

GigaXtend

FST 1.2GHz Taps Standard Profile 2,4 Port Designs Full Profile 2,4,8, Port Designs with Plug In Conditioning



The GigaXtend™ FST 1.2GHz Taps are the latest products designed for the DOCSIS® 3.1 evolution of hybrid fiber-coaxial (HFC) networks. DOCSIS 3.1 technology allows cable operators to fully and efficiently use their broadband networks to provide the services that subscribers demand. As part of DOCSIS 3.1 support, the broadband operating frequency range has been increased to cover the entire 5 MHz to 1.218GHz spectrum.

These products are also fully compatible with orthogonal frequency-division multiplexing (OFDM) signaling requirements. These new capabilities can contribute to higher customer revenue by allowing increased bandwidth across a network, so new and improved services can be provided. The taps offer best-in-class performance along with added flexibility in system design. This flexibility is achieved using three types of optional plug-ins that are ideal for higher output, deep-fiber architectures.

Optional Plug-Ins

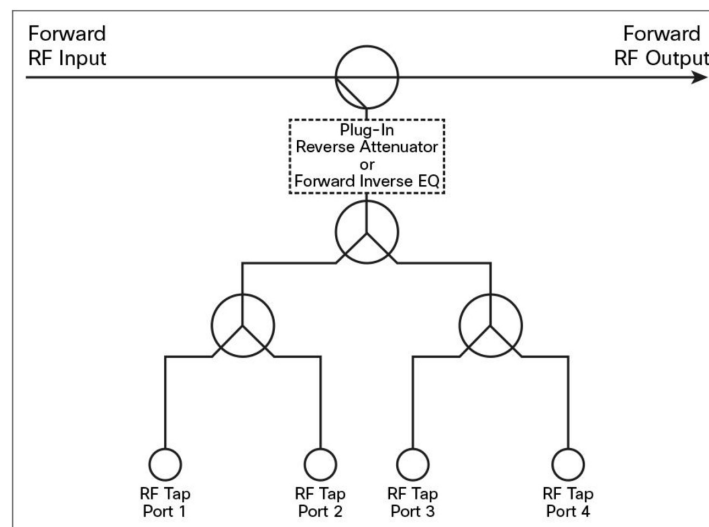
- Reverse attenuators are available in 0, 3, 6, 9, and 12dB values. The attenuators increase the reverse path tap loss with only a minimal effect on forward tap loss. By selectively adding reverse attenuation to reduce reverse tap values, reverse path tap losses can be more similar across the various values of taps used in an HFC network. This approach allows the range of RF levels transmitted from closed-loop customer premises equipment (CPE) to be narrowed, which helps improve the reliability of upstream transmissions.
- Forward equalizers used in The GigaXtend FST 1.2GHz products are available in 2, 3, 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20 and 22dB values. The forward EQs increase the forward path tap loss in a standard cable-tilted fashion, with greater loss at lower frequencies than higher frequencies. The plug-in forward EQ allows optimization of tap output levels at tap locations near the end of the feeder line.
- Forward inverse equalizers used in GigaXtend FST 1.2 GHz products are available in 2, 3, 4, 6, 8, 9, 10, 12, 15, 18, and 21dB values. The inverse equalizers increase the forward path tap loss in a down-tilted fashion, with greater loss at higher frequencies than lower frequencies, and they have only a minimal effect on reverse tap loss. The plug-in forward inverse equalizer allows tap output levels to be optimized at tap locations with high-level forward RF signals and significant up-tilt (typically, they are tap locations closest to nodes and amplifiers).

GigaXtend 1.2 GHz FST products all have IEEE-compliant 6-kV surge protection, providing significantly improved protection against voltage transients in lightning strike areas and locations with unreliable power networks. In addition, the tap products offer AC/RF Bypass Switch capabilities, allowing the tap faceplate to be removed without interrupting service to downstream customers. The taps pass up to 12 amps of current, so operators can access power at locations within the HFC plant where additional power is needed.

Features

- Expanded frequency range handles DOCSIS 3.1 requirements of 1.218 GHz and OFDM signaling
- Optional plug-in reverse attenuators, forward equalizers, and forward inverse equalizers offer design flexibility
- Choice of 2, 4, and 8-way versions
- 6-kV combination wave surge protection for both tap and through ports, with a rugged design that helps the products continue operating after surges that would typically damage products and interrupt service
- 12A through current rating
- AC/RF bypass switch that avoids interruption to the rest of the network during faceplate removal
- Backward-compatible faceplates that support economical faceplate upgrades into existing back housings
- Powder coating for superior environmental protection
- Sealed and swaged extended F-ports that resist moisture
- Nickel-plated brass F-ports that provide a corrosion-resistant drop interface
- Component covers for additional protection of faceplate circuitry during maintenance
- Versatile housing design that permits overhead, pedestal, or multiple dwelling unit (MDU) mounting schemes

Block Diagram (4-Way Tap)



Functional Schematic

Specifications

GigaXtend FST 1.2GHz Tap			
ITEM	MHz	SPECIFICATIONS	
Power Passing	-	12 A	
Tap-Tap isolation¹ (Minimum)	5-10	20 dB	
	11-85	24 dB	
	86-204	26 dB	
	205-750	22 dB	
	751-1250	20 dB	
In-Out Return Loss² (Minimum)	5-1000	2-Way & 4-Way	18dB
		8-Way	17dB
	1001-1250	16 dB	
Tap Port Return Loss³ (Minimum)	5-50	2-Way & 4-Way	18 dB
		8-Way	17 dB
	51-1000	18 dB	
	1001-1250	16 dB	
Hum Modulation @ 10 amps (typical)	5-450	70 dBc	
	451-750	65 dBc	
	751-1250	55 dBc	
EMI Shielding⁴ (Minimum)*	5-1250	110 dB	

NOTE:

- For the 2-way 8 dB and 11 dB taps, the tap-tap isolation of from 5 to 750 MHz is 17 dB, and the tap-tap isolation from 751 to 1250 MHz is 14 dB.
- For 2-way 4 dB with forward equalizer, the input return loss is 16dB.
- For 2-way 8 dB and 11 dB, the tap port return loss is 12 dB and 14 dB, respectively.
- For 4-way 8 dB, the input return loss is 13 dB.
- For 2-way 8 dB and 11 dB, the input return loss is 14 dB and 17 dB, respectively.
- Tested per ANSI/SCTE 48-2 2003.

All return loss and isolation specifications noted in the list are typical performance specs. Worst-case specs would degrade no more than 1 dB for any given spec.

AC/RF Bypass Switch Performance	
ITEM	
System Open Circuit Time	0 ms
Contact Resistance (Max.)	10 mOhms
Through Current Capacity	12A
Voltage Capacity	90 VAC
RF Frequency Range	5 to 1250 MHz
Insertion Loss and Return Loss	See Loss Table
Operating Temperature	-40°C to +60°C

AC/RF Bypass Switch Insertion Loss & Return Loss Table						
AC/RF BYPASS	5MHz	500MHz	750MHz	870MHz	1GHz	1.25GHz
Short Circuited Insertion Loss (dB)	0.02 Max	0.6 Max	0.8 Max	0.7 Max	0.7 Max	0.7 Max
	<0.01 Mean	0.4 Mean	0.5 Mean	0.4 Mean	0.5 Mean	0.5 Mean
Short Circuited Return Loss (dB)	45 Min	16 Min	16 Min	18 Min	21 Min	21 Min
	50 Mean	16.5 Mean	16.5 Mean	18.5 Mean	22 Mean	22 Mean

NOTE:

Unless otherwise noted, specifications reflect typical performance and are referenced to 68° F (20° C). Specifications are based upon measurements made in accordance with SCTE and ANSI standards (where applicable), using standard frequency assignments.

Specifications

MECHANICAL		
WATER AND DUST INGRESS RATING	IP68	
STANDARD TAP	2-Way/4-Way	
DIMENSIONS	3.6"H x 3.6"W x 3.0"D	
WEIGHT	2-WAY	0.30Kg, 0.66 lb
	4-WAY	0.31Kg, 0.68 lb
FULL PROFILE TAP	2-Way/4-Way/8-Way	
DIMENSIONS	4.25"Hx 5.50"W x 3.0"D in.	
WEIGHT	2-WAY	0.45 Kg, 0.99 lb
	4-WAY	0.46 Kg, 1.01 lb
	8-WAY	0.48 Kg, 1.06 lb
BOLT TORQUE REQUIREMENTS		
CENTER CONDUCTOR SEIZURE	15 lb-in to 20 lb-in (1.7 Nm to 2.3 Nm)	
HOUSING CLOSURE	50 lb-in to 60 lb-in (5.6 Nm to 6.8 Nm)	
PORT PLUGS	50 lb-in to 60 lb-in (5.6 Nm to 6.8 Nm)	
SURGE RESISTANCE		
INPUT/OUTPUT PORTS	6 kV (combination wave)	
TAP PORTS	6 kV (combination wave)	
ENVIRONMENTAL		
OPERATING TEMPERATURE	-40 to 60° C	
	-40 to 140° F	
STANDARDS COMPLIANCE		
MECHANICAL	ANSI/SCTE 01 2015 – "F" female port interface specification ANSI/SCTE 91 2015 - 5/8-24 RF & AC female port specification	
EMISSIONS	FCC - Part 76, Subpart K EN 50083-2/A1: 1998	
ENVIRONMENTAL	ASTM G 53 - weathering specification ASTM B 117 - salt spray specification ASTM D 31 - chip resistance specification EN 60529: 1992 (IP test) Bellcore GR-63-CORE - vibration/transportation ANSI/IEEE C62.41 - lightning	
ELECTRICAL SAFETY	UL/CSA 60950-1	

NOTE:

Unless otherwise noted, specifications reflect typical performance and are referenced to 68° F (20° C). Specifications are based upon measurements made in accordance with SCTE and ANSI standards (where applicable), using standard frequency assignments.

Specifications

RF Section Specifications for 2-Way Surge Gap FST (Standard and Full Profile)

ATX PART NUMBER	GTSF-FST-2-04-STD		GTSF-FST-2-08-STD		GTSF-FST-2-04-STD		GTSF-FST-2-14-STD		GTSF-FST-2-17-STD		GTSF-FST-2-20-STD		GTSF-FST-2-23-STD		GTSF-FST-2-26-STD		GTSF-FST-2-29-STD		
	GTSF-FST-2-04-FP		GTSF-FST-2-08-FP		GTSF-FST-2-04-FP		GTSF-FST-2-14-FP		GTSF-FST-2-17-FP		GTSF-FST-2-20-FP		GTSF-FST-2-23-FP		GTSF-FST-2-26-FP		GTSF-FST-2-29-FP		
NOMINAL TAP VALUE, dB	4		8		11		14		17		20		23		26		29		
SPECIFICATION	MHz	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX
Insertion Loss IN-OUT dB	5	-	-	2.7	3.0	1.7	2.0	1.1	1.2	0.9	1.1	0.6	0.8	0.5	0.7	0.5	0.6	0.5	0.6
	40	-	-	2.0	2.2	1.2	1.4	0.7	0.9	0.5	0.8	0.4	0.7	0.3	0.5	0.3	0.6	0.3	0.6
	55	-	-	1.9	2.2	1.2	1.4	0.7	0.9	0.5	0.8	0.4	0.7	0.3	0.6	0.3	0.6	0.3	0.6
	70	-	-	2.0	2.2	1.2	1.4	0.7	0.9	0.5	0.8	0.4	0.7	0.3	0.6	0.3	0.6	0.3	0.6
	86	-	-	2.0	2.3	1.2	1.5	0.7	1.0	0.5	0.8	0.4	0.7	0.3	0.6	0.3	0.6	0.3	0.6
	102	-	-	2.0	2.3	1.2	1.5	0.7	1.0	0.5	0.8	0.4	0.7	0.4	0.6	0.4	0.6	0.4	0.6
	204	-	-	2.3	2.5	1.4	1.7	1.0	1.3	0.7	1.0	0.6	0.8	0.5	0.7	0.5	0.7	0.5	0.7
	258	-	-	2.4	2.7	1.6	1.8	1.1	1.3	0.8	1.1	0.7	1.0	0.6	0.9	0.6	0.9	0.6	0.9
	550	-	-	3.0	3.5	2.0	2.3	1.3	1.6	1.1	1.4	1.0	1.2	0.9	1.2	0.9	1.2	0.9	1.2
	650	-	-	3.3	3.8	2.1	2.7	1.4	1.7	1.1	1.5	1.0	1.3	0.9	1.3	0.9	1.3	0.9	1.3
	750	-	-	3.5	4.0	2.2	2.9	1.5	1.8	1.2	1.6	1.1	1.4	1.0	1.4	1.0	1.4	1.0	1.4
	870	-	-	3.7	4.3	2.5	3.1	1.6	2.1	1.3	1.8	1.2	1.7	1.1	1.5	1.2	1.6	1.2	1.6
	1000	-	-	4.0	4.5	2.7	3.4	1.7	2.2	1.4	1.9	1.3	1.7	1.2	1.7	1.2	1.7	1.2	1.7
	1218	-	-	4.2	4.7	3.0	3.7	2.1	2.6	1.7	2.2	1.6	2.1	1.6	2.0	1.6	2.0	1.6	2.0
1250	-	-	4.3	4.8	3.1	3.8	2.3	2.7	1.8	2.3	1.7	2.2	1.7	2.1	1.7	2.1	1.7	2.1	
SPECIFICATION	MHz	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX
Tap Loss Tolerance ±1.5 dB	5	4.0		8.5		11.0		14.0		16.5		19.5		22.5		25.5		29.0	
	40	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	55	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	70	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	86	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	102	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	204	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	258	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	550	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	650	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	750	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	870	4.0		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	1000	4.5		8.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
	1218	4.5		9.5		11.0		14.0		17.0		20.0		23.0		26.0		29.0	
1250	4.5		9.5		11.5		14.5		17.0		20.0		23.0		26.0		29.0		
SPECIFICATION	MHz			MIN		MIN		MIN		MIN		MIN		MIN		MIN		MIN	
Isolation, OUT-TAP dB (Min)	5-10	-		18		19		21		23		25		27		33		35	
	11-85	-		23		25		26		30		32		34		36		35	
	86-204	-		23		25		26		30		32		34		36		38	
	205-550	-		23		25		26		30		32		34		36		38	
	551-650	-		23		25		26		30		32		34		36		38	
	651-750	-		21		23		24		28		29		32		34		36	
	751-870	-		21		21		23		26		28		30		32		36	
	871-1000	-		20		20		21		24		26		27		30		32	
	1001-1250	-		20		19		20		22		23		23		25		27	

Specifications

RF Section Specifications for 4-Way Surge Gap FST (Standard and Full Profile)

ATX PART NUMBER		GTSG-FST-4-08-STD		GTSG-FST-4-11-STD		GTSG-FST-4-14-STD		GTSG-FST-4-17-STD		GTSG-FST-4-20-STD		GTSG-FST-4-23-STD		GTSG-FST-4-26-STD		GTSG-FST-4-29-STD	
		GTSG-FST-4-08-FP		GTSG-FST-4-11-FP		GTSG-FST-4-14-FP		GTSG-FST-4-17-FP		GTSG-FST-4-20-FP		GTSG-FST-4-23-FP		GTSG-FST-4-26-FP		GTSG-FST-4-29-FP	
NOMINAL TAP VALUE, dB		8		11		14		17		20		23		26		29	
SPECIFICATION	MHz	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX
Insertion Loss IN-OUT dB	5	-	-	2.5	2.9	1.5	2.0	0.9	1.3	0.7	0.9	0.4	0.7	0.4	0.7	0.4	0.7
	40	-	-	2.1	2.3	1.1	1.5	0.6	1.0	0.5	0.6	0.3	0.6	0.4	0.7	0.4	0.7
	55	-	-	2.1	2.4	1.1	1.5	0.7	1.0	0.5	0.7	0.3	0.6	0.4	0.7	0.4	0.7
	70	-	-	2.1	2.4	1.1	1.5	0.7	1.1	0.5	0.7	0.4	0.7	0.4	0.7	0.4	0.7
	86	-	-	2.2	2.4	1.2	1.6	0.7	1.2	0.5	0.8	0.4	0.7	0.5	0.7	0.5	0.7
	102	-	-	2.2	2.5	1.2	1.7	0.8	1.2	0.6	0.8	0.4	0.7	0.5	0.8	0.5	0.8
	204	-	-	2.4	2.7	1.4	1.8	1.0	1.3	0.7	0.9	0.6	0.9	0.7	0.9	0.7	0.9
	258	-	-	2.5	2.9	1.5	1.9	1.1	1.4	0.8	1.0	0.7	1.0	0.8	1.0	0.8	1.0
	550	-	-	3.3	3.7	2.2	2.6	1.4	1.9	1.2	1.5	1.0	1.4	1.1	1.4	1.1	1.4
	650	-	-	3.6	3.9	2.3	2.7	1.5	1.9	1.3	1.5	1.0	1.4	1.1	1.4	1.1	1.4
	750	-	-	4.0	4.4	2.5	2.9	1.6	2.0	1.3	1.5	1.1	1.5	1.2	1.5	1.2	1.5
	870	-	-	4.3	4.7	2.9	3.2	1.8	2.2	1.5	1.8	1.2	1.6	1.2	1.6	1.2	1.6
	1000	-	-	4.5	4.9	3.2	3.5	2.1	2.4	1.6	2.0	1.4	1.7	1.3	1.7	1.3	1.7
	1218	-	-	4.5	4.9	3.5	3.8	2.5	2.8	1.7	2.2	1.6	2.0	1.6	2.1	1.6	2.1
1250	-	-	4.6	5.0	3.7	4.0	2.6	2.9	1.8	2.4	1.7	2.1	1.8	2.2	1.8	2.2	
SPECIFICATION	MHz	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX
Tap Loss Tolerance ±1.5 dB	5	8.0		12.0		14.5		16.5		19.5		22.5		26.0		29.0	
	40	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	55	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	70	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	86	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	102	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	204	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	258	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	550	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	650	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	750	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	870	8.0		12.0		14.5		17.0		20.0		23.0		26.0		29.0	
	1000	8.0		12.5		14.5		17.0		20.0		23.0		26.0		29.0	
	1218	8.5		13.0		15.0		17.0		20.0		23.0		26.0		29.0	
1250	8.5		13.0		15.0		17.0		20.0		23.0		26.0		29.0		
SPECIFICATION	MHz			MIN		MIN		MIN		MIN		MIN		MIN		MIN	
Isolation, OUT-TAP dB (Min)	5-10	-		20		21		23		25		27		33		34	
	11-85	-		25		28		30		29		33		39		34	
	86-204	-		25		28		30		29		33		39		40	
	205-550	-		25		28		30		29		33		39		40	
	551-650	-		23		28		30		29		33		37		39	
	651-750	-		23		26		28		27		31		33		35	
	751-870	-		21		24		25		25		27		31		33	
	871-1000	-		20		22		23		23		25		27		29	
	1001-1250	-		20		20		21		21		23		25		27	

Specifications

RF Section Specifications for 8-Way Full Profile Surge Gap FST

ATX PART NUMBER		GTSG-FST-8-11-FP		GTSG-FST-8-14-FP		GTSG-FST-8-17-FP		GTSG-FST-8-20-FP		GTSG-FST-8-23-FP		GTSG-FST-8-26-FP		GTSG-FST-8-29-FP	
NOMINAL TAP VALUE, dB		11		14		17		20		23		26		29	
SPECIFICATION	MHz	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX
Insertion Loss IN-OUT dB	5	-	-	2.7	3.0	1.7	2.0	1.0	1.2	0.7	1.0	0.4	0.7	0.4	0.7
	40	-	-	2.0	2.3	1.2	1.5	0.8	1.0	0.5	0.8	0.3	0.6	0.3	0.6
	55	-	-	2.0	2.3	1.2	1.5	0.8	1.0	0.5	0.8	0.3	0.6	0.3	0.6
	70	-	-	2.1	2.4	1.3	1.6	0.8	1.0	0.5	0.8	0.3	0.7	0.3	0.7
	86	-	-	2.1	2.4	1.3	1.6	0.8	1.0	0.5	0.8	0.4	0.7	0.4	0.8
	102	-	-	2.1	2.5	1.3	1.7	0.9	1.0	0.6	0.9	0.4	0.7	0.4	0.8
	204	-	-	2.4	2.7	1.5	1.9	1.1	1.0	0.8	1.0	0.6	0.9	0.6	1.0
	258	-	-	2.5	2.8	1.7	1.9	1.2	1.2	0.9	1.1	0.7	1.1	0.7	1.1
	550	-	-	3.1	3.5	2.1	2.6	1.5	1.3	1.2	1.7	1.0	1.4	1.0	1.3
	650	-	-	3.2	3.6	2.2	2.7	1.5	1.9	1.2	1.7	1.0	1.4	1.0	1.4
	750	-	-	3.4	3.8	2.3	2.8	1.5	1.9	1.3	1.8	1.0	1.4	1.0	1.5
	870	-	-	3.6	4.1	2.5	3.0	1.6	2.1	1.4	1.9	1.2	1.7	1.2	1.7
	1000	-	-	3.8	4.2	2.7	3.2	1.8	2.3	1.5	2.0	1.3	1.8	1.3	1.8
	1218	-	-	3.9	4.4	3.0	3.5	2.1	2.6	1.7	2.2	1.7	2.2	1.7	2.2
1250	-	-	4.1	4.6	3.1	3.6	2.2	2.7	1.9	2.4	1.9	2.4	1.9	2.4	
SPECIFICATION	MHz	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX	TYP	MAX
Tap Loss Tolerance ± 1.5 dB	5	11.0		16.0		18.0		20.5		22.5		26.0		29.0	
	40	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	55	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	70	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	86	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	102	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	204	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	258	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	550	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	650	11.0		16.0		18.0		23.0		23.0		26.0		29.0	
	750	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	870	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	1000	11.0		16.0		18.0		20.5		23.0		26.0		29.0	
	1218	12.0		16.6		18.2		20.5		23.0		26.0		29.5	
1250	12.0		17.0		18.4		20.8		23.0		26.0		29.5		
SPECIFICATION	MHz			MIN		MIN		MIN		MIN		MIN		MIN	
Isolation, OUT-TAP dB (Min)	5-10	-		22		24		25		26		33		35	
	11-85	-		27		28		28		31		36		35	
	86-204	-		27		28		28		31		36		38	
	205-550	-		27		28		28		31		36		38	
	551-650	-		27		28		28		31		33		35	
	651-750	-		27		28		28		31		33		34	
	751-870	-		24		25		25		27		27		33	
	871-1000	-		23		23		23		27		27		29	
	1001-1250	-		22		23		23		23		25		27	

NOTE:

Tap loss tolerances above are with 0-dB reverse attenuator installed. For changes to listed tap losses with other values of reverse attenuators or with forward equalizer or forward inverse equalizer installed, refer to "Reverse Attenuator Loss Table" or "Forward Equalizer and Forward Inverse Equalizer Loss Tables."

Unless otherwise noted, specifications reflect typical performance and are referenced to 68° F (20° C).

Specifications are based upon measurements made in accordance with SCTE and ANSI standards (where applicable), using standard frequency assignments.

Specifications

Plug-In Reverse Attenuator Loss 42/54 MHz Split

TAP LOSS VALUE, dB		REVERSE ATTENUATOR USED				
SPECIFICATION	MHz	0 dB	3 dB	6 dB	9 dB	12 dB
TAP Loss Increase (dB) tolerance ± 3 dB	5-42	-	3.0	6.0	9.0	12.0
	54	-	0.8	0.8	0.8	0.8
	550	-	0.8	0.8	0.8	0.8
	750	-	0.8	0.8	0.8	0.8
	870	-	0.8	0.8	0.8	0.8
	1000	-	0.8	0.8	0.8	0.8
	1218	-	0.8	0.8	0.8	0.8
	1250	-	0.8	0.8	0.8	0.8

Plug-In Reverse Attenuator Loss 85/102 MHz Split

TAP LOSS VALUE, dB		REVERSE ATTENUATOR USED				
SPECIFICATION	MHz	0 dB	3 dB	6 dB	9 dB	12 dB
TAP Loss Increase (dB) tolerance ± 3 dB	5-85	-	3.0	6.0	9.0	12.0
	102	-	0.8	0.8	0.8	0.8
	550	-	0.8	0.8	0.8	0.8
	750	-	0.8	0.8	0.8	0.8
	870	-	0.8	0.8	0.8	0.8
	1000	-	0.8	0.8	0.8	0.8
	1218	-	0.8	0.8	0.8	0.8
	1250	-	0.8	0.8	0.8	0.8

NOTE:

Tap loss tolerances above are with 0-dB reverse attenuator installed. The "Reverse Attenuator Loss Table" shows the additional tap loss incurred when using the plug-in reverse attenuators.

Unless otherwise noted, specifications reflect typical performance and are referenced to 68° F (20° C).

Specifications are based upon measurements made in accordance with SCTE and ANSI standards (where applicable), using standard frequency assignments.

Specifications

Plug-In Forward Inverse Equalizer Loss Table

TAP LOSS VALUE, dB		FORWARD EQUALIZER USED													
SPECIFICATION	MHz	2 dB	3 dB	4 dB	6 dB	8 dB	9 dB	10 dB	12 dB	14 dB	15 dB	16 dB	18 dB	20 dB	22 dB
TAP Loss Increase (dB) tolerance ± 3 dB	5	2.6	3.6	4.5	6.5	8.3	9.3	10.2	12.1	14.0	15.0	15.9	17.7	19.6	21.5
	40	2.4	3.3	4.1	5.9	7.4	8.4	9.1	10.9	12.5	13.4	14.2	15.9	17.5	19.2
	55	2.3	3.3	4.0	5.7	7.3	8.2	8.9	10.6	12.2	13.1	13.8	15.4	17.1	18.7
	70	2.3	3.2	3.9	5.5	7.1	8.0	8.6	10.3	11.8	12.7	13.4	15.0	16.6	18.2
	86	2.2	3.1	3.8	5.4	6.9	7.7	8.41	10.1	11.5	12.4	13.0	14.6	16.1	17.7
	102	2.2	3.0	3.7	5.3	6.7	7.5	8.19	9.8	11.2	12.0	12.7	14.2	15.7	17.2
	204	2.0	2.7	3.3	4.6	5.8	6.5	7.07	8.4	9.6	10.4	10.9	12.2	13.4	14.8
	258	1.9	2.6	3.1	4.3	5.4	6.1	6.58	7.9	8.9	9.6	10.1	11.3	12.5	13.6
	550	1.5	1.9	2.2	3.1	3.7	4.2	4.45	5.3	5.9	6.4	6.7	7.4	8.2	8.9
	650	1.3	1.7	2.0	2.7	3.2	3.6	3.83	4.6	5.1	5.5	5.7	6.3	7.0	7.6
	750	1.2	1.6	1.7	2.3	2.7	3.1	3.25	3.9	4.3	4.6	4.8	5.3	5.8	6.3
	870	1.1	1.4	1.5	2.0	2.2	2.5	2.59	3.1	3.4	3.6	3.7	4.1	4.5	4.9
	1000	0.9	1.2	1.2	1.5	1.7	1.9	1.92	2.3	2.4	2.6	2.7	2.9	3.1	3.4
	1218	0.7	0.9	0.8	0.9	0.8	0.9	0.85	1.0	0.9	1.0	0.9	1.0	1.0	1.0
	1250	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.8	0.7	0.7	0.7	0.7

Specifications

Plug-In Forward Inverse Equalizer Loss Table

TAP LOSS VALUE, dB		FORWARD INVERSE EQUALIZER USED										
SPECIFICATION	MHz	2 dB	3 dB	4 dB	6 dB	8 dB	9 dB	10 dB	12 dB	15 dB	18 dB	21 dB
TAP Loss Increase (dB) tolerance ± 0.3 dB	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	40	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	55	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	70	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.5	0.5
	86	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.6	0.7
	102	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.8	0.9	1.1
	204	0.7	0.8	0.8	0.9	1.2	1.3	1.5	1.9	2.6	3.1	4.0
	258	0.9	1.1	1.2	1.3	1.8	1.9	2.5	2.7	3.6	4.3	5.2
	550	1.3	2.0	2.5	3.3	4.8	4.9	6.3	7.2	9.0	11.0	12.8
	650	1.4	2.2	2.8	3.8	5.5	5.8	6.9	8.4	10.4	12.4	14.4
	750	1.5	2.4	3.0	4.4	6.0	6.5	7.5	9.3	11.5	13.4	15.6
	870	1.6	2.6	3.2	5.0	6.5	7.5	8.1	10.3	12.7	14.6	17.0
	1000	1.8	2.8	3.5	5.5	7.0	8.1	8.8	11.2	13.7	15.8	18.5
	1218	2.0	2.95	3.9	5.9	7.9	8.9	9.9	11.9	14.9	17.7	20.7
1250	2.0	3.0	4.0	6.0	8.0	9.0	10.0	12.0	15.0	18.0	21.0	

NOTE:

Tap loss tolerances above are with 0-dB reverse attenuator installed. The "Forward er Loss Table" and "Forward Inverse Equalizer Loss Table" show the additional tap loss incurred when using the plug-in forward equalizers and forward inverse equalizers.

Unless otherwise noted, specifications reflect typical performance and are referenced to 68° F (20° C).

Specifications are based upon measurements made in accordance with SCTE and ANSI standards (where applicable), using standard frequency assignments.

Ordering Information

Part Number	Description
GigaXtend FST Compatible 1.2GHz Standard Taps (order in order in multiples of 20)	
GTSG-FST-2-04-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 4 dB (Mult=20)
GTSG-FST-2-08-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 8 dB (Mult=20)
GTSG-FST-2-11-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 11 dB (Mult=20)
GTSG-FST-2-14-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 14 dB (Mult=20)
GTSG-FST-2-17-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 17 dB (Mult=20)
GTSG-FST-2-20-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 20 dB (Mult=20)
GTSG-FST-2-23-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 23 dB (Mult=20)
GTSG-FST-2-26-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 26 dB (Mult=20)
GTSG-FST-2-29-STD	GigaXtend FST Standard Tap, 1.2GHz, 2-way, 29 dB (Mult=20)
GTSG-FST-4-08-STD	GigaXtend FST Standard Tap, 1.2GHz, 4-way, 8 dB (Mult=20)
GTSG-FST-4-11-STD	GigaXtend FST Standard Tap, 1.2GHz, 4-way, 11 dB (Mult=20)
GTSG-FST-4-14-STD	GigaXtend FST Standard Tap, 1.2GHz, 4-way, 14 dB (Mult=20)
GTSG-FST-4-17-STD	GigaXtend FST Standard Tap, 1.2GHz, 4-way, 17 dB (Mult=20)
GTSG-FST-4-20-STD	GigaXtend FST Standard Tap 1.2GHz, 4-way, 20 dB (Mult=20)
GTSG-FST-4-23-STD	GigaXtend FST Standard Tap, 1.2GHz, 4-way, 23 dB (Mult=20)
GTSG-FST-4-26-STD	GigaXtend FST Standard Tap 1.2GHz, 4-way, 26 dB (Mult=20)
GTSG-FST-4-29-STD	GigaXtend FST Standard Tap, 1.2GHz, 4-way, 29 dB (Mult=20)
GigaXtend FST Compatible 1.2GHz Standard Taps Faceplate (order in order in multiples of 10)	
GTSG-FST-2-04-SFP	GigaXtend FST Standard Fcplt Tap, 1.2GHz, 2-way, 4 dB (Mult=10)
GTSG-FST-2-08-SFP	GigaXtend FST Standard Fcplt Tap, 1.2GHz, 2-way, 8 dB (Mult=10)
GTSG-FST-2-11-SFP	GigaXtend FST Standard Fcplt Tap, 1.2GHz, 2-way, 11 dB (Mult=10)
GTSG-FST-2-14-SFP	GigaXtend FST Standard Fcplt Tap, 1.2GHz, 2-way, 14 dB (Mult=10)
GTSG-FST-2-17-SFP	GigaXtend FST Standard Fcplt Tap, 1.2GHz, 2-way, 17 dB (Mult=10)

Ordering Information Continued

Part Number	Description
GigaXtend FST Compatible 1.2GHz Standard Taps Faceplate (order in multiples of 10)	
GTSG-FST-2-20-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 2-way, 20 dB (Mult=10)
GTSG-FST-2-23-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 2-way, 23 dB (Mult=10)
GTSG-FST-2-26-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 2-way, 26 dB (Mult=10)
GTSG-FST-2-29-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 2-way, 29 dB (Mult=10)
GTSG-FST-4-08-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 4-way, 8 dB (Mult=10)
GTSG-FST-4-11-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 4-way, 11 dB (Mult=10)
GTSG-FST-4-14-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 4-way, 14 dB (Mult=10)
GTSG-FST-4-17-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 4-way, 17 dB (Mult=10)
GTSG-FST-4-20-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 4-way, 20 dB (Mult=10)
GTSG-FST-4-23-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 2-way, 23 dB (Mult=10)
GTSG-FST-4-26-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 4-way, 26 dB (Mult=10)
GTSG-FST-4-29-SFP	GigaXtend FST Standard Fcplt Tap,1.2GHz, 2-way, 29 dB (Mult=10)
GigaXtend FST Compatible 1.2GHz Full Profile Taps (order in multiples of 10)	
GTSG-FST-2-04-FP	GigaXtend FST Tap,1.2GHz, 2-way, 4 dB (Mult=10)
GTSG-FST-2-08-FP	GigaXtend FST Tap,1.2GHz, 2-way, 8 dB (Mult=10)
GTSG-FST-2-11-FP	GigaXtend FST Tap,1.2GHz, 2-way, 11 dB (Mult=10)
GTSG-FST-2-14-FP	GigaXtend FST Tap,1.2GHz, 2-way, 14 dB (Mult=10)
GTSG-FST-2-17-FP	GigaXtend FST Tap,1.2GHz, 2-way, 17 dB (Mult=10)
GTSG-FST-2-20-FP	GigaXtend FST Tap,1.2GHz, 2-way, 20 dB (Mult=10)
GTSG-FST-2-23-FP	GigaXtend FST Tap,1.2GHz, 2-way, 23 dB (Mult=10)
GTSG-FST-2-26-FP	GigaXtend FST Tap,1.2GHz, 2-way, 26 dB (Mult=10)
GTSG-FST-2-29-FP	GigaXtend FST Tap,1.2GHz, 2-way, 29 dB (Mult=10)
GTSG-FST-4-08-FP	GigaXtend FST Tap,1.2GHz, 4-way, 8 dB (Mult=10)
GTSG-FST-4-11-FP	GigaXtend FST Tap,1.2GHz, 4-way, 11 dB (Mult=10)
GTSG-FST-4-14-FP	GigaXtend FST Tap,1.2GHz, 4-way, 14 dB (Mult=10)
GTSG-FST-4-17-FP	GigaXtend FST Tap,1.2GHz, 4-way, 17 dB (Mult=10)
GTSG-FST-4-20-FP	GigaXtend FST Tap,1.2GHz, 4-way, 20 dB (Mult=10)
GTSG-FST-4-23-FP	GigaXtend FST Tap,1.2GHz, 4-way, 23 dB (Mult=10)
GTSG-FST-4-26-FP	GigaXtend FST Tap,1.2GHz, 4-way, 26 dB (Mult=10)
GTSG-FST-4-29-FP	GigaXtend FST Tap,1.2GHz, 4-way, 29 dB (Mult=10)
GTSG-FST-8-11-FP	GigaXtend FST Tap,1.2GHz, 8-way, 11 dB (Mult=10)
GTSG-FST-8-14-FP	GigaXtend FST Tap,1.2GHz, 8-way, 14 dB (Mult=10)
GTSG-FST-8-17-FP	GigaXtend FST Tap,1.2GHz, 8-way, 17 dB (Mult=10)
GTSG-FST-8-20-FP	GigaXtend FST Tap,1.2GHz, 8-way, 20 dB (Mult=10)
GTSG-FST-8-23-FP	GigaXtend FST Tap,1.2GHz, 8-way, 23 dB (Mult=10)
GTSG-FST-8-26-FP	GigaXtend FST Tap,1.2GHz, 8-way, 26 dB (Mult=10)
GTSG-FST-8-29-FP	GigaXtend FST Tap,1.2GHz, 8-way, 29 dB (Mult=10)
GigaXtend FST Compatible 1.2GHz Full Profile Taps Faceplates (order in multiples of 10)	
GTSG-FST-2-04-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 4 dB (Mult=10)
GTSG-FST-2-08-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 8 dB (Mult=10)
GTSG-FST-2-11-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 11 dB (Mult=10)
GTSG-FST-2-14-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 14 dB (Mult=10)
GTSG-FST-2-17-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 17 dB (Mult=10)
GTSG-FST-2-20-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 20 dB (Mult=10)
GTSG-FST-2-23-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 23 dB (Mult=10)
GTSG-FST-2-26-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 26 dB (Mult=10)
GTSG-FST-2-29-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 2-way, 29 dB (Mult=10)
GTSG-FST-4-08-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 8 dB (Mult=10)
GTSG-FST-4-11-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 11 dB (Mult=10)
GTSG-FST-4-14-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 14 dB (Mult=10)

Ordering Information Continued

Part Number	Description
GigaXtend FST Compatible 1.2GHz Full Profile Taps Faceplates (order in multiples of 10)	
GTSG-FST-4-17-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 17 dB (Mult=10)
GTSG-FST-4-20-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 20 dB (Mult=10)
GTSG-FST-4-23-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 23 dB (Mult=10)
GTSG-FST-4-26-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 26 dB (Mult=10)
GTSG-FST-4-29-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 4-way, 29 dB (Mult=10)
GTSG-FST-8-11-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 8-way, 11 dB (Mult=10)
GTSG-FST-8-14-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 8-way, 14 dB (Mult=10)
GTSG-FST-8-17-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 8-way, 17 dB (Mult=10)
GTSG-FST-8-20-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 8-way, 20 dB (Mult=10)
GTSG-FST-8-23-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 8-way, 23 dB (Mult=10)
GTSG-FST-8-26-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 8-way, 26 dB (Mult=10)
GTSG-FST-8-29-FFP	GigaXtend FST Fcplt Tap,1.2GHz, 8-way, 29 dB (Mult=10)
Reverse Attenuators for 42/54 Split (order in multiples of 8)	
	0 dB FST Reverse Attenuator (factory installed in each unit)
GTSG-FST-RA-4254-03	3 dB FST Reverse Attenuator (Mult=8)
GTSG-FST-RA-4254-06	6 dB FST Reverse Attenuator (Mult=8)
GTSG-FST-RA-4254-09	9 dB FST Reverse Attenuator (Mult=8)
GTSG-FST-RA-4254-12	12 dB FST Reverse Attenuator (Mult=8)
Reverse Attenuators for 85/102 Split (order in multiples of 8)	
	0 dB FST Reverse Attenuator (factory installed in each unit)
GTSG-FST-RA-85102-03	3 dB FST Reverse Attenuator (Mult=8)
GTSG-FST-RA-85102-06	6 dB FST Reverse Attenuator (Mult=8)
GTSG-FST-RA-85102-09	9 dB FST Reverse Attenuator (Mult=8)
GTSG-FST-RA-85102-12	12 dB FST Reverse Attenuator (Mult=8)
Forward Equalizers (order in multiples of 8)	
GTSG-FST-FEQ-02	2 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-03	3 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-04	4 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-06	6 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-08	8 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-09	9 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-10	10 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-12	12 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-14	14 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-15	15 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-16	16 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-18	18 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-20	20 dB FST Forward EQ (Mult=8)
GTSG-FST-FEQ-22	22 dB FST Forward EQ (Mult=8)

Ordering Information Continued

Part Number	Description
FST Comp. Tap Forward Inverse Equalizers (order in multiples of 8)	
GTSG-FST-INVEQ-02	2 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-03	3 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-04	4 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-06	6 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-08	8 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-09	9 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-10	10 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-12	12 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-15	15 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-18	18 dB FST Inverse EQ (Mult=8)
GTSG-FST-INVEQ-21	21 dB FST Inverse EQ (Mult=8)

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