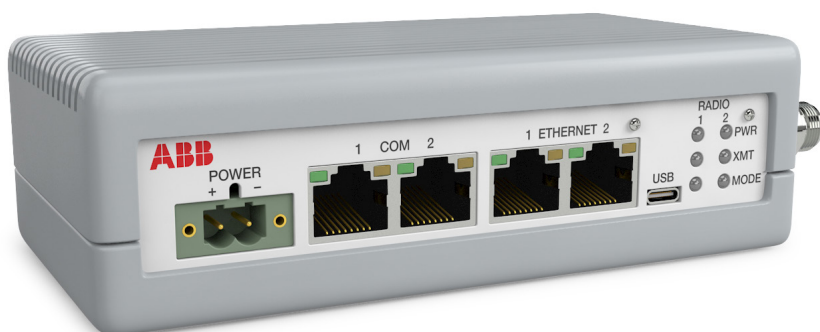


ArcheOS 4000 Series

Licensed 400 MHz PTMP/PTP radios



ArcheOS licensed band point-to-multipoint (PTMP) and point-to-point (PTP) radios provide reliable, around-the-clock wireless connectivity to remote endpoints at low to medium speeds. Every ArcheOS radio can serve as a master, a repeater or a remote endpoint.

ArcheOS 4000 series radios are dual band 406-430 MHz and 450-470 MHz software defined radios. Multiple complex modulation schemes allow for data transfer rates from 9 kbps to 102 kbps using 12.5/25 kHz channel widths. ArcheOS 4000 series radios support conducted output power of up to 10 W.

Enclosed products

Product name	Radios	Ethernet ports	Serial ports	Description
ArcheOS 4222	2	2	2	Dual 400 MHz radios Ethernet and serial
ArcheOS 4122	1	2	2	Single 400 MHz radio, Ethernet and serial

Transmitter

Frequency range	406 – 430 MHz/450 – 470 MHz
Conducted output power	up to 10 W
Range - Line of sight	70+ miles
Modulation	MSK, BPSK, QPSK, 8-PSK, 16-QAM, 32-QAM 64 QAM
Data Rate	9 kbps to 102 kbps
Channel width	12.5/25 kHz
Frequency stability	1.0 ppm
Duty cycle	Continuous
Output impedance	50 Ohms

Receiver sensitivity - FCC

Channel width (kHz)	Modulation	Data rate (kbps)	Sensitivity (dBm)
12.5	MSK	10	-116
	QPSK	23	-104
	8-PSK	34	-100
	16-QAM	45	-96
	32-QAM	57	-93
25	MSK	19	-115
	QPSK	29	-110
	8-PSK	44	-104
	16-PSK	59	-101
	32-QAM	76	-98

Receiver sensitivity - ETSI

Channel width (kHz)	Modulation	Data rate (kbps)	Sensitivity (dBm)
12.5	BPSK	9	-114
	MSK	10	-118
	QPSK	17	-110
	8-PSK	26	-105
	16-QAM	40	-101
	32-QAM	44	-98
25	64-QAM	52	-95
	BPSK	16	-111
	MSK	19	-113
	QPSK	33	-109
	8-PSK	51	-104
	16-QAM	68	-100
	32-QAM	85	-97
	64-QAM	102	-91

Data transmission

Error Detection	Up to 32-bit CRC, retransmit on error
Data Encryption	AES 128/256
Data Interfaces	2 x 10/100 Ethernet, 2 x RS232/422/485 Serial
Data Connector	4 x RJ-45
Serial interface Speed	Up to 230.4 kbps

Automation protocols on COM

Modbus RTU, Modbus TCP, DNP3

Power/Physical

Operating Voltage	10 – 32 VDC +/- 10%
Transmit Current (1W/8W)	Average mA @12 VDC Single radio: 562/945 mA Dual radio: 611/1145 mA
RF Connector	TNC
Dimensions (L x W x H)	6.625" (168 mm) x 3.45" (88 mm) x 1.835" (47 mm)
Weight	Single radio: 1.54 lbs (700 grams) Dual radio: 1.61 lbs (730 grams)

Wireless approvals

FCC, ETSI
Radio Equipment Directive (RED) compliant

Environmental specifications

Operating temperature range	-40°C to +75°C
Humidity	95% operating humidity @ 40°C non-condensing
Location	UL Class I, Division 2, Groups A, B, C and D; T3C

Management

SNMP V3
SuprOS carrier-class NMS support

Security

AES 128/256-bit encryption
Password authentication
VLAN network segregation

Unique capabilities

- **High Speed** 9.6 kbps to 102 kbps over-the-air throughput. ArcheOS's DSM technology offers the industry's highest throughput in a 12.5 kHz channel at 57 kbps.
- **Dual Band** 406 – 430 MHz/450 – 470 MHz frequency band support with a single radio.
- **Dual Radio** Support for optional second RF module in a single enclosure (ArcheOS 4222) provides enhanced repeater functionality, higher throughput rates and multiband/multi-frequency operation
- **Ethernet Switch** Two independent Ethernet ports, each with full VLAN support and configurable as access ports, trunks, or mixed.
- **Serial Bridge** Seamless integration for hybrid networks utilizing both Ethernet and legacy serial devices.

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