Half-Duplex to Full-Duplex Converter

Highlights

Performance

- Line-rate conversion of four 10/100Mb half-duplex ports to 10/100/1000Mb full-duplex
- Line-rate conversion of four 10/100/1000Mb full-duplex ports to 10/100Mb half-duplex

Features

- Fan-less device
- External power brick
- 0ºC to 40ºC operating range
- Half-duplex support on four 10/100Mb user ports
- Full-duplex support on four 10/100/1000Mb switch ports
- IEEE 802.az EEE

Half-Duplex / Full-Duplex — Front

Power Cord

Half-Duplex / Full-Duplex — Back

Enable half-duplex connections with older Ethernet devices

The Half-Duplex to Full-Duplex Converter can be used in conjunction with full-duplex switches to provide 10/100Mb half-duplex connections to older Ethernet devices.

Device Utilization

Many high-speed switches today do not support half-duplex connections that some older Ethernet devices support exclusively. This converter enables those older half-duplex devices to be connected to modern high-speed switches that only support full-duplex.

The converter has four half-duplex user ports that support 10/100Mb half-duplex connections and four 10/100/1000Mb full-duplex ports for connecting to the modern switch. All buffering and speed/duplex conversion is handled by the external converter.

The converter is an unmanaged device. It does not have a console port nor can it be managed via any of its Ethernet ports. As an unmanaged device, network collisions and other half-duplex statistics on the half-duplex ports are not reported to the full-duplex switch ports. Therefore, network monitoring of the half-duplex ports is not supported.

The converter is powered via a small external power brick. There is one power brick for the North American market (NEMA 1-15P) and another power brick for the rest of the world (CEE 7/1). Therefore there are two different ordering numbers.

Note: The Half-Duplex to Full-Duplex Converter is not certified for sale in the following countries: China, Taiwan, Korea, Brazil, Russia.

Performance and Scale

Model #	Description	Half Duplex 10/100Mb ports	Half Duplex 10/100/1000Mb ports
10958	HDX to FDX Converter, Rest of World	4	4
10959	HDX to FDX Converter, North America	4	4

- 8.8Gbps switching capacity
- 4 priority queues
- 192KB packet buffer

External Ports

Hardware Device	Description
10958	4 x 10/100BASE-T (RJ-45) Half Duplex 4 x 10/100/1000BASE-T (RJ-45) Full Duplex
10959	4 x 10/100BASE-T (RJ-45) Half Duplex 4 x 10/100/1000BASE-T (RJ-45) Full Duplex

Physical

Model #	Weight	Height	Width	Depth
10958	0.44 lb (0.20 kg)	1.06 in (2.69 cm)	5.08 in (12.9 cm)	2.72 in (6.91 cm)
10959	0.44 lb (0.20 kg)	1.06 in (2.69 cm)	5.08 in (12.9 cm)	2.72 in (6.91 cm)

Power

10958 - CEE 7/1	Rest of the World External Power Brick
Voltage input range	200VAC - 240VAC
Line frequency range	50Hz to 60Hz
Operating temperature	0°C to 40° C normal operation

10959 - NEMA 1-15P	North American External Power Brick
Voltage input range	100VAC - 120VAC
Line frequency range	50Hz to 60Hz
Operating temperature	0°C to 40° C normal operation

LED Indicators

- Per port status LED including power status

Environmental

Environmental Specifications

- EN/ETSI 300 019-2-1 v2.1.2 - Class 1.2 Storage
- EN/ETSI 300 019-2-2 v2.1.2 - Class 2.3 Transportation
- EN/ETSI 300 019-2-3 v2.1.2 - Class 3.1e Operational
- ASTM D3580 Random Vibration Unpackaged 1.5 G

Operating Conditions

- Temp: 0°C to 40°C (32°F to 122°F) – all models
- Humidity: 10% to 95% relative humidity, noncondensing
- Altitude: 0 to 2,000 meters (6,562 feet)

Packaging and Storage Specifications

- Temp: -40°C to 70°C (-40°F to 158°F)
- Humidity: 10% to 95% relative humidity, non-condensing
- Packaged Shock (half sine): 180 m/s2 (18 G), 6 ms, 600 shocks
- Packaged Vibration: 5Hz to 62Hz at velocity 5 mm/s, 62Hz to 500Hz at 0.2 G
- Packaged Random Vibration: 5Hz to 20Hz at 1.0 ASD w/–3 dB/oct. from 20Hz to 200Hz
- Packaged Drop Height: 14 drops minimum on sides and corners at 42 inches (<15 kg box)

Regulatory and Safety

North American ITE

- UL 60950-1 2nd Ed., Listed Device (U.S.)
- CSA 22.2 No. 60950-1 2nd Ed. (Canada)
- Complies with FCC 21 CFR 1040.10 (U.S. Laser Safety)

European ITE

- EN 60950-1:2007 2nd Ed.

International ITE

- CB Report & Certificate per IEC 60950-1 2nd Ed. + National Differences
- AS/NZS 60950-1 (Australia /New Zealand)

EMI/EMC Standards

North American EMC for ITE

- FCC CFR 47 part 15 Class A (USA)
- ICES-003 Class A (Canada)

European EMC Standards

- EN 55022: Class A
- EN 55024:A2 Class A includes IEC 61000-4-2, 3, 4, 5, 6, 11
- EN 61000-3-2,8 (Harmonics)
- EN 61000-3-3 (Flicker)
- 2014/30/EU EMC Directive

International EMC Certifications

- CISPR 22: Ed 5.2, Class A (International Emissions)
- CISPR 24:A2: Class A (International Immunity)
- IEC 61000-4-2: EN 61000-4-2:2009 Electrostatic Discharge, 8kV Contact, 15kV Air, Criteria A
- IEC 61000-4-3: EN 61000-4-3:2006+A1:2008 Radiated Immunity 10V/m, Criteria A
- IEC 61000-4-4: am1 ed.2./EN 61000-4-4:2004/A1:2010 Transient Burst, 1kV, Criteria A
- IEC 61000-4-5: EN 61000-4-5:2006 Surge, 2 kV L-L, 2 kV L-G, Level 3, Criteria A
- IEC 61000-4-6: EN 61000-4-6:2009 Conducted Immunity, 0.15MHz-80MHz, 10V/m unmod. RMS, Criteria A
- IEC/EN 61000-4-11: Power Dips & Interruptions, >30%, 25 periods, Criteria C

IEEE 802.3 Media Access Standards

- IEEE 802.3ab 1000BASE-T
- IEEE 802.az EEE

Ordering Information

	Hardware Device	Description
10958	HDX to FDX Converter, ROW	External converter for the Rest of World market (EMEA, South America and APAC) that can use a CEE 7/1 plug to connect up to four half-duplex devices to four full-duplex switch ports. External power supply and cord with CEE 7/1 plug included.
10959	HDX to FDX Converter, NA	External converter for the North American market to connect up to four half-duplex devices to four full duplex switch ports. Does NOT support PoE-pass through. External power supply and cord with NEMA 1-15P plug included.
STK-RPS-1005CH3	3 Slot Modular Shelf	Three slot modular shelf for rack mounting up to three of the following devices: STK-RPS-1005PS– 1005W Redundant Power Supply, 10932 – 150 W Redundant Power Supply or 10958/10959 Half-Duplex to Full-Duplex Converter

Warranty

The Converter is covered by the warranty for the switch that it is connected to. For warranty details, visit http://www.extremenetworks.com/support/policies