

### PROBLEM/SOLUTION

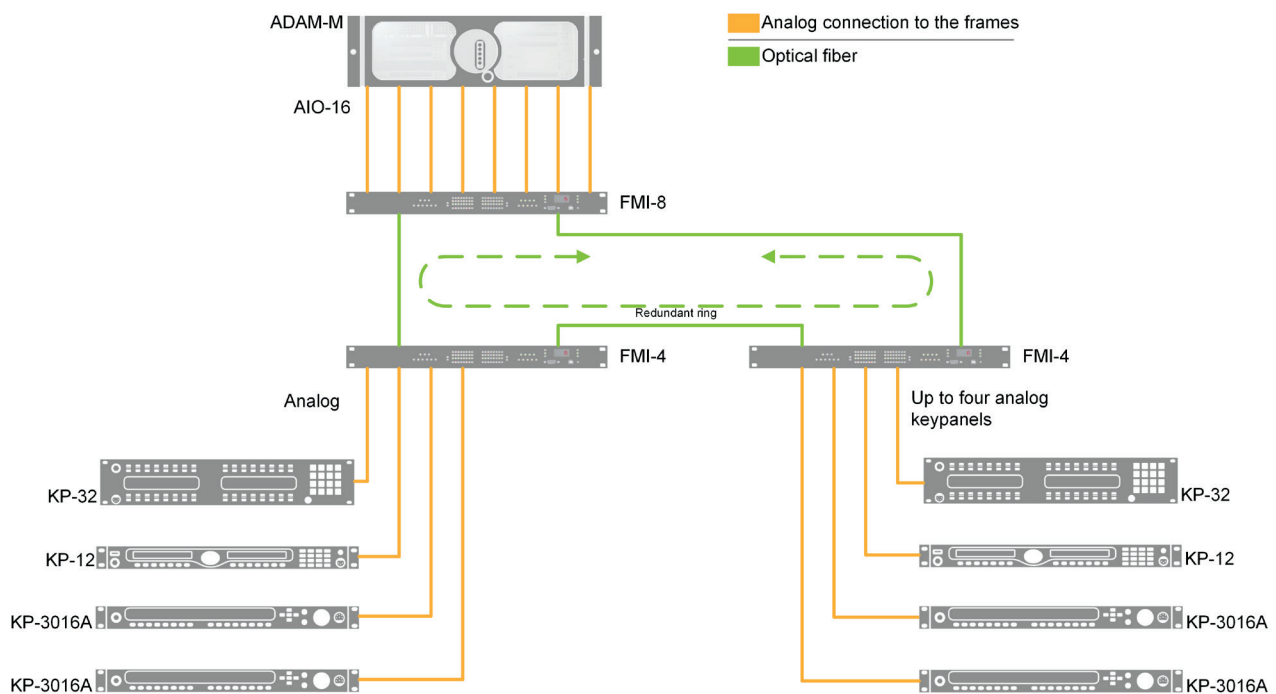
Keypanels are critical to live production. Backup connections for keypanels are essential in case a cable breaks. FMI multiplexers allow keypanels to communicate, even if a cable breaks or is accidentally disconnected. The multiplexers are interconnected with redundant optical fibers; if one fiber fails, the other takes over without interrupting the signal. Multiple multiplexers can be configured in a ring, which provides redundancy for keypanels in multiple locations.

The most common redundancy configuration is to have two multiplexers, connected to one another with two fibers. More complex configurations are possible. Multiple multiplexers can be chained together in a ring topology. A ring topology is resilient to a single fault anywhere on the ring.

### PRACTICAL EXAMPLE

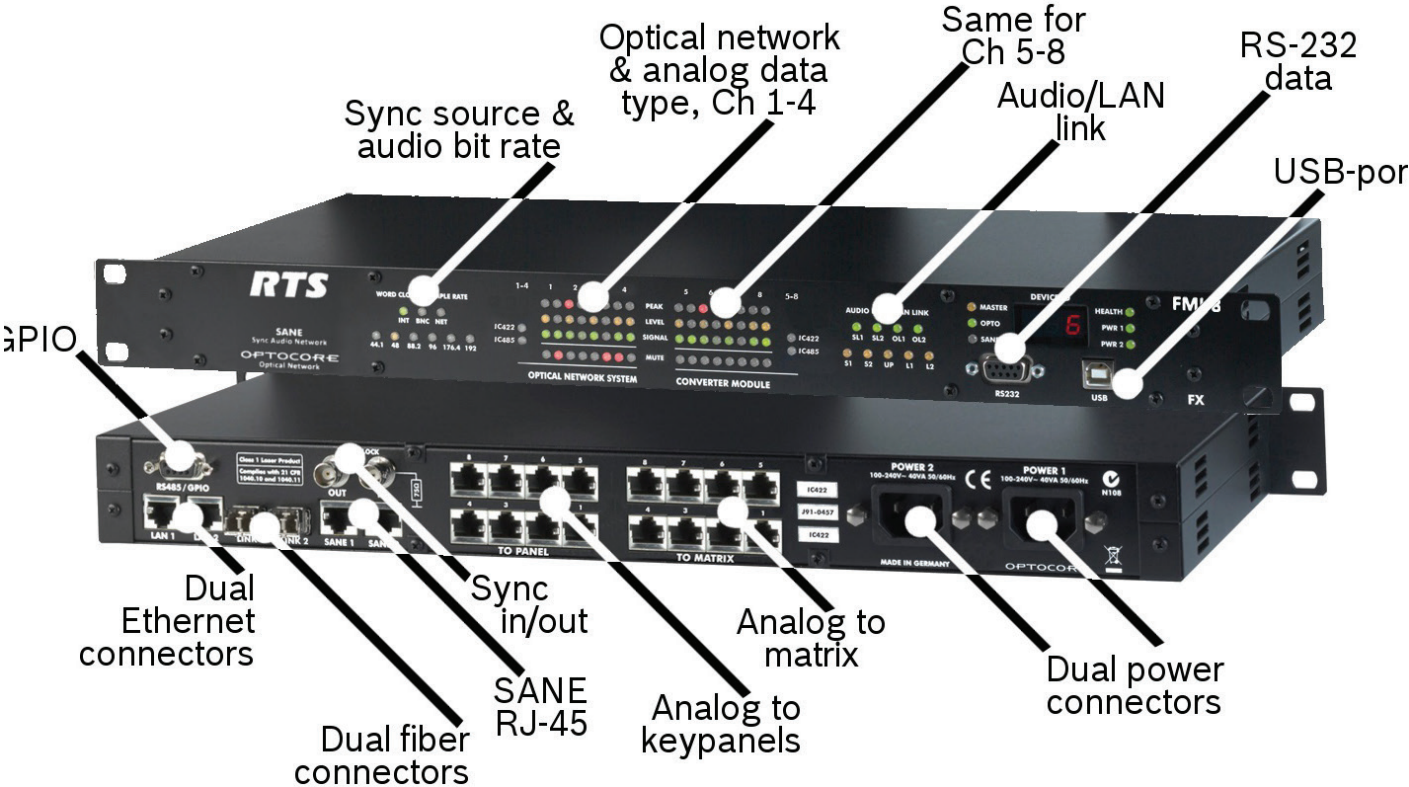
In the use case shown in the graphic below, a total of eight analog keypanels are connected to an ADAM-M, using a ring topology. Both multiplexers shown in the bottom of the graphic have four keypanels. Each of the green lines that make up the multiplexer ring actually consists of a pair of fibers, one for transmit and one for receive. Each multiplexer transmits on two fibers and receives on two fibers. If a fiber pair fails or is accidentally disconnected, only a few microseconds of audio are lost before the signal is re-established.

In addition to providing a fully redundant connection for each keypanel, the topology also simplifies the wiring. There is no need to pull an analog cable from each keypanel, all the way to the matrix. It is sufficient to connect it to the nearest multiplexer with an available port. Once a keypanel is connected to the multiplexer, it is possible to route it to an output port on any of the multiplexers in the ring. This means two matrices could even share the same optical ring.



# PRODUCT VIEWS

FMI-8 front and rear



FMI-4 front



FMI-4 back

