

TBN 1-way tap



- **Ultra high quality headend and cabinet grade 1-way tap**
- **Excellent intermodulation performance by ferrite (1.2/50µs surge)**
- **CPD Safe™ - Tin-Nickel housing and F-inner spring plating**
- **Operational temperature range from -25°C to +70°C**
- **Isolated mounting facility with cable underpass**
- **Exceeds EN Class A screening requirements**



Overview

Brilliant Line products offer a complete line of high frequency splitters and taps that have been developed for high volume applications within the local loop.

The products are tested under extreme conditions, components in a local loop may be required to operate near salt water, along busy highways and in either very hot or cold ambient temperatures. Therefore these products are tested for Salt Spray, Vibration, Damp Heat and Operational Temperature ranges from -25°C to +70°C.

The Brilliant Line employs specially developed magnesium/ferrite materials so that insertion and return losses are minimal.

The TBN range is a special series of taps developed and added to the Brilliant Line series in order to ensure maximum CPD protection. The housings of these models are made of zinc die-cast finished with a Tin-Nickel (nickel-tin) plating and have specially designed F-connectors. These "press-in" F-connectors fit perfectly in their housings by means of double-D holes, ensuring that torque-and cantilever forces far exceed appropriate standards. For an even better HF-performance and CPD reduction, the press-in connectors are directly soldered to the PCB and made of brass covered with a Tin-Nickel plating. This also offers optimum anti-corrosion resistance and screening effectiveness.

Conventional connectors made of zinc can suffer from cold flow, resulting in loose connectors. Laboratory and field tests with brass connectors show that this cold flow effect is reduced close to zero using the much harder brass material. The F-inner spring of this product series is made

of beryllium copper which provides exceptional resilience/contact pressure over a wide range of test gauges (0.51-1.30 mm).

All Brilliant Line models are designed for easy installation, even thicker connectors or filters can be mounted due to the ABS-brackets. The bracket isolates the unit from the mounting surface, not only preventing galvanic isolation corrosion caused by earth loops, but also hum modulation. Additionally the bracket offers the possibility to underpass (multi-taps excluded) a coaxial cable for compact and neat installation. If smaller outer dimensions are required, the bracket can be removed by hand or with a small tool.

Furthermore, all models have double grounding screws/facilities for easy linking and the multi-taps can be mounted both vertically and horizontally.

CPD Safe

CPD (Common Path Distortion) is well known for producing signal interference on networks. It is caused by electrolytic corrosion or the oxidisation of dissimilar metals when in close contact. CPD Safe technology protects against CPD.

- Removes a primary cause of CPD
- Reduces signal interference on the network
- Drives fewer reported faults
- Reduces truck rolls
- Improves customer service

Specifications

		MHz	6dB		8dB		10dB		12dB		16dB		20dB		24dB			
			Typ	Max	Typ	Max	Typ	Max	Typ	Max	Typ	Max	Typ	Max	Typ	Max		
Insertion loss (dB)	In to Out	5-65	2.1	2.4	1.5	1.8	0.9	1.2	0.7	0.9	0.3	0.5	0.4	0.6	0.4	0.6		
		65-300	2.1	2.4	1.4	1.7	0.9	1.2	0.6	0.9	0.3	0.5	0.3	0.6	0.3	0.6		
		300-550	2.0	2.4	1.4	1.7	1.0	1.3	0.7	0.9	0.4	0.6	0.4	0.6	0.5	0.6		
		550-750	2.1	2.4	1.6	1.9	1.1	1.4	0.8	1.0	0.6	0.8	0.6	0.8	0.6	0.8		
		750-862	2.2	2.5	1.8	2.1	1.2	1.5	1.0	1.2	0.7	0.9	0.8	1.0	0.7	1.0		
		862-1006	2.2	2.6	1.8	2.2	1.2	1.6	1.0	1.3	0.7	0.9	0.8	1.1	0.7	1.1		
	In to Tap	5-65	6.4	7.2	9.0	9.4	11.1	11.4	12.6	13.0	16.4	16.9	20.1	20.4	24.1	24.4		
		65-550	6.3	6.8	8.5	9.0	10.8	11.1	12.2	12.5	16.3	16.6	19.8	20.2	23.9	24.2		
		550-1006	6.9	7.3	8.0	8.5	10.2	10.7	12.4	13.2	16.3	16.9	20.1	21.0	24.1	25.0		
	Return loss (dB, typ)	All ports	5-15	30.3		25.8		28.1		27.4		38.4		31.5		30.0		
			15-550	29.0		24.7		26.2		26.3		39.5		32.5		31.6		
			550-1006	25.1		25.5		20.1		20.1		31.2		23.8		23.9		
Isolation	Tap to Tap	65-550	Typ		Min		Typ		Min		Typ		Min		Typ		Min	
		550-1006	N/A															
Directivity	Out to Tap	5-65	45.2	26.0	33.3	28.0	34.6	30.0	47.4	32.0	51.0	34.0	53.2	36.0	55.4	38.0		
		65-550	32.7	26.0	34.9	28.0	34.5	30.0	41.6	32.0	48.7	34.0	47.5	36.0	53.6	38.0		
		550-1006	25.4	22.0	30.1	24.0	31.5	26.0	34.9	28.0	41.1	30.0	36.1	32.0	40.9	34.0		
Screening efficiency (dB) ¹		5-300	>95															
		300-470	>90															
		470-950	>85															
		950-1000	>85															
Shielding effectiveness (dBi) ²		5-300	Avg 130															
		300-1000	Avg 120															
Intermodulation p+q (min)	No surge ³	-122.0																
	25 V surge ⁴	-115.0																
	1 KV surge ⁵	-105.0																
Surge Class conformance ⁶	All ports	1 kV 1.2/50µs																
Connectors	In/Out/Tap	F-female																
Impedance (typ)		75 Ohm																
Dimensions	L x H x D	51.3x50.8x25.1																
Equipment Approval	CE																	

Remarks

1	Tested according to EN 50083-2 2006
2	Tested according to SCTE IPS-TP-403
3	Two carriers (50 & 55MHz), out to in, @ 120dBµV, before surge.
4	Two carriers (50 & 55MHz), out to in, @ 120dBµV, after 10 pulses (25V/1,2µS risetime/500µS duration) at all ports.
5	Two carriers (50 & 55MHz), out to in, @ 120dBµV, after 1 pulse 1KV (IEC 1000-4-5 level 2) at all ports.
6	Tested according to IEC 61000-4-5 2005
	DC power blocking on all F ports

Ordering information

Item Name	Article number
TBN-1-6	10100054
TBN-1-8	10100055
TBN-1-10	10100056
TBN-1-12	10100057
TBN-1-16	10100058
TBN-1-20	10100059
TBN-1-24	10100060
TBN-1-30	10100061

Measurements taken at room temperature

Mechanical & environmental specifications

Performance parameter	Details	
Connectors	Input & Output	F-female
Material	Housing	Tin-Nickel plated Zinc die cast
	Connectors	Tin-Nickel plated Brass
	Inner spring contact	Tin-Nickel plated Beryllium copper
Inner conductor range (mm)		0.56 to 1.30
Resilience inner spring (Gram)	at 0.56 mm innerconductor	125 (min), 150 (typ)
	at 1 mm innerconductor	200 (min), 250 (typ)
	at 1.3 mm innerconductor	250 (min), 300 (typ)
Cold¹ (IEC 60068-2-1:2007)	Specified Temp. Range	-15°C to +55°C (-5°F to +131°F)
	Operating Temp. Range	-25°C to +70°C (-77°F to +158°F)
Change of temperature² (IEC 60068-2-14:1984)	Low temp. (Ta)	-15 °C (+5°F)
	High temp. (Tb)	+55 °C (+131°F)
	Rate of temp. change	1°C per minute
	Number of cycles	2
	Exposure time	3 hours (at Ta&Tb)
Dry heat³ (IEC 60068-2-2:2007)	Temperature	+70°C (+158°F)
	Duration	16 hrs
	Rate of temp. change	1°C per minute
Damp heat⁴ (IEC 60068-2-30:2005)	Upper temperature	+40°C (+104°F)
	Number of cycles	21
Free fall (IEC 60068-2-32:1993)	Height	500mm (19.68 in)
	Number of drop for each impact point	2
	Attitudes	2
Salt mist, cyclic⁵ (IEC 60068-2-52:1996)	Severity	Severity 5
	Duration	672 hrs
	Number of cycles	4
Vibration⁶ (IEC 60068-2-6:1995)	Sweep rate	1 octave p/m
	Sweep cycles	10
	Displacement amplitude	0.75 mm
	Axis	3
	Frequency range	10-55 Hz
Protection (IEC 60529:1989) ⁷	Protection provided by enclosures	IP67
WEEE (2002/96/EC)	Complete product	Marked with wheelie bin logo
RoHS (2002/95/EC)	Complete product	Complies to RoHS

Remarks

1	Specification within the "Operating Temperature Range" may change twice as much as specifications of "Specified Temperature Range".
2	Change of temperature with specified rate of change. After this test insertion loss and tap loss shall be measured (at room temperature) and shall stay within the range which applies for the "Specified Temperature Range".
3	Dry heat for non heat dissipating specimen with gradual change of temp. After 16hrs, the ins.loss and tap loss tested at 70°C (within the limits for Op.Temp. Range). After this test all specs shall be tested at room temperature.(within limits for spec temp.range)
4	Test dB and guidance. At last cycle the insertion loss and tap loss shall be tested and shall stay within the limits which apply for the "Specified Temperature Range".
5	After this test the insertion loss and tap loss shall be tested at room temperature and shall stay within the limits which apply for the "Specified Temperature Range".
6	Basic environmental testing procedures. At the last cycle the insertion loss and tap loss shall be tested and shall stay within the limits which apply for the "Specified Temperature Range".
7	Tested with all ports terminated

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