

1.2 GHz E-Option Plug-In Conditioner Cable Simulator Conditioning at the Tap

Antronix's patented E-Option conditioning multi-taps accommodate a variety of plug-in modules that provide signal conditioning in either the downstream or upstream for optimum system performance. E-Option allows each tap location to be conditioned individually, affecting only the tap ports without impacting the through insertion loss. E-Option solves design challenges such as high/low passive return loss, negative/positive tilt compensation, and return path ingress and noise reduction.

- **Compact Size**

One plug-in affects all tap ports equally while not affecting the through path.

- **Compatible with Antronix multi-taps with E-Option Conditioning**

Supported in all Antronix MGT and RRT series multi-taps with E-Option indicated by an "E" in the model number.

- **Does not Affect the Through Path of the Multi-Tap**

- **Available in Five Types;**

Cable simulator, cable equalizer, return path attenuator and high tap value filter.

- **Cable Equalizer (CEG)**

Equalizes the full bandwidth to compensate for excessive negative tilt usually occurring at the end of the transmission line.

- **Cable Simulator (CSG)**

Simulates a fixed amount of cable to overcome large positive tilts usually found immediately following amplifiers.

- **Return Path Attenuator (RAG)**

Provides attenuation in high value taps so cable modems can run at high outputs, resulting in increase carrier to noise ratio.

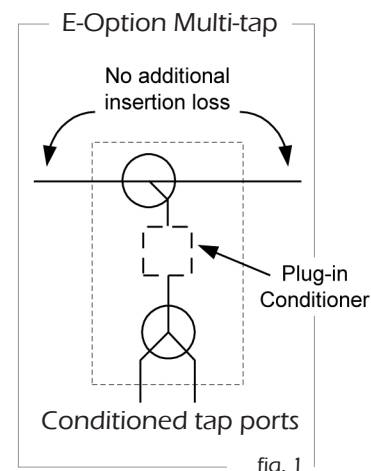
- **High Tap Value (HTG)**

Provide attenuation from 54-1218 MHz and passes the return band to overcome the large passive loss associate with high value taps.

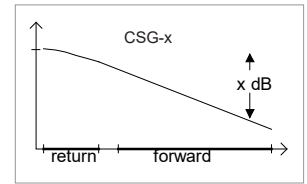


Ordering Guide

Plug-in	Available Values
CSG	02, 03, 04, 06, 08, 09, 10, 12, 15, 18, 21



Cable Simulator (CSG)



The cable simulator is used in the latest system designs that incorporate high output amplifiers allowing the full use of the amplifier gain and 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 provides lower return path attenuation in high value taps so cable modems can overcome the large passive loss associated with high value taps.
- 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.

Electrical Specifications

		CSG-02	CSG-03	CSG-04	CSG-06	CSG-08	CSG-09	CSG-10	CSG-12	CSG-15	CSG-18	CSG-21
	Freq (MHz)											
Equalizer Value @ (1000 MHz)	870	2.0	3.0	4.0	6.0	8.0	9.0	10.0	12.0	15.0	18.0	21.0
Insertion Loss (dB typ)	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	50	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3
	85	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.5	0.5	0.7
	104	0.1	0.2	0.2	0.3	0.3	0.4	0.6	0.6	0.6	0.6	0.9
	300	0.4	0.8	1.2	1.6	1.8	2.3	2.9	3.0	3.4	3.7	4.7
	450	0.8	1.5	2.0	2.7	3.2	3.9	4.9	5.1	5.8	6.3	7.9
	550	1.0	1.8	2.5	3.3	4.2	4.9	6.2	6.3	7.4	8.3	10.1
	750	1.4	2.4	3.2	4.6	5.9	6.9	8.2	8.8	10.7	12.1	14.6
	870	1.6	2.7	3.6	5.3	6.8	8.0	9.1	10.2	12.4	14.5	17.2
	1000	1.9	2.9	3.9	5.8	7.7	8.8	9.9	11.2	14.0	16.7	18.9
	1218	2.2	3.2	4.3	6.3	8.9	9.8	10.6	12.1	14.7	17.2	19.3
Insertion Loss (dB max)	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	50	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.4
	85	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.6	0.7	0.9
	104	0.2	0.3	0.3	0.5	0.5	0.6	0.7	0.8	1.0	1.1	1.3
	300	0.6	1.1	1.4	1.9	2.2	2.6	3.1	3.3	3.9	4.5	5.3
	450	1.0	1.7	2.2	3.0	3.7	4.4	5.1	5.4	6.5	7.4	8.6
	550	1.3	2.0	2.7	3.7	4.7	5.5	6.3	6.8	8.1	9.4	11.0
	750	1.7	2.6	3.4	4.9	6.5	7.5	8.4	9.2	11.3	13.2	16.0
	870	1.9	2.9	3.8	5.5	7.5	8.4	9.3	10.5	13.3	15.7	18.8
	1000	2.1	3.1	4.1	6.1	8.3	9.2	10.2	11.7	14.7	18.2	21.0
	1218	2.3	3.5	4.4	6.7	9.3	10.5	11.0	12.7	15.6	19.0	21.5
Return Loss In/OUT (dB min)	5-30	16	16	16	16	16	16	16	16	16	16	16
	31-600	18	18	18	18	18	18	18	18	18	18	18
	601-1000	18	18	18	18	18	18	18	18	18	18	18
	1001-1218	17	17	17	17	17	17	17	17	17	17	16
Forward Response Flatness (dB)	5-1003	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5	±0.6	±0.7