Slow Scan TV (SSTV)

What is Slow Scan Television, also known as SSTV?

- A method of sending still pictures on a voice bandwidth (less than 3 kHz) channel or medium
- Similar in many ways to facsimile (fax)
- Until recently it was an analog mode with relatively low resolution

- Concept developed in 1957 by Copthorne Macdonald

- Early standard was 120 lines @ 120 pixels per line, black and white picture

- First live tests performed on 11 meter Ham band

- FCC legalized use of SSTV by Advance Class and above in 1970

Early methods of receiving SSTV

- Use of a CRT with long persistence phosphors
  - Scan time had to be very short

- Use of a standard CRT using a camera with an open shutter

- Modification of commercial FAX machines

- Commercial SSTV ‘machines’ – HAL Robot, etc

SSTV Today

• With the advent of computers being equipped with sound cards, some clever Hams were able to write programs that would allow transmitting and receiving SSTV picture with nothing other than a sound card equipped computer

•The software would take a typical graphics file and ‘scan’ it in a SSTV format – at the receiving end the SSTV ‘scan’ would be converted back into a typical graphics file

Two types of SSTV in common use today

- Traditional ‘analog’ SSTV as described above
- Digital SSTV

Analog SSTV Advantages

- Somewhat simpler to use and shorter learning curve
- Will usually get some picture in less than ideal conditions
- Most programs backwards compatible with legacy formats

Analog SSTV Disadvantages

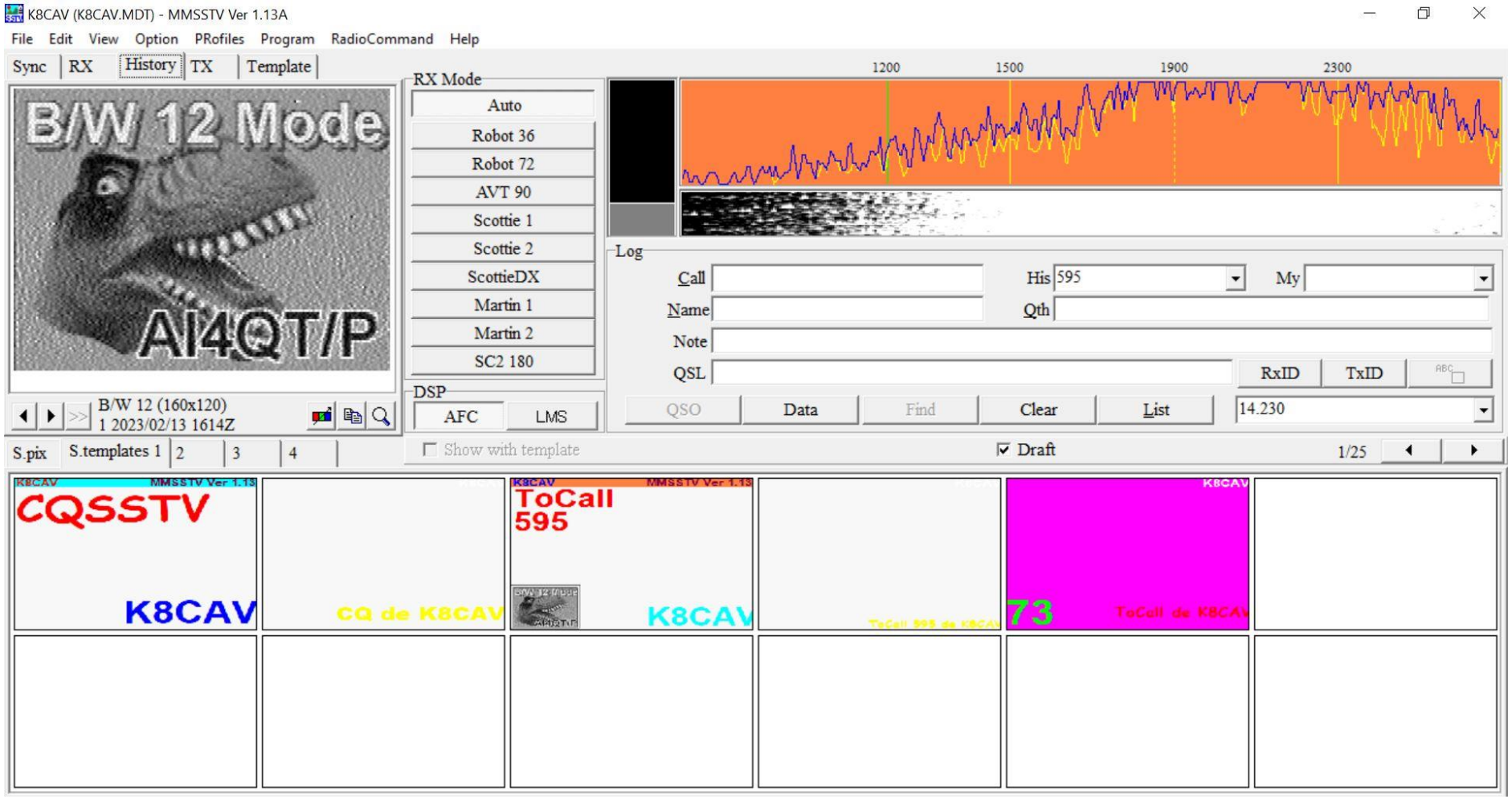
- When a portion of the picture is ‘taken out’ by a static crash or other phenomena, it cannot be recovered. The entire picture must be resent.
- Picture quality varies directly with band conditions. Noisy or fading band conditions result in a less than ideal picture

Digital SSTV Advantages

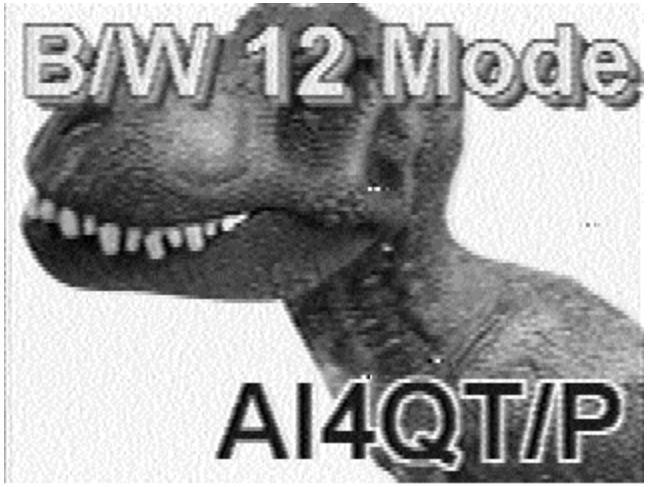
- Picture Quality is as good as the original picture's quality
- Has various redundancy settings to adjust to band conditions
- Allows requests for retransmission of only missing segments to complete picture with segments 'taken out'

Digital SSTV Disadvantages

- Somewhat more complex and longer learning curve
- No picture possible when poor band condition threshold is reached.


K8CAV (K8CAV.MDT) - MMSSTV Ver 1.13A
File Edit View Option PRofiles Program RadioCommand Help
Sync RX History TX Template
B/W 12 Mode
AI4QT/P
B/W 12 (160x120)
1 2023/02/13 1614Z
RX Mode
Auto
Robot 36
Robot 72
AVT 90
Scottie 1
Scottie 2
ScottieDX
Martin 1
Martin 2
SC2 180
DSP
AFC
LMS
1200
1500
1900
2300
Log
Call
His 595
My
Name
Qth
Note
QSL
RxID
TxID
QSO
Data
Find
Clear
List
14.230
S.pix
S.templates 1
2
3
4
Show with template
Draft
1/25
CQSSTV
K8CAV
CQ de K8CAV
ToCall
595
K8CAV
73
ToCall de K8CAV


KQ4ZH
Quack
Quack
KQ4ZH


B/W 12 Mode
AI4QT/P


N1DAY
WA2TO

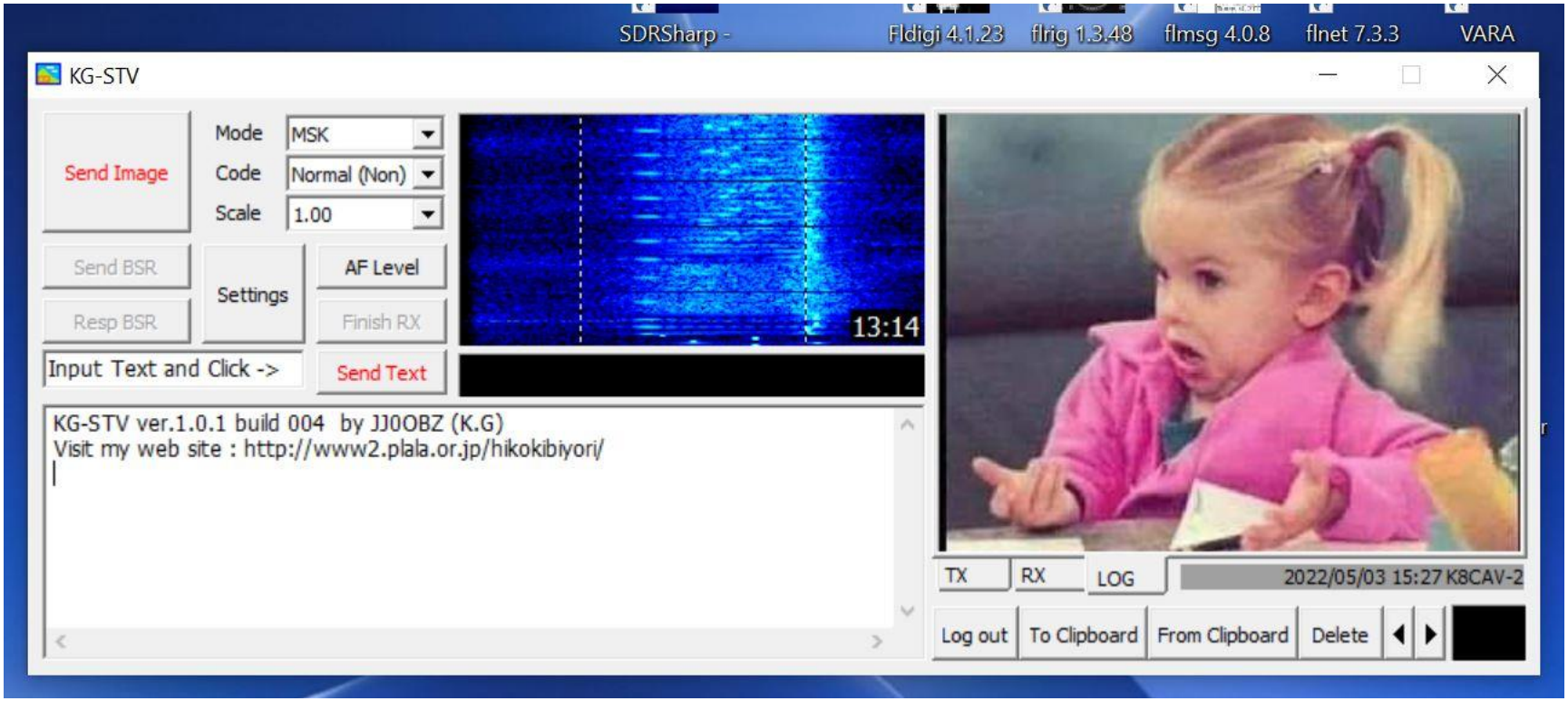
What's it sound like? – Picture from KQ4TX in Scottie 1 mode, 59 signal


EasyPal - K8CAV - Ver:07/OCT/2014
Setup Hybrid Action LoadPic LoadAny Copy Paste WFPic WFTxt Rptr FTP Clear About
K8CAV/2
RX Hz
SNR dB
Total -
OK Segs -
Position -
- remaining segments
Mode B B
Width 2.4 2.4
ErrFix HI HI
QAM 16 16
LeadIn 24
TX RX Sync
MSC FAC Frame Time IO
R/N
TRANSMIT Replay RX FIX BSR
TUNE ID Send Text WAV Pic/QSL
RS2 M EmbedTxt Station Log Session
Hz> 500 1000 1500 2000 2500
RX TX View Edit MSC Mov
Mom, is there really such a thing as a perfect man?
Of course, dear. They're called Ham Radio Operators.
Last_RX_Picture
Gamma < >


Erik & Mary
VK4AES


VK2KNC Norm


Marek SP8WQX


SDRSharp -
Fldigi 4.1.23
flrig 1.3.48
flmsg 4.0.8
flnet 7.3.3
VARA
KG-STV
Send Image
Mode
MSK
Code
Normal (Non)
Scale
1.00
Send BSR
Resp BSR
Settings
AF Level
Finish RX
Input Text and Click ->
Send Text
13:14
KG-STV ver.1.0.1 build 004 by JJ0OBZ (K.G)
Visit my web site : http://www2.plala.or.jp/hikokibiyori/
TX
RX
LOG
2022/05/03 15:27 K8CAV-2
Log out
To Clipboard
From Clipboard
Delete

Where to get Software (Windows)

MMSSTV https://hamsoft.ca/pages/mmsstv.php

SSTV FAX WX https://www.dxzone.com/dx441/sstv-fax-wx-software.html

MultiPSK https://www.dxzone.com/dx8464/multipsk.html

MixW https://www.dxzone.com/dx3165/mixw-v3.html

EasyPal http://www.vk3evl.com/index.php?Itemid=62id=57option=com_contentview=article

KG-STV http://www.wells10000.plus.com/m5aml/kg-stv.htm

Where to get Software (MAC)

Black Cat SSTV https://www.blackcatsystems.com/software/sstv.html

Multiscan 3B SSTV https://www.dxzone.com/dx28725/multiscan-3b-sstv-for-apple-macos.html

Where to get Software (Linux & Raspberry Pi)

QSSTV for Linux https://www.dxzone.com/dx2648/qsstv-for-linux.html

SSTV with the Raspberry PI 4B https://km4nmp.com/2019/11/24/sstv-with-the-raspberry-pi-4b/

TRXAMADRM
http://www.pa0mbo.nl/ties/public_html/hamradio/txamadrm/index.html

Suggested HF SSTV Frequencies (from Wikipedia)

Band	Freq (kHz)	Mode	Notes
160m	1890	LSB	
80m	3730	LSB	Europe
80m	3845	LSB	
6925		USB	Pirate Transmissions
40m	7165	LSB	Europe
40m	7171	LSB	
40m	7180	LSB	Proposed
30m	10132	USB	MP73N Mode Only
20m	14230	USB	Alternates: 14227 kHz USB 14233 kHz USB
15m	21340	USB	
27700		USB	Pirate Transmissions
10m	28680	USB	

Suggested VHF and above SSTV Frequencies

(from Wikipedia)

Band	Freq (MHz)	Mode	Notes
6m	50.680	NFM	
6m	50.950	USB	
2m	145.500	NFM	
2m	145.550	USB	
2m	145.600	NFM	
2m	145.625	NFM	Australia
2m	145.800	NFM	ISS Downlink Call: RS0ISS
1.25m	223.850	NFM	
70cm	433.775	NFM/USB	Australia
70cm	430.950	NFM/USB	