

BASE STATION SYSTEM

APPLICATION

A Base Station is a radio typically controlled by a console that provides RF communications to portables and mobiles within a jurisdictional area either in analog or P25 digital mode. A simplistic example is shown in the diagram below.

THE PROBLEM

When the dispatch office is located in an area where the radio coverage is not large enough (e.g. a valley or in an urban area) to reach all the portables and mobiles, it is desirable to remote the Base Station to a better transmitter site.

KEY FEATURES OF THE SOLUTION

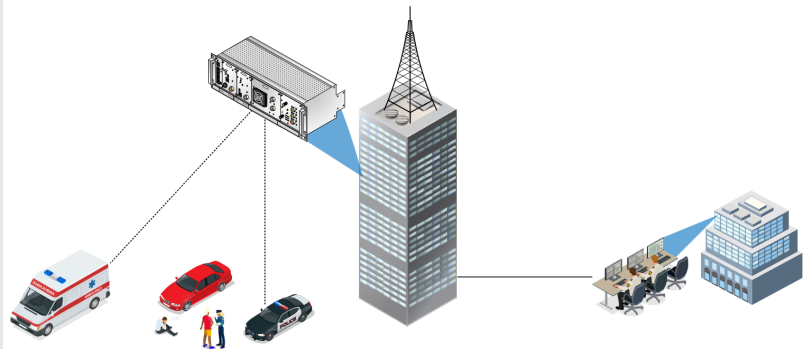
- 8, 30, 80/100W Base Station Systems
- Digital platform
- Analog Mode
 - P25 upgradeable
 - 32 channel capacity
- Modular configurable system
- Full remote control capability
- IP/RF link or wireline connectivity
- Operational -30° to $+60^{\circ}\text{C}$
- Ability to monitor multiple channels simultaneously with additional receivers

THE SOLUTION

To extend the coverage, the Base Station must be located on higher ground such as an office tower (as shown on the following page).

Remote control of the Base Station via a console at the dispatch office can be accomplished in two ways:

- An RF link can be used if the remote site is not accessible or is too distant for wireline connection.
- An alternative for short distances is using a tone or IP remote adapter. Tone remotes use PTT, guard, monitor and function tones to control the station.



THE BENEFITS

A typical Base Station is a modular radio that can be configured for a variety of different applications in a standard 19" subrack. Such systems offer robust construction, low current consumption and extreme temperature tolerance (-30° to $+60^{\circ}\text{C}$) enabling them to be deployed in some of the world's harshest environments such as Alaska and Death Valley.

The Base Station can operate on more than one frequency. This can be accomplished either by remotely switching channels through tones or by locally switching channels manually. Codan's electronics transmitters and receivers each have a 32 channel capacity. Communications between the base and mobile/portables can be selected from the Base Station to go to specific users in the field. The Base Station is operated by tone remote and CTCSS tones are used for selecting users.

A Base Station can also be equipped with monitor receivers allowing the operator to monitor more than one channel at the same time in order to ensure communications are not missed by the dispatch office.

THE CUSTOMER

Typical Base Station customers include: Police, Fire and Ambulance agencies. In many instances they share a common 911 dispatch center that then communicates to individuals on their portables or mobiles via a Base Station. Depending on the geography some of these systems will deploy remote Base Stations. The diagram below illustrates several different Base Station architectures that Codan radios can support. For details on IP interfaces to consoles, refer to Application Note AN550.

Values noted are typical. Equipment descriptions and specifications subject to change without notice or obligation.