



Transcrypt Hopping Code Scramblers (410/416/430/460 series) System Requirements and Expectations

In order to ensure reliable operation of Transcrypt's 410/416/430/460 series hopping code scramblers in any radio system, there are several requirements that need to be met. Although the requirements are not set in stone, it is highly recommended that they be followed for best possible results. Also given are suggestions as to where difficulties may arise in the systems

All Systems:

1. Output deviation of any repeater must be equal to the incoming signal deviation. The output signal must not be boosted to make up for low incoming deviation due to operator neglect of proper radio procedures.
2. Frequency response of the repeater must be reasonably flat (+ or – 3dB, 300 – 3000 Hz)
3. Any CTCSS or DCS tones may be used.
4. If any wireline remotes are used, additional equipment may be required in order to interface a scrambler to the remote.
5. Weak signal areas: in areas of marginal coverage (i.e., basements), loss of synchronization is to be expected
- 6) With any type of security, whether it is basic fixed inversion, hopping code or DES, a loss of range is to be expected. The amount of range loss depends on how well your coverage is, your terrain, and how your radio system is set up. This loss of range is not a power loss – it is how the audio is processed to provide security.

Trunking Systems:

1. If radios are to be used in trunking systems, even if the scrambler is not, Transcrypt needs to know in order to modify/program the scrambler properly.
2. The type of trunking system needs to be specified when the order is placed.

Special considerations/modifications if the units are to be used in the following systems:

Voting Systems:

1. Notch filters in the system will need to be removed and the system modified so that it no longer needs the notch filters for operation. This includes filters in the audio paths from the receivers as well as the audio path to the transmitter.
2. Loss of synchronization can be expected to occur if the voting system is not set for vote and lock.

Simulcast Systems:

1. The same requirements for Voting systems hold for Simulcast systems.
2. The scrambler may not work well in all areas. Locations where there is significant overlap from more than one transmitter will likely degrade the signal and may prevent reliable communications in those areas.

Should you have any questions regarding the above, please do not hesitate to get in touch with your sales rep for additional information – technical support will also be provided by either our Technical Services Group or our Engineering Staff.