

# NAV Pro AV Over IP Solutions

## Minimum Network Requirements & Guidelines – 1G Infrastructures

The NAV™ AV over IP platform uses standard 1G and 10G networks. Below are minimum requirements and guidelines to ensure a successful implementation for a 1G system. For 10G system requirements, please see the other side.

### Minimum Network Requirements – 1G Systems

#### Implementation Considerations

Devices can be installed on a physically isolated network or converged onto existing Gbps networks

For streaming on a private network use the 239.255.0.0 to 239.255.255.255 range which is reserved for administratively scoped addressing

Category 5e or 6 Ethernet network cable for Gbps speeds up to 100m

#### Network Switch Hardware

1 Gbps port for every connected NAV 1G endpoint

IGMPv2 or IGMPv3 implemented

Layer 2+ or 3

Ensure switch supports non-blocking backplane/chassis

If applicable, use switches that support 802.1x for endpoint authentication

#### Network Switch Settings

IGMPv2 or IGMPv3 snooping enabled on all switches and VLANs

IGMPv2 or IGMPv3 querier enabled on one of the switches if no router is present

IGMP Immediate Leave/Fast Leave enabled

802.3az Energy Efficient Ethernet disabled

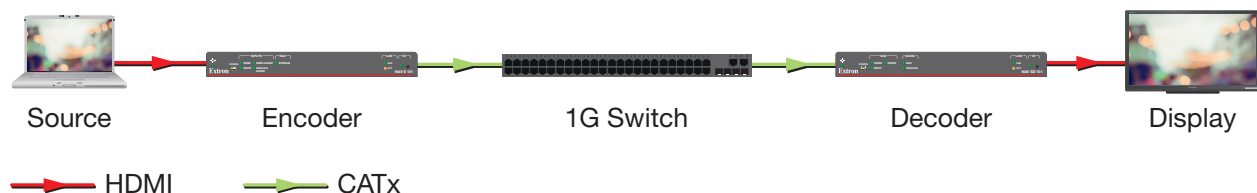
#### Inter-network Connectivity

IGMPv3 required for SSM (Source-Specific Multicast)

Enable PIM (Protocol Independent Multicast) on Layer 3 devices for SSM

\*PIM-SSM is recommended for interfaces connecting different subnets and uses the 232.0.0.0 to 232.255.255.255 range

Configure Access Control Lists and Firewalls to allow traffic from required address ranges/ports



# NAV Pro AV Over IP Solutions

## Minimum Network Requirements & Guidelines – 10G Infrastructures

The NAV™ AV over IP platform uses standard 1G and 10G networks. Below are minimum requirements and guidelines to ensure a successful implementation for a 10G system. For 1G system requirements, please see the other side.

### Minimum Network Requirements – 10G Systems

#### Implementation Considerations

Devices can be installed on a physically isolated network or converged onto existing Gbps networks

For streaming on a private network use the 239.255.0.0 to 239.255.255.255 range which is reserved for administratively scoped addressing

Singlemode or Multimode fiber optic cable for 10 Gbps speeds

#### Network Switch Hardware

10 Gbps port for every connected NAV 10G endpoint

IGMPv2 or IGMPv3 implemented

Layer 2+ or 3

Ensure switch supports non-blocking backplane/chassis

If applicable, use switches that support 802.1x for endpoint authentication

#### Network Switch Settings

IGMPv2 or IGMPv3 snooping enabled on all switches and VLANs

IGMPv2 or IGMPv3 querier enabled on one of the switches if no router is present

IGMP Immediate Leave/Fast Leave enabled

802.3az Energy Efficient Ethernet disabled

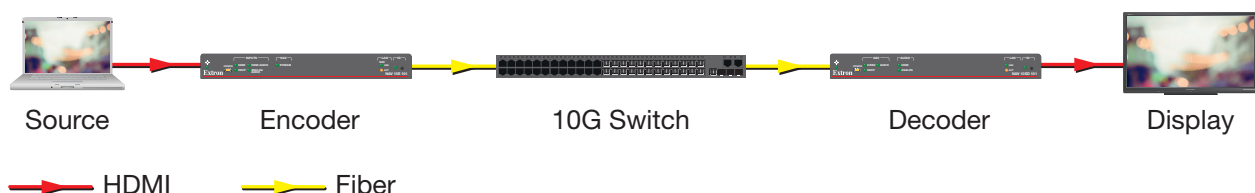
#### Inter-network Connectivity

IGMPv3 required for SSM (Source-Specific Multicast)

Enable PIM (Protocol Independent Multicast) on Layer 3 devices for SSM

\*PIM-SSM is recommended for interfaces connecting different subnets and uses the 232.0.0.0 to 232.255.255.255 range

Configure Access Control Lists and Firewalls to allow traffic from required address ranges/ports



# Extron