

For more information, call 800-622-7711
or visit occfiber.com.

CELLULAR DISTRIBUTION SYSTEM® (800-900 MHz SYSTEMS)

Overview:

OCC's patent pending Cellular Distribution System® (CDS) is designed to improve localized cellular coverage within a building that experiences low signal strength where service provider coverage is acceptable at a nearby outdoor location. The CDS solution applies structured cabling concepts to support wireless communications within a building, using either existing or newly installed coaxial cable to distribute wireless signals. This is accomplished using a unique Distributed Antenna Technology. Four antenna faceplates are cabled to the rack mount CDS panel, creating signal pathways to an external omni-directional antenna for signals that otherwise would experience heavy propagation losses. Materials that cause such losses include external metal siding, concrete and rebar, which seriously inhibit cellular propagation inside your building. These materials are bypassed using the easy-to-install CDS Installation Kit, making the cell phone coverage inside your building as good as the coverage you get outside. Each kit includes all the components required to utilize your existing 75 Ohm coaxial cable with easy-to-follow explicit instructions for fast installation to improve your indoor cellular service.



Applications:

Ideal for building applications where cellular service is readily available at an external location outside the building, yet coverage is poor when the mobile user enters the facility. Typical structures that may benefit from the CDS system are buildings with metal walls or heavy rebar, underground or basement locations. CDS offers product support for all major bands utilized in North America. To find the frequency band used by your service provider, please visit www.wirelessadvisor.com.

Features:

- "Quick and Easy" install kit with explicit instructions so that a cellular systems RF background is not required.
- Cost-effective method to improve cellular coverage in buildings for all North American major service providers.
- Utilizes 75 Ohm coaxial cable for up to 200 feet.
- Low Loss 50 Ohm cable to an external antenna (included) must be placed external to the building to maximum of 300 feet.
- Each CDS panel supports 4 antenna faceplates.
- Standard single-gang faceplate antenna form factor to be installed in poor coverage regions.
- Uses standard F-connectors.
- 19" rack mount panel kit is 2RU size form factor.
- Standard 120 VAC required.
- Creates an effective "line of sight condition" between a user near the faceplate and the service provider tower.
- External omni-directional antenna (included) required at an outdoor area of good service provider coverage.
- External inline lightning protection.



CELLULAR DISTRIBUTION SYSTEM® (800–900 MHz SYSTEMS)

Supported Technologies:

- The CDS Panel is available for the following Provider Bands in North America:
 - 826 – 896 MHz CDMA
 - 806 and 900 MHz iDEN
- Supports voice and data communications, including 3G handsets

Coverage Areas:

- Coverage is highly dependent on the propagation environment.
- Open space installations ~60,000 sq feet per panel coverage established.
- Office space installation ~40,000 sq feet.
- Open space coverage is easier to obtain than closed and walled space.
- Materials such as metal and reinforced concrete reduce effective range.
- The longer the coaxial cable-run, the less range at the faceplate.
- At 200' of RG6, approximately 100' range from the faceplate – dependent on signal strength at the external antenna location.
- Antenna placement in the facility is key to successful deployment.

Performance Graphs:

Figures 1, 2, and 3 illustrate the signal strength in a CDS-supported facility. The innate signal strength is the signal level indicated by a handset with no improvement effects of the distributed antenna technology. As depicted, the CDS system provides an increase of power by 20–30 dBm in environments typical of a manufacturing and office environment for a facility on the order of 50,000 sq feet. Signal strength can be seen to decrease as range increases from the faceplate antenna. The four zones where signal strength was evaluated were fed by cable runs ranging from 50 to 200 feet of 75 Ohm RG6 coaxial cable. Figure 4 illustrates the antenna placement in the hybrid manufacturing office space facility in which the testing was conducted.

CDS Install vs. Innate Office Space Cellular Signal Strength

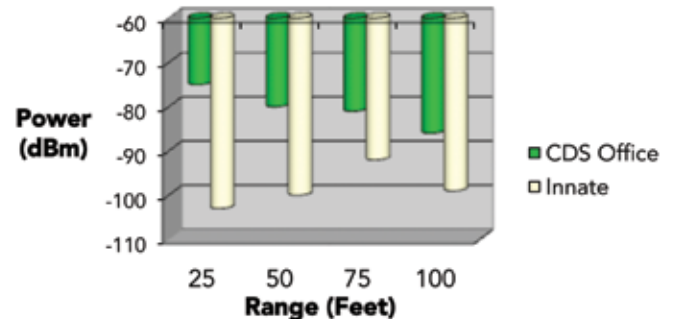


Figure 1

CDS Install vs. Innate Manufacturing Cellular Signal Strength

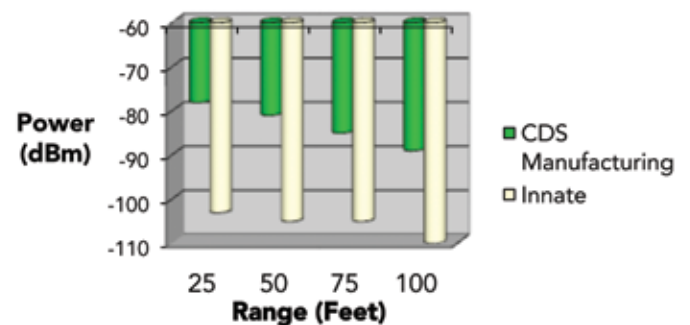


Figure 2

CDS Install vs. Innate Pallet Racking Cellular Signal Strength

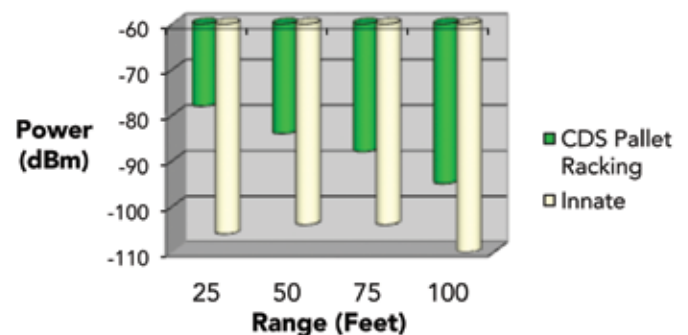


Figure 3

CELLULAR DISTRIBUTION SYSTEM® (800-900 MHz SYSTEMS)

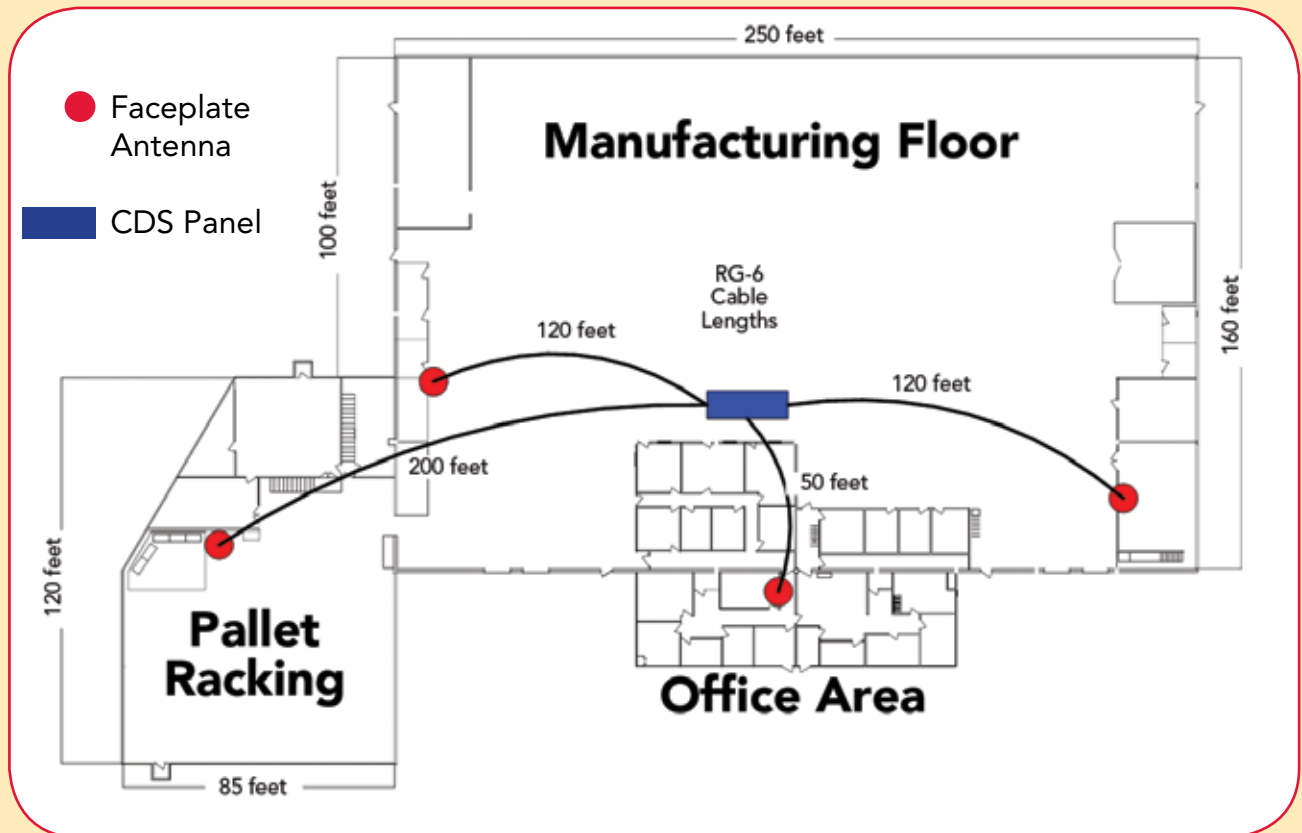


Figure 4

Installation Considerations:

- Faceplate antenna placement and coaxial cable selection and length are critical.
- A good service provider signal strength must be available at the location of the external antenna outside the building.
- Each CDS kit comes standard with an Omni-Directional External Building Antenna, which supports multiple tower locations.
- A High Gain External Antenna may be used, but improvement is often for a single band provider.
- In order to achieve optimum cellular coverage, you must know what frequency range your provider uses in your area.
- Lower loss cable translates into increased coverage range from the faceplate. Thicker coaxial cable generally means lower loss cable.

Warranty:

Each CDS kit is backed by a 1-year product warranty from OCC. The products must receive normal and proper use and due care in handling. Normal wear and tear, deterioration due to aging or damage caused by environmental conditions, electromagnetic interference ("EMI") or radio frequency interference ("RFI") shall not constitute a defect or failure under this warranty. These warranties do not cover defects resulting from accidents, alteration, unauthorized repair, misuse, fire, flood, lightning strike damage, acts of God and or any diverse changes in temperature and climate not considered normal for an interior building infrastructure. All installation records must be updated to reflect any maintenance, movements, additions or changes, and such records shall be made available to OCC upon request.

For more information, call 800-622-7711
or visit occfiber.com.



CELLULAR DISTRIBUTION SYSTEM® (800–900 MHz SYSTEMS)

Ordering Information:

PART NO.	DESCRIPTION
CDS8V-75-C4K-XXX*	Cellular Distribution System Kit for 824 - 894 MHz cellular band
CDS8N-75-C4K-XXX*	Cellular Distribution System Kit for 806 – 866 MHz iDEN band
CDS9N-75-C4K-XXX*	Cellular Distribution System Kit for 896 – 901 and 935 – 945 MHz iDEN band
* Replace "XXX" with length of 50 Ohm cable assembly (available lengths 50' – 300' in increments of 25')	
** Each CDS Kit includes: 1 – CDS Panel 4 – Standard Single-Gang Antenna Faceplates 1 – 50 Ohm Cable Assembly* 1 – Omni-Directional Outdoor Antenna and Mounting Hardware *50 Ohm low loss external coaxial cable available in 25' increments to 300'	



ATTENTION

This CDS product (the "System") (OCC Data Product No. CDS8V-75-C4K-XXX; CDS8N-75-C4K-XXX; CDS9N-75-C4K-XXX; CDS19-75-C4K-XXX), comprised of one CDS panel, four faceplates (internal antennas), internal cabling and external antenna, has been verified as capable of compliance with Subpart B of Part 15 of the FCC's rules, provided that the System and each of its components are used for their intended purpose pursuant to the manufacturer's instructions and authorized vendor's installation and provided that no modifications of any nature are made to the System or any of its component parts. Operation of the System is subject to the following two conditions: (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of this device. The signal booster component (FCC ID No. Pwo8013sb) manufactured by Wilson Electronics, Inc., installed in the CDS panel is certified compliant with Part 22 of the FCC's rules.

The System is designed to cause no interference to lawful users of licensed frequencies, but this does not constitute a guarantee or warranty that no interference will occur.