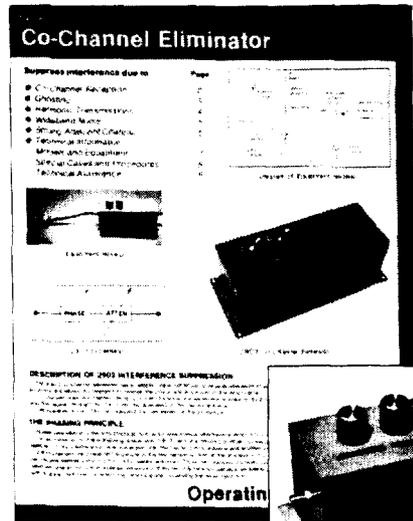


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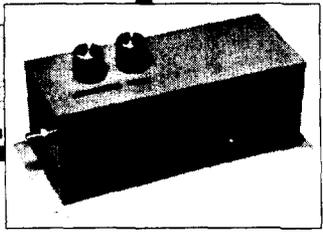
# Co-Channel Eliminators

For Suppressing

- Co-Channel
- In-Channel Carrier
- Wideband Noise
- Ghosting
- Adjacent TV/FM



**Free Operating Manual Ask For It! It Gives Detailed Application Information.**



2903 Interference Suppressor

**Specifications:**  
 Impedance: 75 Ohms  
 Connectors: Type F(61)  
 Attenuation Adjustment: 25 dB Min.  
 Phase Adjustment: Approx. 90°

Model	Frequency(MHz)
2903-2/6	54 - 88
2903-FM	88 - 108
2903-A/I	120 - 174
2903-7/13	174 - 216
2903-UL	470 - 680
2903-UH	680 - 890

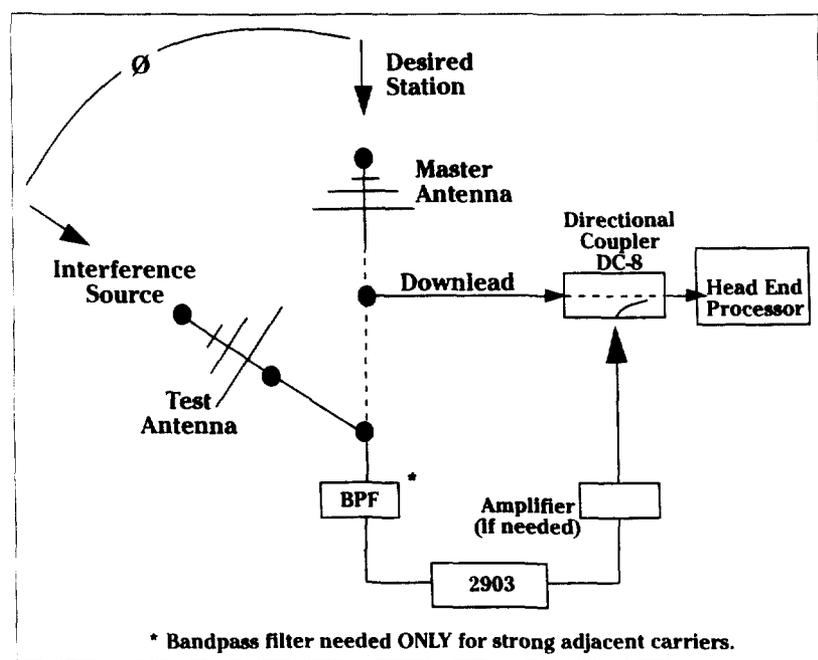
## The Phasing Principle

When an undesired signal is received at the same frequency as the desired one, it is not possible to trap out the interference without also destroying the desired one. In this case, phased cancellation techniques must be applied.

The phasing method of interference suppression removes the interference without removing desired information transmitted at the same frequency as the interference. This desired action is the result of two mirror image samples of the interference cancelling one another. Co-channel interference, for example, is the result of simultaneous reception of two different transmissions at the same TV channel frequency, but with different programs. When a sample of the undesired transmission is acquired by the test antenna and injected into the downlead of the off air antenna, it destroys the undesired sample on the downlead by phase opposition. Because the modulation envelopes of the two interference samples are identical at the processor, they "erase" one another, with nothing "left over" to disturb the desired signal.

## 2903 Applications

- (See illustrations - opposite page)
- 1) **Co-Channel Reception** is the most common application of 2903 and occurs when the off air antenna receives two separate transmissions on the same channel frequency.
  - 2) **Ghosting** is caused by reception of the same program via two separate paths, due to reflection from a building or other structure. Because of its longer path, the "ghost" appears on the screen off-set from the direct pick-up.
  - 3) **Harmonic or Other Non-TV Transmission** may arrive within a desired channel. Common sources are radiated harmonics of amateur radio, FM stations or other communications transmissions, or the reception of principal carrier transmissions in these bands. These carriers cannot be removed with conventional filters or traps without suppressing desired information.
  - 4) **Wide-Band Noise** arises from such sources as broken power transmission line insulators, faulty utility company power transformers, elaborate neon signs, rotating machinery or automotive ignition systems. These abrupt or arcing sources transmit a wide band or RF frequencies which can lay a continuous blanket of noise over several contiguous channels. Noise is more intense the lower the channel frequency.
  - 5) A **Strong Adjacent FM Carrier** is only 200 KHz removed from the desired FM channel, making conventional trapping impractical. The phasing approach is perhaps the only feasible solution, if the desired signal is to remain undamaged after the suppression process.



**Microwave Filter Company, Inc. • 6743 Kinne Street • East Syracuse, NY 13057**  
 Toll Free (USA/Canada): 1-800-448-1666 • Collect (NY/HI/AK): 315-437-3953 • FAX: 315-463-1467, 315-463-0681

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