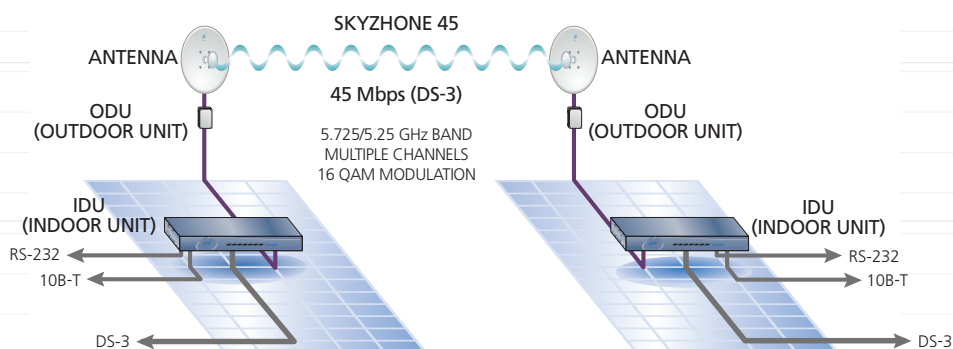ZHONE™

SKYZHONE™ 45

SKYZHONE 45 ALLOWS THE NETWORK TO GO WHERE COPPER AND FIBER CANNOT. A COST-EFFECTIVE, HIGH-PERFORMANCE WIRELESS BRIDGING SOLUTION, THIS SLEEK 45-MEGABIT TRANSPORT IS FULLY MANAGEABLE AND COMPACT IN SIZE ALLOWING FOR EASY INSTALLATION AND QUICK DEPLOYMENT.

COST-EFFECTIVE, RELIABLE POINT-TO-POINT WIRELESS TRANSPORT

Wireless broadband has emerged as an increasingly popular alternative to copper and fiber based networks. Broadband wireless offers exceptional freedom of choice in the telecommunications deployment infrastructure.

- Highly cost-effective point-to-point 45-Mbps solution (full-duplex, 90 Mbps + 10B-T total)
- Flexible multiple frequency, multiple path, full-duplex transport
- Spectrally efficient allowing up to 17 distinct channels per location
- Unlicensed frequency bands for rapid deployment
- Compact size for space efficiency
- Operating range from -40° C to +65° C allows deployment in a wide range of environments
- Integrated with Zhone's Single Line Multi-Service (SLMS™) and Zhone Management System (ZMS™)
- Remote management, provisioning and maintenance
- Local provisioning for stand-alone operation

SKYZHONE 45

ANTENNA — 45 Mbps (DS-3) — ANTENNA

ODU
(OUTDOOR UNIT)

5.725/5.25 GHz BAND
MULTIPLE CHANNELS
16 QAM MODULATION

ODU
(OUTDOOR UNIT)

IDU
(INDOOR UNIT)

RS-232
10B-T

DS-3

IDU
(INDOOR UNIT)

RS-232
10B-T

DS-3

SKYZHONE 45 provides a cost-effective wireless DS-3 link that is quick and easy to deploy due to its compact size, license-free operation and multi-channel capability.
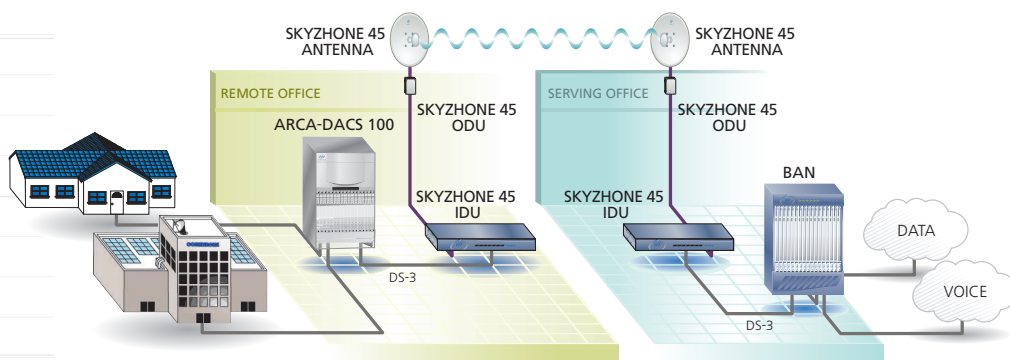
COST-EFFECTIVE

SKYZHONE 45 is a managed, cost-efficient and compact solution, making it the most cost-effective broadband wireless transport product on the market. Value, bandwidth, flexibility and speed of deployment make SKYZHONE 45 a practical part of any network.

QUICK DEPLOYMENT

SKYZHONE 45 operates in the 5.3 and 5.7 GHz unlicensed frequency bands. These U-NII (Unlicensed National Information Infrastructure) bands do not require a user's license under FCC regulations. Where speed of deployment is vital, SKYZHONE 45 soars to meet your network needs. SKYZHONE 45 allows carriers to minimize time to market and maximize revenue.

Network Backhaul Application
SKYZHONE 45 provides cost-effective and easily-deployed backhaul capabilities for DS-3 traffic. Combining SKYZHONE 45 with the Zhone BAN Broadband Access Node and ARCA-DACS 100 Digital Access Cross-Connect provides a complete wireless voice and data access solution.
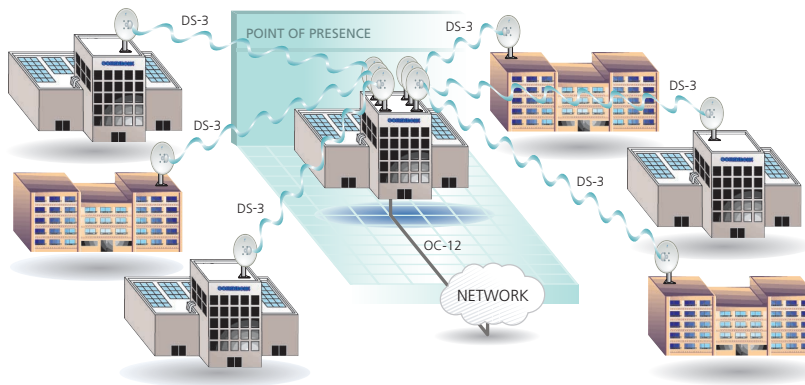
MOBILITY AND PERFORMANCE

SKYZHONE 45 provides a high degree of mobility. This key wireless ownership enables service providers easy deployment to multiple locations and diverse geographic areas. Using robust 16 QAM modulation and powerful Reed-Solomon error correction, SKYZHONE 45 provides reliable and secure communications.

DUAL INTELLIGENCE: ZHONE MANAGEMENT SYSTEM (ZMS) INTEGRATION COMBINED WITH STAND-ALONE LINK TRANSPORT

In the absence of ZMS our intelligent system microprocessors manage the transport independently as a stand-alone link. The integration of SKYZHONE 45 with ZMS allows seamless end-to-end administration that other offerings cannot provide. SKYZHONE 45 is an integral part of the Zhone network management system. Zhone's architecture allows for a fully manageable, integrated network controlled by the Zhone Management System.
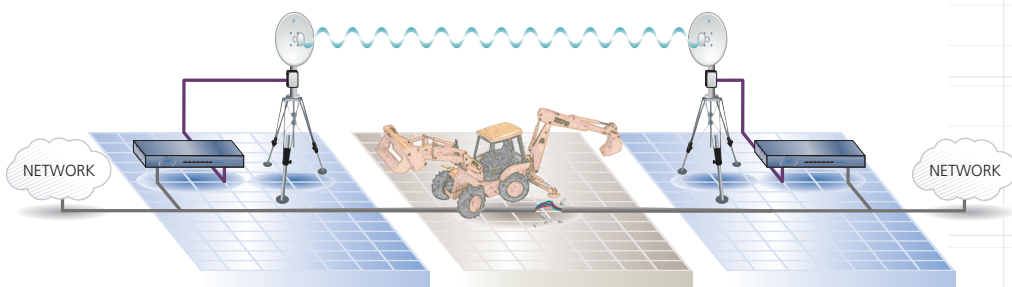
MULTI-CHANNEL CAPABILITY

Offering 17 distinct channels, **SKYZHONE 45** provides the frequency agility and diversity need-ed for unlicensed operation. Service providers can readily serve multiple links from a single point of presence, with even higher densities achievable by varying signal polarization.

Fiber Extension Application
With industry-leading multi-channel capability, SKYZHONE 45 allows up to 17 separate links to be deployed from a single hub.

SKYZHONE 45 offers three different parabolic antenna dish sizes to provide flexible options for high-speed transport. Transport distance is dependent on antenna size: the 2 foot diam-eter antenna can transport data up to 4.3 miles, the 4 foot diameter antenna can transport data up to 5.7 miles and the 6 foot diameter antenna can carry a full DS-3 payload up to 6.5 miles with 99.999% link availability. Factoring for 99.995% availability, the 6 foot antenna extends **SKYZHONE 45**'s transport distance up to 10 miles.

Backup and Temporary Applications
Minimize downtime due to fiber cuts with SKYZHONE 45. With its compact size, ease of deployment and high performance, SKYZHONE 45 can provide temporary DS-3 service quickly and reliably.

TECHNICAL SPECIFICATIONS

General

- SkyZhone 45 is a complete point-to-point broadband wireless transport system, including 2 antennas, 2 ODUs (Outdoor Units), and 2 IDUs (Indoor Units)
- Design range: 0 to 10 miles line-of-sight

IDU (Indoor Unit) Chassis

- Dimensions: 1.75 in. x 17.2 in. x 8.24 in. (HWD)
- Rack Mount: 19 in. or 23 in. width

ODU (Outdoor Unit) Chassis

- Dimensions: 10.0 in x 6.0 in x 4.0 inch (HWD)
- Pole or Wall Mount

Parabolic Antenna

- Dimensions: 2 ft., 4 ft. or 6 ft. diameter
- Pole Mount: 1.9 in. to 4.5 in. diameter
- Included bracket provides azimuth and tilt adjustment

Installation

- Antenna pair mounted in line-of-sight
- ODU cable distance to antenna 6 ft. max.
- IDU cable distance to ODU 300 ft. max.

Power Requirements

- IDU DC: –48 VDC nominal @ 50 W. (–36 to –72 VDC). Complies with "shared DC power" voltage limits criteria and electrical noise criteria of GR-499 core
- IDU AC: 90-260 VAC, 45-65 Hz.
- ODU DC: +17 VDC @ 15 W supplied from IDU via coaxial cable

Environmental

- IDU Operating Temp.:-40° to +65° C
- IDU Storage Temp.: -40° to +75°
- IDU Humidity: 95% non-condensing in sheltered environment
- ODU Operating Temp.: -40° to +65°
- ODU Storage Temp: -40° to +75° C
- ODU Humidity: 100% in unsheltered environment

Standards Compliance

- Safety: UL 1950 3rd Edition, CSA 950
- Emissions: FCC part 15 Class A, FCC part 15 Subpart E, GR-1089-Core (NEBS Level 3)
- Environmental: GR-63-Core (NEBS Level 3), GR-49, GR-487

General RF Specifications

- Frequency Bands: 5.725 to 5.825 GHz / 5.25 to 5.35 GHz
- Modulation: 16 QAM Forward Error Correction: Reed Solomon
- Channelization Plan: Select from 17 possibilities
- Occupied Bandwidth: 18 MHz with guard bands
- Channel Spacing: 30 MHz center to center minimum, programmable
- TX/RX Frequency Separation 475 MHz, fixed
- Transmit IF Frequency: 615 MHz
- Receive IF Frequency: 140 MHz

Transmitter Specifications

- Frequency Reference: Internal TCXO
- Frequency Stability: 1.0 ppm (-40° to +65° C) aging <3.5 ppm over 10 years
- Transmitted Power Output: +7 dBm maximum measured at the antenna connector and controlled by either the Craft Interface or the Zhone Management System in 0.5 dB increments to comply with maximum antenna EIRP requirements of CFR 47 Part 15.407
- Transmitted Spectral Mask: In compliance CFR 47 Part 15.407

Receiver Specifications

- Frequency Reference: Internal TCXO
- Frequency Stability: 1.0 ppm (-40° to +65° C) aging < 3.5 ppm over 10 years
- Receive threshold at 10^{-8} BER:-88 dBm

ODU RF Port

- Antenna Connector: N female with special regulatory adapters to insure correct antenna deployments
- Impedance: 50 ohm

ODU-IDU (IF) Port

- Connector: TNC female
- Cable: 50 ohm, 300 ft. length max.

IDU DS-3 Port

- DS-3 44.736 Mbps full-duplex per GR 499
- Input/Output Connectors: Dual BNC
- Input/Output Impedance: 75 ohm unbalanced
- Line Code: B3ZS

IDU Ethernet Port

- Connector: RJ-45
- 10Base-T

IDU RS-232C Craft Port

- Connector: DB-9
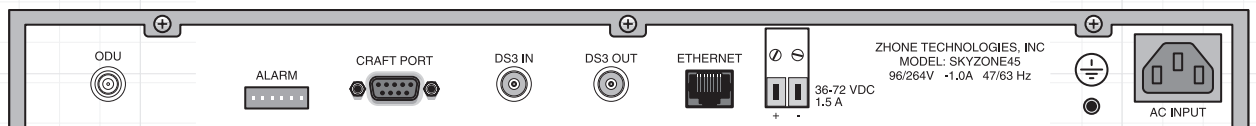- DCE, full-duplex, 9.6 Kbps asynchronous
- VT-100

IDU Alarm Port

- Connector: Phoenix contact modular screw terminal, 6 pin for 18-24 AWG solid or stranded copper wire
- Alarm Types: Critical, Major and Minor

Configuration and Management

- Provisioning: Zhone Management System (ZMS) over 10B-T or VT-100 over local RS-232 craft interface
- Alarms:Indication provided both through ZMS and dry contact closures at the IDU
- Diagnostics: LED Indicators; loop-backs for DS-3; RS-232C using VT-100

SKYZHONE 45 IDU BACK PANEL

ORDERING INFORMATION

Model Number	Description
SZ-045-N--5G-LNK-2F	SkyZhone 45 complete link with two, 2 ft antennas
SZ-045-N--5G-LNK-4F	SkyZhone 45 complete link with two, 4 ft antennas
SZ-045-N--5G-LNK-6F	SkyZhone 45 complete link with two, 6 ft antennas

About Zhone Technologies, Inc. (Zhone)