

DATA Sheet

10GX Patch Panel

The 10GX Patch Panel is a fully loaded patch panel designed to be used within the Belden IBDN System 10GX. The 10GX Patch Panel features the revolutionary 10GX Module, specifically designed to meet the difficult challenges of 10 Gb/s transmission.

To allow for data-rates of 10 Gb/s, the signal needs to be transmitted at frequencies up to a minimum of 500 MHz, as compared with Category 6 transmissions which run up to 200 MHz. To achieve communication at these high frequencies over UTP copper requires significant changes in the way the channel components are designed.

At these high frequencies, all components of a 10G channel begin to emit electromagnetic fields, which negatively impact the channels that are closest in physical proximity. This interaction between one channel and its neighboring channels is called Alien Near End Cross Talk (ANEXT). Overcoming this is one of the most difficult requirements of Augmented Cat 6 standard.

The second critical challenge to developing 10G patch panels is to control the electrical performance of all the other patch panel/module parameters up to a minimum of 500 MHz.

In order to achieve true 10G performance, Belden CDT Networking has designed the 10GX Patch Panel incorporating several technological revolutions that have been designed into the 10GX Module.

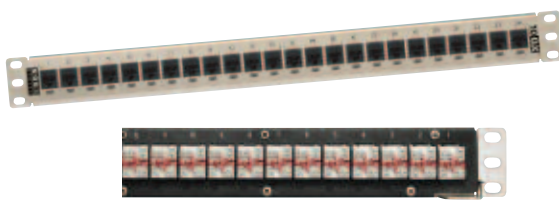
10GX Module Technologies:

MatriX IDC Technology or "Module ANEXT Cancellation Technology" is a patent-pending design of the 10GX Module's IDC pattern. In this matrix design each IDC is positioned at right angles to its neighboring IDC, and serves to "cancel out" the Alien crosstalk generated between modules. The astonishing results of incorporating this technology can be seen in the 15dB reduction in ANEXT over traditional technologies.

The **FleXPoint PCB Technology** or "Module NEXT Compensation Technology" allows the module's crosstalk compensation circuitry to be located at the very point of the source of the noise; the plug interface. The FleXPoint PCB module design uses a patent-pending flexible printed circuit board that offers instant compensation to deliver unbeatable crosstalk performance.

The **X-Bar Technology** or "Module NEXT Control Bar Technology" is the use of a specific patent-pending plastic device that allows each pair to be perfectly positioned at right angles for termination on the 10GX Module's IDC pins. This device optimizes the termination process and allows a 10GX Module terminated under real field conditions to have Installable Performance™ similar to the performance measured in a laboratory environment.

The unmatched Beyond 10G™ performance exceeds all parameters specified in the proposed Augmented Category 6 standard. All performance characteristics including ANEXT, NEXT, FEXT, Insertion Loss and Return Loss have been set to guarantee transmission performance up to 625 MHz.



AX102293 1U, 24-port, Titanium

DATA Sheet

10GX Patch Panel

Features & Benefits

- > 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 Patch Panel to provide Installable Performance™.
- > Truly backward compatible with Cat. 6 components to protect cabling investment
- > Easy to read T568A/B color scheme prevents termination errors
- > Panels are available in 24 and 48-port configurations for greater design flexibility and optimization of rack installation
- > Robust and installer-friendly design to reduce installation and operating costs
- > New titanium paint finish for esthetic design
- > Compatible with standard 19" equipment racks, cabinets or wall mount brackets
- > Integrated rear cable management bar
- > All ports numbered on both the front and back of the panel

- > Large front labeling space facilitating custom port identification
- > Openings for color coded icons
- > 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 different colors of ID Tabs or icons to ease identification and location of users, areas or types of service.

Technical Specifications

Dimensions – without modules (H x W x D)

- > 24-port, 1U panel: 45 x 483 x 13 mm (1.75" x 19" x 0.5")
- > 48-port, 2U panel: 90 x 483 x 13 mm (3.5" x 19" x 0.5")

Materials

Panel:

- > Steel, 16 gauge, textured powder paint finish, titanium

Module:

Dimensions (H x W x D)

- > 0.78" x 0.64" x 1.14" (19.8 x 16.3 x 29.0 mm) – including the X-Bar

Materials

- > Plastics component: fire retardant plastic, UL 94V-0, black

IDC termination interface:

- > IDC clip material: phosphor bronze with nickel plating
- > Gas-tight connection – insulation slicing of 22 to 24 AWG (.64 to .51 mm) plastic insulated solid copper
- > Durability: 20 insertions

Modular jack:

- > 8-pin connector, FCC part 68, Subpart F and IEC-603-7 compliant
- > 8-pin connector compatible with 6-pin plugs
- > Durability: 750 mating cycles
- > Contact material: Flexible circuit printed board (Polyamide base) with min 50 micro-inches gold over nickel plus metal spring (phosphor bronze with plating)

Electrical performance

- > Dielectric strength: 1,000 V RMS at 60 Hz for 1 minute
- > Current rating: 1.5 A maximum
- > Insulation resistance: 500 MΩ minimum
- > Contact resistance (jack-plug interface): 20mΩ
- > Termination resistance (IDC): 2.5mΩ
- > Gas-tight connection – insulation slicing of 22 to 24 AWG (.64 to .51 mm) plastic insulated solid copper conductors
- > Encapsulated clips, in fire retardant, UL 94V-0, plastic support, black
- > Durability: 10 insertions of any combination of wire gauge

DATA Sheet

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Packaging

- > X-Bars (one per port)
- > Individually packaged in a cardboard box, including:
 - > Cable management bar
 - > Laser printable labels
 - > Installation Guide

For More Information

For any other product information call:
1-800-BELDEN-1 or visit us at
www.Belden.com

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.

Transmission Characteristics

Minimum values for mated-connection measured with the 10GX Patch Panel and the 10GX Modular Cord
As per TIA/EIA Aug Cat6 Dec'04

FREQUENCY (MHz)	*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 Cat.6, TIA 568-B.2-10 Draft 1-4

Ordering Information

10GX Patch Panel, Augmented Category 6

DETAIL	ORDERING NUMBER
1U, 24-port, Titanium	AX102293
2U, 48-port, Titanium	AX102296