

## Substation Real-Time Extension Solution

*Extends Communication Manager Signal to Console  
Providing Real-Time Transformer Information*

### OVERVIEW: A Municipal Substation



To transmit electricity from a power plant to distant locations, voltage must be increased to a high voltage. According to safety requirements, however, this voltage must be lowered when travelling near residential areas. In order to achieve this, substations containing switches and transformers are distributed throughout national grids.

Each substation is equipped with 2 or 3 Distributed Processing Units (DPU) with each collecting telecommand, telemetry and telecontrol information by controlling RRtu devices that are subordinate to the control platform. Staffs need to obtain the DPUs' real-time information and make instant adjustments to the operation of their current devices. Furthermore, the console at each dispatching station can only connect to a mouse, keyboard and monitor for safety reasons and the whole signal extension system needs to support high resolution, delay-free monitoring.

### CHALLENGES

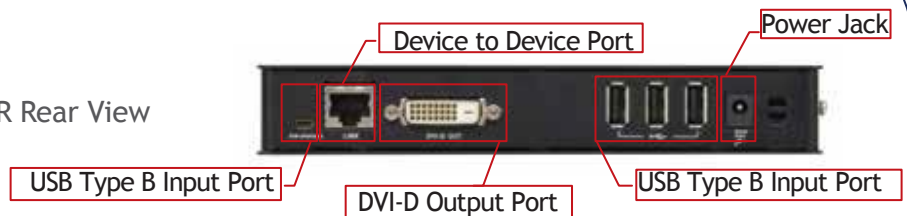
- The DPUs are industrial computers with DVI interfaces. The KVM needs to be extended from the DPUs to consoles.
- Consoles are distributed on different floors with different extension distances. The extended images all require high resolution (1920x1200).
- Local and server operations need to be identical.

### ATEN SOLUTION



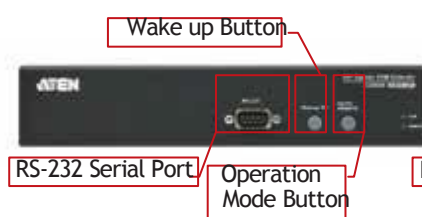
**CE610**  
USB 2.0 DVI KVM Extender

• CE610R Rear View

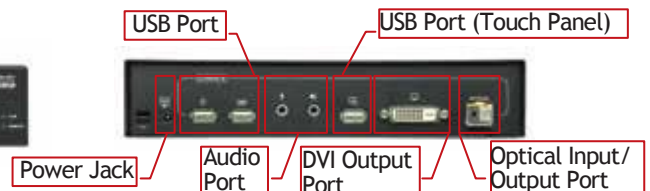


**CE680/CE690**  
DVI Optical KVM Extender

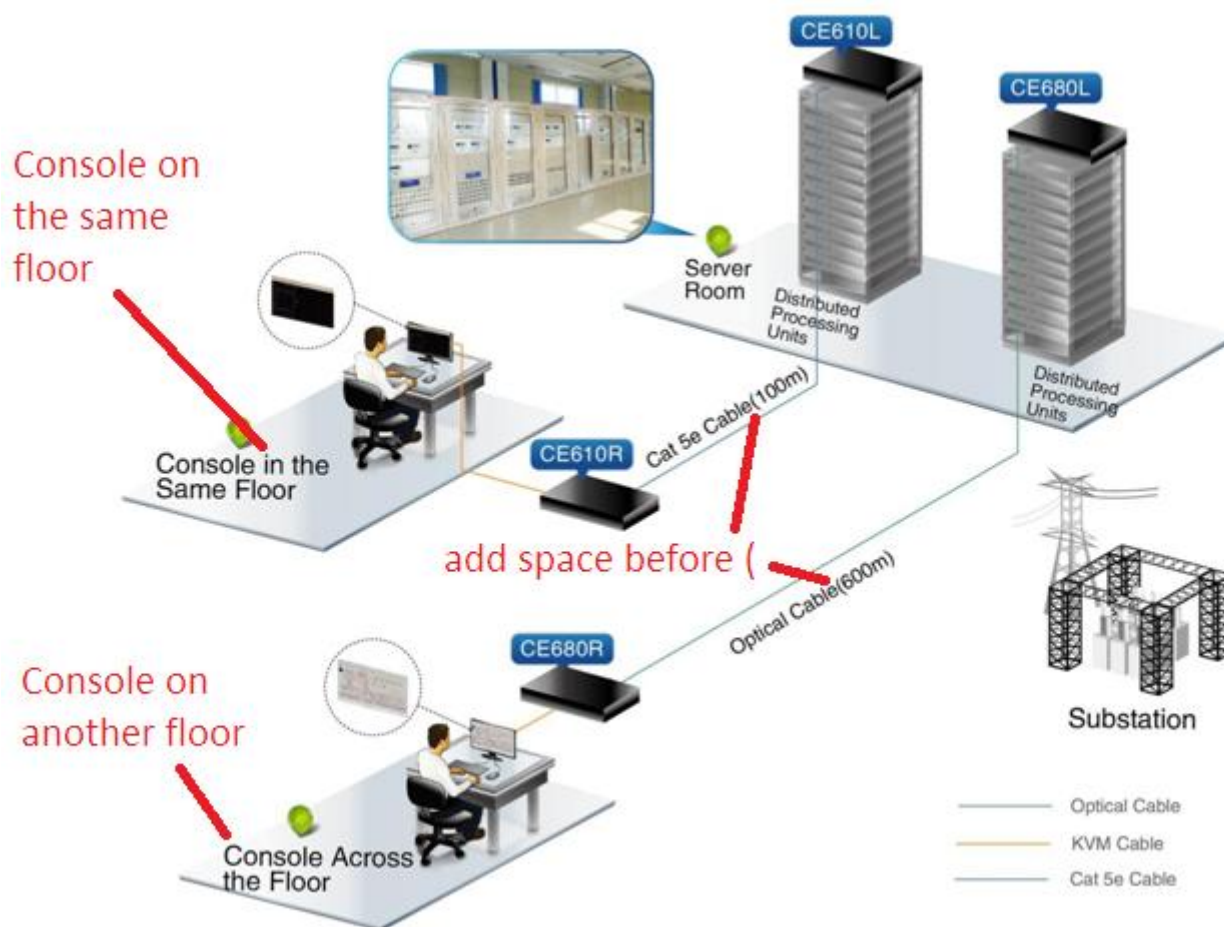
• CE680R Front View



• CE680R Rear View



## SOLUTION ARCHITECTURE



## FEATURES & BENEFITS

- DVI video signals can be extended to a console with the KVM extension solution.
- Meets demands with different extension distances (100m with CE610, 600m with CE680 and 20km with CE690) with resolution up to 1920x1200.
- The keyboard and mouse signals extended by ATEN's optical extender are identical to the original, which ensures substation staff's real-time operation and increased efficiency.

*"We achieved our "man-machine separation" operation after using ATEN's DVI KVM extender. Substation staff can have real-time operation on DPUs directly from their consoles. We can choose different solutions according to different extension distances. At the same time, our agents' consoles became neater, which increased efficiency."*

*– Customer Feedback*

