

XT-200

Programmable Delay Line Instrument



The advantage of dual input channels in a single programmable delay line instrument

Recommended when you need dual signal channels for independent or differential signal pairs

Overview

Built using the same technology that made Colby a trusted name, today the XT-200 stands as our flagship product. The XT-200 utilizes not one but two of Colby's patented trombones to offer precise programmable delay or phase shift for dual-channel requirements.

Features/Benefits

- Easy to setup and use
- Proven reliability, accuracy, and repeatability
- Easily automate or replace manual processes
- Each of the dual channels offers 0-625 ps of total delay
- Full wideband passive delay from 0-18 GHz
- Resolution step size as small as 0.25 ps
- Trombone mean step accuracy better than 0.05% $\sigma = 0.05$ ps
- 500,000 operations before recommended maintenance service
- Now with web browser interface for remote instrument control

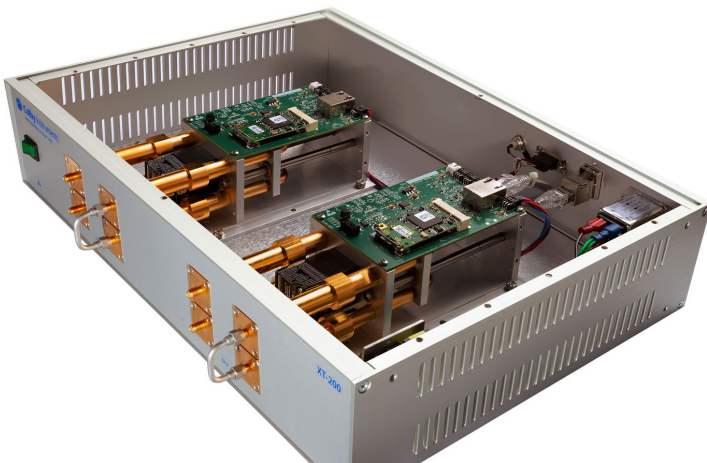
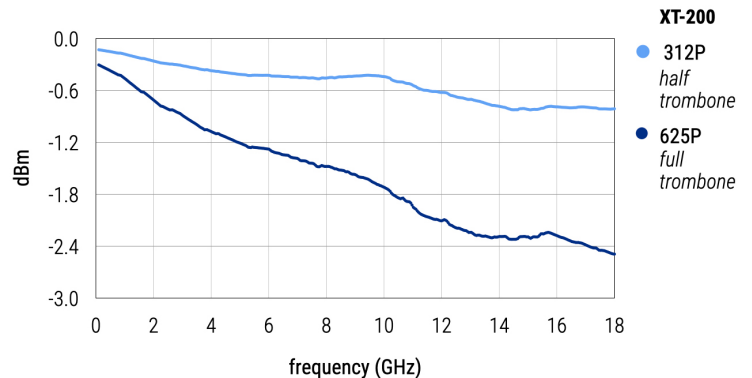
Programmable Interface

Delay settings and instrument control can be specified remotely via Ethernet TCP/IP or RS-232 protocols. Simple commands, like "del1 123.50 ps", are sent to the unit and the corresponding delay or phase shift is realized. A programmable interface assures instrument repeatability, accuracy, and performance superior to any manual phase shifter or delay generator available.

Typical Performance/Insertion Loss

An insertion (S21) and return loss (S11) report is generated for each instrument at time of manufacture^[1].

Typical insertion loss for all XT-200 configurations at max delay



Web Interface

Use your existing Web Browser to control the XT-200 and set desired delay settings.

Options

MT-100A Microterminal (LCD panel and numeric keypad) offers manual entry of desired delay.

[1] Customer receives actual measured insertion (S21) and return loss (S11) data report for each device manufactured.

Colby Product Comparison Chart

XT SERIES

Our most precise programmable delay line instruments using Colby's patented trombone technology.

XR SERIES

Featuring a selection of common step sizes that gives you the broadest signal delay range among all our products.

XS SERIES

Our XS series utilizes solid-state PIN diode technology to give you the fastest switching speeds within a limited signal bandwidth.

	XT-100	XT-200	XR-100	XS-100
Technology Type	Trombone, Trombone + Relay	Trombone	Relays	Solid state PIN diodes
Number of Channels	1	2	1	1
Signal Input Range	0 - 18 GHz	0 - 18 GHz	0 - 18 GHz	100 mhz to 3.5 GHz
Min. Step Resolution	0.25 ps	0.25 ps	5 ps, 10 ps, or 1 ns	1 ps or 5 ps
Max Delay Range	625 ps, 2.50 ns, 5.00 ns, 10.0 ns, 20.0 ns, 50.0 ns, 80.0 ns, 100.0 ns	312.5, 625.0 ps per channel	up to 50.95 ns, 101.91 ns, or 200.0 ns	5.12 ns or 10.23 ns
Phase Shift Step Resolution	0.18 ° per 1 GHz	0.18 ° per 1 GHz	1.8° , 3.60°, and 360° per 1 GHz	9 ° per 1 GHz
Total Phase Shift at 1 GHz	225°, 900°, 1800°, 3600°, 7200°, 18000°, 28800°, 36000°	112.5°, 225°		1842 ° or 3686 °
Total Phase Shift at 5 GHz	1125°, 4500°, 9000°, 18000°, 36000°, 90000°, 144000°, 180000°	562.5°, 1125°		n/a
Switching Speed*	250 ms - 6500 ms	250 ms - 6500 ms	< 100 ms	< 50 ms
Ext. Trigger	no	no	yes	yes
Ethernet TCP/IP	yes	yes	yes	yes
Serial RS-232	yes	yes	yes	yes
Web Browser UI	yes	yes	yes	yes
Microwave Relay Rated	5m MTBF	n/a	5m MTBF	n/a
Recommended Service Interval	500,000 operations or 1 year [2][3]	500,000 operations or 1 year [2][3]	1 year	n/a
Min. frequency for 360° phase shift coverage	1.6 GHz, 400 MHz, 200 MHz, 100 MHz, 50 MHz, 20 MHz, 12.5 MHz, 10 MHZ	3.2 GHz, 1.6 GHz		
Dimensions	12" L x 16 3/4" W x 3 1/2" H (2U)	12" L x 16 3/4" W x 3 1/2" H (2U)	12" L x 16 3/4" W x 3 1/2" H (2U)	12.0" L x 16.5" W x 1.75" H (1U)
Weight	4.1 kg (9.0 lbs.) to 5.0 kg (11 lbs.)	5.4 kg (12 lbs.)	5.6 kg (12.5 lbs.) to 6.1 kg (13.5 lbs.)	2.7 kg (6.0 lbs.)

* depending on network latency

[2] Rated lifetime is specified for maximum switching current of 100 ma. Higher currents for increased power handling can be switched (up to 100W CW max.), but the rated lifetime will be lower.

[3] All connection interfaces should be inspected/serviced to ensure instrument is operating at its published performance specifications.