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ANTRONIX[®]

CONNECTING THE WORLD OF COMMUNICATIONS



CORPORATE/SALES

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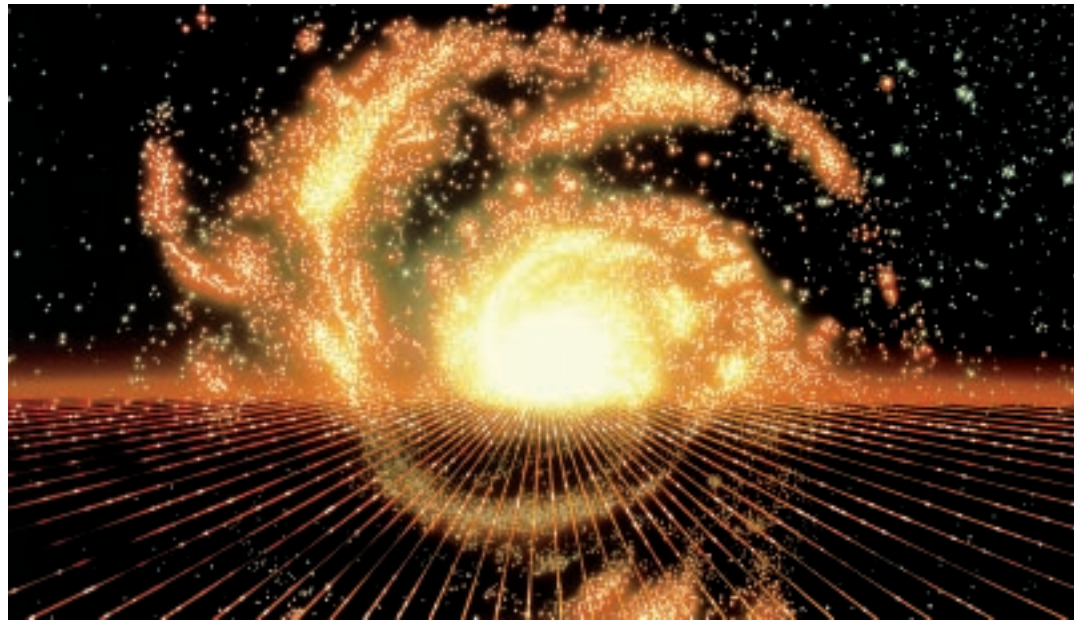
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MILENIUM ANTRONIX[®]

MILENIUM • ENGINEERED AND MANUFACTURED BY ANTRONIX

REFERENCE DESIGN MANUAL



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Ever since our inception, Antronix has been an industry leader. Antronix holds many patents and is always on the leading edge of new product development. Our commitment to both service and quality are unsurpassed.

Antronix is unique. All of our engineering development and marketing is done entirely in the U.S.A. This ensures that you will only be getting state-of-the-art products and services.

Antronix brand products are sold through authorized distributors.

Antronix... Connecting the World of Communications.



**Quality
Excellence
Integrity**

OUR MISSION

"The mission of Antronix is to be the benchmark by which broadband communications technology is judged. We constantly strive to set the standard for both product innovation and customer service within the broadband communications industry."

BRIEF HISTORY

PAST

In 1980 Antronix introduced its first line of products, the "HS" Series. This line of subscriber passives set new industry standards by offering a high isolation splitter that provided the lowest insertion loss of any split-

MILESTONE
1980
FIRST ANTRONIX
PRODUCT INTRODUCED
SUBSCRIBER PASSIVES.

ter on the market. The "HS" Series was built in an indoor/outdoor die cast housing, while the competition offered less electrical and mechanical performance in an indoor type housing. Two years later, we introduced our first line of multitaps, the OMT series. Once again, Antronix raised industry standards by offering the

MILESTONE
1982
INTRODUCED OMT SERIES
MULTITAPS WHICH LATER BECAME
THE MULTIMEDIA LINE.

first brass F-Ports at a time when other manufacturers were still using die cast aluminum F-Ports. Over the next two decades, Antronix continued

to develop cutting edge products that deliver unsurpassed performance. As a testament to our commitment, we have sold over 30 million multitaps and main line passives in the U.S. and have become the world's leading producer of multitaps, main line and subscriber passives.

PRESENT

As the Broadband industry evolves from basic one-way broadcast systems to advanced two-way applications, new Multimedia delivery technology is required to keep existing systems from becoming obsolete. Antronix is focused on leading this Multimedia Revolution. We have already developed new products that are specifically

MILESTONE
1983
INTRODUCED MAIN LINE PASSIVES

designed to meet the challenges associated with interactive return services. Whether it's overcoming ingress or equalizing return signals, our products provide the best tools to optimize your system.

FUTURE

The products Antronix manufactures today are intended to meet the needs of tomorrow. The Milenium Series of multitaps is a fully interchangeable product line that allows for new products to fit into existing housings. Since upgrades can be made with-

MILESTONE
1989
MILENIUM SERIES INTRODUCED.
CAMPORT®
WORLD'S FIRST AUTO-SEIZING
F-PORT INTRODUCED.

out removing the installed Milenium Multitap, new technology can easily be added to existing systems.



FOCUS ON ENGINEERING

Our Technology Center, located in our U.S. Corporate Headquarters, brings over 20 years of experience to the development of new products. Our U.S. facility offers design, prototype and pre-pilot production capability, which enable us to stay on the

MILESTONE
1992
DEVELOPED THE FIRST
1 GHz MULTITAP

MILESTONE

1996

FIRST HERMETICALLY SEALED
TWISTED PAIR MULTITAP.
FIRST TO USE IDC CONNECTOR
FOR POWERING MULTITAPS.

leading edge of advancing technologies. We welcome the opportunity to discuss any design need you have.



MANUFACTURING CONSISTENCY

As we strive to accomplish our mission of being the industry benchmark for product innovation, we know that we must first set our own standards higher than every other broadband manufacturer. Antronix has developed strict product specifications that provide the foundation of our production procedures.

Our ISO 9000 certified manufacturing facilities provide quality products and follow strict Quality Control pro

cedures. Incoming QC and Vendor Validation Audits ensure the components and parts we use are within specifications. In-Process QC on our manufacturing floor ensures that the workmanship of each production stage remains consistently above even the highest standards.



Outgoing QC follows the strict requirements of MIL-STD-105D. Our Quality Assurance team insists upon the highest level of quality control and closely monitors these procedures. Our manufacturing facilities utilize state-of-the-art production equipment to help ensure that our high product standards are met. We are capable of high-volume production through the latest automated processes that enable us to consistently deliver the highest workmanship quality.

MILESTONE

1998

INTRODUCED
THE WORLD'S ONLY
DUAL COMPARTMENT MULTITAP

FACILITIES

- Taiwan
- Tianjin, China
- Shenzhen, China
- Over 250,000 square feet
- Over 1,800 labor employees

CAPACITY

- 600,000 multitaps and main line passives per month
- 2.0 million subscriber passives per month.

OPERATIONAL CONTROL

Operational control is maintained through our comprehensive Integrated Management System (IMS). IMS is a management control system that integrates our entire development team. The IMS Management Team is made up of our V.P. of Engineering, V.P. of Manufacturing, and V.P. of Quality Assurance. The team members report directly to the Chief Operations Officer.

MILESTONE

2001

FIRST AUTO-SIEZING MULTITAP

PATENTS

Wire-Seizing Connector for Coaxial Cable
#4,897,045

Cable TV Multitap with Uninterruptible
Signal/Power Throughput
#5,677,578 & 5,814,905

Hermetically Sealed Electrical
Connection to a Junction Box
#5,939,672

Dual Compartment Multitap
#5,994,976 & 6,074,250

Low Pass Filter for a Junction Box
#6,018,278

Tool for Shunting a Cable Multitap
#6,025,760

Cable Clamping Apparatus for Junction Box
#6,069,315

Hermetically Sealed F-Connector
#6,071,144

F-Connector Assembly
#6,299,479

Auto-Seizing Coaxial Cable Port
for an Electrical Device
#6,309,251

Multitap Kit for Cable Television Systems
for Path Equalization
#6,570,465

MULTITAPS

Performance

The superior performance of the Milenium Series of multitaps is tangible evidence of our mission to become the benchmark for the broadband industry. This fully integrated product line provides lower insertion loss than most multitaps on the market today. With a full 12 amperes current capacity, our multitaps can fully utilize the network's powering capabilities. For NIU powering, a simple baseplate change upgrades your multitap for power extracting capability since the housings can also accommodate telephony baseplates. In addition, the Milenium Series is the only line of multitaps to offer the patented auto seizing CamPort F connector. This feature eliminates contact plating wear and corrosion while its unique clamping mechanism ensures consistent contact.

Protection From the Environment

Milenium Series multitaps are designed not only to provide benchmark quality performance when installed today, but also to continue to deliver such a level of performance for years to come. Each Milenium multitap undergoes a four-stage corrosion protection process that offers maximum protection from the environment. The four stages consists of:

1. A 360 aluminum alloy housing (the most corrosive-resistant alloy material on the market that is used for die casting).

2. The housing is then impregnated with a sealer to eliminate porosity.
3. Clear chromate coatings are then applied inside and out to protect the aluminum and prevent corrosion.
4. Two polyurethane coatings are applied for superior protection.

All Milenium hardware is made from heat-treated stainless steel and has proprietary plating to reduce galvanic reaction. Our corrosion protection, however, does not stop at the exterior of the multitap. A unique grounding system between the PCB and the baseplate eliminates long-term performance degradation that is due to oxidation and corrosion.

Surge and Ground Loop Protection

For protection from power surges and nearby lightning strikes, Milenium multitaps are built with high voltage self-healing film capacitors. In addition, to eliminate subscriber ports from burning out due to differing ground loop potentials, all MGT Series multitaps are built with blocking capacitors at each subscriber port.

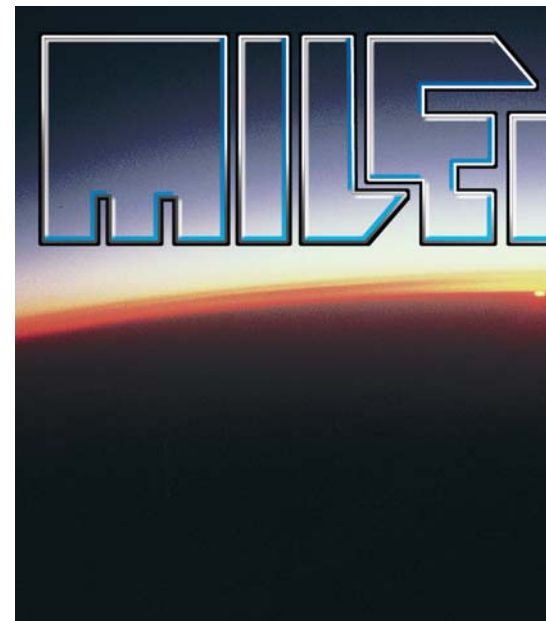
Superior Hum Modulation

The Milenium 1 GHz multitaps use a special ferrite blend that minimizes core saturation. Milenium multitaps are, therefore, able to provide the best RF specifications and lowest hum modulation.

Installation Features

The Milenium Series multitaps are designed to be not only simple to install, but also easy to maintain once installed. This allows for upgrades to be made cost effectively and quickly. Some of the installation features that allow for these benefits are as follows:

- The Rotational seizure posts have a single screw for simple installation for aerial or pedestal application.



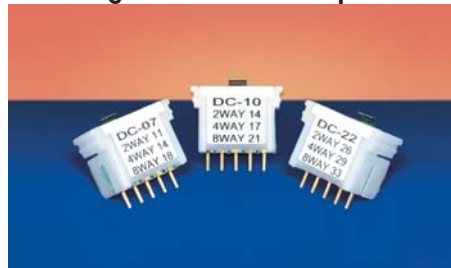
- Drip wells, numbered ports and a strip gauge all make in-field installation easier, consistent and reliable.
- Multitap values are color coded for identification.
- A neoprene weather gasket and EMI gasket are located on the baseplate. This guarantees that a fresh gasket is automatically installed when the baseplate is replaced.
- A plastic cover protects components when the baseplate is removed.
- Main line entry points are ribbed for proper adhesion of heat shrink.

Multitaps



MGT3200-SE/U
MGT3400-SE/U
MGT3800-SE/U

Plug-In Directional Couplers



MDC-07
MDC-10
MDC-22

MGT3000-SE/U

The Milenium MGT3000-SE/U is the most advanced multitap on the market today. Some of the features that allow the MGT3000-SE/U to bear this distinction are:

Flexibility

The Plug-in Directional Coupler in the Milenium MGT3000-SE/U multitap gives you the flexibility to change the direction of the signal feed without having to re-



splice a tap location. By simply removing the baseplate and turning the plug-in directional coupler, you can change the design of your system without changing the multitaps. The flexibility of the Milenium MGT3000 serves to minimize

Multitaps



MGT2200-SE/U
MGT2400-SE/U
MGT2800-SE/U

your inventory expenses, as the value of the tap can easily be changed by installing a different plug-in DC value. The MGT3000 also saves installation time by eliminating the need to remove drops when making a system change. This feature saves labor dollars.

Unsurpassed RF Performance

The MGT3000's RF performance sets the standard for the new Milenium. With a bandwidth from 5 MHz to 1 GHz, the MGT3000 is the lowest insertion loss plug-in full bandwidth multitap on the market. The MGT3000 is engineered with improved return loss and isolation in the return band to overcome challenges in two-way active digital broadband networks.

Extended Surge Protection

Main line ports are fully protected against 6KV combination wave surge and meets IEEE C62.41 Cat. B3.

Uninterrupted Signal and Power

The patented Milenium USP utilizes a dual make-before-break switch to offer uninterrupted video, data, telephony and power when the baseplate is removed.

MGT2000-SE/U

The MGT2000-SE/U utilizes a fixed DC designed for maximum performance and reliability. Some of the features that separate it from the competition are:

Excellent RF Performance

The MGT2000 provides low insertion loss performance and a 1 GHz bandwidth. Each tap is built on its own PC board resulting in superior electrical performance and consistency from unit to unit.

Uninterrupted Signal and Power

The patented Milenium USP utilizes a dual make-before-break switch to offer uninterrupted video, data, telephony and power when the baseplate is removed.

Compatibility

The MGT2000-SE/U Series is compatible with all Milenium, Addressable, Conditioning and Powering Series Multitaps. Whether you are upgrading your bandwidth, from the MMT2000 or looking ahead to utilize the features of the MGT3000, adding NIU Subscriber Powering by twisted pair or at the drop, conditioning at the tap, or upgrading to

COLOR CODE CHART

MODEL NUMBERS			COLOR CODE
2-output	4-output	8-output	
2204			GREEN
2208	2408		BLACK
2211	2411	2812	GOLD
2214	2414	2815	ROYAL BLUE
2217	2417	2818	DARK BLUE
2220	2420	2821	DARK ORANGE
2223	2423	2824	LIGHT ORANGE
2226	2426	2827	RED
2229	2429	2830	PURPLE
2232	2432	2833	HOT PINK RED
	2435	2836	GREEN
		2839	BLACK

Ordering Information: 1 GHz Multitap

MGT2200 2-output • MGT2400 4-output • MGT2800 8-output

Tap Values:

2-output

(04, 08, 11, 14, 17, 20, 23, 26, 29, 32) dB

4-output

(08, 11, 14, 17, 20, 23, 26, 29, 32, 35) dB

8-output

(12, 15, 18, 21, 24, 27, 30, 33, 36, 39) dB

addressability, the MGT2000-SE/U multitap eliminates the need to splice in a new tap. This provides the flexibility to upgrade existing systems by simply changing the baseplate.

NIU SUBSCRIBER POWERING

Today's customers demand cable systems with optimal multimedia capabilities. To satisfy this demand, video, telephony and data capabilities must be delivered into the customer's home through a single coaxial system. The Milenium Series of multitaps allows operators to achieve this desired multimedia capacity by offering a single multitap capable of delivering power to the NIU by either coaxial cable or twisted pair wiring. Through a simple baseplate upgrade, Milenium Series allows operators to selectively install NIU subscriber powering multitaps where needed.

The Milenium model MGT2000-FP and Milenium model MGT2000-DP provide F-Port NIU subscriber power on coaxial cable. The Milenium model MGT2000-TP provides NIU subscriber power by twisted pair. The DP and TP Series of multitaps feature the Easy Access Compartment (EAC), which allows power control without removing the baseplate. If the baseplate removal is required, each series has a USP for uninterrupted up and downstream signal and power during removal. This feature is essential in order to maintain system reliability for telephony and data.

MGT2000-FP/U

This model offers F-Port coaxial power extraction. Other benefits of the MGT2000-FP/U include:

- Use existing drops for AC power to the subscriber, making it cost effective.

F-Port Powering Multitap



MGT2800-FP/U

- The CamPort F-Port gives it reliable center conductor contact.
- There is power control at each F-Port.
- The power control is offline to prevent shock hazards.
- Each F-Port utilizes a self-resetting current limiter to prevent overload conditions.

MGT2000-DP/U

This model offers F-Port coaxial power extraction with EAC. Other benefits of the MGT2000-DP/U include:

- EAC housing for power control without removing the baseplate.
- The use of existing drops to provide AC power to the subscriber make it cost effective.
- The CamPort F-Port gives it reliable center conductor contact.
- There is power control at each F-Port.
- Each F-Port utilizes a self-resetting current limiter to prevent overload conditions.

MGT2000-DP2/U

This model offers F-Port coaxial power extraction with EAC. Other benefits of the MGT2000-DP2/U include:

- Increased current capacity by allowing two current limiters per F-Port.
- Up to 700 mA per port @ 60°C

F-Port Powering Multitap



MGT2400-DP/U
MGT2800-DP/U

MGT2000-TP/U

This model offers twisted pair power extraction. Other benefits of the MGT2000-TP/U include:

- NIU powering by twisted pair.
- EAC housing for power control without removing the baseplate
- Patented gel environmental barrier to prevent moisture from seeping into twisted pair terminals.



- There is power control for each twisted pair.
- Each F-Port utilizes a self-resetting current limiter to prevent overload conditions.

Twisted Pair Powering Multitap



MGT2400-TP/U

ADDRESSABLE TAPS

System Description

The cost-effective AGT3000 addressable multitap includes the functionality of the conventional Milenium multitap with the added intelligence to enable or disable signals to each individual tap ports remotely. This capability reduces operating costs and generates more revenue for a full return on investment.

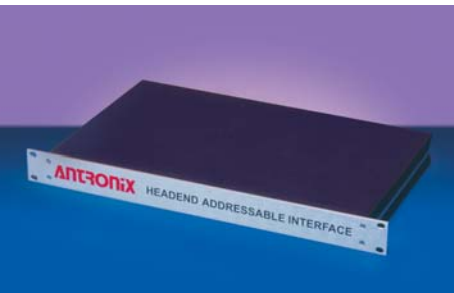


The AGT3000 Series offers the following features:

Backward Compatible

The AGT3000 was engineered to be backward compatible with Antronix MGT and MMT multitaps. Regardless of whether the deployment is system-wide or incremental in high-churn communities, a simple baseplate change is all

Addressable Control Unit



ACU-3000A

that is required to upgrade your multitaps for addressability.

Plug-in Directional Coupler

A plug-in directional coupler enables you to change the tap value or the direction without splicing in a new multitap.

E-Option

The multitap ports can be conditioned with various plug-in filters for flexible deployment of digital return services without experiencing additional insertion loss.

Surge Resistant

The main line ports are capable of withstanding 6KV combination wave surges per IEEE C62.41 Cat. B3.

Ultra Low Power Consumption

Our state-of-the-art power management design limits the steady-state power consumption to less than 10 mA (1 watt), making system power redesigns unnecessary. With a wide input voltage range of 38 to 90 VAC, the addressable multitap will continue to operate even under line voltage sagging conditions.

Continual Port Updates

All addressable tap ports in your system are continually updated for highest reliability.

Uninterrupted Signal and Power

The patented Milenium USP offers uninterrupted signal and power when the baseplate is removed.

Addressable Tap



AGT3800-SE/U

High Security

Our addressable multitap system utilizes proprietary security measures to prevent cable theft, hackers, and unauthorized usage.

Benefits

Lower costs. Costly truck rolls to locations where an addressable multitap is installed are eliminated.

Increased customer satisfaction and billable days. Customers can enjoy the benefits of multimedia services almost immediately since there is no need to schedule an installer. This translates to improved customer satisfaction, as well as an increased number of billable days.

Increased revenues. Customers with delinquent accounts will be inclined to make payments more promptly, since their service can easily be disabled.

Increased security. Cable theft will be reduced since all tap ports are "dead" when service is disabled. Therefore, a large percentage of cable thieves will switch to legal paying subscribers.

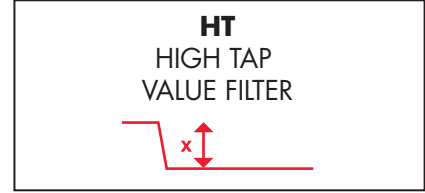
Increased safety. In locations where technician access and safety is a concern, the addressable multitap enables the cable operator to remotely control the subscriber port.

Increased reliability. In a conventional multitap, when service is discontinued, a technician must manually disconnect the drop cable, which results in connector wear and corrosion. This is no longer a concern, since the AGT3000 allows drop cables to remain permanently connected. Furthermore, unterminated tap ports are prone to ingress and have reduced RF performance. The AGT3000 terminates the tap port internally when disabled to eliminate these problems.

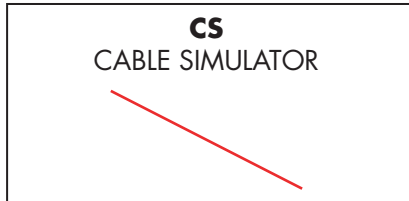
CONDITIONING AT THE TAP

As part of the Antronix mission to set the standard for product innovation, we have developed a new series of multitaps. These multitaps are engineered to resolve many of the system design issues that are common in two-way active digital broadband networks. The unique patented E-Option Series provides signal conditioning at the multitap's port, including return path equalization, cable modem utilization, and cable tilt/loss compensation. Since the E-Option Series has a separate plug-in conditioner and plug-in directional coupler, different functions can be added without affecting the main line response. The E-Option Series, therefore, is also able to prevent additional insertion loss when the application-specific plug-in's are added to the multitap's port. The remarkable versatility of the E-Option Series helps provide more precise inventory management and is available in all Milenium Series multitaps. The following plug-in conditioners are available for multitaps with the E-Option Series:

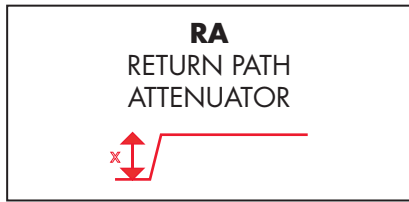
also add additional return path attenuation to eliminate the need for high pass filters. By attenuating the return path signals, cable modems can be driven at full power for maximum signal-to-noise ratio without fear of clipping distortion in the optical return laser.



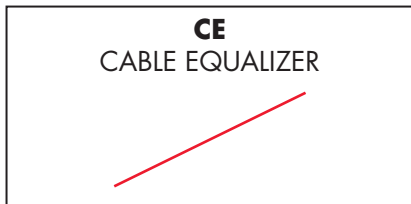
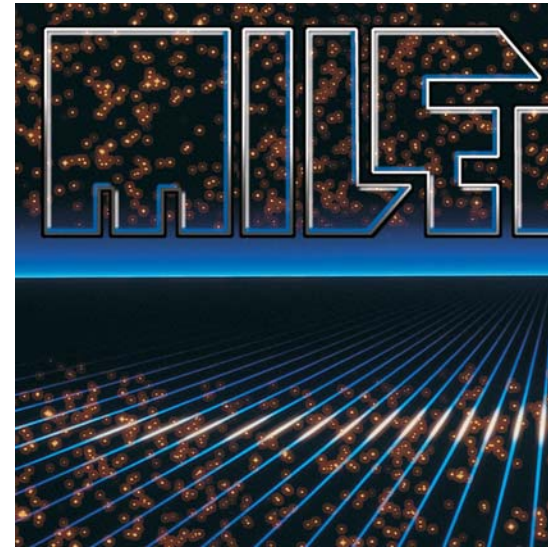
- **High Tap Value Filter (HT).** HT allows the use of cable modems in high tap values by reducing the return path tap loss without affecting the forward path tap loss.



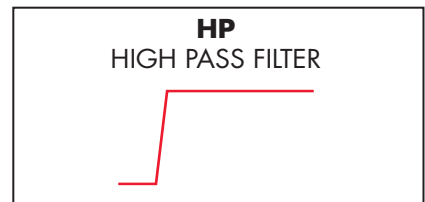
- **Cable Simulator (CS).** CS simulates the response of a fixed length of cable at the tap port for taps close to amplifiers with large tilts.



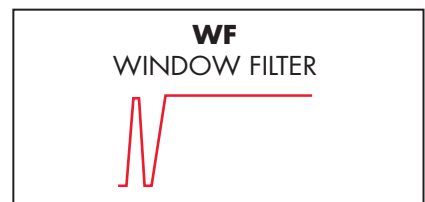
- **Return Path Block Attenuator (RA).** RA provides block attenuation to the return path to prevent overdriving the return active device from high return signals, such as cable modems and cable telephony. This plug-in allows cable modems to be driven at full power for maximum signal-to-noise ratio without fear of clipping distortion.



- **Cable Equalizer (CE).** CE provides cable equalization at the tap port to compensate for excessive slope to extend the length of a line. Equalizers



- **High Pass Filter (HP).** HP blocks the return band to prevent ingress from noisy subscribers.



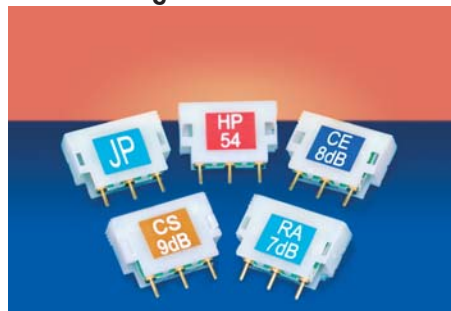
- **Window Filters (WF).** WF are custom filters that block the return band of noisy homes to prevent ingress while providing a narrow pass band window for pilot frequencies of addressable converters.

Multitaps with Conditioning



MGT2200-SE/U
MGT2400-SE/U
MGT2800-SE/U

Plug-In Conditioners



JP, HP-54, CE-08,
CS-09, RA-07

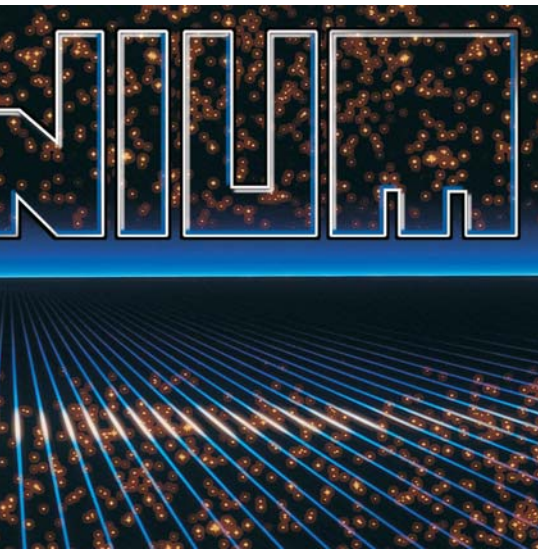
Quality • Excellence • Integrity



DUAL COMPARTMENT

MGT/9 MGT/9SB2

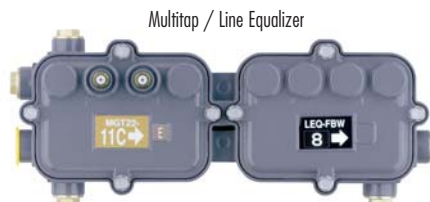
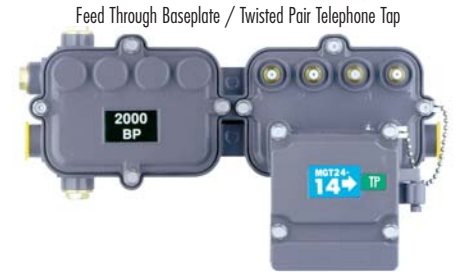
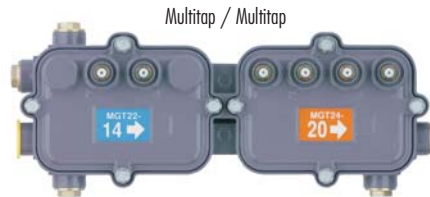
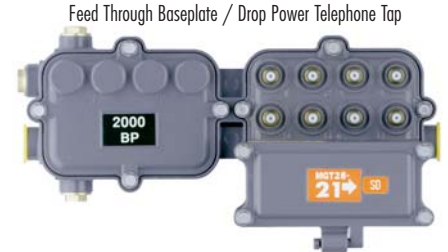
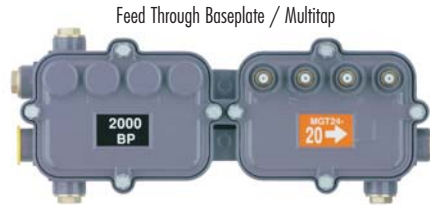
Antronix has set a new standard for product innovation by bringing "Plug and Play" technology to the CATV Industry. The patented Milenium dual compartment multitap offers a "future-proof" design that makes it the only multitap housing you will ever need to splice in, regardless of what new



technologies emerge. This is achieved through a unique dual baseplate design that allows for two Milenium baseplates to be used in any configuration. Each compartment has a patented USP bypass switch for uninterrupted up and downstream signal and power during baseplate removal. The MGT/9 can be mounted vertically or horizontally, making it perfect for apartment installations. The MGT/9SB2 has all the same features as the MGT/9, but is manufactured for aerial installation.

Some additional features of these multitaps include:

- Two baseplate compartments.
- Reduces the need for extension connectors for upgrades.



- Broad selection of baseplates from which to choose.
 - F-Port Powering
 - Twisted Pair Powering
 - Line Equalization
 - Addressability
 - Reverse Direction Baseplates
- Dual baseplates can be used in any combination of 2, 4, 6, 8, 10, 12 and 16 outputs.
- Combine two eight-output baseplates for the only 16-way tap on the market today. Perfect for apartment house applications.

- Horizontal and vertical mounting available.
- Use our 2000-BP baseplate in one compartment to reserve space for future needs.

MAIN LINE PASSIVES

HIGH PERFORMANCE

Milenium Main Line Passives are capable of handling 15 amperes of current continuously on all ports. Our unique circuit design and proprietary ferrite core material provide the highest level of RF performance on the market. Milenium Main Line Passives are also cost effective, as low insertion loss reduces costly amplifier requirements. All ports are capable of withstanding a 6KV Combination Wave Surge per IEEE C62.41-1991 Cat. B3, allowing them to withstand the harshest line conditions. Antronix Main Line Passives also offer a four-stage corrosion protection process that offers maximum protection from the environment. The four stages consist of:

- 1) A 360 aluminum alloy housing (the most corrosive-resistant alloy material on the market).
- 2) The housing is then impregnated with a sealer to eliminate porosity.
- 3) Clear chromate coatings are then applied inside and out to protect the aluminum and prevent corrosion.
- 4) Two polyurethane coatings are applied for superior protection.

Additional benefits of Antronix Main Line Passives include:

- A full 1 GHz bandwidth.
- The ability to direct and conserve power through a fuse holder on each output leg.
- Shorting bars, that are shipped with each unit, which can be replaced in the field with fuses if desired.
- The capacity to withstand a 6KV Combination Wave Surge per IEEE C62.41-1991 Cat. B3 on each port.
- A high current power inserter that is capable of 30 amperes of AC input.
- The capacity to withstand 25 amperes for two hours, if main line is short-circuited under extreme fault conditions.
- Interlocking tongue-and-groove housing and faceplate along with a wire mesh gasket guarantee excellent RFI isolation.
- A strip gauge for exact connector pin length.
- A rotational seizure post for simple installation.

- Antronix High Current Main Line Passives also offer the C-series option. This unique feature allows the printed circuit board to be mounted in the housing for troubleshooting without interrupting upstream and downstream signal or power when the baseplate is removed (C-series) or mounted in the baseplate for quick change-outs (standard).



Line Splitters



MGLSH-2F
MGLSH-3F
MGLSH-3BF

Line Directional Couplers



MGDCH-2108F
MGDCH-2112F
MGDCH-2116F

SURGE PROTECTION

Antronix High Current Main Line Passives can be equipped with a rugged electronic crowbar device to safeguard the unit from surge related damage. This device activates when hazardous voltages exceed 180V and diverts the overvoltage to ground. With 3000 amperes of surge protec-



tion, the AC series is ideal for installations in areas prone to lightning strikes and power line surges. The 6KV Combination Wave Surge per IEEE C62.41-1991 Cat. B3. protection provides extremely fast response times in surge conditions and along with unmatched long term reliability.

Antronix High Current Main Line Passives also offer the following benefits:

- Surge response time of less than one nanosecond.
- A surge protection device that resets once the overvoltage is cleared and returns to a high impedance state.
- A protection device that prevents overvoltage from permanently damaging the device. The AC-series cannot be damaged by overvoltage. This gives the AC-series superior long-term reliability over SCR protection devices.
- The AC-series Main Line Passive extends its surge protection outside the unit by adding a level of protection to the entire distribution line.

PLUG-IN SURGE PROTECTION



PSP-3

Antronix offers the same crowbar surge protection in a plug-in device. Your existing Milenium Main Line Passives can easily be retrofitted by replacing the fuse buss with a rugged surge protected plug-in to safeguard against power surges of up to 3000

amperes. A simple plug-in upgrade can dramatically increase the reliability of your system.



The PSP-3 is available as a factory built-in or optional plug-in unit.

Line Power Inserter



MGPIH-2000F

Line Power Inserter



MGPIH-2000AC

LINE EQUALIZERS

Besides multitaps and main line passives, equalizers are an integral part of the Antronix mission to set the standard in the broadband industry. The Milenium line of equalizers provides low loss equalization that compensates for excessive cable loss slope. Our equalizers are available with our patented Milenium USP that features a dual make-before-break switch for uninterrupted signal and power when the baseplate is removed.

LEQ-PEA

The LEQ-PEA equalizer provides 12 amperes of current capacity and the flexibility of both a forward path plug-in and a reverse path plug-in. The flexibility of additional forward equalizers allow for easy system redesigns. System studies have shown that the addition of reverse band attenuation in strategic locations provides optimal support to reverse band services. Various combinations of plug-ins are available to accommodate the forward and reverse path equalization requirements of any system.

The LEQ-PEA offers the following benefits:

- The ability to change your forward path equalization design with a simple forward equalizer plug-in change.
- The ability to include cable simulation in your forward path design with a simple forward cable simulator plug-in.
- The reverse path can be optimized

by adding a plug-in reverse path attenuator. By adding attenuation in the reverse path, return signals such as cable modems can be operated at higher levels for improved signal-to-noise performance while preventing clipping distortion in the optical return laser.

- The reverse path attenuator can be used to simplify return signal alignment.
- Accommodates various plug-in modules to accomplish specific system performance.

LEQ-FBW

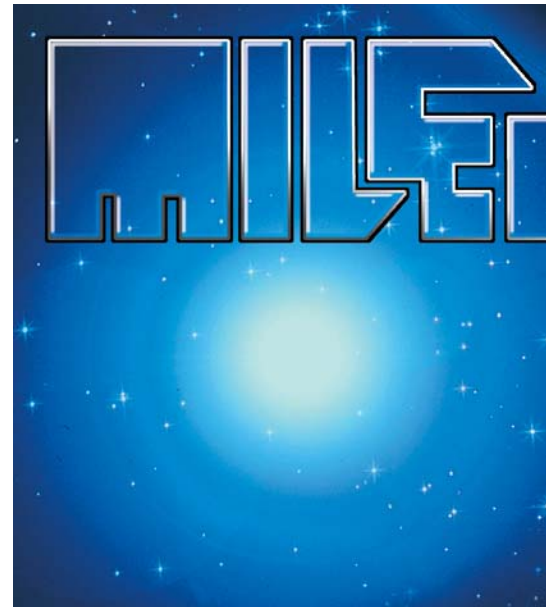
The LEQ-FBW is a 12-ampere, full bandwidth equalizer that allows for full forward and reverse cable equalization from 5 MHz to 1 GHz. The LEQ-FBW's plug-in equalizer allows you to modify the equalizer if your system requirements change and protects against design miscalculations.

The benefits of the LEQ-FBW include:

- Utilization of a full bandwidth equalizer with return path signal sources, such as cable modems, permit full power operation at all subscriber locations without fear of overdriving the return laser.
- Independent equalization of forward and reverse frequency split, since no diplex filter is involved.

LEQ

The LEQ series of equalizers provide fixed forward equalization to compensate for cable loss slope. With a built-in diplex filter, the equalizer compensates cable loss while providing minimum loss in the return band from 5 to 42 MHz.



Available Equalization Values:

- LEQ11-750-42B/U: 11dB of cable equalization at 750 MHz
- LEQ8-860-42/U: 8dB of cable equalization at 860 MHz.

Flexible Line Equalizer



LEQ-PEA/U

Full Bandwidth Line Equalizer



LEQ-FBW/U

Fixed Line Equalizer



LEQ11-750-42B/U

BASEPLATES

MGT2000/P MGT3000/P

Milenium Series baseplates are available in several styles to fit any system requirements. From changing a tap value, number of outputs, supplying NIU powering at the F-Port or Twisted



Pair, or Addressability, Milenium baseplates are completely interchangeable and forward and backward compatible.

The philosophy behind Milenium is to protect your investment. As future technology evolves, a simple baseplate change is all that is required. There is never a need to splice in a new tap. Milenium is the leading state of the art building block system available on the market today.

Benefits:

- Forward and backward compatible
- Cost-effective upgrades
- Full selection of baseplates for any applications

FEEDTHROUGH BASEPLATES 2000-BP

Used with the dual compartment housing, the feed through baseplate is installed when one baseplate is used. The feed through plate makes available the possibilities for future applications.

Benefits:

- Leaves space for future needs.
- Maintains electrical and mechanical integrity.

REVERSE TEST PLATE

The Reverse Test Plate is designed to monitor return signals. The Baseplate utilizes a 20dB test point. This valuable tool helps the technician replace the existing milenium tap plate with the Reverse Test Plate and monitor return signals without affecting downstream signals.



PRESENT

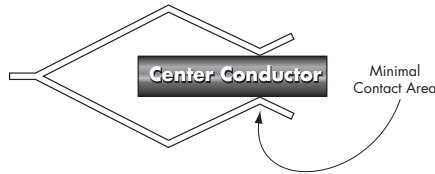
CamPort[®] AUTO-

The Only Time Proven Auto-Seizing

***Zero insertion force to eliminate contact plating wear. **10**



The CamPort from Antronix provides the most reliable cable connection available today. The integrity of the CamPort's auto-seizing F-Port contact is maintained by the Cam Activated Mechanism. The CamPort



Standard F-Port contact

Our point is that we don't have one...

A standard F-Port, with a simple 2, 3, or even 4-point contact, provides a point contact of only a few thousandths of an inch per side. Such a small contact area is inadequate for reliable, corrosion-free connections. The CamPort, however, does not have individual points of contact, but provides a full sur-

face contact between the cam and the center conductor.

Antronix thrives under pressure...

The potential problems inherent in the minimal contact area of a standard F-Port are compounded by the fact that the conventional point contact offers little or no control over contact pressure. The insertion of center conductors into

the port has a tendency to change and reduce both the contact pressure and the contact resistance. This degradation of the contact with the conductor in a standard F-Port is the unavoidable result of the eventual weakening of the spring tension of the contact material. The advanced design of the auto-seizing mechanism of the CamPort, however, enables the contact to remain strong

MECHANICAL SPECIFICATIONS

Material

Body:Brass
 Insulators:DELRIN plastic
 Spring Contacts:.....Phosphor bronze

Finish

Body:Nickel/zinc alloy plated, chrome treated
 Insulators:Smooth, self-lubricating
 Spring Contacts:Silver-plated

Dimensions

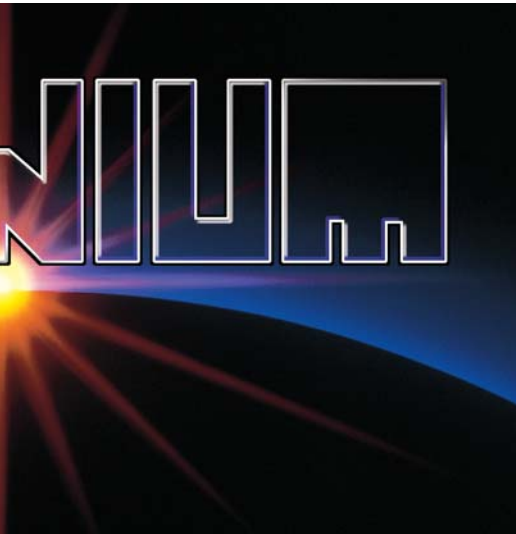
Connector body length (to flange): ..1/2"
 Thread Gauge:.....3/8"-32
 Length of Open Spring Contact:.....1/2"
 Spring Contact Area:0.08 sq. in.



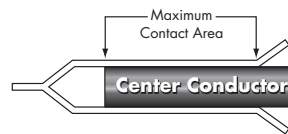
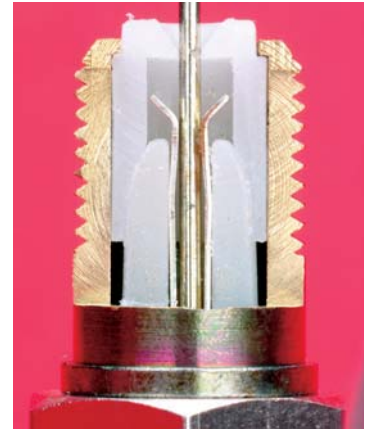
ING THE -SEIZING F-Port.

ing F-Port On The Market Today.

0 grams of contact pressure when the cam is fully engaged.



gives your system the intermittent free transmission path essential for advanced digital, telephony, cable modem, and all other power passing applications, including common television signals.



CamPort® contact

even after constant use and re-use. This unique feature allows the CamPort to remain "open" when not in use. Only after the conductor is in place does the auto-seizing mechanism tighten to the proper contact pressure. Since there is no friction when the center conductor is removed or inserted, the contact pressure remains constant each time the port is used.

Always a full plate...

The plating on a standard F-Port contact continually wears away each time the drop, trap, or terminator is put on the F-Port. As the plating wears down, corrosion builds up. This corrosion build up will continually weaken the signal until the entire signal is eventually lost. The obvious result of corrosion damage is an increased number of service calls.

The plating on the CamPort's auto-seizing F-Port however, is not prone to such wear and remains full and intact for a longer life requiring fewer service calls.

* Specification source is for RG59 cable.

** Specification source is for RG6 cable.

Seizing Force on Cable Center Conductor

RG-59 Cable (.032" dia) 1,000 grams NOM.

RG-6 Cable (.040" dia) 2,000 grams NOM.

Insertion Force:.....*Zero

Electrical

Impedance:75 Ohm NOM.

Return Loss:20 dB MIN.

Insertion Loss:0.1 dB MAX.

D.C. Resistance:0.2 Ohm MAX.

Quality • Excellence • Integrity



TOOLS & ACCESSORIES



IJT-2000

Installation Jumper Tool

The IJT-2000 Jumper Tool maintains up and downstream signal and power when aerial mounted MGT2000 and MGT3000 baseplates are removed from housings without USP. This allows for baseplates to be removed for upgrades or maintenance without interrupting video, data, power and telephony signals. The IJT is easy to use and locks into place for a positive connection. It is power rated to 15 amps continuous.



CL-350

Self-resetting current limiter used in the MGT Series NIU Subscriber Powering Taps. Nominal current up to 350mA @ 60°C per port at 90VAC and 550mA @ 20°C.



**IJT-2000
Installation Jumper Tool
For Aerial Mount**

Reverse Test Plate

The Reverse Test Plate is designed to monitor return signals. The Baseplate utilizes a 20dB test point. This valuable tool helps the technician replace the existing milenium tap plate with the reverse test plate and monitor return signals without affecting downstream signals.





CL-480C

Self-resetting current limiter used in the MGT Series NIU Subscriber Powering Taps. Nominal current up to 480mA @ 60°C per port at 90VAC and 750mA @ 20°C.



CLT-350

The CLT-350 jumper tool allows for the current limiter used in the MGT Series NIU Subscriber Powering Taps to be easily inserted and removed. The CLT is made of a high quality non-conductive material that ensures a safe, shock-free installation.



Flexible Installation Jumper Tool, IJT-1000F

When pedestal mounted MGT2000 and MGT3000 baseplates without USP are removed from housings, the IJT-1000F Flexible Jumper Tool maintains up and downstream signal and power. This allows for baseplates to be removed for upgrades or maintenance without interrupted video, data, power and telephony signals. It is power rated to 15 amps continuous.



SPBLG

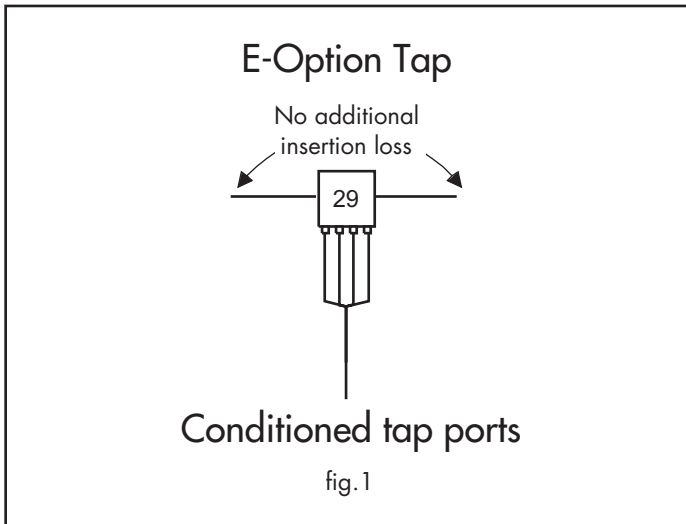
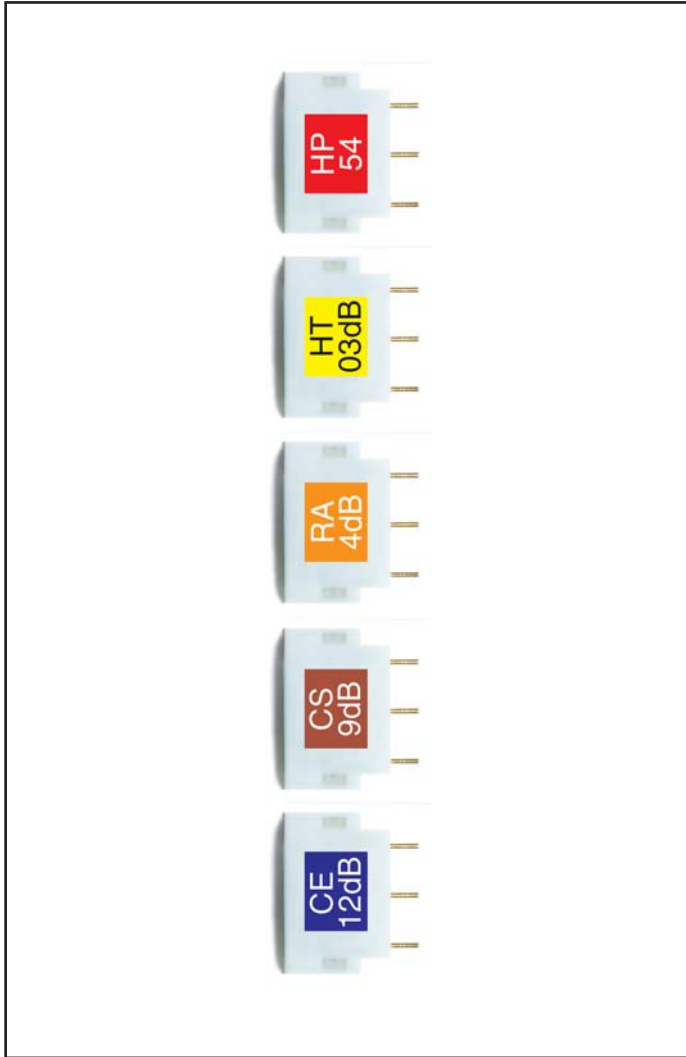
The SPBLG provides a cost effect splice block in a Milenium housing and reserves the location for future applications. A simple baseplate change upgrades the splice block to any Milenium series multitap.



IJT-1000F Flexible Installation Jumper Tool Pedestal Mount

E-OPTION CONDITIONING

ANTRONIX E-OPTION PASSIVES



Where Design Challenges Become Design Solutions.

Introduction:

Traditional Cable Television Systems had long been associated with one way downstream signal transmissions that provided video services to customers. The return path, when utilized, had been used primarily for PEG (Public, Educational, Government) channels, which transmitted the signal from a remote site such as a school or city hall back to the headend for retransmission on the downstream.

As customers demanded more channels and services the bandwidths of the systems have continually increased to 860MHz, with higher gain amplifiers, increased tilt and utilization of the return bandwidth in the entire system for high-speed data and telephony services. With the use of higher bandwidths and the addition of new services has come the requirement for tighter tolerances in both the downstream and upstream signals in order to maintain quality service to the customer and meet FCC Technical Specifications. With the use of the return band has come the challenge of controlling ingress and noise, which affects the reliability of the upstream signals. To maintain these tighter tolerances and control ingress and noise in the return path requires some unique and creative solutions that are found in Antronix taps with the E-Option.

E-Option Conditioning Taps

E-Option Taps have the capability to accommodate a variety of plug-in modules that allow the conditioning of the system in either the downstream or upstream for optimum system performance. E-Option allows each tap location to be conditioned individually for its specific requirement, conditioning only the tap ports without affecting the through insertion loss (see fig 1). E-Option solves design challenges such as return path ingress and noise reduction, negative/positive tilt compensation and high/low passive return path loss.

E-OPTION PLUG-INS

Full Bandwidth Cable Equalizer (CE): The cable equalizer is used to equalize the entire bandwidth from 5 to 1000MHz. The cable equalizer is normally used on taps toward the end of the line. The advantages of this equalizer are:

- It allows the system to have full equalization from 5 to 1000MHz independent of the return bandwidth or split.
- It equalizes the forward bandwidth to overcome excessive negative tilt associated with long coaxial lines allowing the distribution line to be extended.
- It conditions the tap ports for the correct signal levels for proper set-top operation and to meet FCC Technical specifications.
- It adds attenuation on the return path allowing cable modems to operate at a higher output and lowers the noise/ingress coming from the customers premise, achieving a greater signal to noise/ingress on the return path.
- It is available in a variety of values to meet your design criteria.

Cable Simulator (CS): The cable simulator is used in the latest system designs that are utilizing high output amplifiers allowing the full use of the amplifier gain with large positive tilts. The cable simulator is normally used in the first few taps after an amplifier. The advantages of the cable simulator are:

- It simulates a fixed amount of cable thus overcoming excessive positive tilts.
- It conditions the tap ports for correct signal levels for proper set-top operation and to meet FCC Technical Specifications.
- It is available in a variety of values to meet your design criteria.

Return Path Block Attenuation (RA): The return path attenuator is used in systems deploying high speed data services that are utilizing the return path. The return path attenuator is normally used in low value taps toward the end of the distribution system which have low loss in the return path. The advantages of the return path attenuator are:

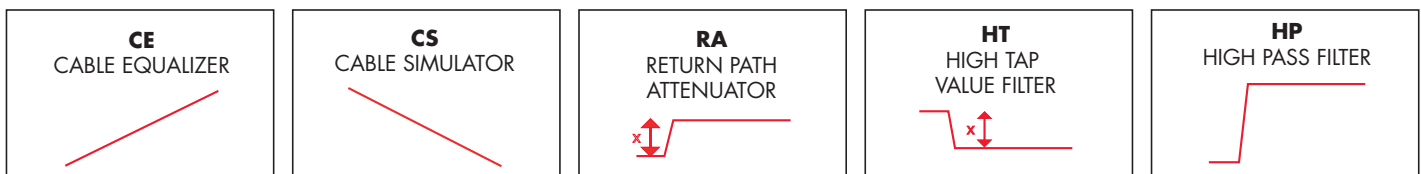
- It adds attenuation in the return path without affecting the forward path allowing the cable modem to operate at a higher output level increasing the carrier to noise/ingress ratio.
- It attenuates any ingress or noise coming from the subscriber premise thus improving the reliability of the return path.
- It prevents the return fiber transmitters from going into clipping.
- It is available in a variety of values to meet your design criteria.

High Tap Value Plug-in (HT): The High Tap Value Plug-in is used in system designs that are utilizing amplifiers with high outputs, high value taps and cable modems. The advantages of the High Tap Value Plug-in are:

- It lowers the return path attenuation in high value taps allowing the cable modem to overcome the large passive loss associated with these taps.
- It increases the carrier to noise/ingress of the cable modem signal.
- It is available in a variety of values to meet your design criteria.

High Pass Filter (HP): The High Pass Filter is used in systems deploying cable modem services. The advantages of the high pass filter are:

- It eliminates ingress and noise generated from the customer premises from getting into the return path.
- It allows high pass filtering on all tap ports using one filter.
- Cost savings, one filter verses 2, 4 or 8.



PRODUCT ORDERING GUIDE

Milenium Multitaps: Part Number Selection and Options

MODEL	SERIES	OUTPUT	TAP VALUE	BANDWIDTH	NIU SUBSCRIBER POWER	CONDITIONER SOCKET	HOUSING & BASEPLATE SELECTION
XXX	X	X	XX	-S	XX	E	/XX
Select One	Select One	Select One	Select One		Select One		Select One
MGT Standard 1GHz	2 2000 Fixed DC	2 Output Baseplate	04,08,11,14,17, 20,23,26,29,32 dB	S 5-1000MHz	FP F-Port Powered	E Conditioner Socket	/P Baseplate Only
AGT Addressable 1 GHz	3 3000 Plug In DC	4 Output Baseplate	08,11,14,17,20, 23,26,29,32,35 dB		DP F-Port Powered in EAC Housing		/9 Horizontal & Vertical Mount Dual Compartment Baseplate & Housing (Includes USP)
		8 Output Baseplate	12,15,18,21,24, 27,30,33,36,39 dB		TP Twisted Pair Powered in EAC Housing		/9SB2 Horizontal Mount Only Dual Compartment Baseplate & Housing (Includes USP)
					Leave Blank NoPowering		/U Uninterrupted Signal and Power
					NOTE: All Powered Multitaps have USP		

LEQ-PEA: Part Number Selection and Options

MODEL	FORWARD	FORWARD (FOR LE OR LS PLUG IN)	FORWARD (FOR LE OR LS PLUG IN)	REVERSE	REVERSE (AP ONLY)	HOUSING & BASEPLATE SELECTION
LEQ-PEA	-XX	XX	-XX	/XX	XX	/X
	Select One	Select One	Select One	Select One	Select One	Select One
	LE Plug in Cable Equalizer	75 750 MHz Bandwidth	08 dB	AP Plug in Attenuator Pad	01-16,18 dB	/P Baseplate Only
	LS Plug in Cable Simulator	86 860 MHz Bandwidth	11 dB (750 MHz Only)	Leave Blank AP-00 (Jumper)		/U Uninterrupted Signal and Power
	Leave Blank JP-Plug in Jumper					

E-Plug-In Conditioners: Part Number Selection and Options



PLUG IN CONDITIONER	CONDITIONER VALUE
XX	-XX
Option	Select One
CE Cable Equalizer	02,04,06,08,10,12,14 or 16 (dB)
CS Cable Simulator	03,06,09, or 12 (dB)
RA Return Path Block Attenuator	02,04,06,08,10,12,14,16 or 18 (dB)
HT High Tap Filter	03,06,09,12 or 15 (dB)
HP High Pass Filter	52 or 54
JP Jumper JP is shipped with all E version unless indicated	

PRODUCT INDEX

Model No.	Description
MULTITAPS	
VIDEO	
MGT2200-SE/U	2-OUTPUT MULTITAP 5 - 1000 MHZ WITH USP
MGT2400-SE/U	4-OUTPUT MULTITAP 5- 1000 MHZ WITH USP
MGT2800-SE/U	8-OUTPUT MULTITAP 5 - 1000 MHZ WITH USP
VIDEO WITH PLUG IN DC	
MGT3200-SE/U	2-OUTPUT MULTITAP 5 - 1000 MHZ WITH PLUG IN D.C.
MGT3400-SE/U	4-OUTPUT MULTITAP 5 - 1000 MHZ WITH PLUG IN D.C.
MGT3800-SE/U	8-OUTPUT MULTITAP 5 - 1000 MHZ WITH PLUG IN D.C.
MDC	PLUG-IN DC MDC-00, 04, 07, 10, 13, 16, 19, 22, 25
LMDC (INDIVIDUAL)	PLUG-IN DC LABEL (INDIVIDUAL) LMDC-4, 8, 11, 12, 14, 15, 17, 18, 20, 21, 23, 24, 26, 27, 29, 30, 32, 33
LMDC (SET)	PLUG-IN DC LABEL (SET) LMDC-00, 04, 07, 10, 13, 16, 19, 22, 25
CONDITIONING AT THE TAP: E-OPTION	
E-OPTION	CONDITIONING SOCKET WITH JUMPER
RA	RETURN PATH BLOCK ATTENUATION RA-02, 04, 06, 08, 10, 12, 14, 16, 18
CE	CABLE EQUALIZER CE-02, 04, 06, 08, 10, 12, 14, 16
CS	CABLE SIMULATOR CS-03, 06, 09, 12
HT	HIGH TAP VALUE PLUG-IN HT-03, 06, 09, 12, 15
HP	HIGH PASS FILTER HP-52, 54
ADDRESSABLE TAPS	
AGT3200-SE/U	ADDRESSABLE MULTITAP 5 - 1000 MHZ
AGT3400-SE/U	ADDRESSABLE MULTITAP 5 - 1000 MHZ
AGT3800-SE/U	ADDRESSABLE MULTITAP 5 - 1000 MHZ
ACU-3000A	HEADEND CONTROLLER
NIU SUBSCRIBER POWERING	
MGT2200-SDPE/U	2-OUTPUT MULTITAP/DROP POWER THRU F-PORT
MGT2400-SDPE/U	4-OUTPUT MULTITAP/DROP POWER THRU F-PORT
MGT2800-SDPE/U	8-OUTPUT MULTITAP/DROP POWER THRU F-PORT
MGT2200-SDP2E/U	2-OUTPUT MULTITAP/DROP POWER THRU F-PORT/700 mA
MGT2400-SDP2E/U	4-OUTPUT MULTITAP/DROP POWER THRU F-PORT/700 mA
MGT2200-SFP/U	2-OUTPUT MULTITAP/F-PORT POWER
MGT2400-SFP/U	4-OUTPUT MULTITAP/F-PORT POWER
MGT2800-SFP/U	8-OUTPUT MULTITAP/F-PORT POWER
	*** E-OPTION IS NOT AVAILABLE IN THE 8-WAY FP.
MGT2200-STP/U	2-OUTPUT MULTITAP/TWISTED PAIR POWER
MGT2400-STP/U	4-OUTPUT MULTITAP/TWISTED PAIR POWER
MGT2800-STP/U	8-OUTPUT MULTITAP/TWISTED PAIR POWER

PRODUCT INDEX

DUAL COMPARTMENT

MGT2200-SE/9	2-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL AND VERTICAL
MGT2400-SE/9	4-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL AND VERTICAL
MGT2800-SE/9	8-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL AND VERTICAL
MGT2200-SE/9SB2	2-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL
MGT2400-SE/9SB2	4-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL
MGT2800-SE/9SB2	8-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL
MGT3200-SE/9SB2	2-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL W/ PLUG IN D.C.
MGT3400-SE/9SB2	4-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL W/ PLUG IN D.C.
MGT3800-SE/9SB2	8-OUTPUT MULTITAP/DUAL COMPARTMENT - HORIZONTAL W/ PLUG IN D.C.

*dB VALUES FOR ALL MULTITAPS ARE AS FOLLOWS:

2-OUTPUT (4,8,11,14,17,20,23,26,29,32)
4-OUTPUT (8,11,14,17,20,23,26,29,32,35)
8-OUTPUT (12,15,18,21,24,27,30,33,36,39)

BASEPLATES

AGT3200-SE/P	ADDRESSABLE BASEPLATE 5 - 1000 MHZ
AGT3400-SE/P	ADDRESSABLE BASEPLATE 5 - 1000 MHZ
AGT3800-SE/P	ADDRESSABLE BASEPLATE 5 - 1000 MHZ
LEQ-PEA/P	EQUALIZER- BASEPLATE ONLY INCLUDES, ONE FORWARD JUMPER AND ONE APOO (JUMPER) IN THE REVERSE
LEQ-PEA-L()**-**/AP**/P	EQUALIZER- BASEPLATE ONLY WITH PLUG-IN FORWARD AND REVERSE. UNIT INCLUDES: USP, ONE FORWARD AND ONE REVERSE ATTENUATOR. (SELECT ONE PLUG IN CONDITIONER FROM THE LIST SHOWN BELOW AND ONE ATTENUATOR AS SHOWN BELOW)
LEQ-PEA-L()**-**/P	EQUALIZER- BASEPLATE ONLY WITH PLUG-IN FORWARD AND ONE APOO (JUMPER) IN THE REVERSE. UNIT INCLUDES: USP AND ONE FORWARD. (SELECT ONE PLUG IN CONDITIONER FROM THE LIST SHOWN BELOW)
LEQ-PEA/AP**/P	EQUALIZER- BASEPLATE ONLY WITH ONE FORWARD JUMPER AND REVERSE ATTENUATOR. UNIT INCLUDES: USP, ONE REVERSE ATTENUATOR. (SELECT ONE ATTENUATOR MODEL AP AS SHOWN BELOW) LE**- EQUALIZER-BANDWIDTH (SELECT ONE): 75 (750 MHZ) OR 86 (860 MHZ) LS**- SIMULATOR-BANDWIDTH (SELECT ONE): 75 (750 MHZ) OR 86 (860 MHZ) **- / - EQ VALUE (SELECT ONE): 08 (8 DB) OR 11 (11DB) AP** - RETURN ATTENUATION (SELECT ONE) - VALUE OF RETURN ATTENUATION (00, 01-16 ONE DB STEPS & 18) NO ATTENUATION (JUMPER- APOO) LEAVE BLANK. *** SEE THE "LINE EQUALIZERS" SECTION FOR THE PLUG-IN CONDITIONERS.
LEQ-FBW/P	FULL BANDWIDTH EQUALIZER-BASEPLATE ONLY
MGT2200-SE/P	2-OUTPUT BASEPLATE WITH CONDITIONER JUMPER "JP"
MGT2400-SE/P	4-OUTPUT BASEPLATE WITH CONDITIONER JUMPER "JP"
MGT2800-SE/P	8-OUTPUT BASEPLATE WITH CONDITIONER JUMPER "JP"

MGT3200-SE/P	2-OUTPUT BASEPLATE WITH PLUG IN D.C.
MGT3400-SE/P	4-OUTPUT BASEPLATE WITH PLUG IN D.C.
MGT3800-SE/P	8-OUTPUT BASEPLATE WITH PLUG IN D.C.
MGT2200-SFP/P	2-OUTPUT BASEPLATE/F-PORT POWER
MGT2400-SFP/P	4-OUTPUT BASEPLATE/F-PORT POWER
MGT2800-SFP/P	8-OUTPUT BASEPLATE/F-PORT POWER
MGT2200-SDPE/P	2-OUTPUT DROP POWER BASEPLATE W/EAC
MGT2400-SDPE/P	4-OUTPUT DROP POWER BASEPLATE W/EAC
MGT2800-SDPE/P	8-OUTPUT DROP POWER BASEPLATE W/EAC
MGT2200-STP/P	2-OUTPUT BASEPLATE/TWISTED PAIR POWER
MGT2400-STP/P	4-OUTPUT BASEPLATE/TWISTED PAIR POWER
MGT2800-STP/P	8-OUTPUT BASEPLATE/TWISTED PAIR POWER
MGT2220R-S/P	REVERSE TEST BASEPLATE

MAIN LINE PASSIVES

MGLSH-2F	TWO-WAY LINE SPLITTER W/FUSES AND HIGH CURRENT
MGLSH-3F	THREE-WAY LINE SPLITTER W/FUSES AND HIGH CURRENT
MGLSH-3BF	THREE-WAY LINE SPLITTER BALANCED W/FUSES AND HIGH CURRENT
MGDCH-2108F	DIRECTIONAL COUPLER 8 DB W/FUSES AND HIGH CURRENT
MGDCH-2112F	DIRECTIONAL COUPLER 12 DB W/FUSES AND HIGH CURRENT
MGDCH-2116F	DIRECTIONAL COUPLER 16 DB W/FUSES AND HIGH CURRENT
MGPIH-2000F	POWER INSERTER W/FUSES AND HIGH CURRENT

SURGE PROTECTION

MGLSH-2FAC	TWO-WAY LINE SPLITTER W/FUSES AND HIGH CURRENT- SURGE PROTECTION
MGLSH-3FAC	THREE-WAY LINE SPLITTER W/FUSES AND HIGH CURRENT- SURGE PROTECTION
MGLSH-3BFAC	THREE-WAY LINE SPLITTER BALANCED W/FUSES AND HIGH CURRENT - SURGE PROTECTION
MGDCH-2108FAC	DIRECTIONAL COUPLER 8 DB W/FUSES AND HIGH CURRENT - SURGE PROTECTION
MGDCH-2112FAC	DIRECTIONAL COUPLER 12 DB W/FUSES AND HIGH CURRENT - SURGE PROTECTION
MGDCH-2116FAC	DIRECTIONAL COUPLER 16 DB W/FUSES AND HIGH CURRENT - SURGE PROTECTION
MGPIH-2000FAC	POWER INSERTER W/FUSES, HIGH CURRENT W/ PSP-3 PLUG IN SURGE PROTECTION
MGPIH-2000AC	POWER INSERTER W/FUSES, HIGH CURRENT W/ BUILT IN ANTRONIX SURGE PROTECTION
PSP-3	CONVERT A STANDARD HIGH CURRENT POWER INSERTER W/ THE PSP-3 PLUG IN SURGE PROTECTION

ALL MAIN LINE PASSIVES ARE ASSEMBLED WITH THE PC BOARD ON THE BASEPLATE. MAIN LINE PASSIVES CAN BE SPECIAL ORDERED WITH THE BASEPLATE ASSEMBLED IN THE HOUSING - USE OPTION C WHEN ORDERING.

LINE EQUALIZERS

LEQ-PEA/U	EQUALIZER- INCLUDES USP, ONE FORWARD JUMPER AND ONE APOO (JUMPER) IN THE REVERSE
LEQ-PEA-L()**.***/AP**/U	EQUALIZER WITH PLUG-IN FORWARD AND REVERSE. UNIT INCLUDES: USP, ONE FORWARD AND ONE REVERSE ATTENUATOR. (SELECT ONE PLUG IN CONDITIONER FROM THE LIST SHOWN BELOW AND ONE ATTENUATOR AS SHOWN BELOW)
LEQ-PEA-L()**.***/U	EQUALIZER WITH PLUG-IN FORWARD AND ONE APOO (JUMPER) IN THE REVERSE. UNIT INCLUDES: USP AND ONE FORWARD. (SELECT ONE PLUG IN CONDITIONER FROM THE LIST SHOWN BELOW)
LEQ-PEA/AP**/U	EQUALIZER WITH ONE FORWARD JUMPER AND REVERSE ATTENUATOR. UNIT INCLUDES: USP, ONE REVERSE ATTENUATOR. (SELECT ONE ATTENUATOR MODEL AP AS SHOWN BELOW)

PRODUCT INDEX

LE** - EQUALIZER-BANDWIDTH (SELECT ONE): 75 (750 MHZ) OR 86 (860 MHZ)
LS** - SIMULATOR-BANDWIDTH (SELECT ONE): 75 (750 MHZ) OR 86 (860 MHZ)
**/ - EQ VALUE (SELECT ONE): 08 (8 DB) OR 11 (11DB)
AP** - RETURN ATTENUATION (SELECT ONE) - VALUE OF RETURN ATTENUATION
(00, 01-16 ONE DB STEPS & 18)
NO ATTENUATION (JUMPER- APO0) LEAVE BLANK.

PLUG-IN CONDITIONERS

LE	PLUG-IN CABLE EQUALIZER
LS	PLUG-IN CABLE SIMULATOR
AP	PLUG-IN ATTENUATOR PAD
JP	PLUG-IN JUMPER
LEQ11-750-42B/U	FIXED EQUALIZER FOR 11dB OF CABLE AT 750MHz WITH USP
LEQ8-860-42/U	FIXED EQUALIZER FOR 8dB OF CABLE AT 860MHz WITH USP
LEQ-FBW/U	FULL BANDWIDTH EQUALIZER WITH USP
AGEQ-870-8	870 MHz PLUG IN EQUALIZER FOR THE LEQ-FBW/U, 8dB
AGEQ-870-11	870 MHz PLUG IN EQUALIZER FOR THE LEQ-FBW/U, 11dB
AGEQ-750-8	750 MHz PLUG IN EQUALIZER FOR THE LEQ-FBW/U, 8dB
AGEQ-750-11	750 MHz PLUG IN EQUALIZER FOR THE LEQ-FBW/U, 11dB

TOOLS & ACCESSORIES

IJT-2000	INSTALLATION JUMPER TOOL-FOR AERIAL MOUNTED BASEPLATES
IJT-1000F	PEDESTAL MOUNT- RF/AC JUMPER TOOL
CL-350	350 MILLIAMPER CURRENT LIMITER
CL-480C	480 MILLIAMPER CURRENT LIMITER
CLT-350	TOOL FOR INSERTION/REMOVAL OF CURRENT LIMITER
2000-BP	FEED THROUGH BASEPLATE
MGT2000/U	STANDARD 5-1/4" HOUSING W/ USP FEATURE
MTH3009	9" DUAL COMPARTMENT HOUSING
MTH3009SB2	9" DUAL COMPARTMENT HOUSING - HORIZONTAL ONLY
SPBLG	SPLICE BLOCK