

## Model 2910 Group Delay Equalizer for Interdigital Combiners

### General:

The Model 2910 Group Delay Equalizer is designed to correct asymmetries in group delay whenever bandpass filters are used, thus improving signal fidelity throughout the FM channel. Closely-spaced stations in balanced (constant impedance) combiner chains, spaced 0.8 or 1.0 MHz apart, are a common application for group delay equalization, though it is also appropriate for fine-tuning the group delay characteristics of wider spaced stations.

The Shively Model 2910 is designed to correct up to 400 nsec of delay at  $f_c \pm 200$  kHz. Typical correction is to:

- 50 ns or less at  $f_c \pm 150$  kHz
- 75 ns or less at  $f_c \pm 200$  kHz

### Tuning:

The low-level group delay equalizer is fine-tuned by attaching it to the narrowband input of its station's combiner module. After fine-tuning, it is relocated to its permanent location between the output of the exciter and the input of the IPA.

### Application:

The equalizer is needed only for the station in a closely-spaced pair that is located farthest from the antenna. In balanced combiner systems that allow for signal feeds to be alternated between transmission lines (for example: back-fed and cross-fed systems), careful attention should be paid to tuning the equalizer in the feed position the station will normally occupy. When the signal flow is reversed, the equalizer should be removed from the transmission chain.

|                 |   |
|-----------------|---|
| Insertion loss: | < 0.9 dB typical                                    |
| Power Handling: | 150 Watts   |
| Connections:    | Type N (female)                                     |
| Dimensions:     | 8" wide x 4" deep x 48" high                        |
| Weight:         | 20 lb (9.1 kg)                                      |
| Mounting:       | Bolt holes located in spacer bracket and base plate |



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