

What Systems Will Support the Applications You Need?

Belden IBDN Systems	10GX	4800	3600	2400	1200
Guaranteed Bandwidth	625MHz	300MHz	280MHz	250MHz	160MHz
TIA standards	Category 6A	Category 6	Category 6	Category 6	Category 5e
ISO standards	Class EA	Class E	Class E	Class E	Class D
Bandwidth	500MHz	200MHz	200MHz	200MHz	100MHz
Supports 10GBASE-T short reach mode (low power) – IEEE 802.3an	Yes	No	No	No	No
Supports 10GBASE-T full implementation- IEEE 802.3an	Yes	Limited ^(a)	Limited ^(a)	Limited ^(a)	No
Improves noise immunity – Noise reduction factor (Healthcare, Industrial facilities) – TIA 569B ^(b)	0.3	0.5	0.5	0.5	1
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 – 2 pairs – IEEE 802.3at	30 Watts	30 Watts	24 Watts	24 Watts	24 Watts
Supports broadband video (CATV) & high speed internet (DOCSIS) over UTP ^(c)	780/260	720/240	660/220	600/200	540/180
Improves higher temperate performance – length de-rating @50°C (122°F)	No de-rating	No de-rating	6 m	8 m	10 m
Supports VoIP applications – BER – Bit Error Rate / QoS – Quality of Service ^(d)	Yes	Yes	Yes	Yes	No
Supports 1000BASE-T applications – IEEE 802.3ab	Yes	Yes	Yes	Yes	Yes

- (a) Category 6 cables were not specifically designed for optimum alien crosstalk performance between cables. Performance can vary depending on the cable design and installation conditions. Test results presented to the TIA TR-42.7 subcommittee indicate that alien near-end crosstalk tends to be dominated by the connectivity, and alien far-end crosstalk tends to be dominated by the cables. 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.
- (b) 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. It is anticipated that Category 6A would 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.
- (c) Number of Standard Definition (SD) or High Definition (HD) channels over a frequency range starting at 54 MHz to the highest supported frequency by the cabling system (e.g. up to 860 MHz for 10GX System).
- (d) Discussion Paper – Category 6 vs Category 5e Cabling Systems and Implications for Voice over IP Networks.