



SYSTIMAX®
GigaSPEED® X10D
F/UTP Solution Guide

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The SYSTIMAX® GigaSPEED® X10D F/UTP Solution provides unprecedented performance for key parameters such as insertion loss and all forms of crosstalk, both within and between channels, yielding improved bandwidth, data throughput and network efficiency.

The SYSTIMAX® GigaSPEED® X10D F/UTP Solution has been specifically engineered with enhanced cable and connector performance designed to support the latest 10 Gb/s Ethernet requirements. Using patented technology and the scientific capabilities of CommScope Labs, this solution exhibits far superior channel performance than legacy F/UTP solutions, and innovative engineering techniques to meet the specific channel requirements of the ISO/IEC 11801 Class E_A and ANSI/TIA-568-C.2 Category 6A standards. The SYSTIMAX® GigaSPEED® X10D F/UTP Solution delivers next generation support by providing double the bandwidth of today's Category 6 cabling channel and guaranteed performance in worst case installation conditions out to 500MHz.

The GigaSPEED X10D F/UTP Solution

Extending... the usable bandwidth of the enterprise

Extending... the peak performance of the enterprise

Extending... the technology of copper cabling

Extending... the value of the IT budget

Extending... the life of the enterprise cabling infrastructure

SYSTIMAX GigaSPEED X10D F/UTP Channel Performance

The SYSTIMAX GigaSPEED X10D F/UTP cabling system is designed specifically to meet or exceed the latest ISO/IEC Class E_A cabling specification. A major breakthrough of the SYSTIMAX GigaSPEED X10D F/UTP Solution over other legacy F/UTP solutions is vastly improved performance across the complete frequency spectrum from 1 to 500MHz.

By utilizing the unique design tools available to CommScope Labs, the technologies implemented in the SYSTIMAX GigaSPEED X10D F/UTP Solution are capable of incorporating the F/UTP technology while maintaining pair balance without degrading the internal channel transmission performance. Superior Crosstalk performance, improved Insertion Loss performance and guaranteed channel performance up to 500 MHz are the key enhancements that set the SYSTIMAX GigaSPEED X10D F/UTP Solution apart from other F/UTP solutions on the market today.

SYSTIMAX GIGASPEED X10D F/UTP PERFORMANCE SPECIFICATIONS

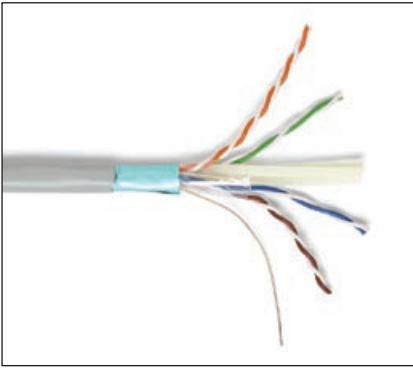
Channel Performance Specifications for the GigaSPEED X10D F/UTP Solution												
Freq (MHz)	Insertion Loss (dB)	PS ANEXT (dB)	Avg. PS ANEXT (dB)	PS AACR-F (dB)	Avg. PS AACR-F (dB)	NEXT (dB)	ACR-N (dB)	PS NEXT (dB)	PS ACR (dB)	ACR-F (dB)	PSACR-F (dB)	Return Loss (dB)
1.0	4.0	67.0	69.3	67.0	71.0	65.0	61.0	62.0	58.0	63.3	60.3	19.0
4.0	4.2	67.0	69.3	65.0	69.0	63.0	58.9	60.5	56.4	51.2	48.2	19.0
8.0	5.8	67.0	69.3	58.9	62.9	58.2	52.5	55.6	49.9	45.2	42.2	19.0
10.0	6.5	67.0	69.3	57.0	61.0	56.6	50.2	54.0	47.6	43.3	40.3	19.0
16.0	8.2	67.0	69.3	52.9	56.9	53.2	45.1	50.6	42.5	39.2	36.2	18.0
20.0	9.2	67.0	69.3	51.0	55.0	51.6	42.5	49.0	39.9	37.2	34.2	17.5
25.0	10.2	66.0	68.3	49.0	53.0	50.0	39.8	47.3	37.1	35.3	32.3	17.0
31.2	11.5	65.1	67.4	47.1	51.1	48.4	37.0	45.7	34.3	33.4	30.4	16.5
62.5	16.4	62.0	64.3	41.1	45.1	43.4	27.1	40.6	24.3	27.3	24.3	14.0
100.0	20.9	60.0	62.3	37.0	41.0	39.9	19.1	37.1	16.3	23.3	20.3	12.0
200.0	30.1	55.5	57.8	31.0	35.0	34.8	4.8	31.9	1.9	17.2	14.2	9.0
250.0	33.9	54.0	56.3	29.0	33.0	33.1	-0.7	30.2	-3.6	15.3	12.3	8.0
300.0	37.4	52.8	55.1	27.5	31.5	31.7	-5.6	28.8	-8.5	13.7	10.7	7.2
400.0	43.7	51.0	53.3	25.0	29.0	29.6	-14.0	26.6	-17.0	11.2	8.2	6.0
500.0	49.3	49.5	51.8	23.0	27.0	27.9	-21.4	24.8	-24.5	9.3	6.3	6.0

Note: values at specific frequencies for information only.

Performance shall be met on a swept frequency basis as per the above listed formulae.

The SYSTIMAX GigaSPEED X10D F/UTP Solution offers guaranteed channel performance to the above specifications for registered SYSTIMAX Network Infrastructure Solutions installations. Please contact your CommScope representative for a GigaSPEED X10D F/UTP Solution Guide and GigaSPEED X10D F/UTP Design and Installation Guidelines.

SYSTIMAX GigaSPEED 91 Series F/UTP Cable



1291 Cable

The SYSTIMAX GigaSPEED X10D F/UTP cabling system is designed specifically to meet or exceed the latest ISO/IEC Class E_A cabling specification. A major breakthrough of the SYSTIMAX GigaSPEED X10D F/UTP Solution over other legacy F/UTP solutions is vastly improved performance across the complete frequency spectrum from 1 to 500MHz. By utilizing the unique design tools available to CommScope Labs, the technologies implemented in the SYSTIMAX GigaSPEED X10D F/UTP Solution are capable of incorporating the F/UTP technology while maintaining pair balance without degrading the internal channel transmission performance. Superior Crosstalk performance, improved Insertion Loss performance and guaranteed channel performance up to 500 MHz are the key enhancements that set the SYSTIMAX GigaSPEED X10D F/UTP Solution apart from other F/UTP solutions on the market today.

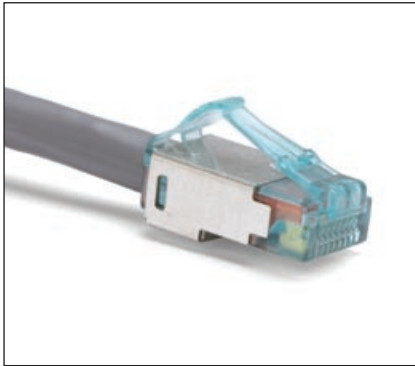
features and benefits

- Electrical performance guaranteed to meet or exceed the channel specifications of Amendment 1 to ISO/IEC 11 801:2002 Class E_A, and ANSI/TIA-568-C.2 Category 6A up to 500 MHz when used as part of a GigaSPEED X10D F/UTP Channel in registered SYSTIMAX installations
- 4-pair construction with aluminum foil tape and isolator center member provides extra margin of performance required for high-bandwidth applications
- 1291 Non-Plenum cable is ETL listed as CMR and CMG. This cable is constructed with a single jacket.
- 2291 Plenum cable is ETL listed as CMP. This cable is constructed with a single jacket.
- 3291 LSZH cable meets the requirements of IEC 60332-3. This cable is constructed with a single jacket.
- ETL Listed - 1291 Riser rated CMR and CMG
- IEC Certified - 3291 LSZH rated IEC 60332-3
- Can support network line speeds up to at least 10 Gbps
- Qualifies for the SYSTIMAX 20-Year Extended Product Warranty and Applications Assurance when included as part of a registered SYSTIMAX GigaSPEED X10D F/UTP channel

ORDERING INFORMATION:

Material ID	Product Number	Description
760081364	1291B BL 4/23 R1000	GigaSPEED X10D 1291B Category 6A F/UTP Non-Plenum Cable, blue jacket, 4 pair count, 1000 ft (305 m) length, reel
760081372	1291B GR 4/23 R1000	GigaSPEED X10D 1291B Category 6A F/UTP Non-Plenum Cable, gray jacket, 4 pair count, 1000 ft (305 m) length, reel
760081380	1291B OR 4/23 R1000	GigaSPEED X10D 1291B Category 6A F/UTP Non-Plenum Cable, orange jacket, 4 pair count, 1000 ft (305 m) length, reel
760081398	1291B SL 4/23 R1000	GigaSPEED X10D 1291B Category 6A F/UTP Non-Plenum Cable, slate jacket, 4 pair count, 1000 ft (305 m) length, reel
760081406	1291B WH 4/23 R1000	GigaSPEED X10D 1291B Category 6A F/UTP Non-Plenum Cable, white jacket, 4 pair count, 1000 ft (305 m) length, reel
760122630	2291B BL 4/23 R1000	GigaSPEED X10D 2291B Category 6A F/UTP Plenum Cable, blue jacket, 4 pair count, 1000 ft (305 m) length, reel
760122655	2291B SL 4/23 R1000	GigaSPEED X10D 2291B Category 6A F/UTP Plenum Cable, slate jacket, 4 pair count, 1000 ft (305 m) length, reel
760122648	2291B WH 4/23 R1000	GigaSPEED X10D 2291B Category 6A F/UTP Plenum Cable, white jacket, 4 pair count, 1000 ft (305 m) length, reel
760081315	3291B BL 4/23 R1000	GigaSPEED X10D 3291B Category 6A F/UTP Low Smoke Zero Halogen Cable, blue jacket, 4 pair count, 1000 ft (305 m) length, reel
760081323	3291B WH 4/23 R1000	GigaSPEED X10D 3291B Category 6A F/UTP Low Smoke Zero Halogen Cable, white jacket, 4 pair count, 1000 ft (305 m) length, reel

SYSTIMAX GigaSPEED X10D G10FP F/UTP Modular Patch Cords



G10FP translucent aqua sled



G10FP Patch Cord

SYSTIMAX GigaSPEED X10D G10FP F/UTP patch cords are for use at both ends of a SYSTIMAX® GigaSPEED® X10D F/UTP channel. Along with cable and patching hardware, CommScope Labs has characterized the performance of these cords in thousands of different channel configurations using the Modal Decomposition Modeling (MDM) tool.

The high performance G10FP modular patch cord family has a patented plug design featuring a distinctive metallized construction, low profile rear housing and anti-snag latch for easy and rapid field identification. Through an innovative design, the G10FP plug exhibits dramatic reduction in performance variation. Together with high precision manufacturing, this provides the electrical performance needed to deliver the SYSTIMAX GigaSPEED X10D F/UTP Solution.

features and benefits

- Electrical performance guaranteed to meet or exceed the channel specification of Amendment 1 of ISO/IEC 11801 Class E_A and ANSI/TIA-568-C.2 Category 6A up to 500 MHz when used as part of a GigaSPEED X10D F/UTP Channel in registered SYSTIMAX installations
- Can support network line speeds up to at least 10 Gbps
- Certified component of an integrated GigaSPEED X10D F/UTP Solution
- Qualifies for the SYSTIMAX 20-Year Extended Warranty and Applications Assurance when included as part of a registered SYSTIMAX GigaSPEED X10D F/UTP channel

GIGASPEED X10D G10FP MODULAR PATCH CORD

Material ID	Product Number	Description (All solid conductor)	Jack Color Options	Cord Color Options	UOM	Cable/Cordage Length Options
CPCGGJ2	G10FP	G10FP on 1295 Solid F/UTP Cordage	0	1,2,3,8,9	F, M	3-300ft /1-100m
CPCG4J2	G10FP117	G10FP Single-ended on 1295 Solid F/UTP Cordage	0	1,2,3,8,9	F, M	3-300ft /1-100m
CPCGGK2	G10FP-P	G10FP on 2295 Solid Plenum F/UTP Cordage	0	3,8,Z	F, M	3-300ft /1-100m
CPCG4K2	G10FP117-P	G10FP Single-ended on 2295 Solid Plenum F/UTP Cordage	0	3,8,Z	F, M	3-300ft /1-100m
CPCGGL2	G10FP-L	G10FP on 3295 Solid LSZH F/UTP Cordage	0	8	F, M	3-300ft /1-100m
CPCG4L2	G10FP117-L	G10FP Single-ended on 3295 Solid LSZH F/UTP Cordage	0	8	F, M	3-300ft /1-100m

Ordering Material ID Example: C P C G G J 2 - 0 2 F 0 0 7

GIGASPEED X10D G10FP ZONE EXTENSION CORD

Material ID	Product Number	Description	Jack Color Options	Cord Color Options	UOM	Cable/Cordage Length Options
CA1G742	G10FP-HGS620MS	G10FP to M-series HGS620 on 1295 Solid Cordage	1,2,5,6,7	1,2,3,8,9	F, M	3-300ft /1-100m
CA1G642	G10FP-HGS620KS	G10FP to Keystone HGS620 on 1295 Solid Cordage	1	1,2,3,8,9	F, M	3-300ft /1-100m
CA1G542	G10FP-HGS620	G10FP to HGS620 on 1295 Solid Cordage	0	1,2,3,8,9	F, M	3-300ft /1-100m
CA1G762	G10FP-HGS620MS-P	G10FP to M-series HGS620 on 2295 Solid Plenum Cordage	1,2,5,6,7	3,8,Z	F, M	3-300ft /1-100m
CA1G662	G10FP-HGS620KS-P	G10FP to Keystone HGS620 on 2295 Solid Plenum Cordage	1	3,8,Z	F, M	3-300ft /1-100m
CA1G562	G10FP-HGS620-P	G10FP to HGS620 on 2295 Solid Plenum Cordage	0	3,8,Z	F, M	3-300ft /1-100m
CA1G772	G10FP-HGS620MS-L	G10FP to M-series HGS620 on 3295 Solid LSZH Cordage	1,2,5,6,7	8	F, M	3-300ft /1-100m
CA1G672	G10FP-HGS620KS-L	G10FP to Keystone HGS620 on 3295 Solid LSZH Cordage	1	8	F, M	3-300ft /1-100m
CA1G572	G10FP-HGS620-L	G10FP to HGS620 on 3295 Solid LSZH Cordage	0	8	F, M	3-300ft /1-100m

Ordering Material ID Example: CA1G742-02F007

GIGASPEED X10D HGS620 PRE-TERMINATED TO 91 SERIES CABLES

Material ID	Product Number	Description	Jack Color Options	Cord Color Options	UOM	Cable/Cordage Length Options
CA177A2	HGS620MS-HGS620MS	M-series HGS620 to M-series HGS620 on 1291 Cable	1,2,5,6,7	8,C,Z	F, M	10-300ft /3-100m
CA166A2	HGS620KS-HGS620KS	Keystone HGS620 to Keystone HGS620 on 1291 Cable	1	8,C,Z	F, M	10-300ft /3-100m
CA155A2	HGS620-HGS620	HGS620 to HGS620 on 1291 Cable	0	8,C,Z	F, M	10-300ft /3-100m
CA177B2	HGS620MS-HGS620MS-P	M-series HGS620 to M-series HGS620 on 2291 Plenum Cable	1,2,5,6,7	C,Z	F, M	10-300ft /3-100m
CA166B2	HGS620KS-HGS620KS-P	Keystone HGS620 to Keystone HGS620 on 2291 Plenum Cable	1	C,Z	F, M	10-300ft /3-100m
CA155B2	HGS620-HGS620-P	HGS620 to HGS620 on 2291 Plenum Cable	0	C,Z	F, M	10-300ft /3-100m
CA177C2	HGS620MS-HGS620MS-L	M-series HGS620 to M-series HGS620 on 3291 LSZH Cable	1,2,5,6,7	8	F, M	10-300ft /3-100m
CA166C2	HGS620KS-HGS620KS-L	Keystone HGS620 to Keystone HGS620 on 3291 LSZH Cable	1	8	F, M	10-300ft /3-100m
CA155C2	HGS620-HGS620-L	HGS620 to HGS620 on 3291 LSZH Cable	0	8	F, M	10-300ft /3-100m

Ordering Material ID Example: CA177A2-18F050

Jack Color Options: 0=NA, 1=Black, 2=Blue, 3=Gray, 4=Green, 5=Ivory, 6=Orange, 7=Red, 8=White, 9=Yellow

Cord Color Options: 1=BK(Black), 2=LB(Light Blue), 3=DG(Dark Gray), 4=GN(Spring Green), 6=OR(Orange), 7=RD(Red), 8=WH(White), 9=YL(Yellow), B=LL(Lilac), C=SL(Slate), Z=BL(Blue)

Unit of Measure: F=Feet, M=Meter

Cable/Cordage Length Options: 001, 002, 003. . .

Please contact your CommScope's representative for the availability of non-standard length, color and configuration.

SYSTIMAX GigaSPEED X10D Shielded High Density Information Outlet



SYSTIMAX GigaSPEED X10D Shielded High Density Information Outlet

The SYSTIMAX GigaSPEED X10D shielded high density information outlet is the latest result of many years of continuous product development at CommScope Labs and features a patent pending flexible mounting system that enables a single connector to mount in three separate openings (high density, M-Series, and keystone). The HGS620 has a rugged, full-metal construction and allows for multiple size cable terminations for F/UTP and S/FTP installation (0.270 inches up to .300 inches diameter over jacket).

When used with the SYSTIMAX GigaSPEED X10D F/UTP modular panels, cable length is dramatically reduced in a channel configuration. CommScope engineers pushed the threshold and reduced the original 15 meter cable length requirement to 5 meters for 3 or 4 connector channels and only 3 meters for 2 connector channels - a more than 65 percent reduction in short channel length. These new short cable requirements give CommScope customers the design freedom to build a Category 6A infrastructure that meets their needs without the hassles of inefficient spacing and slack storage.

features and benefits

- Architectural design and flexibility - supports 5 meter cables in 3 and 4 connector channels, 3 meter cables in 2 connector channels and cross connect cords down to 1 meter
- Allows for multiple size cable terminations 0.270 inches up to 0.300 in. diameter over jacket and flame ratings: F/UTP and S/FTP
- Universal design and label supports both T568A and T568B wiring
- Black icons provided in strip of three: VOICE, DATA and BLANK and are also sold separately in bulk packs, available in green, blue, red, black, white and yellow
- Termination time decreased when using the HGS-TTS termination tool and GigaSPEED X10D F/UTP 91B Series Cables
- Electrical performance guaranteed to meet or exceed the channel specification of Amendment 1 of ISO/IEC 11801 Class E_A and ANSI/TIA-568-C.2 Category 6A up to 500 MHz when used as part of a GigaSPEED X10D F/UTP Channel in registered SYSTIMAX installations
- Patent pending flexible mounting system enables a single connector to mount in three separate openings: HD (High Density), M-Series and Keystone
- Rugged, full-metal construction
- IDC connector terminations on rear of base allow quick and easy installation of 22 to 24 AWG cables
- Optimal performance is achieved when using SYSTIMAX shielded patch cords
- UL® listed
- Can support network line speeds up to at least 10 Gbps
- Certified component of an integrated GigaSPEED X10D F/UTP solution
- Qualifies for the SYSTIMAX 20-Year Extended Warranty and Applications Assurance when included as part of a registered SYSTIMAX GigaSPEED X10D F/UTP Channel
- TAA compliant

ORDERING INFORMATION:

Material ID	Product Number	Description
760152801	HGS620	GigaSPEED X10D Shielded High Density Information Outlet
760152827	HGS-A-KS-BK	HGS Keystone Adapter Bulk Pack
760154211	HGS-A-MS-Black	HGS M-Series Adapter
760154252	HGS-A-MS-Blue	HGS M-Series Adapter
760154187	HGS-A-MS-White	HGS M-Series Adapter
760154195	HGS-A-MS-Ivory	HGS M-Series Adapter
760154229	HGS-A-MS-Orange	HGS M-Series Adapter
760154096	H61A-226-Green	HGS Icon Strip Bulk Pack
760154112	H61A-318-Blue	HGS Icon Strip Bulk Pack
760154120	H61A-317-Red	HGS Icon Strip Bulk Pack
760154070	H61A-003-Black	HGS Icon Strip Bulk Pack
760154047	H61A-262-White	HGS Icon Strip Bulk Pack
760154104	H61A-123-Yellow	HGS Icon Strip Bulk Pack
760152876	HGS-TT-S	Hand Termination Tool - Seat Only

SYSTIMAX 360 GigaSPEED X10D F/UTP Modular Panels



SYSTIMAX 360 GigaSPEED X10D Modular Panel,
48 Port, Front View



SYSTIMAX 360 GigaSPEED X10D Modular Panel,
48 Port, Rear View



SYSTIMAX 360 GigaSPEED X10D Angled
Modular Panel, 24 Port

The SYSTIMAX 360 GigaSPEED X10D F/UTP modular panels are available in straight and angled constructions and are iPatch®-Ready, making them field upgradeable to iPatch without the need to remove patch cords, meaning no network downtime. The F/UTP modular panels offer easy cable routing and bundling through CommScope's rear cable management solution and feature the elegant SYSTIMAX 360 design.

When used with the SYSTIMAX GigaSPEED X10D HGS620 information outlet, cable length is dramatically reduced in a channel configuration. CommScope engineers pushed the threshold and reduced the original 15 meter cable length requirement to 5 meters for 3 or 4 connector channels and only 3 meters for 2 connector channels - a more than 65 percent reduction in short channel length. These new short cable requirements give CommScope customers the design freedom to build a Category 6A infrastructure that meets their needs without the hassles of inefficient spacing and slack storage.

features and benefits

- Simple-to-use grounding solution
- Straight and Angled constructions, both iPatch (intelligence) Ready
- Features the elegant SYSTIMAX 360 design
- Supports 5 meter cables in 3 and 4 connector channels, 3 meter cables in 2 connector channels and cross connect cords down to 1 meter when using the GigaSPEED X10D Shielded High Density Information Outlet (HGS620)
- iPatch-Ready - field upgradeable to iPatch without the need to remove patch cords, meaning no network downtime
- TAA compliant
- Easy cable routing and bundling through improved rear cable management solution
- Electrical performance guaranteed to meet or exceed the channel specification of Amendment 1 of ISO/IEC 11801 Class E_A and ANSI/TIA-568-C.2 Category 6A up to 500 MHz when used as part of a GigaSPEED X10D F/UTP Channel in registered SYSTIMAX installations
- Available in 24 and 48 port configurations
- Qualifies for the SYSTIMAX 20-Year Extended Warranty and Applications Assurance when included as part of a registered SYSTIMAX GigaSPEED X10D F/UTP Channel
- Compatible with DYMO Labeling Solution

ORDERING INFORMATION:

Material ID	Product Number	Description
760150144	360-IPR-MFTP-E-HD6B-1U-24	SYSTIMAX 360 GigaSPEED X10D Evolve High Density F/UTP Modular Panel, 24-port
760151498	360-IPR-MFTP-E-HD6B-2U-48	SYSTIMAX 360 GigaSPEED X10D Evolve High Density F/UTP Modular Panel, 48-port
760151290	360-IPR-MFTP-A-E-HD6B-1U-24	SYSTIMAX 360 GigaSPEED X10D Evolve High Density F/UTP Angled Modular Panel, 24-port
760151746	360-IPR-MFTP-A-E-HD6B-2U-48	SYSTIMAX 360 GigaSPEED X10D Evolve High Density F/UTP Angled Modular Panel, 48-port
760151480	360-MFTP-LKB	SYSTIMAX 360 GigaSPEED X10D Evolve High Density F/UTP Modular Panel Label Kit
760152371	360-iP-M-E-HD6B-1U-24	SYSTIMAX 360 iPatch Evolve High Density F/UTP Modular Panel, 24-port
760152389	360-iP-M-E-HD6B-2U-48	SYSTIMAX 360 iPatch Evolve High Density F/UTP Modular Panel, 48-port
760152538	360-E-C-1U	360 Evolve Panel Front Cover 1U
760152546	360-E-C-2U	360 Evolve Panel Front Cover 2U



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