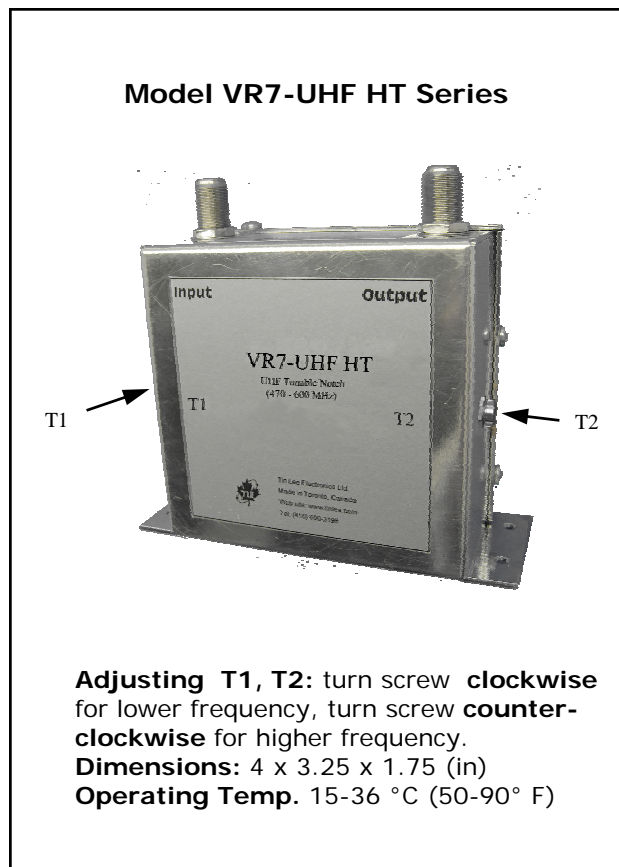


**VR7-(Fo)UHF HT, VR7-470/600 HT, VR7-600/700 HT and VR7-700/870 HT****Description and Specifications**

The VR7–(UHF) HT series UHF frequency tunable notch is designed to selectively attenuate one (or two) UHF signals. Model VR7–(UHF) HT consists of two HQ tunable helical resonators (T1 and T2) which can be tuned separately to two frequencies, or, tuned to the same frequency for greater attenuation.

The VR7–(UHF) HT series is available in four models:  
 VR7-(Fo) UHF HT— optimized notch at Fo tunable  $\pm 10$  MHz  
 VR7-470/600 HT—frequency tunable 470 to 600 MHz,  
 VR7-600/700 HT—frequency tunable 600 to 700 MHz,  
 VR7-700/870 HT —frequency tunable 700 to 870 MHz,

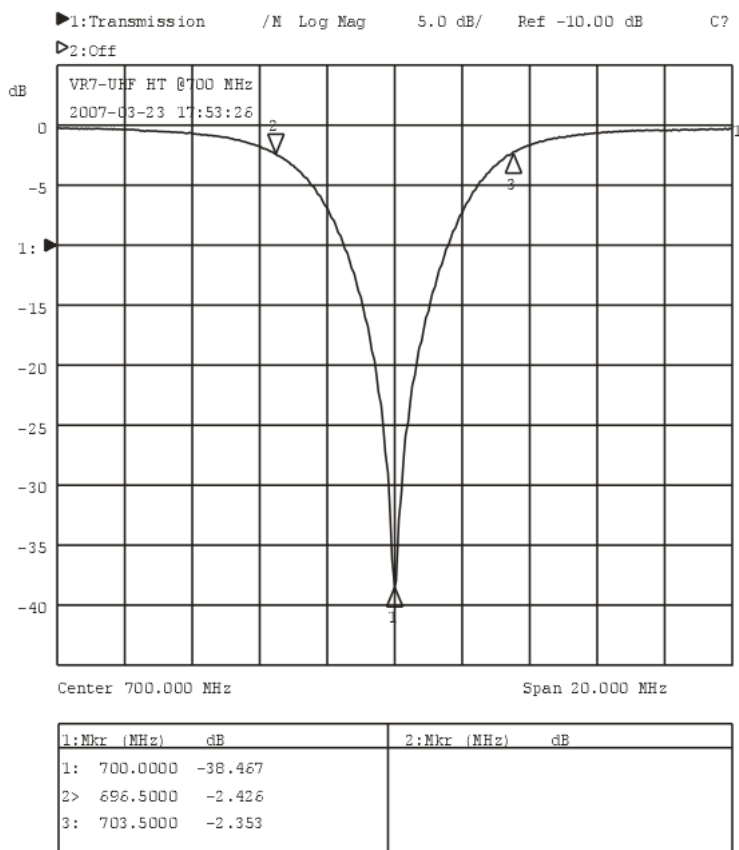
- UHF notch is factory preset to the center of the VR7 tuning range, or, to a user-specified frequency (Fo)
- Rejection is typically a minimum of 30 dB
- Fo is frequency-tunable via trimmers T1 and T2
- Tuning range: 3 models cover 470 to 870 MHz, or specified Fo with tuning range:  $\pm 10$  MHz
- Rejection of individual notch from 8 dB to 16 dB
- Passband: 5 to 1000 MHz (with 1dB insertion loss)
- 75 ohms F type female connectors (standard)
- Connector Options (50 ohms): BNC, SMA, N, TNC
- RF Power handling: 1 watt max
- Graph supplied with this unit (sample fig.1,2)
- User can specify Fo and the notch depth, thereby optimizing selectivity of the notch

**Table 1: VR7-UHF HT Series Notch Specifications: Attenuation: T1, T2, T1+T2 and Selectivity**

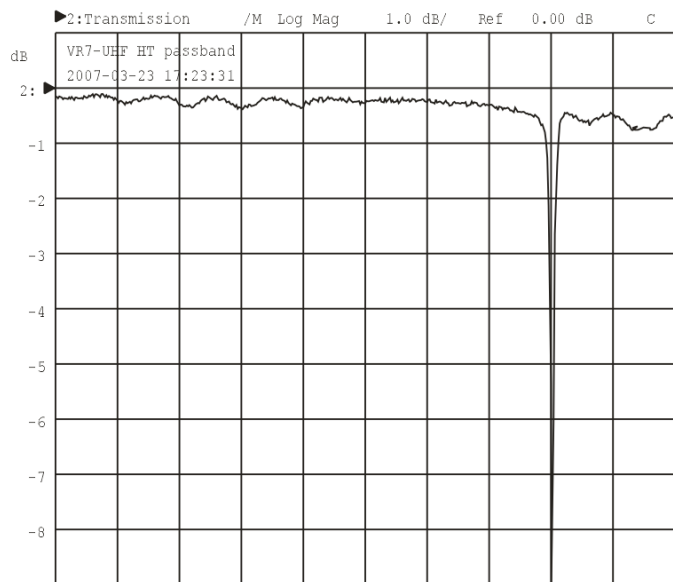
Model	Frequency	T1 attn	T2 attn	T1 + T2 attn	3dB BW	Tune Range
VR7-Fo UHF HT	User Fo	8-10 dB	8-10 dB	>30 dB	$\pm 2.0$ -3.0 MHz	$\pm 10$ MHz
	470 MHz	11 dB	11 dB	>40 dB	$\pm 3.5$ MHz	470-600 MHz
VR7-470/600 HT	550 MHz	14 dB	14 dB	>40 dB	$\pm 4.5$ MHz	
	600 MHz	15 dB	15 dB	>45 dB	$\pm 6.0$ MHz	
VR7-600/700 HT	600 MHz	12	12	>40 dB	$\pm 4.5$ MHz	600-700 MHz
	650 MHz	14	14	>40 dB	$\pm 5$ MHz	
	700 MHz	15	15	>45 dB	$\pm 6.0$ MHz	
VR7-700/870 HT	700 MHz	12 dB	12 dB	>40 dB	$\pm 6.0$ MHz	700-870 MHz
	785 MHz	14dB	14 dB	>45 dB	$\pm 7.0$ MHz	
	800 MHz	16dB	16 dB	>45 dB	$\pm 8.0$ MHz	



**Figure.1** Graph shows VR7-UHF HT with 35 dB notch, Fo at 700 MHz (Fo) with 3 dB BW of  $\pm 4$  MHz (approx).



**Figure.2** Graph shows VR7-UHF HT passband (thru loss and operating bandwidth)



## VR7-Fo UHF Frequency Adjustments



Turn Screw clockwise for lower Fo



Turn Screw counter-clockwise for higher Fo

**Notch tuning:** use an RF instrument with frequency sweep to view frequency response of the filter at 100 MHz span at Fo. Traps can be re-tuned to a higher or lower frequency by adjusting screw trimmers T1 and T2 (see photo).

**Coarse Adjustments** - Tune one notch at a time to Fo. Individual notch is factory preset between 8 to 12 dB attenuation. Coarse tune T1 and T2 together at Fo.

**Fine-tune** - Use narrow 20 MHz span at Fo. Retune each notch a few times to optimize attenuation. Alternately adjust each tuner very slightly (1/10 rotation) in either direction until notches resonate together at Fo for desired attenuation.

Example: Two 10 dB notches (preset) provide >30 dB attenuation with 3 dB BW of  $\pm 3$  MHz Fo at 700 MHz

**Adjustment is not recommended without suitable equipment to frequency sweep the filter.**

### Caution:

Do not tune screws beyond the UHF frequency range. This may damage the screws.

