

SSTVCAM

From ArgentWiki

The Argent Data Systems SSTVCAM module is a self-contained slow-scan television encoder with an integrated digital camera.

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Features

- Scottie 1, Scottie 2, Robot 36 and Robot 72 modes
- Manual trigger or automatic timed operation
- 8 frames of non-volatile image storage
- Character encoder for Scottie modes
- 60 degree FOV with standard lens
- 75 mA current draw while transmitting, 3.5 mA idle

Hardware Description

The SSTVCAM board measures 1.5" by 1.28" (38mm by 35mm) and is 0.85" (22mm) high with the camera installed. It weighs approximately 1/3 ounce (9 grams.) At a minimum, the board requires a power supply and connection to the transmitter's microphone input.

Pinouts

Pin	Function
PWR	Power input - 5 to 12 volts DC
GND	Ground
GND3	Ground

SEND	Sends or stores a frame
RETR	Selects memory retrieve mode
STOR	Selects memory store mode
MODE1	Selects SSTV format
MODE2	Selects SSTV format
PTT	Open collector push-to-talk output
OUT	Audio output
RXD	Serial data input (LVTTTL) - 3.3v max
TXD	Serial data output (LVTTTL)
SEL1	Selects memory slot or timer interval
SEL2	Selects memory slot or timer interval
GND2	Ground
SEL3	Selects memory slot or timer interval

Note that while the unit will function with a 12 volt input, higher input voltages may generate excessive heat at the voltage regulator when the camera is operating. A supply voltage of 9 volts or less is recommended.

The GND, RX, TX, and 3.3V pads across the bottom of the board are provided for remote connection of the camera module. Cable length should be kept to not more than a few inches.

Solder Jumpers

Jumper	Function
HT	Selects handheld PTT mode
SJ1	Increases audio output level
SJ2	Increases audio output level

Operation

All of the digital inputs on the SSTVCAM are active low - grounding a pin sets it 'on'. The SSTV format to be used is selected by the MODE1 and MODE2 inputs, as follows:

MODE1	MODE2	Format
Off	Off	Robot 36
On	Off	Robot 72
Off	On	Scottie 2
On	On	Scottie 1



SSTVCAM sample capture

If STOR and RETR are off, pressing button S1 or momentarily grounding the SEND line triggers an immediate

transmission in the selected mode. If STOR is on, a frame will be saved to the memory slot selected by SEL1-SEL3. If RETR is on, a previously saved frame will be sent from the selected memory slot. If both STOR and RETR are on, the unit will operate in self-timed mode, sending frames automatically with a delay between each frame specified by SEL1-SEL3, as follows:

SEL1	SEL2	SEL3	Delay
Off	Off	Off	0 seconds
On	Off	Off	10 seconds
Off	On	Off	30 seconds
On	On	Off	60 seconds
Off	Off	On	120 seconds
On	Off	On	300 seconds
Off	On	On	600 seconds
On	On	On	1200 seconds

Character Generator

A 1-line character generator occupies the top of the frame in Scottie mode. By default, this line displays the SSTVCAM version and a frame sequence number. The contents of the line can be changed by sending serial data to the unit through the RXD line at 4800 baud with LVTTTL (0 to 3.3v) signal levels. Sending a carriage return or linefeed moves the cursor to the start of the line.

Starting with firmware version 1.2, sending an end-of-text (control-C) signal causes the SSTVCAM to save the current line of text to non-volatile memory.

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ARGENT SSTVCAM IMPLEMENTER'S NOTES

1. The call sign information should be programmed prior to configuring the unit to automatically snap and send pictures. Otherwise, one has a very small window (maybe 20 seconds or so) to enter this information before the unit "locks up."
2. In the future a small programming board (DIP switch perhaps) would make configuration easier than the current method of wire-wrapping on the header pins.