

SynchroCast3™

Single Frequency Simulcasting with Multiple Transmitters



SynchroCast3 System

Intraplex® SynchroCast3, the latest simulcasting solution from Harris, provides a dynamic, scaleable solution for single frequency networks of overlapping transmitters. The system uses the proven Intraplex T1/E1 multiplexer with the precision of GPS digital timing to enable a network of transmitters to work together to increase coverage areas and reduce interference.

The SynchroCast3 system will automatically adjust for any link delays that occur. Link delay changes can result from network rerouting, signal path fade, and other network conditions. The delay received at the transmitter is continuously sampled. If a change in delay persists, SynchroCast3 will initiate a delay correction at the transmitters. Once the delay correction is started, the shift in delay time is done seamlessly without interruption to system operation and at a controlled rate to prevent overshooting the desired delay.

Optimizes the Use of Available Frequencies

SynchroCast3 allows the use of a limited number of radio frequencies to cover a wider geographical area, often with the existing infrastructure. Turning a traditional mobile radio network into a simulcast network can improve penetration in areas with marginal coverage. It can also increase the capacity of a radio system without adding frequencies to the network. Mid size and smaller radio systems can now realize the advantages of proven Intraplex SynchroCast technology without the need to install a completely new radio system.

3rd Generation Product Improves on Industry Leading Performance

SynchroCast3 improves on earlier generations of the SynchroCast product with increased time sampling, new alert/alarm reporting features, simplified installation and management, and the ability to be integrated into existing SynchroCast installations. More efficient use of network bandwidth reduces timing overhead and allows additional bandwidth to be allocated to voice and data transmission. Dynamic and hitless delay adjustments, reliable operation, and flexible implementations continue with this newest generation product to provide the level of service required for public safety operations.

Dramatically Improves Coverage Areas

Now, mobile radio system operators can install a simulcast radio system on a single channel or an entire mobile radio system without having to install a completely new system. The SynchroCast3 system makes new GPS-based timing technology available to older mobile radio networks. It gives users easy control of the system functions critical to adjusting the coverage area to achieve desired performance. The Harris simulcasting product also provides reference signals to the base station for precise control of channel frequencies. The system uses either T1 or E1 transmission lines now readily available from Telco carriers or via private networks. These can be traditional land based, microwave, or fiber optic links. In fact, these systems can include a combination of public and private network links and still precisely control the necessary parameters to achieve peak simulcast performance.

Why use SynchroCast3?

Make better use of available frequencies

With a limited set of frequencies available for mobile radio applications, getting the most benefit from the existing infrastructure is essential.

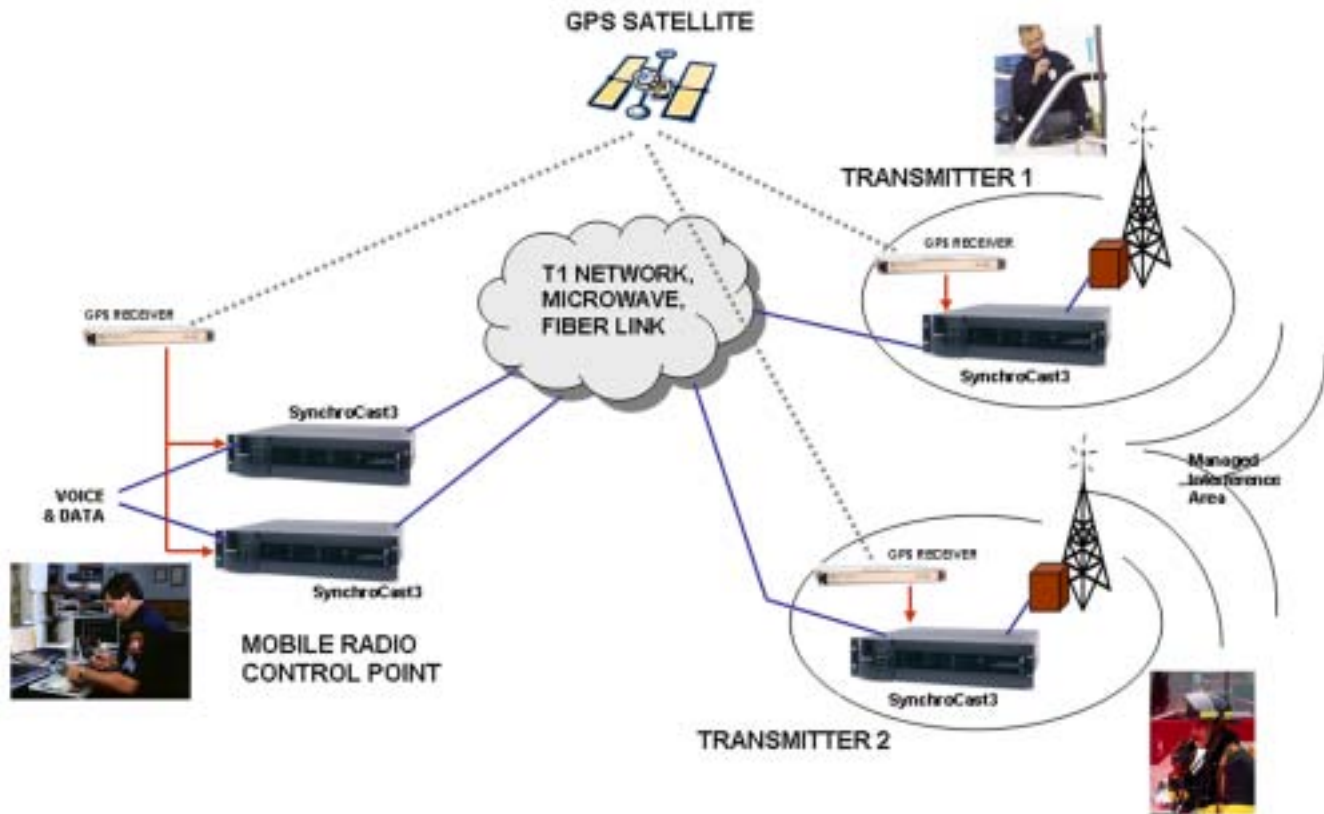
Increase coverage and channels without adding frequencies

By simulcasting the current frequencies, the operator can increase the coverage and typically the number of radio system channels. A simple radio system might use 3 frequencies distributed over an

area to provide coverage. Converting this to a simulcast system allows the user to cover the same area with one frequency. This will release the two additional frequencies for reuse as extra channels on the radio system or for use by another agency.

Add fill-in transmitters for shadowed areas

A location that is shadowed because of geography can now use simulcast to add the necessary coverage without having to apply for an additional frequency.



SynchroCast3 System Requirements

Components

SynchroCast3 is ordered as add-on components or as a pre-configured package with the Intraplex Access Server system. SynchroCast3 components are as follows:

IX-SNC-101S	Control point timing module
IX-SNC-101T	Transmitter point timing module
IX-MA-480	Module adapter for GPS and timing interfaces required for the IX-SNC-101S and IX-SNC-101T.
IX-SNC-SCS-8	Cable set for SynchroCast3 timing modules at the control point or transmitter
IX-SNC-SCS-9	Cable set for expansion multiplexers at the control point or transmitter

GPS Receiver

One GPS receiver is required for each base station site in the system and at the control point site. Consult Harris Networking and Government solutions for recommended models.

Compatible Modules

The SynchroCast3 system works with many Harris Intraplex channel modules. For conventional T1 radio systems, Intraplex model numbers IX-VF-25 (4 Wire) or IX-VF-28 (4 Wire Tx only) can be used for the voice channels of the system. The standard voice channels may also be used for simulcast paging systems. Additionally, data channels operating at 9.6 kbps are available for newer digital voice mobile radio systems.

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