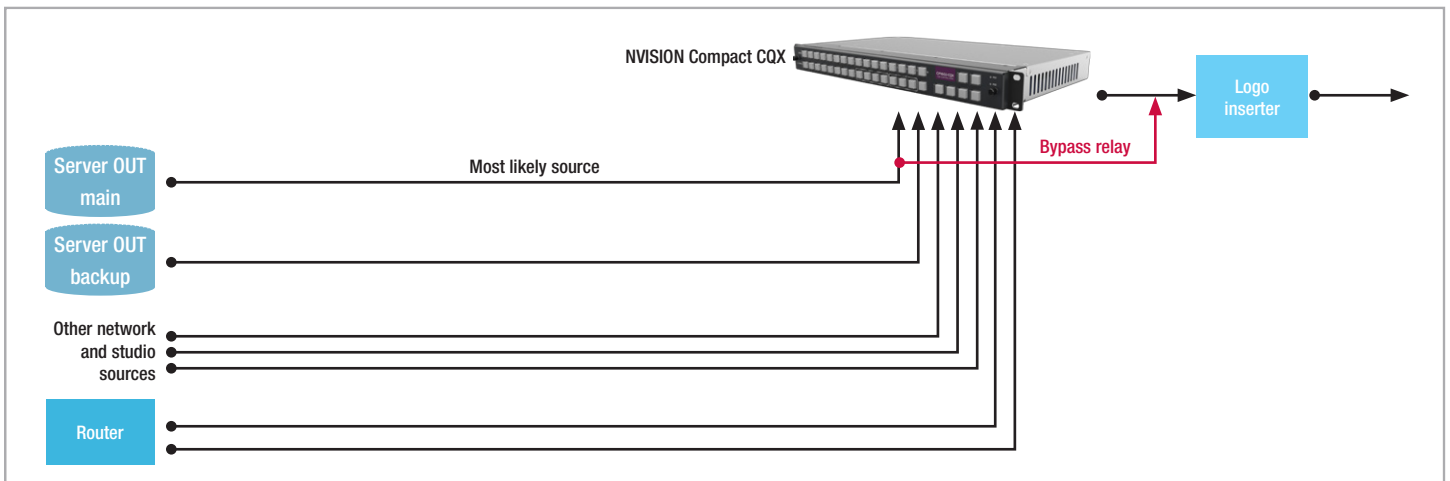
Master control backup/bypass using parallel backup switcher & downstream 2 x 1 change-over



Speciality channel backup/bypass using downstream backup switcher



Simple master control



# NVISION Compact CQX 3G/HD/SD Router with Clean and Quiet Switching

## SPECIFICATIONS

### Electrical

**AC input:** 90-250 VAC, 50/60 Hz, auto-ranging  
**AC fuses:** No user serviceable fuses  
**AC connectors:** 2, 12 VDC with external modules  
**AC power:** PS0001-00, HB0321-00, 50 W, one IEC 320  
**AC power usage:** 33W nominal  
**Regulatory compliance:** UL listed and CE compliant

### Mechanical

45 mm (1.75 in.) high  
482.6 mm (19 in.) wide  
257.81 mm (10.15 in.) depth without a control panel attached  
**Weight:** 4.4 kg (2 lbs.) for 16x16, 8.8 kg (4 lbs.) for 32x32  
**Mounting:** EIA 310-C, 483 mm (19.0 in.)  
**Grounding terminal:** Cooper, accepts 14-6 AWG

### Serial Control

**Type:** 1 serial port  
**Standard:** SMPTE ST 207, EIA-422, configurable  
**Connector:** 1, DE-9

### GPIO

**Connector:** DB25 (16 inputs, 4 outputs)

### Ethernet

**Type:** 10/100 Base T  
**Standard:** IEEE 802.3  
**Protocol:** NVISION Ethernet protocol  
**Connector:** 1, RJ45

### Environmental Specifications

**Operating temperature:** 0 to 40° C (32 to 104° F)  
**Relative humidity:** 0 to 90%, non-condensing  
**Cooling:** Front serviceable fan tray

### Video Reference Input

**Type:** Analog video reference  
**Standard:** PAL, NTSC, or tri-level sync  
**Connector:** Loop through, BNC  
**Impedance:** 75Ω or Hi-Z  
**Input level:** 0.5 Vp-p to 2.0 Vp-p  
**Input return loss:** ≥30 dB to 5 MHz

### SD Inputs/Outputs

**Type:** Standard definition serial digital video  
**Standard:** SMPTE ST 259  
**Data rate:** Auto reclocking at 270 Mb/s or auto bypass with pass-through from 19 Mb/s to 360 Mb/s (Note: inputs do not reclock)  
**Connector:** BNC  
**Impedance:** 75Ω  
**Cable equalization:**  
350m (1,148 ft.) Belden 1694A  
200m (656 ft.) Belden 1855A, or equivalent cable, at 270 Mb/s

**Router path:** Non-inverting  
**I/O return loss:** >15 dB, 5 to 540 MHz  
**Output level:** 800 mVp-p ±10%  
**Output rise/fall time:** 600 ps +10%  
**Output overshoot:** ≤10% of amplitude max  
**Output alignment jitter:** ≤0.2 Ulpp from 1.0 kHz to 27 MHz  
**Output timing jitter:** ≤0.2 Ulpp from 10 Hz to 1.0 kHz

### SD and HD Inputs/Outputs

**Type:** High definition serial digital video  
**Standard:** SMPTE ST 259, SMPTE ST 344 and SMPTE ST 292  
**Data rate:** Auto reclocking at 270 Mb/s and 1.483 and 1.485 Gb/s or auto bypass with pass-through from 19 Mb/s to 1.5 Gb/s (Note: inputs do not reclock)  
**Connector:** BNC  
**Impedance:** 75Ω  
**Cable equalization:**  
150m (492 ft.) Belden 1694A  
85m (278 ft.) Belden 1855A, or equivalent cable, at 1.5 Gb/s

**Router path:** Non-inverting  
**Output level:** 800 mVp-p ±10 %  
**I/O return loss:** >15 dB, 5 MHz to 1.5 GHz  
**Output rise/fall time:** ≤270 ps  
**Output overshoot:** ≤10 % of amplitude max  
**Output alignment jitter:** ≤0.2 Ulpp from 100 kHz to 150 MHz  
**Output timing jitter:** ≤1.0 Ulpp from 10 Hz to 100 kHz

### 3G/HD/SD Inputs/Outputs

**Type:** High definition serial digital video  
**Standard:** SMPTE ST 259-C, SMPTE ST 292 and SMPTE ST 424  
**Data rate:** Auto reclocking at 270 Mb/s and 1.483, 1.485, 2.967, 2.970 Gb/s or auto bypass with pass-through from 19 Mb/s to 3 Gb/s (Note: inputs do not reclock)  
**Connector:** BNC  
**Impedance:** 75Ω

### Cable equalization (for cables listed or equivalent cable):

400m (1,312 ft.) Belden 1694A, 250m (820 ft.) Belden 1855A at 270 Mb/s  
150m (492 ft.) Belden 1694A, 100m (328 ft.) Belden 1855A at 1.5 Gb/s  
100m (328 ft.) Belden 1694A, 45m (147 ft.) Belden 1855A at 3 Gb/s

**Router path:** Non-inverting  
**Output level:** 800 mVp-p ±10 %

**I/O return loss:**  
>15 dB, 5 MHz to 1.5 GHz >10 dB, 1.5 GHz to 3 GHz  
**Output rise/fall time:** ≤135 ps  
**Output overshoot:** ≤10 % of amplitude max  
**Output alignment jitter:** ≤0.3 Ulpp from 100 kHz to 300 MHz  
**Output timing jitter:** ≤2.0 Ulpp from 10 Hz to 100 kHz

### Video Transition Rates

(slow = 3 sec., medium = 2 sec., fast = 1 sec.)  
**1080i59.94, NTSC:** slow 90, medium 60, fast 30 frames  
**1080i50, PAL:** slow 75, medium 50, fast 25 frames  
**720p50:** slow 150, medium 100, fast 50 frames  
**720p60:** slow 180, medium 120, fast 60 frames

Specifications subject to change without notice

## ORDERING

### Clean and quiet switches

CR1602-3GIG-CQX 16x8 3G clean and quiet switch, 1 RU  
CR1602-HD-CQX 16x8 HD clean and quiet switch, 1 RU

### Power supply

CRPS1 Redundant power supply for Compact Routers and Remote panels

### Control panel\*

CP1602-CQX 16x8 control panel for CQX

### Remote Panel Expansion Kits

Note: Allows CP panel to operate separately and remotely via Ethernet. CP panel can be programmed using CRSC when mounted to an RP  
RP16 Remote panel expansion kit for 1 RU

\* Must be purchased with each NVISION Compact CQX, mounts to the front of the switcher or to a RP16 for remote control.



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