SLOW SCAN TV PRESENTATION

by
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Overview

- What is Slow Scan TV (SSTV)
- A brief history of SSTV
- SSTV Tech stuff
- How can ***you*** setup an SSTV transmission?
- Questions, comments, & feedback

What is Slow Scan TV (SSTV)

- A literal term for SSTV is narrowband television.*
- It allows for an image to be embedded into audio data and transmitted as a radio signal.
- Analog broadcast television requires at least 6 MHz wide channels, because it transmits 25 or 30 picture frames per second (NTSC, PAL, SECAM color systems).*
- SSTV usually only takes up to a maximum of **3 kHz of bandwidth**.*
- Tradeoff: it's a much slower way for picture transmission (a couple of minutes to transmit one image frame).*
- SSTV sends pictures without relying on Cell, WIFI, or Satellite tech.
- It is a neat technology w/links to the moon landing! It can be used to motivate audiences about HAM radio!

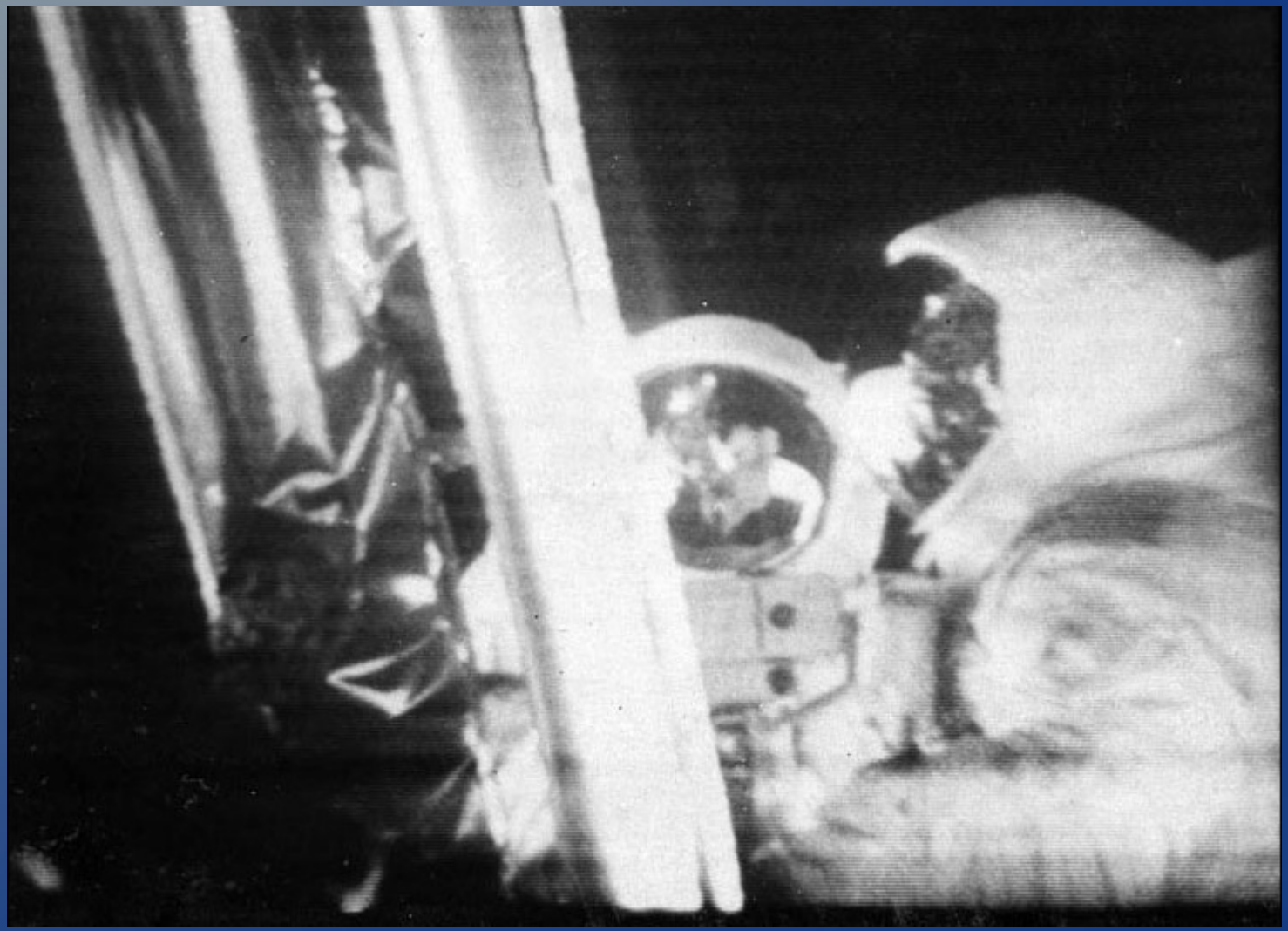
* source = Wikipedia

A Brief Historical Perspective*

- 1957 - Copthorn Macdonald develops the fundamental concepts behind SSTV
- 1968 - FCC makes SSTV legal for advanced class hams (USA).
- 1969 – SSTV used to transmit Apollo 11 images from the moon.
- 1970 - W7FEN uses double sideband SSTV providing simultaneous voice and SSTV (voice on lower sideband, SSTV on upper sideband) for the first time
- 1970 - WB8DQT, W2DD send the first color SSTV pictures using Polaroid camera.
- 1977 - Personal Computer 1st used to send & receive SSTV
- 1997 - PC Windows based SSTV software marketed

* source = Wikipedia

Monochrome SSTV image
10 frames per second
320 scan lines
Multiplexed with comms & telemetry*



* source = Wikipedia

SSTV Technical* (1/2)

- Color images transmit 120, 128, 240, or 256 scan lines.
- The image will take from 12 seconds up to 4 minutes to transmit depending on format, e.g. Martin M1,...M4, Scottie S1,...,S4.
- Scottie S1, the format that I've used, has a frame time of 110 sec. and pushes 256 scan lines to the receiving station (this includes 16px room for HAM's callsign, etc.)
- Sync pulses signifying new lines are sent as bursts of 1200 Hz tones.

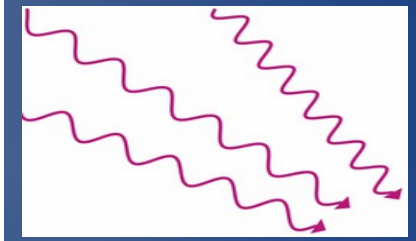
* source = ARRL Extra Class License Manual

SSTV Technical* (2/2)

- A code is transmitted with each frame for the receiving equipment to discern the mode of the SSTV image.
- The code is sent during the vertical sync pulse and is called 'vertical interval signaling' of VIS.
- Receiving SW reads the code and adjusts its decoding settings to properly acquire and display the image.

* source = ARRL Extra Class License Manual

How can ***you*** setup an SSTV transmission? (Hardware)



How can ***you*** setup an SSTV transmission? (Software)

- CQ SSTV Slow Scan TV by Black Cat Systems (you can get this at the iPhone App Store)

- SDR Console vers. 3.0.9 (https://www.sdr-radio.com/Software/%F0%9F%92%BEDownloads)
- VBCABLE (https://www.vb-audio.com/Cable/index.htm)
- MMSSTV vers. 1.13a (https://hamsoft.ca/pages/mmsstv.php)

Your Questions & Comments

Appendix 1 – Image vs Range (1/2)

- 322 ft (0.06 mi) away from receiver (Scottie S1 mode)

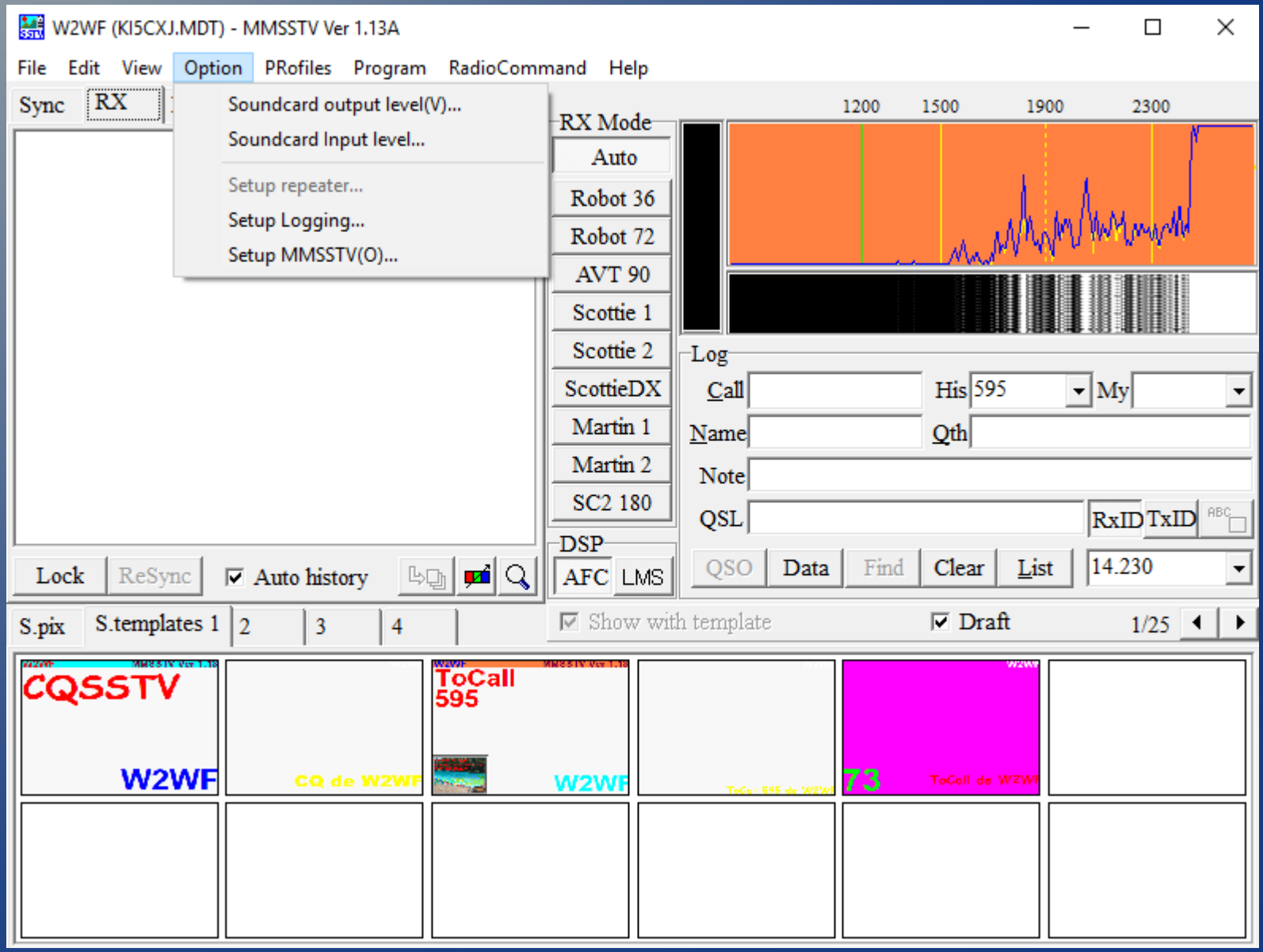
- 636 ft (0.12 mi) away from receiver (Scottie S1 mode)

Appendix 1 – Image vs Range (2/2)

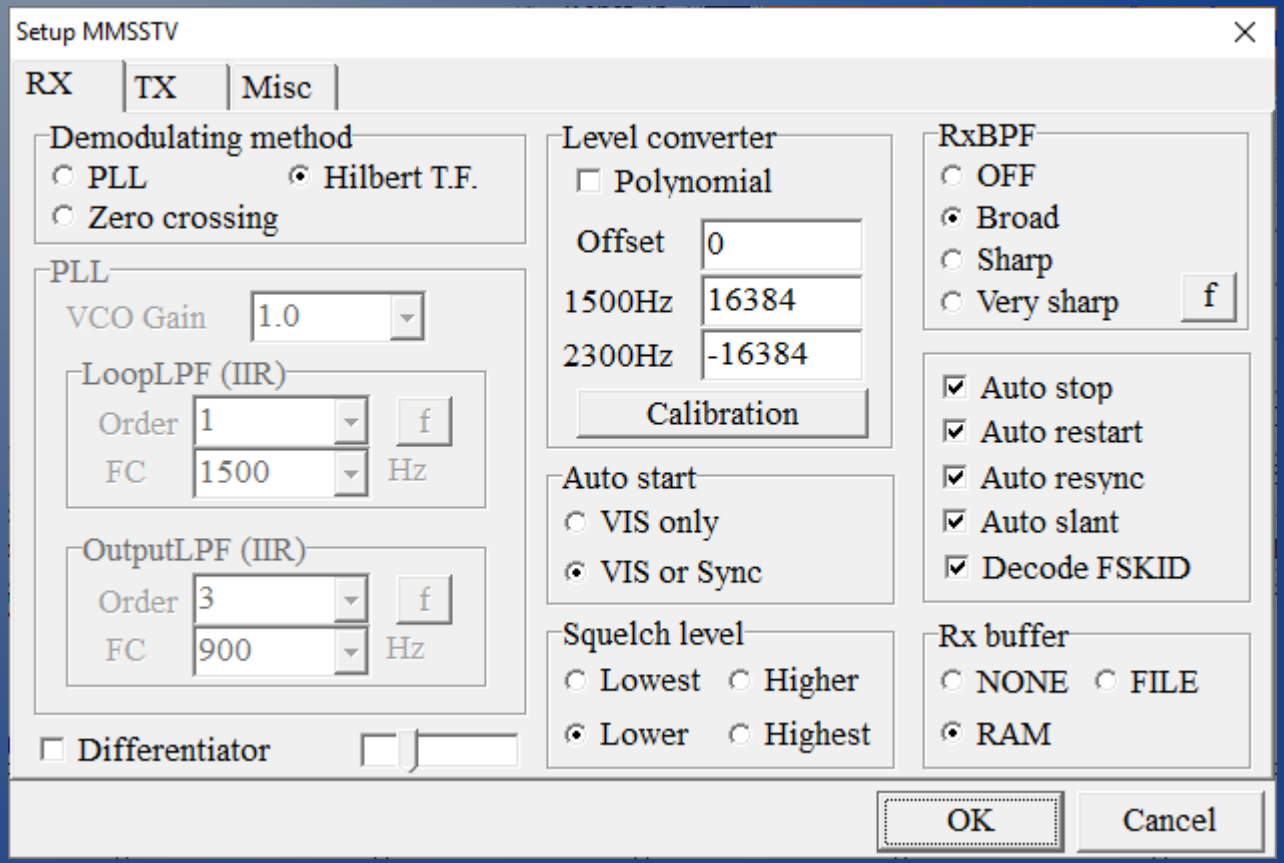
- 1,112 ft (0.2 mi) away from receiver (Scottie S1 mode)

- 1,984 ft (0.38 mi) away from receiver (Scottie S1 mode)

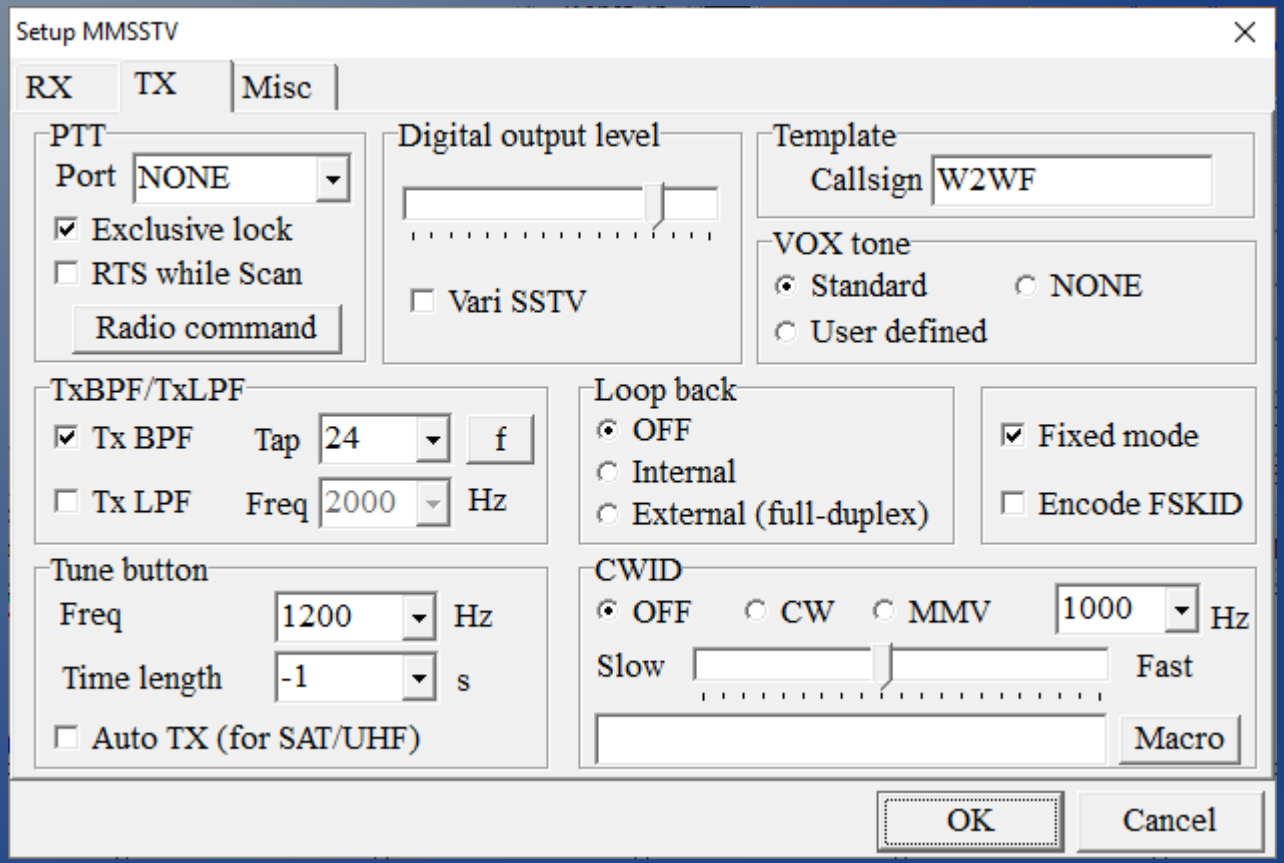
Appendix 2 – SW Settings (1/4)



Appendix 2 – SW Settings (2/4)



Appendix 2 – SW Settings (3/4)



Appendix 2 – SW Settings (4/4)