

## Cell Station (CS-S7) Adaptive Array

### INDOOR AND OUTDOOR CELL STATION FOR PAS/iPAS NETWORK

THE UTSTARCOM ADAPTIVE ARRAY CS PROVIDES 1 CONTROL AND 7 TRAFFIC CHANNELS (1C7T) FOR PAS/iPAS NETWORKS IN 1880MHz TO 1920MHz PHS CHANNEL RANGE



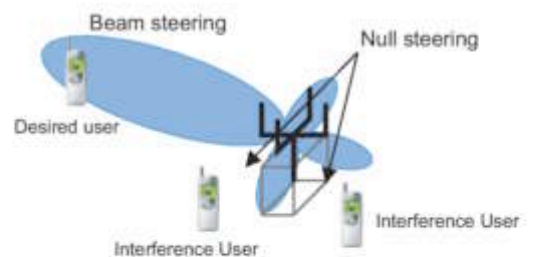
- HIGH CAPACITY SMART ANTENNA
- SOFTWARE ADJUSTABLE TRANSMISSION POWER FOR ALL MARKETS
- ADAPTIVE ARRAY ANTENNA (SMART ANTENNA) TECHNOLOGY
- SUPPORTS OUTDOOR AND INDOOR INSTALLATIONS
- SYNCHRONIZATION WITH GPS RECEIVER UNIT
- RCR STD-28 PHS RADIO INTERFACE
- EXPANDED FREQUENCY SUPPORT FROM 1880MHz TO 1920MHz
- UP TO 16 CELL STATIONS COMBINED INTO ONE CELL SITE LOCATION TO SOLVE COVERAGE AND CAPACITY LIMITATIONS

#### ADAPTIVE ARRAY ANTENNA

The CS-S7 Adaptive Array is a 1 Control Channel, 7 Traffic Channel (1C7T) Cell Station that is intended for outdoor or indoor applications. Eight antennas are used for both transmission and reception. These Cell Station use Smart Antenna technologies to enhance both transmit and receive sensitivity. Like the CS-S7 Compact Array and CS-M7 Cell Stations, the CS-S7 Adaptive Array may be installed in groups of 2 to provide 15 traffic channels sharing a single control channel (1C15T). The CS-S7 Adaptive Array may be connected to a Global Positioning System (GPS) receiver to obtain timing signals. The Adaptive Array CS operates on line voltages between 84VAC and 286VAC and supports PHS channels from 1880MHz to 1920MHz.

#### SMART ANTENNA

The Adaptive Array Antenna System in the CS uses beam steering technologies to maximize receive sensitivity and transmit power at the direction of individual users. Null steering technology is used to suppress the signals to/from the direction of interfering users. The result is superior RF performance, higher call quality, and improved coverage.

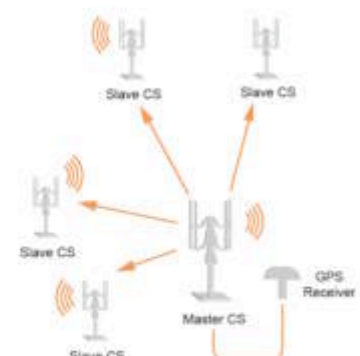


#### COMPATIBLE WITH ALL UTSTARCOM SWITCHING & ACCESS NETWORK CONFIGURATIONS

The CS-S7 Adaptive Array is compatible with UTStarcom PAS Access Network systems as well as with mSwitch@iPAS based systems. It can be used in combination with other CS types including the Enhanced Cell Station CS-A3, CS-S7 Compact Array and CS-M7.

#### CELL STATION SYNCHRONIZATION

Cell Stations (CS) may use over the air synchronization. The master CS synchronizes with other master CSs via a Global Positioning System (GPS) receiver. Slave CSs synchronize with the Master CS by receiving an over the air synchronization signal from the Master CS as depicted in the diagram below. A CS-S7 Adaptive Array can operate as a master or slave.



# Technical Specifications



Operating Frequency	1880 MHz -1920MHz
Carrier Space	300KHz
Carrier Number	132
Air Interface	Based on Research and Development Center for Radio Systems Standard (RCR STD 28 Release 3.3)
Access Mode	Multi-carrier Time Division Multiple Access - Time Division Duplex (TDMA-TDD)
Channel	1 Control 7 Traffic Channels (1C7T)
Group control	1 Control 15 Traffic Channels (1C15T)
Frame length	5ms
Modulation	PI/4 Quadratic Phase Shift Keying (QPSK)
Transmission bit rate	384 kbit/s
Voice coding	32kbits/s Adaptive Differential Pulse Code Modulation (ADPCM) (JT-G721)
RF output power (average)	500mW (+20%, -50%)
Frequency tolerance	-2.8ppm to + 2.8ppm
Antennas	8 antenna Adaptive Array Transmission 4 Branch adaptive diversity Reception 4 branch adaptive array
Receive sensitivity	-112 dBm (when BER=0.01)
Power output	500mw Average Power, Administrable In 8 Steps To 20mW Range (Fixed Wireless Local Loop) 4km Line of Sight Distance CS-S7 to Fixed Service Unit.
Power supply	85VAC – 286VAC, 50/60Hz Compliance FCC Part 24 PCS
Power consumption	Without GPS 140W(maximum) With GPS 150W(maximum)
Lightning Protection power supply	15kV per IEC61000-4-5
Lightning Protection BRI line	15kV per IEC61000-4-5
ESD Protection	±8kV(Contact electronic Discharge) per IEC61000-4-2 ±15kV(Air-gap Discharge) per IEC61000-4-2
EMI standard	Class B VCCI
Waterproof design	Waterproof examination - Protection class 6 per JIS C 0920
Operating temperature	-15°C to 50°C 5°F to 122°F
Operating humidity	90% relative humidity
Physical size	370 mm (w) _ 400 mm (d) _ 210 mm (h) 14.6 in (w) x 15.8 in (d) x 8.3 in (h)
Weight	17.8 kgs/39.3 lbs

Please note the information contained herein is for informational purposes only. Technical claims listed depend on a series of technical assumptions. Your experience with these products may differ if you operate the products in an environment, which is different from the technical assumptions. UTStarcom reserves the right to modify these specifications without prior notice. UTStarcom makes no warranties, express or implied, on the information contained in this document.

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#### About UTStarcom, Inc.

UTStarcom is a global leader in IP-based, end-to-end networking solutions and international service and support. The company sells its broadband, wireless, and handset solutions to operators in both emerging and established telecommunications markets around the world. UTStarcom enables its customers to rapidly deploy revenue-generating access services using their existing infrastructure, while providing a migration path to cost-efficient, end-to-end IP networks. Founded in 1991 and headquartered in Alameda, California, the company has research and design operations in the United States, China, Korea and India. UTStarcom is a FORTUNE 1000 company. For more information about UTStarcom, visit the company's Web site at [www.utstar.com](http://www.utstar.com)

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