

What Systems Will Support the Applications You Need?

Belden IBDN Systems	1200	2400	3600	4800	10GX
Guaranteed Bandwidth	160MHz	250MHz	280MHz	300MHz	625MHz
Standards					
TIA standards	Category 5e	Category 6	Category 6	Category 6	Category 6A
ISO standards	Class D	Class E	Class E	Class E	Class EA
Bandwidth	100MHz	200MHz	200MHz	200MHz	500MHz
10GBASE-T					
Supports 10GBASE-T full implementation (from long to very short ^(a) channels) - IEEE 802-3an	No	Limited ^(b)	Limited ^(b)	Limited ^(b)	Yes
Supports 10GBASE-T short reach mode (low power) – IEEE 802-3an	No	No	No	No	Yes
Power over Ethernet					
Supports Power over Ethernet – 2 pairs – IEEE 802.3af	12.95 Watts	12.95 Watts	12.95 Watts	12.95 Watts	12.95 Watts
Supports Power over Ethernet Plus – IEEE 802.3at - Remote powering over 2 pairs or 4 pairs in Watts	24/48 Watts	26/52 Watts	28/56 Watts	30/60 Watts	30/60Watts
Broadband Communications					
Highest supported frequency for broadband video (CATV) & high speed internet (DOCSIS) for 100 m distance	620 MHz	680MHz	740 MHz	800 MHz	860 MHz
Number of Standard Definition (SD) or High Definition (HD) channels from 54 MHz up to the highest supported frequency	540/180	600/200	660/220	720/240	780/260
VoIP & IP Video					
Supports VoIP and IP video over QoS enabled Ethernet networks in noisy / high temperature environments ^(c)	No	Yes	Yes	Yes	Yes
1000BASE-T					
Supports 1000BASE-T applications – IEEE 802.3ab	Yes	Yes	Yes	Yes	Yes
Improves noise immunity – Noise reduction factor (Healthcare, Industrial facilities) – TIA 569B ^(d)	1	0.5	0.5	0.5	0.3
High Temperature					
Highest temperature without length de-rating ^(e)	N/A	30 °C	35 °C	50 °C	50 °C

(a) Belden White Paper - 'Short is Tough', this paper discusses minimum channel lengths with 2, 3, and 4-connector topologies to meet Category 6A requirements.

(b) Category 6 cabling was not specifically designed for optimum alien crosstalk performance between cables / connectors. Performance can vary depending on design and installation conditions. Maximum supported distances can vary from 37- to 55-meter channel distance, or possibly longer using mitigation techniques. The effectiveness of the mitigation techniques will depend on the nature of the alien crosstalk coupling. Please contact our tech support for more information.

(c) Belden Discussion Paper – Category 6 vs Category 5e Cabling Systems and Implications for Voice over IP Networks.

(d) Higher-performance cabling provides better noise immunity. Annex C of the TIA-569B standard provides a summary of noise-immunity tests that were performed for 1000BASE-T transmission over Category 5e and Category 6 cabling in close proximity to power cables. Category 6A cables provide a noise reduction factor of 0.3 or 70% less noise than Category 5e, because Category 6A cables are more tightly twisted and have better pair-balance characteristics.

(e) Highest temperature to meet Category 6 Insertion Loss specifications without de-rating the channel length.