

SM Cirius SHC - 900 Mbps Ethernet + TDM

Hybrid Microwave Transport Solution

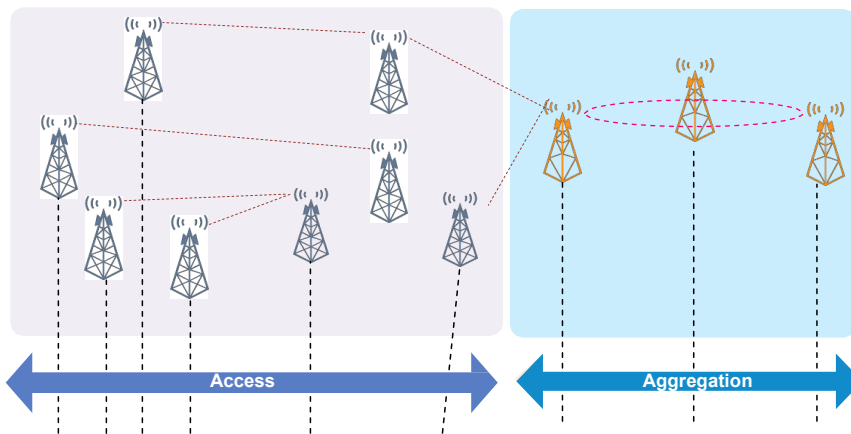
The Cirius SHC (Super High Capacity) series is a carrier-grade, wireless Ethernet backhaul product line which includes both TDM and Ethernet high-capacity devices.

All products in the Cirius SHC series are tightly coupled with Star Microwave's advanced microwave radios and are managed by comprehensive management system providing a complete solution for mobile backhaul, private networks, and wireline network last-mile extensions.



Product Description

The Cirius SHC series product line integrates superior networking functionality with the industry's most advanced microwave technology creating a superior transport solution.



Product Features

- Operation Band : 6-38GHz
- FCC channels 10-50 MHz
- ETSI channels 7-56 MHz
- Modulations up to 1024 QAM.
- Data throughput up to 900 Mbps and TDM Payload.
- ATPC (Automatic Transmit Power Control).
- ACM (Adaptive Code Modulation)
- Up to 4,000 active VLAN entries
- Supports Jumbo frame size up to 9600 bytes.
- Obtain double the capacity over same bandwidth using CDDP technology

Applications

- Ideal for carrier-class backhaul applications
- Tele-Medicine applications
- Video Surveillance

Technical Specifications

| GENERAL | | |
|---------------------------------------|--|---|
| Frequency Band | 6 / 7 / 8 / 11 / 13 / 15/ 18 / 23 / 26 /28 / 32 / 38GHz | |
| Channel Bandwidth | ETSI: 7, 14, 28, 40, 56 MHz FCC: 10, 20, 40 50 MHz | |
| Modulation | QPSK - 1024 QAM | |
| Transmission Capacity | 10Mbps – 450Mbps, per carrier | |
| PERFORMANCE | | |
| System Configuration | 1+0, 1+1, 2+0, 2+0 XPIC | |
| Features | ATPC, ACM, FEC | |
| ATPC Feature | Hitless | |
| Regulatory Compliance | ETSI EN 302 217-2-1, ETSI EN 302 217-2-2 | |
| | ETSI EN 301 489-1 EMC, ETSI EN 301 489-4 EMC, RoHS | |
| Safety | EN60950-1 | |
| MTBF | 30 years | |
| PORTS | | |
| ODU Interface | 1 x TNC Female; Up to 300m IF cable support | |
| Ethernet | 7 x Giga Ethernet (data traffic, management port) | |
| E1 | 16 x E1 | |
| Serial Port | RS-232 via RJ-45 connector | |
| LED Indicator | RUN, IDU Alarm, ODU Alarm | |
| RSSI Port for RSL (ODU) | BNC test jack, output Voltage vs RSL: 0.1 to 4.5 VDC vs -90 to -20 dBm | |
| SERVICE PARAMETERS | | |
| PDH Service | Interfaces Type | 120Ω balanced (RJ-45) or 75Ω unbalanced (BNC) via MDR68 connector |
| | Bit Rate | E1: 2048 Kbit/s ± 50ppm |
| | Standard | ITU-T G.703 compliance |
| IP Service | Interfaces Type | 4 x 10/100/1000 Base-T (RJ-45) + 3 x 1000 Base-X (SFP) |
| | Frame Size | Up to 2046 bytes |
| | MAC Table Size | 8K |
| | VLAN Tagging | IEEE 802.1Q (Up to 4K VLAN entries) |
| MANAGEMENT | | |
| Management Port | Ethernet VLAN or Separate Ethernet (RJ-45/SFP) | |
| Security/Authentication | Authentication uses 2 level password | |
| SNMP | SNMP traps, MIB, SNMPv2 | |
| Configuration System | Web based HTTP, Telnet, FTP, Serial ASCII | |
| Loopbacks | Line Loopback, System Loopback, IF Loopback | |
| POWER | | |
| Power Consumption (IDU+ODU) | 60W (1+0, 0.5U) per unit | |
| Power Supply Voltage | -48V DC | |
| MECHANICAL & ENVIRONMENTAL | | |
| Dimensions (H x W x D) | IDU: 442 x 240 x 22 | |
| | ODU: 279 x 240 x 92 | |
| Weight | IDU: 3.0 kg | |
| | ODU: 4.2 kg | |
| Temperature Range | IDU: -5°C to +55°C | |
| | ODU: -33°C to +55°C | |
| Humidity | IDU: ≤85%, non-condensing | |
| | ODU: ≤100%, condensing | |

Technical Specifications

Appendix - Transmitter Radio Performance

| Transmitter Technical Specifications | | | | | | | | |
|--------------------------------------|--------------|--------|----|-------|----|----|----|----|
| Frequency band (GHz) | | 6-8 | 11 | 13-15 | 18 | 23 | 32 | 38 |
| Maximum Tx Power (dBm) | QPSK | 30 | 28 | 27 | 25 | 25 | 23 | 23 |
| | 16QAM/32QAM | 26 | 24 | 23 | 22 | 22 | 21 | 20 |
| | 64QAM/128QAM | 25 | 22 | 21 | 20 | 20 | 17 | 17 |
| | 256QAM | 22 | 20 | 19 | 18 | 18 | 15 | 15 |
| | 512QAM | 20 | 18 | 17 | 16 | 16 | 13 | 13 |
| | 1024QAM | 18 | 16 | 15 | 14 | 14 | 11 | 11 |
| Minimum Tx Power | | 0 dBm | | | | | | |
| Tx Power Increment | | 1 dB | | | | | | |
| Tx Power Accuracy | | ± 2 dB | | | | | | |

Appendix - Receiver Radio Performance

| ETSI SYSTEM - Receiver Sensitivity (dBm) | | | | | | | | | |
|--|----------------|---------|-------|-------|-------|-------|-------|-------|-------|
| Capacity | BW | Mod | 6-8 | 11 | 13-15 | 18 | 23 | 32 | 38 |
| 10 | 7 MHz | QPSK | -87.0 | -86.5 | -86.5 | -86.0 | -86.0 | -84.0 | -83.5 |
| 20 | | 16QAM | -83.0 | -82.5 | -82.5 | -82.0 | -82.0 | -80.0 | -79.5 |
| 25 | | 32QAM | -80.0 | -79.5 | -79.5 | -79.0 | -79.0 | -76.0 | -75.5 |
| 32 | | 64QAM | -78.0 | -77.5 | -77.5 | -77.0 | -77.0 | -72.0 | -71.5 |
| 38 | | 128QAM | -75.0 | -74.5 | -74.5 | -74.0 | -74.0 | -68.0 | -67.5 |
| 44 | | 256QAM | -71.0 | -70.0 | -70.0 | -69.5 | -69.5 | -64.0 | -63.5 |
| 49 | | 512QAM | -68.0 | -67.0 | -67.0 | -66.5 | -66.5 | -61.0 | -60.0 |
| 53 | | 1024QAM | -65.0 | -64.5 | -64.0 | -64.0 | -64.0 | -58.0 | -57.0 |
| 21 | 14 / 13.75 MHz | QPSK | -87.0 | -86.5 | -86.5 | -86.0 | -86.0 | -81.0 | -80.5 |
| 42 | | 16QAM | -80.0 | -79.5 | -79.5 | -79.0 | -79.0 | -77.0 | -76.5 |
| 51 | | 32QAM | -77.0 | -76.5 | -76.5 | -76.0 | -76.0 | -73.0 | -72.5 |
| 66 | | 64QAM | -74.0 | -73.5 | -73.5 | -73.0 | -73.0 | -69.0 | -68.5 |
| 78 | | 128QAM | -71.0 | -70.5 | -70.5 | -70.0 | -70.0 | -65.0 | -64.5 |
| 90 | | 256QAM | -67.0 | -66.0 | -66.0 | -65.5 | -65.5 | -61.0 | -60.5 |
| 100 | | 512QAM | -64.0 | -63.5 | -63.0 | -62.5 | -62.5 | -58.0 | -57.0 |
| 108 | | 1024QAM | -61.0 | -63.0 | -60.0 | -59.0 | -59.0 | -55.0 | -54.0 |
| 42 | 28 / 27.5 MHz | QPSK | -84.0 | -83.5 | -83.5 | -83.0 | -83.0 | -78.0 | -77.5 |
| 84 | | 16QAM | -78.0 | -77.5 | -77.5 | -77.0 | -77.0 | -74.0 | -73.5 |
| 105 | | 32QAM | -75.0 | -74.5 | -74.5 | -74.0 | -74.0 | -70.0 | -69.5 |
| 133 | | 64QAM | -72.0 | -71.5 | -71.5 | -71.0 | -71.0 | -66.0 | -65.5 |
| 158 | | 128QAM | -69.0 | -68.5 | -68.5 | -68.0 | -68.0 | -62.0 | -61.5 |
| 183 | | 256QAM | -66.0 | -65.0 | -65.0 | -64.5 | -64.5 | -58.0 | -57.5 |
| 200 | | 512QAM | -63.0 | -62.0 | -61.5 | -61.0 | -61.0 | -55.0 | -54.5 |
| 225 | | 1024QAM | -60.0 | -59.0 | -58.5 | -58.5 | -58.5 | -52.0 | -51.5 |
| 84 | 56 / 55 MHz | QPSK | -80.0 | -79.5 | -79.5 | -79.0 | -79.0 | -75.0 | -74.5 |
| 168 | | 16QAM | -75.0 | -74.5 | -74.5 | -74.0 | -74.0 | -71.0 | -70.5 |
| 208 | | 32QAM | -71.0 | -70.5 | -70.5 | -70.0 | -70.0 | -67.0 | -66.5 |
| 265 | | 64QAM | -69.0 | -68.5 | -68.5 | -68.0 | -68.0 | -63.0 | -62.5 |
| 313 | | 128QAM | -65.0 | -64.5 | -64.5 | -64.0 | -64.0 | -59.0 | -58.5 |
| 363 | | 256QAM | -61.0 | -60.0 | -60.0 | -59.5 | -59.5 | -55.0 | -54.5 |
| 407 | | 512QAM | -58.0 | -57.0 | -57.0 | -56.0 | -56.0 | -52.0 | -51.0 |
| 465 | | 1024QAM | -55.0 | -54.5 | -54.5 | -53.0 | -53.0 | -49.0 | -48.0 |

Technical Specifications

Appendix - Receiver Radio Performance

| FCC SYSTEM - Receiver Sensitivity (dBm) | | | | | | | | | |
|---|--------|---------|-------|-------|-------|-------|-------|-------|-------|
| Capacity | BW | Mod | 6-8 | 11 | 13-15 | 18 | 23 | 32 | 38 |
| 15 | 10 MHz | QPSK | -87.0 | -86.5 | -86.5 | -86.0 | -86.0 | -83.0 | -82.5 |
| 30 | | 16QAM | -82.0 | -81.5 | -81.5 | -81.0 | -81.0 | -79.0 | -78.5 |
| 37 | | 32QAM | -79.0 | -78.5 | -78.5 | -78.0 | -78.0 | -75.0 | -74.5 |
| 45 | | 64QAM | -76.0 | -75.5 | -75.5 | -75.0 | -75.0 | -71.0 | -70.5 |
| 52 | | 128QAM | -73.0 | -72.5 | -72.5 | -72.0 | -72.0 | -67.0 | -66.5 |
| 60 | | 256QAM | -70.0 | -69.0 | -69.0 | -68.5 | -68.5 | -63.0 | -62.5 |
| 68 | | 512QAM | -67.0 | -66.0 | -66.0 | -64.0 | -64.0 | -60.0 | -59.5 |
| 75 | | 1024QAM | -63.0 | -62.0 | -62.0 | -62.0 | -62.0 | -57.5 | -57.0 |
| 30 | 20 MHz | QPSK | -85.0 | -84.5 | -84.5 | -84.0 | -84.0 | -81.0 | -80.5 |
| 63 | | 16QAM | -78.0 | -77.5 | -77.5 | -77.0 | -77.0 | -75.0 | -74.5 |
| 79 | | 32QAM | -76.0 | -75.5 | -75.5 | -75.0 | -75.0 | -72.0 | -71.5 |
| 95 | | 64QAM | -73.0 | -72.5 | -72.5 | -72.0 | -72.0 | -68.0 | -67.5 |
| 110 | | 128QAM | -69.0 | -68.5 | -68.5 | -68.0 | -68.0 | -63.0 | -62.5 |
| 126 | | 256QAM | -66.0 | -65.0 | -65.0 | -64.5 | -64.5 | -59.0 | -58.5 |
| 143 | | 512QAM | -63.0 | -62.0 | -62.0 | -61.5 | -61.5 | -56.0 | -55.0 |
| 162 | | 1024QAM | -60.0 | -59.5 | -59.5 | -58.5 | -58.5 | -53.0 | -52.0 |
| 46 | 30 MHz | QPSK | -84.0 | -83.5 | -83.5 | -83.0 | -83.0 | -80.0 | -79.5 |
| 94 | | 16QAM | -78.0 | -77.5 | -77.5 | -77.0 | -77.0 | -75.5 | -74.5 |
| 117 | | 32QAM | -76.0 | -75.5 | -75.5 | -75.0 | -75.0 | -72.0 | -71.5 |
| 142 | | 64QAM | -72.0 | -71.5 | -71.5 | -71.0 | -71.0 | -67.0 | -66.5 |
| 165 | | 128QAM | -69.0 | -68.5 | -68.5 | -68.0 | -68.0 | -63.0 | -62.5 |
| 188 | | 256QAM | -65.0 | -64.0 | -64.0 | -63.5 | -63.5 | -58.0 | -57.5 |
| 213 | | 512QAM | -62.0 | -61.0 | -61.0 | -60.5 | -60.5 | -55.0 | -54.5 |
| 245 | | 1024QAM | -59.0 | -58.0 | -58.0 | -57.5 | -57.5 | -52.0 | -51.0 |
| 64 | 40 MHz | QPSK | -82.0 | -81.5 | -81.5 | -81.0 | -81.0 | -77.0 | -76.5 |
| 128 | | 16QAM | -78.0 | -77.5 | -77.5 | -77.0 | -77.0 | -73.0 | -72.5 |
| 159 | | 32QAM | -74.0 | -73.5 | -73.5 | -73.0 | -73.0 | -69.0 | -68.5 |
| 194 | | 64QAM | -69.0 | -68.5 | -68.5 | -68.0 | -68.0 | -65.0 | -64.5 |
| 226 | | 128QAM | -67.0 | -66.5 | -66.5 | -66.0 | -66.0 | -61.0 | -60.5 |
| 258 | | 256QAM | -63.0 | -62.0 | -62.0 | -61.5 | -61.5 | -57.0 | -56.5 |
| 302 | | 512QAM | -60.0 | -59.0 | -59.0 | -58.0 | -58.0 | -54.0 | -53.5 |
| 330 | | 1024QAM | -57.0 | -56.0 | -56.0 | -55.0 | -55.0 | -51.0 | -50.5 |
| 77 | 50 MHz | QPSK | -82.0 | -81.5 | -81.5 | -81.0 | -81.0 | -75.0 | -74.5 |
| 156 | | 16QAM | -77.0 | -76.5 | -76.5 | -76.0 | -76.0 | -71.0 | -70.5 |
| 195 | | 32QAM | -74.0 | -73.5 | -73.5 | -73.0 | -73.0 | -67.0 | -66.5 |
| 236 | | 64QAM | -69.0 | -68.5 | -68.5 | -68.0 | -68.0 | -63.0 | -62.5 |
| 275 | | 128QAM | -66.0 | -65.5 | -65.5 | -65.0 | -65.0 | -59.0 | -58.5 |
| 314 | | 256QAM | -62.0 | -61.0 | -61.0 | -60.5 | -60.5 | -55.0 | -54.5 |
| 361 | | 512QAM | -59.0 | -58.0 | -58.0 | -57.5 | -57.5 | -52.0 | -51.5 |
| 404 | | 1024QAM | -56.0 | -55.0 | -55.0 | -54.5 | -54.5 | -49.0 | -48.0 |

Star Microwave | 41458 Christy St. | Fremont, CA | 94538 | USA

Tel: +1 510-498-7900 | Fax: +1 510-498-7901 | Email: sales@starmicrowave.com | www.starmicrowave.com

Specifications and availability may change without notice.