

Trust Your
ADVANCED INFRASTRUCTURE
with the
LINEAR SERIES



Advanced system diagnostics show that quality passives save money by dramatically improving signal strength and reducing service calls.

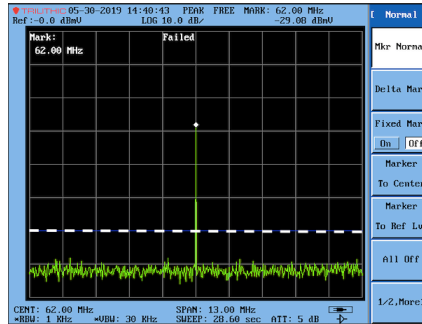
Learn more about how the Amphenol Broadband Solutions Linear Series is your full line of essential broadband digital passives for a reliable network.

Linearity Is Essential For A Reliable Network

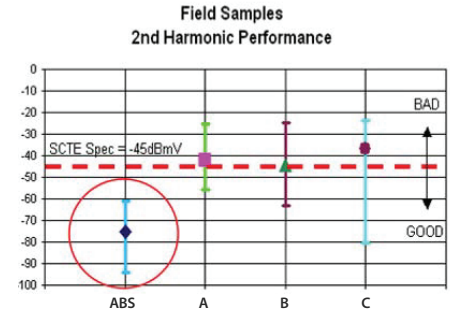
How can you be certain the passives you buy and install today won't deteriorate or fail in two or three years, creating significant and unnecessary service costs for your network?

To ensure performance longevity, Amphenol Broadband linear passives are designed to handle potential high-level RF power e.g. DOCSIS 3.1 (2 +65dBmV).

High-signal levels can saturate and magnetize the ferrite core. Saturation resilient ferrite material will greatly reduce potential passive intermodulation, mainly 2nd and 3rd harmonic carriers that can potentially cause co-channel interference with downstream QAM carriers.



Sample groups of splitters in service for over 3 years show that Amphenol Broadband's passives exceed the SCTE specification, while 3 other brands failed.

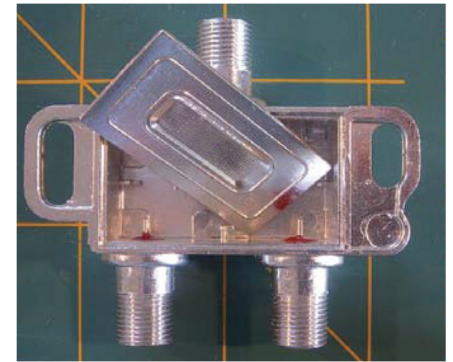


Second harmonic distortion indicates a lack of linearity which creates interference in the forward band from high-power modern signals in the reverse band.

Quality Design

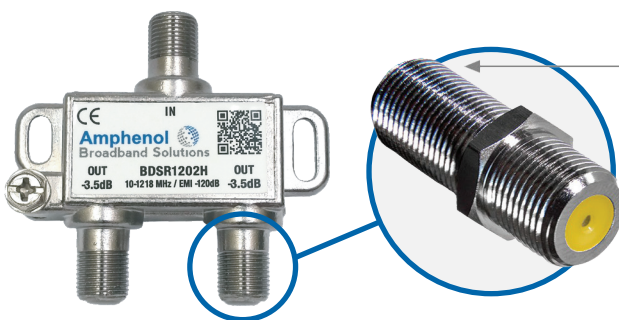
At Amphenol Broadband, quality design begins with a well-made housing. The primary elements of the housing are the base metal, the tooling, the plating and the finish.

- **Tooling & Finish:** Our splitters are highly polished to a smooth finish that resists micro-pooling of environmental agents. Parting lines along the ports have been eliminated to ensure an optimum weather seal.
- **Base Metal & Plating:** Zinc alloy is plated with NiSn to make the housing electrochemically compatible with the connectors. The back plate is also cast from zinc alloy. NiSn plating offers a dependable surface for soldering the back plate to the housing.



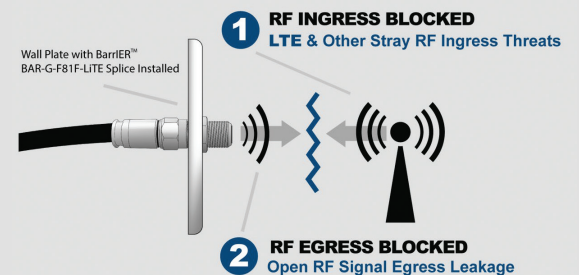
A channel between the back plate and the housing creates a solder well to ensure reliable EMI containment.

Minimizing broadband noise is a longstanding CATV system network challenge. Excess noise limits data throughput restricting services. Optional **Barrier™ LiTE** is a technology addressing noise corruption within CATV networks.



- Standard F-Female
- Color Coded Insulators Simplify Installation
- Barrier™ LiTE F-Female

Signal Containment in RF Systems:



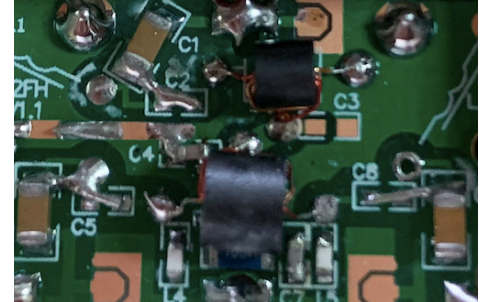
Quality Components

Quality components begin with the right materials. The primary components in Amphenol Broadband's passives devices consist of:

- **Low-intermod ferrite inductors with LAF technology**
- **High Voltage surface mount capacitors**
- **Durable low loss Print Circuit Board material**

The ferrite material that forms the core of the RF transformers is a highly complex ceramic. The linearity of the signals passing through these transformers can easily be degraded by the wrong blend of ferrite materials. This is where the real differences in splitter performance lie.

Perhaps even more important than the components themselves, is the circuit board layout. In our circuit boards, the signal path is carefully tuned to optimize the efficiency of the signal transmission at each component interface.



Our circuit boards are carefully laid out using surface mount technology for more robust signal paths.



Every unit is carefully tuned and tested individually using a network analyzer.

Quality Manufacturing

The quest to make the highest quality passives possible doesn't stop at design and components.

Quality in manufacturing is critical too, and requires dedication and skill. Our production teams work closely with our engineering experts to optimize the assembly process so that every splitter we make not only meets our high standards, but yours as well.

About Amphenol Broadband Solutions

Amphenol Broadband Solutions is the most diverse and experienced communications engineering team in the industry. With expertise in RF, Fiber Optics and Wireless technologies, our state-of-the-art engineering and manufacturing teams deliver improved logistics, faster response times and increased performance and reliability.

Count on Amphenol Broadband to deliver top quality passives that reduce your maintenance costs and help to maintain your reputation as a reliable service provider.



Description:

The Linear Series is a full line of broadband digital splitters and taps designed to be the industry's optimum DOCSIS 3.1 ready passive products. Providing future proof RF performance and long-term reliability through design excellence, innovation and quality manufacturing. Fully solder zinc die cast housing and backplate ensures the best electrical and mechanical integrity. Precisely engineered components and materials guarantee linear performance under every environment.

Trust your network with the Amphenol Broadband Solutions Linear Series.

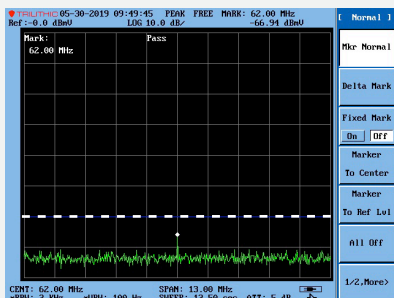


Model
BDSR1202H

Features & Benefits:

DOCSIS 3.1 Ready Performance:

- High performance out to 1.2 GHz
- Return loss shown is actual Min. dB across full frequency spectrum (not degraded by $F \geq 40$ MHz -1.5dB per octave) providing enhanced return loss at 1.2 GHz
- Ultra-high EMI shielding effectiveness 120dBc future proofing against possible 4G/5G in-band RF interference
- Enhanced passive intermodulation performance -115dBc after 1KV pulse and Electromagnet test on all ports and upstream OFDM carrier levels up to 65dBmV
 - Avoiding possible passive second harmonic co-channel interference with downstream QAM channels
 - Avoiding possible second harmonic interference within 5-200 MHz OFDM upstream carrier
 - Unique splitter Ferrite (LAF) technology with enhanced linear performance and low insertion loss at 1218 MHz



Design:

- NiSn plated or White Bronze (optional) zinc die-cast housing, F-ports and inner contact spring minimising possible CPD due to galvanic material mismatch
- Induction soldered zinc die-cast back plate avoiding potential component damage due to excessive heat, which can degrade the MTBF (Mean Time Between Failure) of the device
- All Port Voltage protection that works from 0-1000V unlike other solutions, which require a minimum voltage (e.g. 500V) before the protection activates. This further enhances the internal component long-term reliability
- Capacitive coupled F-ports prevent hum modulation
- Machined F-ports pressure sealed
- QR code provides additional product information

Compliance & Certification:

- RoHS Compliant
- Built to SCTE standards
- CE Marked

Additional Info:

**Horizontal Broadband Digital Splitter Series
Model BDSR1200H Specifications**



Insertion Loss	Frequency(MHz)	BDSR1202H	BDSR1203H	BDSR1203HB	BDSR1204H	BDSR1206H
dB Max	12 - 65	3.7	3.8/7.3	6.0	7.3	9.0
	66 - 300	3.8	3.8/7.3	6.1	7.3	9.3
	301 - 550	3.9	3.9/7.4	6.3	7.4	9.6
	551 - 750	4.0	4.0/7.5	6.5	7.5	10.0
	751 - 862	4.0	4.0/7.5	6.5	7.5	10.4
	863 - 1006	4.1	4.1/8.0	7.0	8.0	10.6
	1007 - 1218	4.1	4.1/8.0	7.0	8.0	11.0

Isolation						
dB Min	12 - 65	30	30	30	30	30
	66 - 550	26	26	26	26	26
	551 - 1006	24	24	24	24	24
	1007 - 1218	21	21	21	21	21

Return Loss						
(Output/Input)	10 - 47	20	20	20	20	20
dB Min	48 - 950	18	18	18	18	18
	951 - 1218	16	16	16	16	16

Shielding						
dBc	12 - 1218	120	120	120	120	120

RoHS
Compliant

Surge Protection	
Input	1KV Combination Wave 1.2/50 us with 2 ohm source impedance
Output	1KV Combination Wave 1.2/50 us with 2 ohm source impedance

Second Harmonic
>115 dBc measured with 2 carriers at 60 and 65 MHz @ 60 dBmV per carrier before and after 10X 25V DC Pulses and 1KV Combination Wave 1.2/50 us with 2 Ohm Source Impedance (1 x positive, 1 x negative) on all ports

Customers are reminded they are SOLELY responsible for confirming that all products are properly installed and used in accordance with codes and regulations.

Additional Info:

**Topless Broadband Digital Splitter Series
Model BDSR1200T Specifications**



Insertion Loss	Frequency(MHz)	BDSR1202T	BDSR1203T	BDSR1203TB	BDSR1204T	BDSR1206T	BDSR1208T
dB Max	12 - 65	3.7	3.8/7.3	6.0	7.3	9.0	10.8
	66 - 300	3.8	3.8/7.3	6.1	7.3	9.3	10.8
	301 - 550	3.9	3.9/7.4	6.3	7.4	9.6	11.0
	551 - 750	4.0	4.0/7.5	6.5	7.5	10.0	11.3
	751 - 862	4.0	4.0/7.5	6.5	7.5	10.4	11.4
	863 - 1006	4.1	4.1/8.0	7.0	8.0	10.6	11.5
	1007 - 1218	4.1	4.1/8.0	7.0	8.0	11.0	12.0

Isolation							
dB Min	12 - 65	30	30	30	30	30	30
	66 - 550	26	26	26	26	26	26
	551 - 1006	24	24	24	24	24	24
	1007 - 1218	21	21	21	21	21	21

Return Loss							
(Output/Input)	10 - 47	20	20	20	20	20	20
dB Min	48 - 950	18	18	18	18	18	18
	951 - 1218	16	16	16	16	16	16

Shielding							
dBc	12 - 1218	120	120	120	120	120	120

RoHS
Compliant

Surge Protection	
Input	1KV Combination Wave 1.2/50 us with 2 ohm source impedance
Output	1KV Combination Wave 1.2/50 us with 2 ohm source impedance

Second Harmonic
>115 dBc measured with 2 carriers at 60 and 65 MHz @ 60 dBmV per carrier before and after 10X 25V DC Pulses and 1KV Combination Wave 1.2/50 us with 2 Ohm Source Impedance (1 x positive, 1 x negative) on all ports

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Additional Info:

Horizontal Broadband Digital Tap Series
Model BDCR12100H 1 Output Specifications



Insertion Loss	Frequency(MHz)	BDCR12106H	BDCR12108H	BDCR12110H	BDCR12112H	BDCR12116H	BDCR12120H	BDCR12124H
In to Out	12 - 65	2.8	1.8	1.4	1.0	0.9	0.9	0.9
dB Max	66 - 300	2.8	1.8	1.4	1.0	0.9	0.9	0.9
	301 - 550	2.8	2.0	1.6	1.2	1.0	1.0	1.0
	551 - 750	2.9	2.2	1.8	1.4	1.2	1.2	1.2
	751 - 862	2.9	2.2	1.9	1.5	1.2	1.2	1.2
	863 - 1006	3.2	2.4	2.0	1.7	1.4	1.4	1.4
	1007 - 1218	3.5	2.7	2.5	2.2	1.7	1.5	1.4

Insertion Loss

In to Tap	12 - 65	6.5	8.5	10.5	12.5	16.0	20.0	24.0
dB Max	66 - 862	6.5	8.5	10.5	12.5	16.0	20.0	24.0
	863 - 1218	6.5	8.5	10.5	12.5	16.0	20.0	24.0

Isolation

Tap to Tap	12 - 65	N/A	N/A	N/A	N/A	N/A	N/A	N/A
dB Min	66 - 550	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	551 - 1006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1007 - 1218	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Isolation

Out to Tap	12 - 65	25	28	29	30	35	38	41
dB Min	66 - 550	23	25	28	30	32	35	38
	551 - 1006	20	20	21	22	28	30	32
	1007 - 1218	18	18	19	20	25	26	27

Return Loss

(Output/Input)	12 - 860	20	20	20	20	20	20	20
dB Min	861 - 1002	18	18	18	18	18	18	18
	1003 - 1218	16	16	16	16	16	16	16

Shielding

dBc	12 - 1218	110	110	110	110	110	110	110
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RoHS

Compliant

Surge Protection

Input	6kV/200A Ring Wave
Output	6kV/200A Ring Wave

Second Harmonic

>115 dBc measured with 2 carriers at 60 and 65 MHz @ 60 dBmV per carrier before and after 10X 25V DC Pulses and 1KV Combination Wave 1.2/50 us with 2 Ohm Source Impedance (1 x positive, 1 x negative) on all ports

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Additional Info:

Horizontal Broadband Digital Tap Series Model BDCR12200H 2 Output Specifications



Insertion Loss	Frequency(MHz)	BDCR12208H	BDCR12210H	BDCR12212H	BDCR12216H	BDCR12220H	BDCR12224H
In to Out	12 - 65	4.4	3.0	1.6	1.4	1.2	1.1
dB Max	66 - 300	4.3	3.0	1.7	1.6	1.2	1.0
	301 - 550	4.3	3.0	1.8	1.7	1.3	1.0
	551 - 750	4.3	3.1	1.9	1.8	1.4	1.2
	751 - 862	4.3	3.1	1.9	1.8	1.4	1.2
	863 - 1006	4.4	3.4	2.4	1.9	1.7	1.6
	1007 - 1218	5.2	4.2	3.2	2.5	2.3	2.2

Insertion Loss

In to Tap	12 - 65	8.5	10.5	12.0	16.0	20.0	24.0
dB Max	66 - 862	8.5	10.5	12.0	16.0	20.0	24.0
	863 - 1218	8.5	10.5	12.0	16.0	20.0	24.0

Isolation

Tap to Tap	12 - 65	40	40	40	40	40	40
dB Min	66 - 550	35	35	36	36	36	36
	551 - 1006	29	29	30	30	30	30
	1007 - 1218	28	29	30	30	30	30

Isolation

Out to Tap	12 - 65	27	29	31	35	39	43
dB Min	66 - 550	24	26	28	32	36	40
	551 - 1006	22	23	24	28	32	36
	1007 - 1218	20	21	22	26	28	30

Return Loss

(Output/Input)	10 - 47	20	20	20	20	20	20
dB Min	48 - 950	18	18	18	18	18	18
	951 - 1218	16	16	16	16	16	16

Shielding

dBc	12 - 1218	120	120	120	120	120	120
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RoHS

Compliant

Surge Protection

Input	1KV Combination Wave 1.2/50 us with 2 ohm source impedance
Output	1KV Combination Wave 1.2/50 us with 2 ohm source impedance

Second Harmonic

>115 dBc measured with 2 carriers at 60 and 65 MHz @ 60 dBmV per carrier before and after 10X 25V DC Pulses and 1KV Combination Wave 1.2/50 us with 2 Ohm Source Impedance (1 x positive, 1 x negative) on all ports

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Additional Info:

**Vertical True Flex Broadband Digital Tap Series
Model BDCR12400VF 4 Output Specifications**



Insertion Loss	Frequency(MHz)	BDCR12410VF	BDCR12412VF	BDCR12416VF	BDCR12420VF
In to Out	12 - 65	3.0	1.6	1.4	1.2
dB Max	66 - 300	3.0	1.7	1.6	1.2
	301 - 550	3.0	1.8	1.7	1.3
	551 - 750	3.1	1.9	1.8	1.4
	751 - 862	3.1	1.9	1.8	1.4
	863 - 1006	3.4	2.4	1.9	1.7
	1007 - 1218	4.2	3.2	2.5	2.3

Insertion Loss					
In to Tap	12 - 65	10.5	12.0	16.0	20.0
dB Max	66 - 862	10.5	12.0	16.0	20.0
	863 - 1218	10.5	12.0	16.0	20.0

Isolation					
Tap to Tap	12 - 65	40	40	40	40
dB Min	66 - 550	36	36	36	36
	551 - 1006	30	30	30	30
	1007 - 1218	30	30	30	30

Isolation					
Out to Tap	12 - 65	29	31	35	39
dB Min	66 - 550	26	28	32	36
	551 - 1006	22	24	28	32
	1007 - 1218	20	22	26	28

Return Loss					
(Output/Input)	10 - 47	20	20	20	20
dB Min	48 - 950	18	18	18	18
	951 - 1218	16	16	16	16

Shielding					
dBc	12 - 1218	120	120	120	120

RoHS Compliant

Surge Protection	
Input	1KV Combination Wave 1.2/50 us with 2 ohm source impedance
Output	1KV Combination Wave 1.2/50 us with 2 ohm source impedance

Second Harmonic
>115 dBc measured with 2 carriers at 60 and 65 MHz @ 60 dBmV per carrier before and after 10X 25V DC Pulses and 1KV Combination Wave 1.2/50 us with 2 Ohm Source Impedance (1 x positive, 1 x negative) on all ports

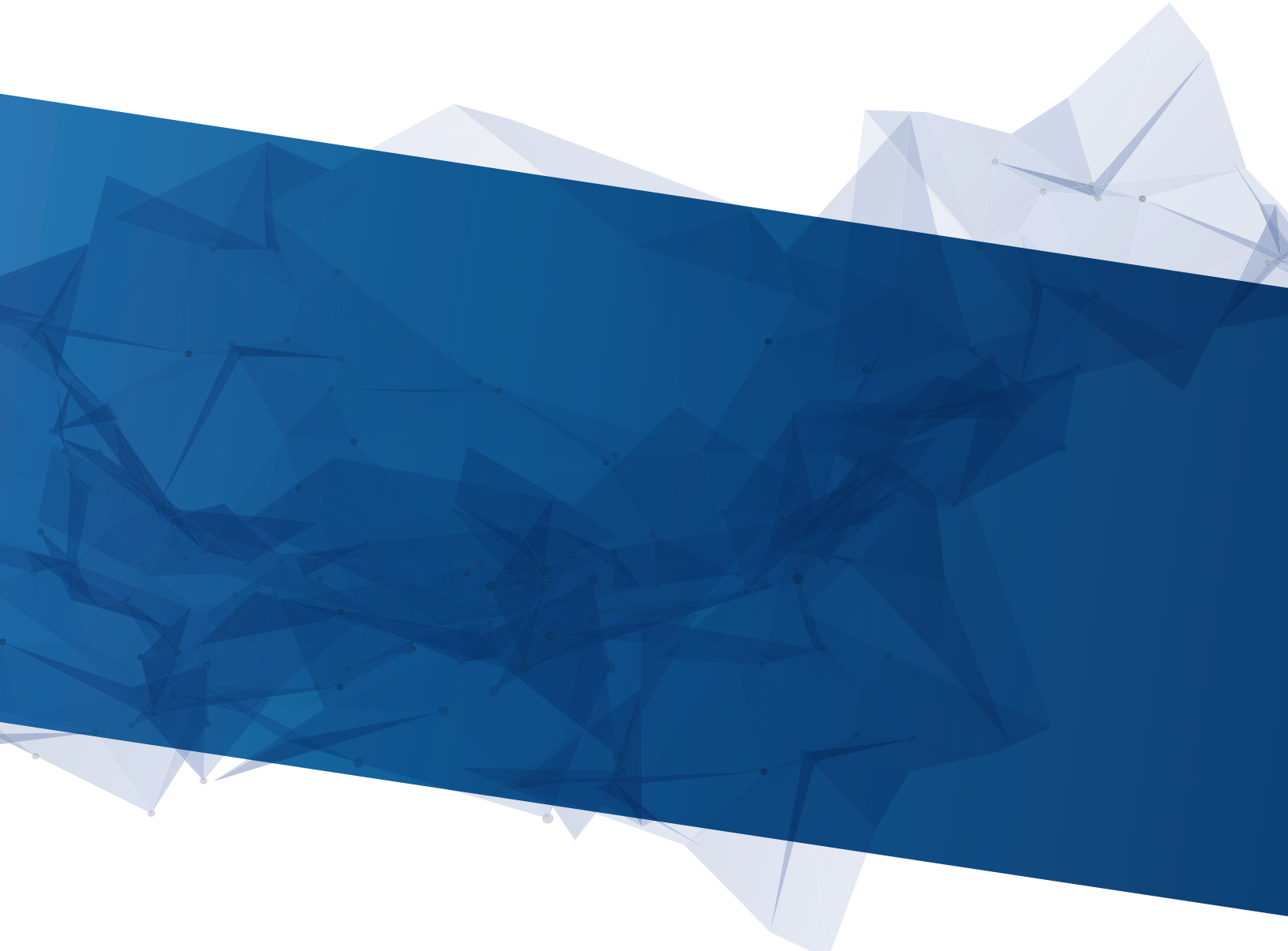
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General Specifications:

Electrical Specifications:	
Linear Series	All Types
Frequency Range	5-1218 MHz
Nominal Impedance	75 Ohm
Shielding Effectiveness	120dBc Min.
All Port Surge Immunity	1kV Combination Wave (IEC 61000-4-5)
Intermodulation RF CW Level 60dBmV f1 = 60 MHz f2 = 65 MHz 2f1 = 120 MHz f1+f2 = 125 MHz 2f2 = 130 MHz	2f1 = -115dBc Min. f1+f2 = -115dBc Min. 2f2 = -115dBc Min. (After 1kV Pulse On All Ports) (During Electromagnet Test)
Operating Temperature	LGI Spec -15° C to +45° C

Mechanical Specifications:	
Linear Series	All Types
Housing	Zinc Diecast NiSn or White Bronze Plating
Back Plate	Zinc Diecast Induction Soldered
Connectors	ANSI/SCTE 01 2006 IEC 61169-24 Machined (NiSn or White Bronze Plated)
F Inner Contact Spring	Phosphor Bronze NiSn or White Bronze Plated Pin Acceptance 0.51mm to 1.3mm Pin Withdrawal Force ≥ 0.30N Pin Insertion Force ≤ 25N
Operating Temperature	LGI Spec -40° C to +60° C
Corrosion Tested	Salt Mist Test (IEC 60068-2-52:1996) 672 Hrs (4 Cycles) Severity 5
Vibration	IEC 60068-2-6 1995

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