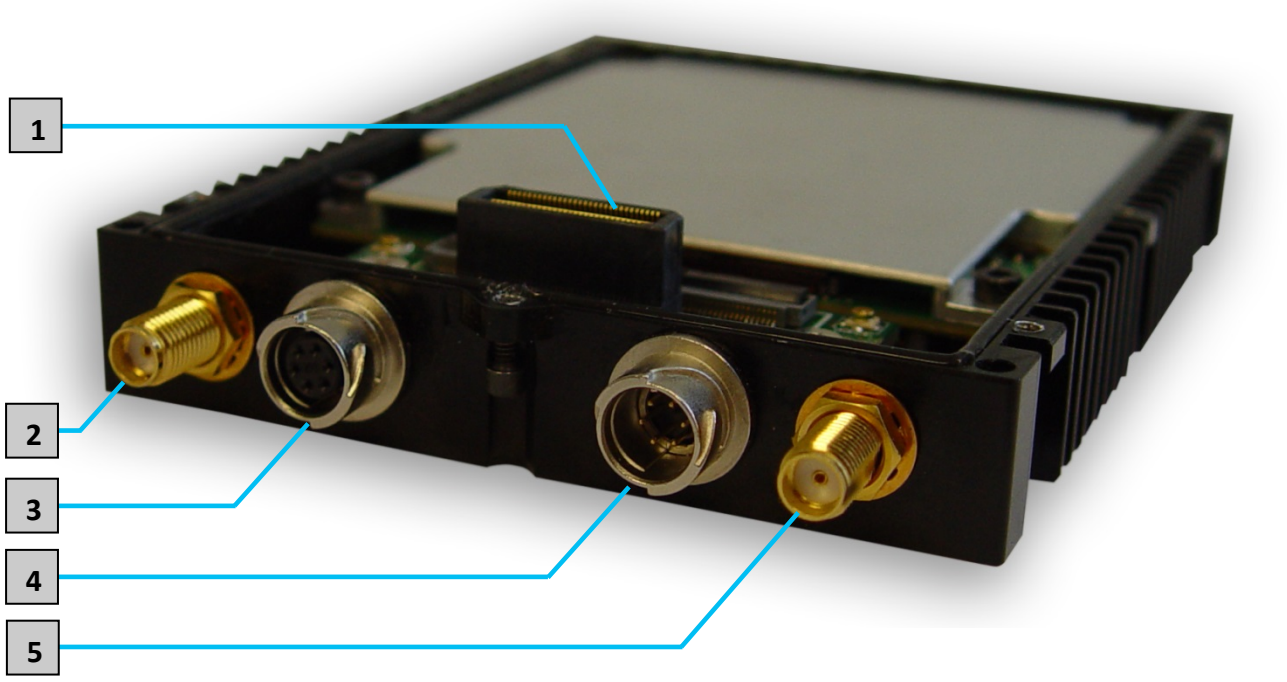
1. Hardware Overview



1 Expansion Connector (For connecting to SC3822) [Samtec QTH-030-03-L-D-A-K]

2 WiFi Connector [SMA Female]

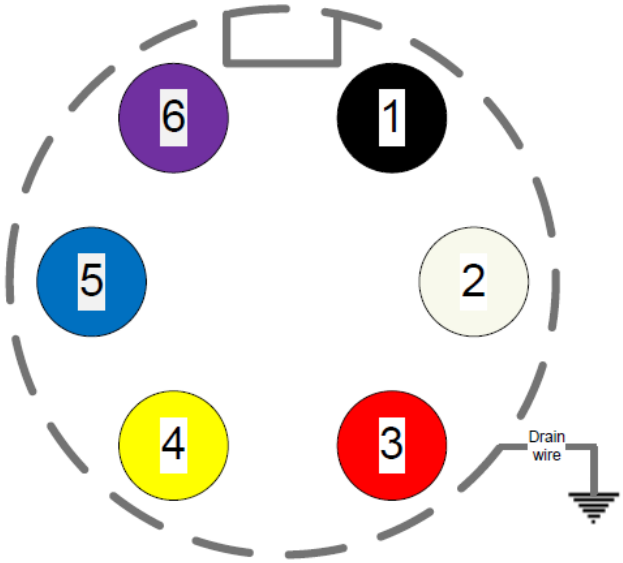
3 SD Video Encoder/Decoder Connector [Hirose LF07WBR-6S] – Future Feature

4 Push-to-Talk (PTT) Connector [Hirose LF07WBR-6P]

5 GPS Connector [SMA Female]

1.1 PTT Connector Pinout

SC-IOM PTT Connector	
Enclosure PTT Connector (Hirose LF07WBR-6P)	**Signal**
1	RESERVED
2	RESERVED
3	GND
4	PTT
5	SPK
6	MIC



Female - PTT

LF07WBP-6S (CIRCULAR CONN)

1.2 Mechanical and Operating Specifications

Power

- **Input** 9-32 V
- **Connection** Extension Interface (mates with SC3822)
- **Consumption** < 10W

Environmental

- **Operating Temperature** -40^0 C to 55^0 C (-40^0 F to 131^0 F)
- **Weather Rating** IP67 (when mated with SC3822 and all connectors mated)

Mechanical – Chassis

- **Chassis Dimensions** 4.4” x 3.4” x 0.6”
- **Weight** 7.3oz

Connectors

- **WiFi** SMA (f)
- **GPS** SMA (f)
- **SD Video** Hirose LF07WBR-6P – Future Feature
- **PTT** Hirose LF07WBR-6S

1.3 SC-IOM Specifications

WiFi

- **Standards** 802.11 a/b/g
- **AP Modes** NAT, Bridged*
- **Frequency Bands** 2.4GHz / 5GHz

PTT (Push-to-Talk)

- **Audio Codec** G.711, 8 ksps @ 8 pits per sample
- **MIC Bias** 1.8V (200Ω series resistor)
- **MIC Input Impedance** >= 20KΩ
- **MIC Input Voltage** 0.707 Vrms (Max)
- **Speaker Output Voltage** 3.5 Vrms (Max)
- **Speaker Output Power** 125mW with 32Ω Load (Max)

Bluetooth – Future Feature

- **Standard** 4.0

Video Encoding / Decoding – Future Feature

- **Electrical Interface** Analog / Composite
- **Encoding Standards** H.264 / MPEG4 / MJPEG
- **Frame Rate** Up to 30fps
- **Bit Rate** Up to 2Mbps

Storage – Future Feature

- **Onboard Storage** 64GB

2. Web Interface

2.1 Getting Started

Connect a laptop to a StreamCaster radio using the supplied Ethernet cable and turn on the radio. Users can type "ping <IPaddress>" in order to determine whether the radio and IOM are fully booted. A web configuration will then be available by typing the IOM IP address in a web browser. Please ensure that your laptop is on the same subnet as the radio and IOM (172.20.xx.xx by default). Users will be directed to the Basic Configuration page. (See **Figure 1**)

2.1.1 Basic Configuration

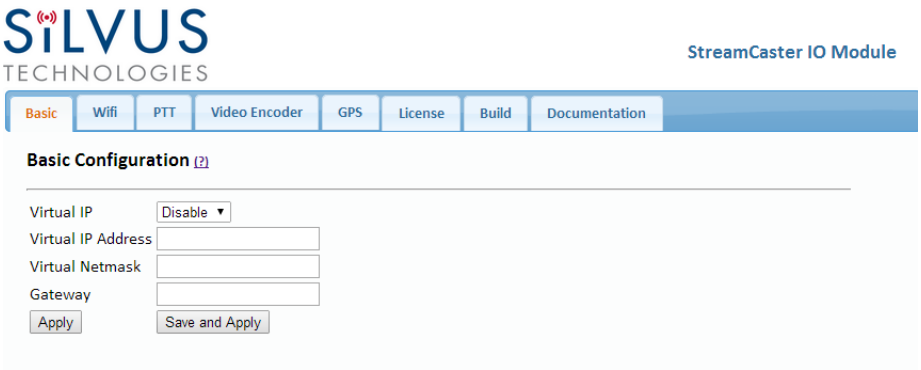


Figure 1 Basic Configuration Page

This page is used to configure a secondary IP address for the IOM. A brief description of each parameter is given below.

- **Virtual IP**: Enable or Disable the Secondary IP address for the IOM.
- **Virtual IP Address**: Secondary IP address for the IOM. The user may set this to be on the user's IP network, e.g., 192.168.2.10. Once this secondary IP address is set, the user may access the IOM web page using either the native IP address or the secondary IP address. Please note that the secondary IP address should NOT be on the 172.20.xx.xx subnet.
- **Virtual Netmask**: Netmask for the Secondary IP address, e.g. 255.255.255.0.
- **Gateway:** Gateway for local network to allow IOM to connect to the internet
- **Apply**: Applies the new values but does not save them to flash.
- **Save and Apply**: Save the new values to flash and apply.

2.1.2 Wifi

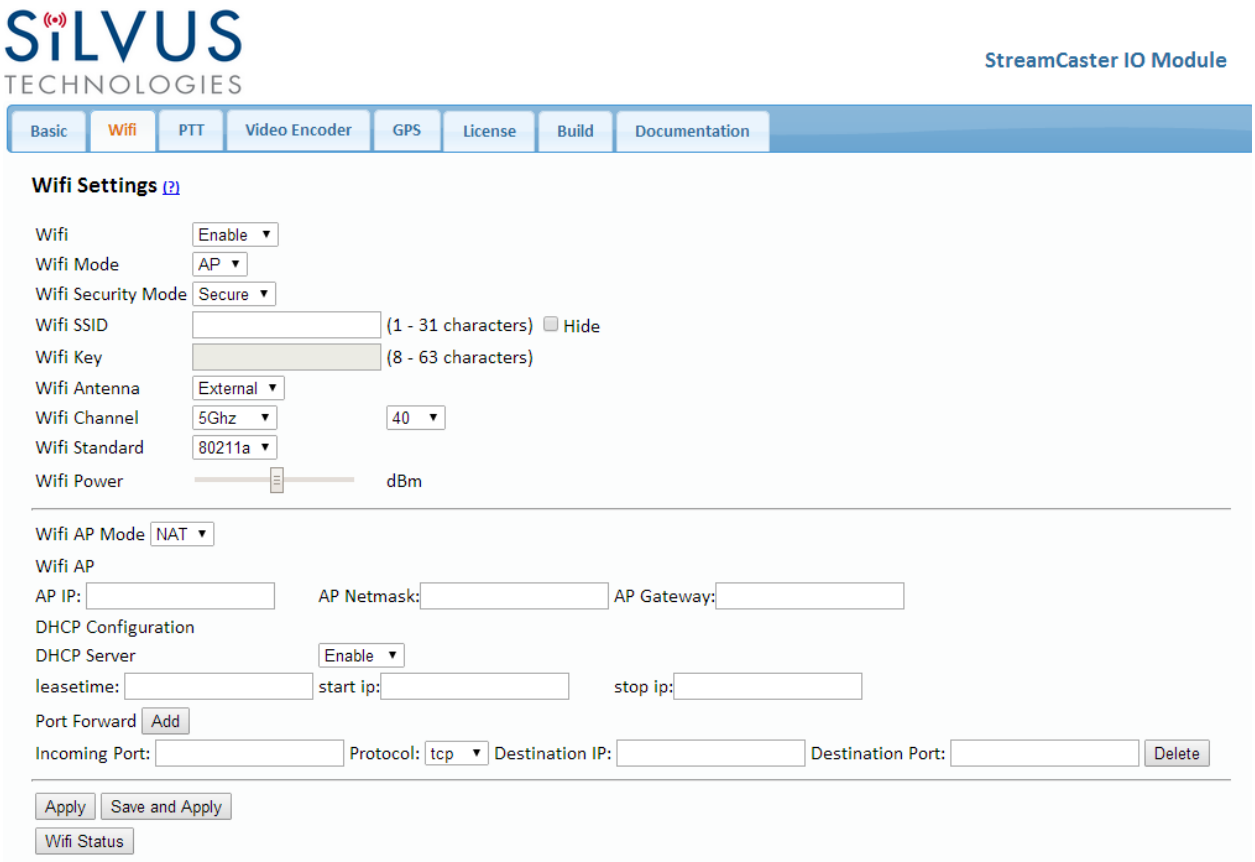


Figure 2 Advanced Configuration Page

This page is used to configure the Wi-Fi functionality of the IOM. A brief description of each parameter is given below.

- **Wifi:** Enable or Disable the IOM WiFi.
- **Wifi Mode**: Currently only AP mode is supported.
- **Wifi Security Mode**: Enable or disable Wifi security. If enabled, the Wifi will be secured with WP2-PSK encryption.
- **Wifi SSID**: Set the publicly displayed name of the Wifi network.
- **Wifi Key**: Set password for Wifi if security mode is set to 'Secure'.
- **Wifi Antenna:** Specify whether the IOM should use its internal antenna or an external antenna connected to the SMA port. Note that the internal antenna will only be effective if using the OEM variant of the IOM.
- **Wifi Channel**: Select Wifi frequency band and channel.

- **Wifi Power:** Use this slider to control the output power of the Wifi. Power can be varied from 0dBm to 25dBm. A higher power will give you more Wifi range, but will also consume more power.

- **Wifi AP Mode:** Currently only NAT mode is supported.

- **AP IP**: Set the IP address of the Wifi AP. This should be on a different subnet than the radio subnet (172.20.xx.yy) to be able to access the mesh from a Wifi connected device. Default is 172.30.254.1

- **AP Netmask**: Set the netmask of the Wifi AP. Default is 255.255.0.0

- **AP Gateway**: Set the Gateway of the Wifi AP. Typically this is the same as the AP IP. Default is 172.30.254.1

- **DHCP Server**: Enable or Disable the DHCP server on the IOMs Wifi AP.

- **Lease Time**: Specify, in seconds, how long a DHCP assigned address is valid before being renewed. Typical value is 600 seconds.

- **Start IP:** Start address of the DHCP range. i.e. 172.30.254.100

- **Stop IP:** Stop address of the DHCP range. i.e. 172.30.254.200

- **Port Forward:** Click the 'Add' button to add more port forwarding rules.

- **Incoming Port**: Incoming port for NAT port forwarding.

- **Protocol**: Choose whether to forward TCP, UDP or Both type of data that is on the incoming port.

- **Destination IP**: IP address of device connected to the IOM Wifi that the data should be forwarded to.

- **Destination Port**: Port number of destination device to deliver the forwarded data to.

- **Apply**: Apply the new values but does not save them to flash.

- **Save and Apply**: Save the new values to flash and apply.

- **Wifi Status**: Shows list of MAC addresses of currently connected devices.

2.1.3 PTT (Push-to-Talk)

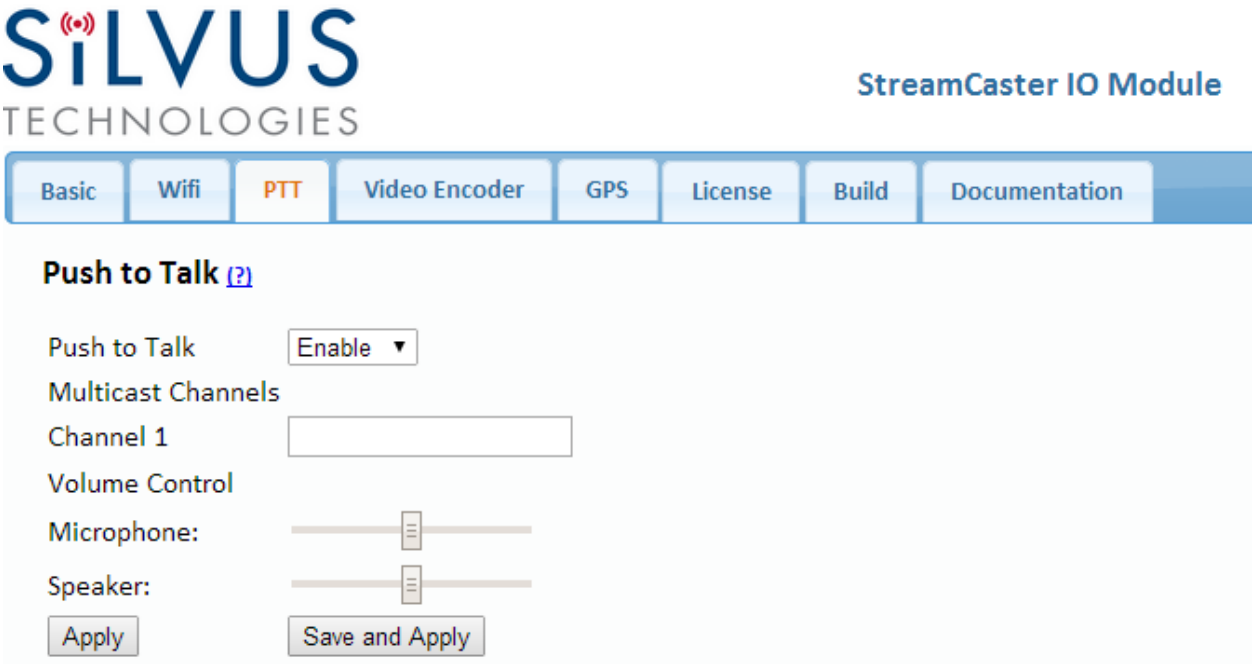


Figure 3 PTT Configuration Page

This page is used to configure channel and volume settings of the IOM push-to-talk functionality.

- **Push to Talk**: Enable or Disable PTT.

Multicast Channels:

- **Channel 1**: Specify the multicast channel that this IOM device will subscribe to. Clusters of IOMs on a single network can have their communications separated by specifying different channels.

Volume Control:

- **Microphone**: Move the slider to increase or decrease the Microphone gain.
- **Speaker**: Move the slider to increase or decrease the speaker volume.
- **Apply**: Apply the new values but does not save them to flash.
- **Save and Apply**: Save the new values to flash and apply.