StreamCaster 3800

MIMO Radio – Expanded Frequency Options

Silvus introduces its next generation of high-speed wireless communications systems, which include increased RF band support and enhanced mobility support.

The SC3800 dual band radio is the next generation in the Silvus StreamCaster™ family of MIMO radios. The SC3800 has an all new band flexible RF section, providing dual band capability across a much wider range of frequencies. A lower band is provided within the range 400 MHz to 2.7 GHz, and an upper band falls between 4 and 6 GHz. A list of current bands supported is provided in the specifications section. This list will expand as market demands are identified.

Additional SC3800 enhancements include:

- User selectable frequency bands
- Additional bandwidth options (1.25MHz*, 2.5MHz*)
- Enhanced mobility support

The SC3800 transceiver, a stand-alone IP based packet MIMO radio, will surpass the capabilities of traditional SISO (single antenna) solutions and will deliver the following capabilities:

- Connectivity in extreme NLOS (non-line-of-sight) multipath rich environments such as urban canyons and within buildings
- Connectivity under highly mobile conditions on the ground, water, and in the air
- High data throughput rates
- Mesh network (self-forming, or managed)
- Multiple antenna configurations available; omnidirectional, high-gain directional or hybrid

Compared to conventional single antenna solutions, the SC3800 delivers the following validated improvements:

- 4.5x coverage increase in dense urban terrain
- 10x less transmit power for same range and throughput
- 2.5x increase in LOS range
- 3x increase in data rate

Missions Benefitting from the SC3800

The SC3800 is ideal for missions that require superior communications of voice/video/data in NLOS multipath-rich environments. Examples of such missions include:

- Telerobotic / UGV for EOD / IED, recon, surveillance
- Below-deck wireless networking / ship-boarding
- Air-to-air & air-to-ground (manned, or unmanned)
- Urban ops, requiring video links within a building and with units outside the building
- Autonomous convoy
- Ship-to-shore high data rate transfer / comms
- First Responder urban network / relay
- Connectivity within mines / tunnels / caves

Ease of Use

Each transceiver enables bidirectional networking to simplify logistics. As an Ethernet bridge, the SC3800 can be interfaced with countless third party applications, and a multitude of configurations are accessed via web pages within the radio.

Network Management Utility allows for the real-time management of all the radios in the network for TX power, frequency, channel bandwidths, link adaptation, range control and other parameters.

Automatic link adaptation changes the radio operating parameters in real time to provide performance as close to capacity as possible while not losing the link when abrupt changes in channel conditions occur such as moving around a corner or entering a building.

Contact us at: info@silvustechnologies.com +1-310-479-3333 Visit our website: www.silvustechnologies.com

SC3800 Specifications

General

- **Waveform** — Mobile Networked MIMO (MN-MIMO™)
- **Modulation** — C-OFDM; BPSK, QPSK, 16-QAM, 64-QAM
- **Channel Bandwidth** — 1.25, 2.5, 5 & 20 MHz
- **Encryption** — AES 128 or AES 256 (optional)
- **Frequency Stability** — 1 PPM over temp -40° - +85° C
- **Tuning Step Size** — 1 KHz
- **Data Rates** — 65 Mbps UDP & 50 Mbps TCP
- **MAC Protocols (Medium Access Control)** — CSMA, TPMA, TDMA
- **Error Correction** — 1/2, 2/3, 3/4, 5/6
- **Antenna Processing** — Spatial Multiplexing, Space-Time Coding, Eigen Beam Forming
- **No. of Spatial Streams** — 1-4
- **No. of Antennas** — 4
- **Total Power Output** — 10 mW – 1 W (variable)

Performance

- **Latency** — 7 ms average
- **Sensitivity** — Varies with MCS index
Maximum = -102 dBm
(5 MHz BW, MCS 0)
- **Cognitive Interference Avoidance** — Contact sales for additional information

Ordering Information

There are three mechanical versions of the SC3800: standard, extended temperature and OEM PCB. Note the operating temperature and mechanical differences under "Environmental, and "Mechanical".

Additionally, bands must be specified at time of order in accordance with the following Frequency Band Table. If your band of interest is not listed, please contact your sales person.

- **SC3800** — Standard temperature specs (short fins)
- **SC3800-T** — Extended temperature specs (long fins)
- **SC3800-O** — OEM PCB

Frequency Band Specifics

Please note, this table reflects standard frequency bands available, additional bands are frequently added as demands dictate. If your band of interest is not listed, please contact your sales person. (All bands listed in MHz)

Low Band		High Band	
UHF	400-450 *		
ISM 900	902-928 *	**C-1 Band**	4400-4700 *
JTRS	1350-1390	**C-2 Band**	4700-4994
BAS	2025-2110 *	**C-3 Band**	4900-5275 *
BAS+	2025-2110 *	**C-4 Band**	5150-5875 *
2.2	2200-2300 *		
2.3	2300-2400 *		
ISM2400	2400-2500 *		

(*) in development

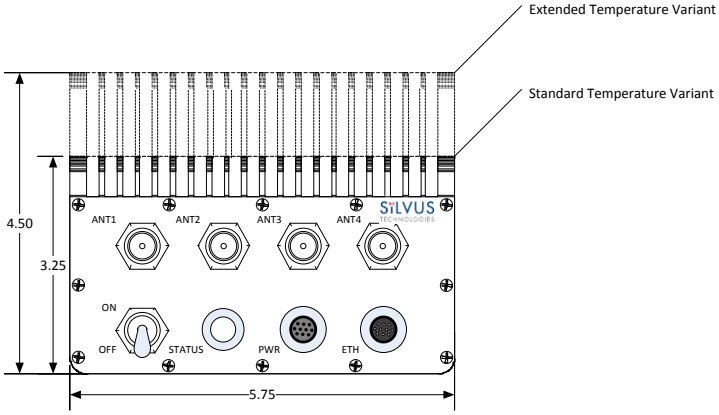
Environmental

	Standard	Extended Temperature
Operating Temp.	-40° - +55° C	-40° - +65° C
IP Rating (Ingress Protection)	IP-67 (Dust / Immersion in water up to 1m)	

Mechanical – Chassis

In addition to the physical system package described here, Silvus offers the core board-stack for integration into an OEM product

	Standard	Extended Temperature
Dimensions	3.25" x 5.75" x 4" H x L x W	4.5" x 5.75" x 4" H x L x W
Weight	3.7 Pounds	4.0 Pounds
Color	FED-STD-595B-34094 (Camouflage green 383 - CARC)	
Mounting	4-hole mounting patterns (non-penetrating) located on both rear and bottom sides	



Connectors

- **RF** — TNC (f) (4 each)
- **Data / Control** — Ethernet cable, Mighty-Mouse 801 Heavy-Duty, Double-Start 10 conductor (f)
- **Power** — Mighty-Mouse 801 Heavy-Duty, Double-Start 10 conductor (m)

Controls and Indicators

- **Power** — On / Off Toggle with detent
- **Status Indicator** — Power-on
- **Web Browser** — Center Frequency, Channel Bandwidth, Output Power, MCS Index, Link Distance, Link Adaptation, StreamCaster™ Network Management Utility

Power Requirements

- **Voltage** — 9 – 20 VDC
- **Consumption** — 13.5 W – 0% TX Duty Cycle (receive only)
24.5 W – 80% TX Duty Cycle

Mechanical – OEM Board Stack

- **Dimensions** — 1.9" x 5.25" x 2.9" H x L x W
- **Weight** — 8 oz
- **RF Connector** — SMP (m)
- **Data Connector** — Harwin M80 8-pin (m), (RS232 optional)
- **Power Connector** — Harwin M80 8-pin

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