



Spectronite A10

All-Outdoor with **LinkProtect**

Superior capacity & unprecedented robustness

High-performance full-outdoor system

Optimal Tx power / Dynamic Channel technology

Smart power protection



PRODUCT DATASHEET

v1.9 January 2017

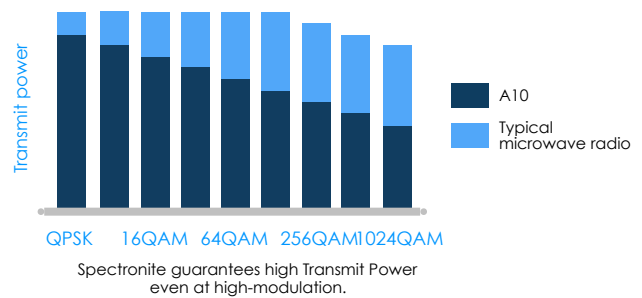
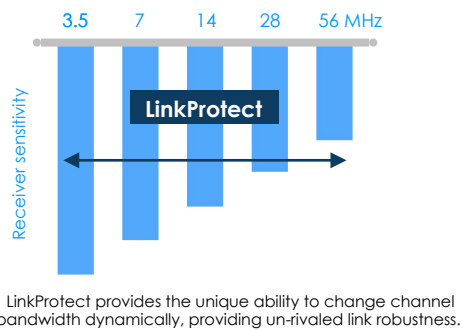


Setting New Heights in Network Uptime.

LinkProtect for best in class robustness

With the growing demand for wireless backhaul capacity, usage of advanced modulation is spreading and wider channels are becoming more popular. As a result, transmission is getting more sensitive to fading and network reliability is strongly affected.

A10 integrates Spectronite revolutionary LinkProtect technology and optimized transmit power to fight against the side-effect of high-capacity transmission. LinkProtect enables a full dynamic management of the transmission channel, resulting in the strong improvement of the overall link robustness, smaller antennas and longer distance.



Carrier-class power options

the most robust microwave radio in the industry is made even more resistant by the use of a 100% redundant power supply. A10 provides smart power management and real-time sensing of power modules. The failure of a power module will automatically trigger alarms to allow for scheduled preventive maintenance.

All-road site setup

A10 breaks the 100m barrier between the last switch and the radio, often caused by PoE distance limitations. Fiber port and direct power injection allow for the installation of radios hundreds of meters away from data rooms making it a true all-road radio.



Option for redundant PoE power supply is available. The A10 integrated smart power sensors will monitor real-time power supply and trigger alarms triggering preventive maintenance requests.

Fiber ports coupled with direct DC power breaks the Power-over-Ethernet 100m distance limit.

RADIO

Frequency bands

7, 8, 11, 13, 15, 18, 23, 26, 28, 32, 38, 42 GHz

Channel bandwidth

3.5 MHz - 56 MHz, all ETSI and ANSI channels

Modulation

1024QAM, 512QAM, 256QAM, 128QAM, 64QAM, 32QAM, 16QAM, 8QAM, QPSK

Radio protection

- LinkProtect technology for dynamic channel management
- Adaptive coding and modulation (ACM)
- Adaptive power control (ATPC)
- 1+1

Transmit power

- Dynamic distortion compensation for higher power at all modulation orders
- Up to 35 dBm with full-Indoor Unit
- Up to 30 dBm with high power outdoor radio

THROUGHPUT

Ethernet throughput

575 Mbps max. bi-directional / full-duplex (with Header Compression over 64B only traffic)

Air interface throughput

466 Mbps max. bi-directional / full-duplex

Ethernet Ports

Per port Ingress rate shaping
Per port Egress rate shaping

Latency

50 to 180 µsec depending on traffic type

CONNECTIVITY

Ethernet interface

- 2x 10/100/1000BASE-T Ethernet ports type RJ-45
- 1x 1000BASE-X SFP fiber port
- 1x E1/DS1 port (optional) type RJ-45

Local console

Micro USB

Power

- Dual redundant Power-Over-Ethernet ports
- -48 VDC power connector with tear protection, for direct DC injection

ETHERNET

L2 switching

- Maximum MAC addresses: 8192
- Jumbo frames: 10240 bytes
- Number of VLANs: 4096
- Port-based VLAN, 802.1Q VLAN
- Link aggregation*
- IEEE 802.3: 10BASE-T
- IEEE 802.3u: 100BASE-T
- IEEE 802.3ab: 1000BASE-T
- IEEE 802.3z: 1000BASE-X
- IEEE 802.3ac: Ethernet VLANs
- IEEE 802.1Q: VLAN tagging
- IEEE 802.1Q: Trunk Interconnect
- IEEE 802.3x: Pause Frames/Flow control
- IEEE 802.1w: Rapid Spanning Tree Protocol (RSTP)*

Quality of Service

- Port Priority
- IEEE802.1p/IEEE802.1Q
- IPv4 DiffServ
- TC
- MAC

Synchronisation

IEEE-1588 TC*

TDM

E1/DS1 Interface

- E1 2.048 Mb/s 120 Ohm balanced
- DS1 1.554 Mb/s 100 Ohm balanced
- SAtOP (RFC4553)
- Jitter and wander compliant to MEF18, ITU-T G.8261 and G.823

MANAGEMENT

Management modes

- In-band (local and remote)
- Out-of-band through dedicated port
- VLAN based management (local and remote)
- Local (console)
- Integrated SNMP agent

Remote management

SNMPv1/v2c

Alarms

- Multi-level logs activation option
- Remote logging to Syslog server
- User-defined criticality settings

ENVIRONMENTAL

Operation temperature

-33°C to +55°C according to ETSI 300 019-2-4 Class 4M5
Unitary tested -40°C to +60°C

Humidity

0 to 100% non condensing

MECHANICAL

Dimensions

Height: 275 mm
Width: 225 mm
Depth: 95 mm

Weight

3.8 kg

ELECTRICAL

Power consumption

55W max.

Power supply

Fully redundant power through:

- -24.0 V to -60.0 V, DC PoE
- -24.0 V to -60.0 V, DC redundant PoE
- -48 V (-36.0 V to -59.0 V), DC power

ANTENNAS & COUPLERS

Diameters

1/2, 2/3, 1, 1.5, 2, 3, 4, 5, 6 ft.
direct or remote mount

Couplers

- 3dB, 6dB or 10dB single polarised 1+1 hybrid couplers
- Orthomode transducer for dual-polarisation operation

Mounting Pole

ø51 to ø114 mm

CERTIFICATIONS

Spectrum

EN 302 217-2-2

EMC

EN 301 489-1, EN 301 489-4

Safety

EN 60950-1

Surge

EN61000-4-5, Class 4

Storage

ETSI EN 300 019-1-1 Class 1.2

Transportation

ETSI EN 300 019-1-2 Class 2.3

Maximum transmit power (dBm)					
Frequency	6 - 8 GHz	11 GHz	13 - 18 GHz	23 - 26 GHz	28 - 38 GHz
QPSK	30	28	26	25	23
8QAM	30	28	26	25	23
16QAM	30	28	26	25	23
32QAM	30	28	26	25	23
64QAM	30	28	26	25	23
128QAM	29	26	25	24	22
256QAM	28	25	24	23	21
512QAM	27	24	23	22	20
1024QAM	26	23	22	21	19

Air interface throughput (Mbps)							
	56 MHz	40 MHz	28 MHz	20 MHz	14 MHz	7 MHz	3.5 MHz
QPSK	93	67	47	33	23	11	6
8QAM	140	100	70	50	35	17	8
16QAM	186	133	93	67	47	22	11
32QAM	233	166	116	83	58	28	14
64QAM	279	200	140	100	70	34	17
128QAM	326	233	163	116	81	39	20
256QAM	372	266	186	133	93	45	22
512QAM	419	299	210	150	105	50	25
1024QAM	466	333	233	166	116	-	-

Maximum Ethernet throughput (Mbps)							
	56 MHz	40 MHz	28 MHz	20 MHz	14 MHz	7 MHz	3.5 MHz
QPSK	115	82	58	41	29	14	7
8QAM	173	124	86	61	43	21	10
16QAM	230	164	115	82	58	28	14
32QAM	288	206	144	103	72	35	17
64QAM	345	246	173	124	86	41	21
128QAM	403	288	201	144	101	48	24
256QAM	460	329	230	164	115	55	28
512QAM	518	370	259	185	129	62	31
1024QAM	575	411	288	206	144	-	-

Receiver sensitivity (dBm @ BER 10-6) for channel bandwidth of 3.5 MHz											
Frequency	6	7	8	13	15	18	23	26	28	32	38
QPSK	-95.0	-94.5	-94.5	-94.0	-93.0	-94.5	-93.5	-93.0	-93.0	-92.5	-92.0
8QAM	-90.5	-90.0	-90.0	-89.5	-88.5	-90.0	-89.0	-88.5	-88.5	-88.0	-88.0
16QAM	-88.5	-88.0	-88.0	-87.0	-86.5	-88.0	-87.0	-86.5	-86.5	-85.5	-85.5
32QAM	-85.0	-84.5	-84.5	-83.5	-83.0	-84.5	-83.5	-83.0	-83.0	-82.0	-82.0
64QAM	-82.0	-81.5	-81.5	-80.5	-80.0	-81.5	-80.5	-80.0	-80.0	-79.0	-79.0
128QAM	-78.5	-78.0	-78.0	-77.5	-77.0	-78.0	-77.0	-76.5	-76.5	-76.0	-76.0
256QAM	-75.5	-75.0	-75.0	-74.5	-74.0	-75.0	-74.0	-73.5	-73.5	-73.0	-73.0
512QAM	-73.0	-72.5	-72.5	-72.0	-71.5	-72.5	-72.0	-71.5	-71.5	-70.5	-70.5
1024QAM	-	-	-	-	-	-	-	-	-	-	-

Receiver sensitivity (dBm @ BER 10-6) for channel bandwidth of 7 MHz											
Frequency	6	7	8	13	15	18	23	26	28	32	38
QPSK	-92.5	-92.0	-92.0	-91.5	-90.5	-92.0	-91.0	-90.5	-90.5	-90.0	-90.0
8QAM	-88.0	-87.5	-87.5	-87.0	-86.0	-87.5	-86.5	-86.0	-86.0	-85.5	-85.5
16QAM	-86.0	-85.5	-85.5	-84.5	-84.0	-85.5	-84.5	-84.0	-84.0	-83.5	-83.0
32QAM	-82.5	-82.0	-82.0	-81.0	-80.5	-82.0	-81.0	-80.5	-80.5	-80.0	-79.5
64QAM	-79.5	-79.0	-79.0	-78.0	-77.5	-79.0	-78.0	-77.5	-77.5	-77.0	-76.5
128QAM	-76.5	-75.5	-75.5	-75.0	-74.5	-75.5	-74.5	-74.5	-74.0	-74.0	-73.5
256QAM	-73.5	-72.5	-72.5	-72.0	-71.5	-72.5	-71.5	-71.5	-71.0	-71.0	-70.5
512QAM	-71.0	-70.0	-70.0	-69.5	-69.0	-70.0	-69.5	-69.0	-68.5	-68.5	-68.0
1024QAM	-	-	-	-	-	-	-	-	-	-	-

Receiver sensitivity (dBm @ BER 10-6) for channel bandwidth of 14 MHz											
Frequency	6	7	8	13	15	18	23	26	28	32	38
QPSK	-90.0	-89.5	-89.5	-89.0	-88.0	-89.5	-88.5	-88.0	-88.0	-87.5	-87.5
8QAM	-85.5	-85.0	-85.0	-84.5	-83.5	-85.0	-84.0	-83.5	-83.5	-83.0	-83.0
16QAM	-83.5	-83.0	-83.0	-82.0	-81.5	-83.0	-82.0	-81.5	-81.5	-81.0	-80.5
32QAM	-80.0	-79.5	-79.5	-78.5	-78.0	-79.5	-78.5	-78.0	-78.0	-77.5	-77.0
64QAM	-77.0	-76.5	-76.5	-75.5	-75.0	-76.5	-75.5	-75.0	-75.0	-74.5	-74.0
128QAM	-74.0	-73.0	-73.0	-72.5	-72.0	-73.0	-72.0	-72.0	-71.5	-71.5	-71.0
256QAM	-71.0	-70.0	-70.0	-69.5	-69.0	-70.0	-69.0	-69.0	-68.5	-68.5	-68.0
512QAM	-68.5	-67.5	-67.5	-67.0	-66.5	-67.5	-67.0	-66.5	-66.0	-66.0	-65.5
1024QAM	-65.5	-65.0	-65.0	-64.0	-63.5	-65.0	-64.0	-63.5	-63.5	-63.0	-62.5

Receiver sensitivity (dBm @ BER 10-6) for channel bandwidth of 28 MHz												
Frequency	6	7	8	11	13	15	18	23	26	28	32	38
	20 MHz											
QPSK	-87.5	-87.0	-87.0	-87.5	-86.5	-85.5	-87.0	-86.0	-85.5	-85.5	-85.0	-85.0
8QAM	-83.0	-82.5	-82.5	-83.0	-82.0	-81.0	-82.5	-81.5	-81.0	-81.0	-80.5	-80.5
16QAM	-81.0	-80.5	-80.5	-81.0	-79.5	-79.0	-80.5	-79.5	-79.0	-79.0	-78.5	-78.0
32QAM	-77.5	-77.0	-77.0	-77.5	-76.0	-75.5	-77.0	-76.0	-75.5	-75.5	-75.0	-74.5
64QAM	-74.5	-74.0	-74.0	-74.5	-73.0	-72.5	-74.0	-73.0	-72.5	-72.5	-72.0	-71.5
128QAM	-71.5	-70.5	-70.5	-71.0	-70.0	-69.5	-70.5	-69.5	-69.5	-69.0	-69.0	-68.5
256QAM	-68.5	-67.5	-67.5	-68.0	-67.0	-66.5	-67.5	-66.5	-66.5	-66.0	-66.0	-65.5
512QAM	-66.0	-65.0	-65.0	-66.0	-64.5	-64.0	-65.0	-64.5	-64.0	-63.5	-63.5	-63.0
1024QAM	-63.0	-62.5	-62.5	-63.0	-61.5	-61.0	-62.5	-61.5	-61.0	-61.0	-60.5	-60.0

Receiver sensitivity (dBm @ BER 10-6) for channel bandwidth of 56 MHz												
Frequency	6	7	8	11	13	15	18	23	26	28	32	38
	40 MHz											
QPSK	-84.0	-83.5	-83.5	-84.0	-83.0	-82.0	-83.5	-82.0	-82.0	-82.0	-81.5	-81.5
8QAM	-80.0	-79.5	-79.5	-80.0	-79.0	-78.0	-79.5	-78.5	-78.0	-78.0	-77.5	-77.5
16QAM	-77.5	-77.0	-77.0	-77.5	-76.5	-75.5	-77.0	-76.0	-75.5	-75.5	-75.0	-75.0
32QAM	-74.5	-73.5	-73.5	-74.0	-73.0	-72.5	-73.5	-72.5	-72.5	-72.0	-72.0	-71.5
64QAM	-71.0	-70.5	-70.5	-71.0	-70.0	-69.0	-70.5	-69.5	-69.0	-69.0	-68.5	-68.5
128QAM	-68.5	-67.5	-67.5	-68.0	-67.0	-66.5	-67.5	-66.5	-66.5	-66.0	-66.0	-65.5
256QAM	-65.0	-64.5	-64.5	-65.0	-64.0	-63.0	-64.5	-63.5	-63.0	-63.0	-62.5	-62.5
512QAM	-63.0	-62.5	-62.5	-63.0	-61.5	-61.0	-62.5	-61.5	-61.0	-61.0	-60.5	-60.0
1024QAM	-58.5	-58.0	-58.0	-59.5	-58.5	-57.5	-59.0	-58.0	-57.5	-57.5	-57.0	-57.0



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