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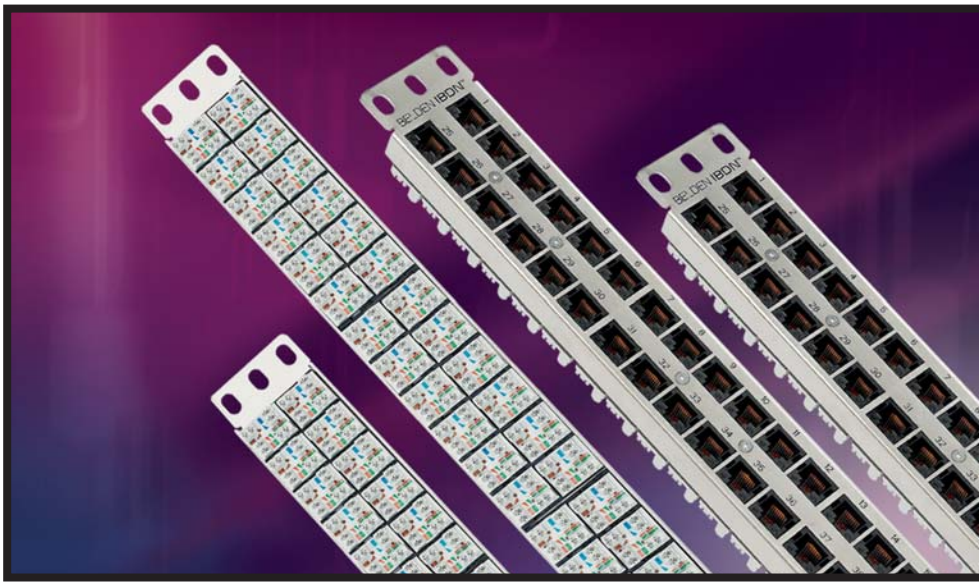
New Product Bulletin

NP 253E

Ultra High-density Patch Panels

When space comes at a premium – as is typical with data centers – and the high bandwidth needs of 10GBASE-T must be met, these patch panels will exceed your expectations.



10GX® 1U 48-Port Ultra High-density Patch Panels Combine Unsurpassed Density with Beyond 10G Performance

Once the proposed 10GBASE-T standard is published for unshielded twisted pair (UTP) cables, the number of 10 Gigabit networks will grow quickly. The high bandwidth of 10GBASE-T is ideal for applications such as equipment distribution areas (TIA-942 Standard), data centers, or anywhere extremely high throughput is needed. Such installations also represent very high-density environments.

Our 10GX 1U 48-Port Ultra High-density Patch Panels have been designed for these demanding applications.

No Other Patch Panel Delivers This Density and Performance

While traditional 48-port patch panels require 2 units of rack space, this 48-port 10G Patch Panel fits into a 1U rack space – providing double the port density. And, when used with the Belden® High-density Modular Racking System, which requires no horizontal cable management, the 10GX 1U 48-Port Ultra High-density Patch Panel delivers four times the density of standard patch panels.

Naturally, this high density means nothing if the patch panel can't handle the rigors of 10 Gigabit/second data streams. That's where the 10GX Patch Panel really delivers. A data signal of 10Gb/s requires a bandwidth of 500 MHz – two-and-a-half times the bandwidth of Category 6 transmissions. Communication at these high frequencies requires a re-design of virtually every channel component.

At 500+ MHz, these components emit electromagnetic fields which disturb channels in close physical proximity. This interaction between one channel and its neighbor is called Alien Near-End CrossTalk (ANEXT), and reducing ANEXT is a major 10G challenge.

Not only does the Belden IBDN System 10GX meet the bandwidth and ANEXT challenges of 10G, but the 10GX 1U 48-port Ultra High-density Patch Panel exceeds them, delivering guaranteed performance to 625 MHz.

10GX Modules are the Foundation

The heart of the 10GX Ultra High-density Patch Panel is the use of its exclusive 10GX Modules. These modules incorporate three patent-pending advancements:

- **MatriX IDC Technology:** This unique design locates each IDC connector at right angles to its neighbor, canceling out ANEXT. This innovation cuts ANEXT by 15 dB.
- **FleXPoint PCB Technology:** A flexible printed circuit board allows crosstalk-compensating circuitry to be located directly at the plug interface – the exact point where noise originates. This configuration provides excellent crosstalk performance to 625 MHz.
- **X-Bar Technology:** This termination technology allows each UTP pair to be perfectly positioned for accurate termination under typical field conditions. The result is Installable Performance® – performance comparable to termination performed in the lab.

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Now also available:

GigaFlex Category 6+ 1U 48-port Ultra High-density Patch Panels

GigaFlex Category 5E+ 1U 48-port Ultra High-density Patch Panels

10GX® Ultra High-density Patch Panels provide 2-to-4 times the density of conventional patch panels, while exceeding proposed Augmented Category 6 standards, i.e., providing guaranteed performance characteristics for transmission at frequencies as high as 625 MHz.

Features and Benefits

- Quadruple the effective density as compared with traditional 48-port 2U patch panels, when used with Belden's High-density Modular Racking System
- Specifically designed for very dense environments such as equipment distribution areas (TIA-942 Standard) or data centers
- Extra overhead beyond proposed Augmented Category 6 standard
- In-line modules for better density and clear, simple labeling
- Modules based on:
  - MatriX IDC Technology or "Module ANEXT Cancellation Technology," reducing the ANEXT by 15 dB
  - FleXPoint PCB Technology or "Module NEXT Compensation Technology," offering excellent crosstalk performance up to 625 MHz
  - X-Bar Technology or "Module NEXT Control Bar Technology," allowing the 10GX Ultra High-density Patch Panel 1U 48-port to provide Installable Performance®
- Truly backwards compatible with Category 6 components to protect cabling investment
- Easy-to-read T568A/B color scheme prevents termination errors
- Robust and installer-friendly design to reduce installation and operating costs
- New titanium paint finish for aesthetic design
- Compatible with standard 19" equipment racks, cabinets or wall mount brackets
- Includes rear cable management bar kit
- All ports numbered on the front of the panel
- Room for labeling strip on the front of the panel
- Large front labeling space facilitating custom port identification
- Matching laser-printable labels for clear identification and to ease network management

Installation Tips

- Plan the telecommunications room layout prior to patch panel installation
- Allow for future expansion when planning patch panel installation
- Use patch cord management accessories when frequent moves, additions and changes are expected
- Label each port carefully for future reference and ease of location
- Use the Belden® High-density Modular Racking System for highest density

10GX® Ultra High-density Patch Panel IU 48-port, Augmented Category 6

Technical Specifications	
Dimensions (H x W x D)	48-port, 1U panel: 45 x 483 x 13 m (1.75" x 19" x 0.5") Module: 0.78" x 0.64" x 1.14" (19.8 x 16.3 x 29.0 mm) including the X-Bar
Panel Materials	Steel, 16 gauge, textured powder paint finish, titanium
Housing Materials	Plastics component: fire retardant plastic, UL 94V-0, Black
IDC Termination	IDC clip material: phosphor bronze with nickel plating Gas-tight connection: insulation slicing of 22 to 24 AWG (0.64 to 0.51 mm), plastic insulated solid copper Durability: 20 insertions
Modular Jack	8-pin connector: FCC part 68, Subpart F and IEC-603-7 compliant; compatible with 6-pin plugs Durability: 750 mating cycles Contact material: Flexible circuit printed board (Polyimide base) with min 50 micro-inches gold over nickel plus metal spring (phosphor bronze with plating)
Electrical Performance	Dielectric strength: 1,000V RMS at 60 Hz for 1 minute Current rating: 1.5 A maximum Insulation resistance: 500 mΩ minimum Contact resistance (jack-plug interface): 20 mΩ Termination resistance (IDC): 2.5 mΩ Gas-tight connection: insulation slicing of 22 to 24 AWG (0.64 to 0.51 mm), plastic insulated solid copper conductors Encapsulated clips: fire retardant, UL 94V-0, plastic support, Black Durability: 10 insertions of any combination of wire gauge
Packaging	X-Bars (one per port) Individually packaged in a cardboard box, including: – Cable management bar, – Laser-printable labels – Installation Guide

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10GX® Ultra High-density Patch Panel IU 48-port, Augmented Category 6

Transmission Characteristics

Minimum values for mated connection measured with the 10GX Ultra High-density Patch Panel IU 48-port and the 10GX Modular Cord as per TIA/EIA 568-B.2-10 Draft 6.

Frequency (MHz) (min.)	*NEXT (dB) (min.)	NEXT (dB) (min.)	PSANEXT (dB) (min.)	Return Loss (dB) (min.)
0.772	96.2	96.2	112.2	70.2
1.0	94.0	94.0	110.0	68.0
4.0	82.0	82.0	98.0	56.0
8.0	75.9	75.9	91.9	49.9
10.0	74.0	74.0	90.0	48.0
16.0	69.9	69.9	85.9	43.9
20.0	68.0	68.0	84.0	42.0
25.0	66.0	66.0	82.0	40.0
31.25	64.1	64.1	80.1	38.1
62.5	58.1	58.1	74.1	32.1
100.0	54.0	54.0	70.0	28.0
200.0	48.0	48.0	64.0	22.0
250.0	46.0	46.0	62.0	20.0
300.0	42.9	44.5	60.5	18.5
350.0	40.2	43.1	59.1	17.1
400.0	37.9	42.0	58.0	16.0
450.0	35.8	40.9	56.9	14.9
500.0	34.0	40.0	56.0	14.0
550.0	32.3	39.2	55.2	13.2
600.0	30.8	38.4	54.4	12.4
625.0	30.1	38.1	54.1	12.1

* Values as per Proposed Standard for Augmented Category 6, TIA 568-B.2-10 Draft 6

Ordering Information

Description	Ordering Number
10GX Ultra High-density Patch Panel, 1U, 48-port, Titanium	**AX102488**
Now Available:	
GigaFlex Cat. 6+ Ultra High-density Patch Panels, 1U, 48-port, Titanium	**AX102490**
GigaFlex Cat. 5E+ Ultra High-density Patch Panels, 1U, 48-port, Titanium	**AX102489**

All information is subject to change without notice, since Belden reserves the right to change its products as progress in engineering and manufacturing methods or other circumstances may warrant.