INTRODUCING THE
StreamCaster™ 4200

ONLY TACTICAL RADIO WITH TRANSMIT BEAMFORMING - UP TO 40% INCREASE IN RANGE

IP67 RUGGEDIZED HANDHELD FOR MESH NETWORKING IN HARSH ENVIRONMENTS

4W TRANSMIT POWER WITH UP TO 12HR BATTERY LIFE AND COOL OPERATION

HIGH FIDELITY (G.722) INTEGRATED PUSH-TO-TALK

100+ MBPS THROUGHPUT

SiLVUS
TECHNOLOGIES
LEADING THE MIMO REVOLUTION

StreamCaster™ 4200

General

Waveform	Mobile Networked MIMO (MN-MIMO™)
Channel Bandwidth	5, 10, 20 MHz (1.25*, 2.5*)
Encryption	DES Standard, AES/GCM 128/256 Optional (FIPS 140-2), Suite B
Data Rate	100+ Mbps (Adaptive)
MIMO Techniques	Spatial Multiplexing, Space-Time Coding, TX Eigen Beamforming, RX Eigen Beamforming
Total Output Power	1mW – 4W Variable (up to 8W Effective w/ TX Beamforming)
PTT Voice Codec	G.711/G.722
Latency	7ms Average (20MHz BW)
Sensitivity	-99 dBm @ 5MHz BW
Frequency Bands	Bands from 400MHz to 6GHz Available Dual Band Optional
Onboard Storage	Up to 128 GB*

Frequency Band Options

Band (Freq. Code)	Frequency Range	Band (Freq. Code)	Frequency Range
UHF (042)*	400-450	Low C Band (455)*	4400-4700
ISM 900 (091)*	902-928	Federal C (470)*	4400-5000
L Band (137)	1350-1390	High C Band (485)*	4700-5000
Broadcast A (209)	1980-2200	5.2GHz ISM (520)*	5150-5250
Broadcast B (206)	2025-2110	5.8GHz ISM (580)*	5725-5875
Federal S (225)	2200-2300		
Low S Band (230)	2200-2400		
High S Band (240)	2300-2500		
2.4GHz ISM (245)	2400-2500		

(All bands listed in MHz)

Note: If band of interest is not listed, please contact a sales representative

(*) In development

Mechanical

Ambient Temp.	-40° to +65° C
IP Rating	IP-67 (Dust / Immersion in Water up to 1m)**
Dimensions	4.00" x 2.63" x 1.51" (Excluding Connectors)
Weight	15 oz.
Color	Black Anodized
Mounting	4-Hole Mounting Patterns (Through-Hole)

Power

Voltage	9 – 20 VDC
Power Consumption	4.8 W – 24 W
Battery Life	Up to 12 Hours (6.8Ah MBITR Battery)
Power Options	Twist-Lock Battery or Front Panel

Interfaces

RF	TNC(f) (2 Each)
Primary	Ruggedized Circular Connector (Front Panel) 1x Ethernet, 1x RS232, DC Input (Optional)
Auxiliary	Ruggedized Circular Connector (Front Panel) 1x USB 2.0 Host, 1x USB 2.0 OTG
PTT (Push-to-Talk)	Ruggedized Circular Connector (Front Panel)
Status Indicator	Bi-Color LED
Management Interface	Web-Based StreamScape™ Network Manager

Mechanical – OEM
(Pictured Below)

Dimensions	3.61" x 2.15" x 0.71"
Weight	4.1 oz (w/ Outer Shields)
RF Connectors	SMP (m)

(**) Must have all connectors mated with IP67+ cables/antennas

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The SC3822 is the smallest MIMO enabled radio specifically designed for mesh networking in harsh environments. It measures a mere 4.5" x 3.5" x 1.0" in size and delivers connectivity where traditional single antenna radios fail. This radio utilizes the advanced MN-MIMO waveform to enable true self-adaptive ad-hoc mesh networking without any user involvement. The SC3822 automatically self-adapts to deliver data rates as high as 85 Mbps UDP across a single link and is fully interoperable with other radios in the StreamCaster family.

The SC3822 boasts a unique band flexible RF section providing dual band capability across a wide range of frequencies, in a highly compact design. A lower band is provided within the range 400 MHz to 2.7 GHz, and an upper band falls between 4 and 6 GHz. Refer to the specifications section for a complete list of supported bands.

Additional SC3822 features include:

- Dramatically reduced form factor in a 2x2 design
- USB support
- Expansion module to add capability such as Bluetooth, WiFi and analog to IP video encoding

The SC3822 transceiver, a stand-alone IP based packet MIMO radio, will surpass the capabilities of traditional SISO (single antenna) solutions and will deliver:

- 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)
- GPS and Multicast Support

Compared to conventional single antenna solutions, field trials have validated the benefits of MN-MIMO:

- 4.5x coverage increase in dense urban terrain
- 10x less transmit power for same range and throughput
- 2x increase in LOS range
- 2-4x increase in data rate

Missions Benefitting from the SC3822

The SC3822 is ideal for cost-sensitive applications that require an aggressive form factor with superior communications of voice/video/data in NLOS multipath rich environments such as:

- Broadcast/ENG
- Covert surveillance
- 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 SC3822 can be interfaced with countless third party applications, and a multitude of configurations are accessible via web pages within the radio.

The radio comes equipped with the powerful StreamScape™ network management tool that allows for real-time management and control of all radio parameters in the network such as TX power, frequency, channel bandwidth, link adaptation 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.

General

- **Waveform** — Mobile Networked MIMO (MN-MIMO™)
- **Modulation** — C-OFDM; BPSK, QPSK, 16-QAM, 64-QAM
- **Channel Bandwidth** — 5, 10 & 20 MHz (1.25*, 2.5*)
- **Encryption** — DES Standard, AES 128/256 Optional (FIPS 140-2)
- **Frequency Stability** — 1 PPM over temp -40° - +85° C
- **Tuning Step Size** — 1 KHz
- **Data Rates** — Max 85 Mbps UDP & 70 Mbps TCP
- **Error Correction** — 1/2, 2/3, 3/4, 5/6
- **MIMO Diversity** — 2x2
- **MIMO Techniques** — Spatial Multiplexing, Space-Time Coding, Eigen Beam Forming
- **No. of Spatial Streams** — 1-2
- **No. of Antennas** — 2
- **Total Power Output** — 10mW – 500mW (variable)

Performance

- **Latency** — 7 ms average (20MHz BW)
- **Sensitivity** — Varies with MCS index and BW
  Maximum = -99 dBm (5 MHz BW, MCS 0)
- **Frequency Bands** — Dual Band; Bands from 400MHz to 6GHz Available

Ordering Information

There are two mechanical versions of the SC3822: standard and OEM PCB.

Additionally, bands must be specified at time of order in accordance with the table shown under 'Frequency Band Specifics' below. If your band of interest is not listed, please contact your sales person.

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	
Band (Freq. Code)	**Frequency Range**	**Band (Freq. Code)**	**Frequency Range**
UHF (042)	400-450	Low C Band (455)	4400-4700
ISM 900 (091)	902-928	High C Band (485)	4700-5000
L Band (137)	1350-1390	5.2GHz ISM (520)	5150-5250
Broadcast A (209)	1980-2200	5.8GHz ISM (580)	5725-5875
Broadcast B (206)	2025-2110		
Federal 'S' (225)	2200-2300		
Federal 'S' + 2.4GHz ISM (235)	2200-2500		
2.4GHz ISM (245)	2400-2500		

(*) in development

Environmental

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

*Must have all connectors mated and use IP67 or better cables/antennas

Mechanical – Chassis

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

	Standard Temperature	Extended Temperature
Dimensions	4.4" x 3.4" x 1.3"	4.4" x 3.4" x 2.0"
Weight	1.0 Pounds	1.2 Pounds
Color Options	a. Black anodized	
	b. FED-STD-595B-34094 (Green 383)	
Mounting	4-hole mounting patterns (Through-hole)	

1.3"
4.4"
3.4 "
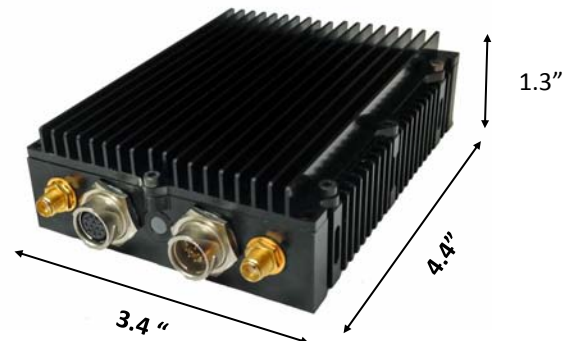
*Standard Temperature enclosure shown. Extended Temp has height of 2"

Connectors

- **RF** — SMA (f) (2 each)
- **Data / Control** — Ethernet (Gigabit for OEM, 100 Base-T for Enclosed), RS232, USB 2.0
- **Power** — Hirose LF Series Circular Connector (Front Panel) Samtec QSH (Expansion)

Controls and Indicators

- **Status Indicator** — Tri-Color LED
- **Web Browser** — Center Frequency, Channel Bandwidth, Output Power, MCS Index, Link Distance, Link Adaptation, StreamScape™ Network Management Utility

Power Requirements

- **Voltage** — 9 – 32 VDC
- **Consumption** — 6 W – 16 W (Duty Cycle & Frequency Dependent)

Mechanical – OEM Board Stack

- **Dimensions** — 3.3" x 2.9" x 0.5" L x W x H
- **Weight** — 9.0 oz (w/ Outer Shields)
  5.3 oz (w/o Outer Shields)
- **RF Connectors** — SMP (m)

StreamCaster™ 3822

MIMO Radio — Dual Band

Part Numbering Scheme

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SC	StreamCaster

MODEL NUMBER

3500
3800
3822

LOW BAND (CENTER FREQ.)

X .	X	X	GHZ

HIGH BAND (CENTER FREQ.)

Y .	Y	Y	GHZ

CHASSIS

x	NONE
S	STD TEMP
T	EXT TEMP

COLOR

x	N/A
B	BLACK
G	GREEN

ENCRYPTION

1	AES 128
2	AES 128/256
3	DES