

GigaXtend

SGP 1.2GHz Passives Couplers, Splitters and Power Inserters



SGP 1.2GHz Passives
(front view)

The GigaXtend™ SGP 1.2GHz Passives product line is the latest evolution of the HFC network providing full support of the DOCSIS 3.1 standard. DOCSIS 3.1 support will allow MSOs to fully and efficiently utilize their broadband networks to provide the services that their subscribers demand. Support for DOCSIS 3.1 means that the frequency capabilities of the devices is increased to the full 1.218 GHz spectrum as well as full compatibility with the new OFDM signaling requirements. These new capabilities will allow MSOs to increase revenue generation by allowing increased capability across their networks to drive new and improved services to their customer base.

Today's MSOs are challenged to deliver new and improved services to subscribers, as cost-effectively as possible. The GigaXtend™ SGP 1.2GHz Passives product line is the latest evolution of the HFC network providing full support of the DOCSIS 3.1 standard and OFDM sub carrier requirements. This allows MSOs to increase frequency of devices to the 1.218 GHz spectrum across the existing network with no signal degradation. Added capacity plus reliable performance means better service for customers.

A key requirement for service quality is the reliability of the network. The GigaXtend™ SGP 1.2GHz Passives family of products is designed for optimal reliability in broadband networks. The 6 kV surge specification, industry-leading hum modulation, and the power soak ratings of the directional couplers, splitters, and power inserters, coupled with the outstanding insertion loss specifications, help ensure the reliable performance required in the most demanding applications.

Features

- 6 kV surge protection
- 15A current carrying capability of splitters and directional couplers and 20A input rating of power inserters allow network powering of cable telephony services
- Industry-leading insertion loss specifications reduce amplifier requirements
- Unique, patented AC bypass coil provides superior hum modulation performance, which is important in advanced, high current networks
- Superior return loss specifications promote more reliable transmission of digital signals
- Versatile housing design permits aerial or pedestal mounting
- Power passing/blocking jumpers for increased architectural flexibility
- Interchangeability of faceplates for all directional couplers and splitters simplifies architectural changes and reduces costs
- Durable powered-paint coating for superior environmental protection
- Compliant to 25A and 2-hour, 149°F (65°C) power soak rated

RF Specifications

| ATX PART NUMBER | | GTSG-PAS-SIVES-DC-08 | | GTSG-PAS-SIVES-DC-12 | | GTSG-PASSIVES-DC-16 | | GTSG-PAS-SIVES-S2 | | GTSG-PAS-SIVES-S3 | | GTSG-PASSIVES-S3U | | | | GTSG-PAS-SIVES-PI | |
|--|-----------|----------------------|------|----------------------|------|---------------------|-----|-------------------|-----|-------------------|-----|-------------------|-----|------|-----|-------------------|-----|
| NOMINAL TAP VALUE, dB | | 8 | | 12 | | 16 | | 2-Way | | 3-Way | | 3 Way-Unbalanced | | | | PI | |
| | | | | | | | | | | | | LOW | | HIGH | | | |
| SPECIFICATION | MHz | TYP | MAX | TYP | MAX | TYP | MAX | TYP | MAX | TYP | MAX | TYP | MAX | TYP | MAX | TYP | MAX |
| Insertion Loss dB | 5 | 1.7 | 1.9 | 0.9 | 1.1 | 0.9 | 1.1 | 4.1 | 4.4 | 5.9 | 6.1 | 7.3 | 7.5 | 3.7 | 3.9 | 0.6 | 0.9 |
| | 10 | 1.6 | 1.8 | 0.8 | 1.1 | 0.8 | 1.0 | 3.8 | 4.2 | 5.5 | 5.8 | 7.0 | 7.4 | 3.6 | 3.8 | 0.4 | 0.6 |
| | 40 | 1.6 | 1.7 | 0.8 | 1.1 | 0.8 | 1.0 | 3.7 | 4.0 | 5.3 | 5.6 | 6.8 | 7.2 | 3.5 | 3.8 | 0.4 | 0.6 |
| | 85 | 1.6 | 1.7 | 0.9 | 1.1 | 0.8 | 1.0 | 3.7 | 4.0 | 5.4 | 5.6 | 6.9 | 7.2 | 3.6 | 3.8 | 0.4 | 0.7 |
| | 100 | 1.6 | 1.7 | 0.9 | 1.1 | 0.8 | 1.0 | 3.8 | 4.0 | 5.4 | 5.6 | 6.9 | 7.2 | 3.6 | 3.8 | 0.5 | 0.7 |
| | 200 | 1.6 | 1.8 | 1.0 | 1.1 | 0.9 | 1.1 | 3.9 | 4.1 | 5.6 | 5.8 | 7.1 | 7.3 | 3.7 | 3.8 | 0.6 | 0.7 |
| | 550 | 1.6 | 2.0 | 0.9 | 1.3 | 0.9 | 1.2 | 3.9 | 4.3 | 5.7 | 6.2 | 7.3 | 7.9 | 3.8 | 4.2 | 0.4 | 0.7 |
| | 750 | 1.8 | 2.2 | 1.1 | 1.5 | 1.0 | 1.4 | 4.1 | 4.5 | 6.0 | 6.5 | 7.5 | 8.0 | 4.1 | 4.6 | 0.4 | 0.8 |
| | 870 | 1.9 | 2.4 | 1.2 | 1.7 | 1.0 | 1.5 | 4.3 | 4.7 | 6.2 | 6.6 | 7.6 | 8.1 | 4.4 | 4.7 | 0.5 | 0.9 |
| | 1000 | 2.2 | 2.5 | 1.5 | 1.9 | 1.3 | 1.6 | 4.5 | 4.9 | 6.4 | 6.9 | 7.8 | 8.3 | 4.6 | 4.9 | 0.6 | 1.0 |
| | 1218 | 2.5 | 2.7 | 2.1 | 2.2 | 1.6 | 1.8 | 5.0 | 5.1 | 6.9 | 7.2 | 8.3 | 8.6 | 5.1 | 5.2 | 0.8 | 1.1 |
| 1250 | 2.5 | 2.8 | 2.2 | 2.3 | 1.7 | 1.9 | 5.0 | 5.2 | 7.1 | 7.3 | 8.4 | 8.7 | 5.1 | 5.2 | 0.9 | 1.2 | |
| Tap Loss (dB) Max Tolerance ±1 (dB) | 5 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 10 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 40 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 85 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 100 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 200 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 550 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 750 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 870 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 1000 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| | 1218 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | |
| 1250 | 8.5 | | 12.3 | | 16.0 | | - | | - | | - | | - | | - | | |
| Flatness (±dB) | 5-1000 | 0.5 | | 0.5 | | 0.5 | | 0.5 | | 0.5 | | 0.5 | | 0.5 | | 0.35 | |
| | 5-1250 | 0.6 | | 0.6 | | 0.6 | | 0.6 | | 0.75 | | 0.75 | | 0.75 | | 0.5 | |
| Return Loss (dB) (Min) | 5-40 | 16 | | 20 | | 20 | | 20 | | 18 | | 15 | | 15 | | 16 | |
| | 41-400 | 20 | | 23 | | 24 | | 23 | | 23 | | 18 | | 18 | | 18 | |
| | 401-750 | 20 | | 23 | | 24 | | 23 | | 23 | | 18 | | 18 | | 18 | |
| | 751-870 | 20 | | 23 | | 24 | | 23 | | 23 | | 18 | | 18 | | 18 | |
| | 871-1000 | 20 | | 20 | | 22 | | 20 | | 20 | | 16 | | 16 | | 18 | |
| | 1001-1250 | 18 | | 20 | | 22 | | 20 | | 20 | | 16 | | 16 | | 18 | |
| Isolation (dB) (Min) | 5-10 | 16 | | 20 | | 20 | | 20 | | 18 | | 19 | | 19 | | 56 | |
| | 11-85 | 20 | | 23 | | 24 | | 23 | | 23 | | 23 | | 23 | | 58 | |
| | 86-204 | 20 | | 23 | | 24 | | 23 | | 23 | | 23 | | 23 | | 58 | |
| | 205-750 | 20 | | 23 | | 24 | | 23 | | 23 | | 23 | | 23 | | 58 | |
| | 751-870 | 20 | | 20 | | 22 | | 20 | | 20 | | 20 | | 20 | | 53 | |
| | 871-1250 | 18 | | 20 | | 22 | | 20 | | 20 | | 20 | | 20 | | 53 | |

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.

| ELECTRICAL | | |
|-------------------------------|--|--------------------------|
| POWER INSERTER | | |
| HUM MODULATION @15A (Typical) | 5-10 MHz | 60 dBc |
| | 11-869 MHz | 65 dBc |
| | 870-1250 MHz | 65 dBc |
| POWER PASSING | 20A, 60/90 VAC max input port | |
| | 15A, 60/90 VAC max output port | |
| | 6 kV Surge Resistant (combination wave) | |
| DIRECTIONAL COUPLERS | | |
| HUM MODULATION @15A (Typical) | 5-10 MHz | 60 dBc |
| | 11-1000 MHz | 65 dBc |
| | 1001-1250 MHz | 60 dBc |
| POWER PASSING | 15 A, 60/90 VAC, 60 Hz | |
| | 6 kV Surge Resistant (combination wave) | |
| SPLITTERS | | |
| HUM MODULATION @15A (Typical) | 5-10 MHz | 60 dBc |
| | 2-WAY 11-1000 MHz | 65 dBc |
| | 3-WAY 11-1000MHz | 3 Way-Unbalanced, 60 dBc |
| | 1001-1250MHz | 60 dBc |
| POWER PASSING | 15 A, 60/90 VAC, 60 Hz | |
| | 6 kV Surge Resistant (combination wave) | |
| 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 |
| | 3-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 | 0.48Kg, 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) | |
| CONNECTOR PULL OUT | 100 lb. min. | |
| 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.

Ordering Information

| Part Number | Description |
|--------------------------------------|---|
| GigaXtend SGP 1.2GHz Passives | |
| GTSG-PASSIVES-DC-08 | GigaXtend SGP 1.2 GHz Directional Coupler, 8dB |
| GTSG-PASSIVES-DC-12 | GigaXtend SGP 1.2 GHz Directional Coupler, 12dB |
| GTSG-PASSIVES-DC-16 | GigaXtend SGP 1.2 GHz Directional Coupler, 16dB |
| GTSG-PASSIVES-S2 | GigaXtend SGP 1.2 GHz 2-Way Splitter |
| GTSG-PASSIVES-S3 | GigaXtend SGP 1.2 GHz 3-Way Splitter-Balanced |
| GTSG-PASSIVES-S3U | GigaXtend SGP 1.2 GHz 3-Way Splitter-Unbalanced |
| GTSG-PASSIVES-PI | GigaXtend SGP 1.2 GHz power Inserter |

Products or features contained herein may be covered by one or more U.S. or foreign patents. Other non-ATX product and company names mentioned in this data sheet are the property of their respective companies.

© 2020 by ATX Networks Corp. and its affiliates (collectively "ATX Networks Corp."). All rights reserved. This material may not be published, broadcast, rewritten, or redistributed. Information in this document is subject to change without notice. Rev. 07/2020 (ANW1480)



ATX Networks

Tel: 289.204.7800 | Toll-Free: 866.YOUR.ATX | support@atx.com