

MAREXMG

SpaceCam1 Active
October 2008

Who is MarexMg

- Marex is a group of volunteers that like to build Amateur Radio projects for the Russian manned space program.
- We are a 503c Not for profit corporation registered in Massachusetts.
- We rely on donations and corporate supports for our projects.

MarexMg Mir projects

- PacCom TNC (Dave Larsen 1995)
- Kantronics KPC-9612 TNC upgrade (1997)
- DCI RF filter project (Prevent de-sensing, 1998)
- Tasco Slow Scan TV (1998) 20,000 SSTV images.

MarexMG ISS projects

- SpaceCam1 SSTV (2006)
- Kenwood D700 Software upgraded project (2008)
- Many other proposals pending.

SpaceCam1 Project

The MAREX-NA / ARISS SSTV System is an entry-level PC based Slow Scan Television system designed to be used on board the International Space Station.

The original proof-of-concept system was built by the MAREX team and successfully flown on the Russian Space Station Mir (December 1998 until August 1999).

SpaceCam1 went into Operation from ISS in October 2008

MAREX-NA ISS SpaceCam 1



Portions © (1999) Silicon Pixels USA

Robot 36

Robot 72

Scottie S1

Scottie S2

Martin M1



7%

Auto-Save

Lock Mode



DEFAULT

LIBRARY

REPEATED

CREW

USER



C: \SSTV Images

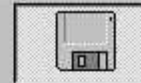
20:42:18 MAREX-NA SpaceCam 1 (Beta 1 Build 001 13-March-2000)
 20:42:18 Main window loaded
 20:42:18 Setting DSP filter: Bandpass
 20:42:18 Initializing preview grids
 20:42:19 Initializing VFW interface
 20:42:21 Logitech QuickCam VC USB,
 20:42:21 Live window

MANUAL

REPEATER

SETTINGS

Slide Show ON (O)



Slide Show OFF (F)

Slide Show disk path (Use DISK icon)

C:\SSTV IMAGES\

TRANSMIT (T)



Enable video

RECEIVE (R)



Auto-RECEIVE (A)

STANDBY /
ABORT (S)

RE-SYNC (Y)

Refresh Preview Grids

Project Overview

- SpaceCam1 software is a Windows application
- Kenwood D700 Transceiver
- VOX-Box Interface module (Laptop to D700)
- Laptop (Left over from tourist)
- Antennas:
 - 3 Quad band 2m, 440, 1.2 GHz, & 2.4 GHz
 - 1 10 meter
 - 1 2m (co-phased)
 - 2 Patch antennas on Columbus Module

ARISS Support

- MarexMG designed and delivered the SpaceCam1 Software. ARISS handled the ton of paperwork.
- ARISS designed/built the VOX-Box
- D700 Hardware/Software modified by ARISS
- Delivered 7 coax feeds to multiple antennas.

Flight Time line

- SpaceCam1 Demo to ARISS April 1999 and accepted.
- We almost flew in March 2003 on STS-114. Due to a paper work issue the project was rescheduled. Then came the Columbia problem.
- SpaceCam1 Arrived on ISS September 2004 via Cargo rocket Progress-19.
- Activated on August 2006

Software Status

- SpaceCam1 and supporting hardware delivered to ISS in 2004.
- Cosmonaut *Pavel Vinogradov* tested SpaceCam1 in August 2006.
- During the test a problem was discovered with the Vox Box audio control unit.

SpaceCam1 features

- Slide Show Mode
 - Images from disk or camera will be sent continuously.
- Repeater Mode
 - Earth stations can send an Image to SpaceCam1 and it will repeat the image back to any Earth station within the footprint.

SpaceCam1 features continued

- Auto Receive
 - SpaceCam1 will automatically receive SSTV images (several formats) and save them to disk.
- Slide Show Mode
 - Crew can select a single image or multiple images to be Repeated over and over again.

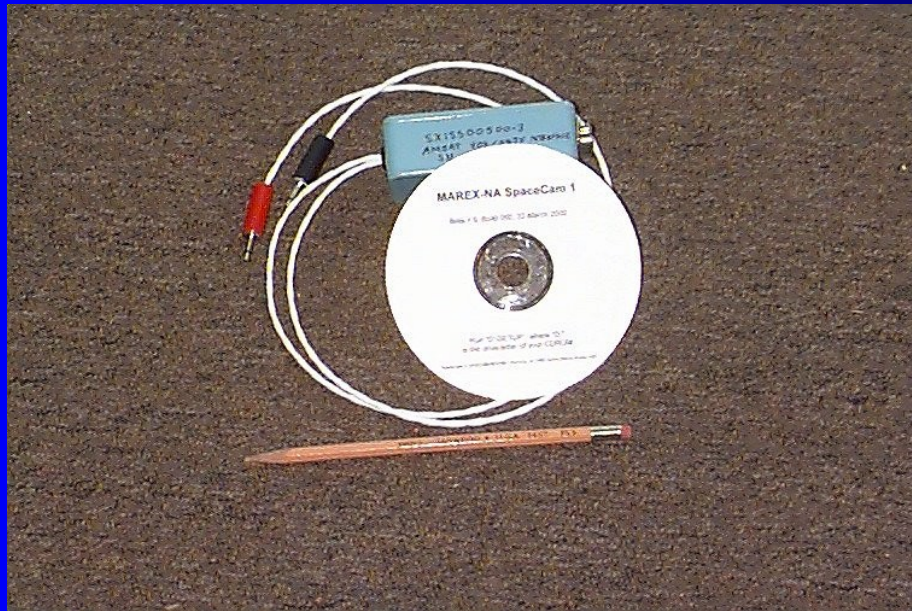
Testing

Farrell Winder and the MAREX team have been actively testing the new software with Lou's W5DID new Audio Box.



Testing Cont.

The image on the left shows the size of the Audio Adapter box required to connect the SSC to the AIRSS Amateur Radio System.



MAREX TEAM

Miles Mann

Jim Barber

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Lou McFadin

WF1F Project Architect

N7CXI Software Architect

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N1GZD Translation coordinator

W4HTB Hardware Engineer

W8ZCF PC/SSTV Engineer

W9NTP SSTV Architect

K0TV VHF-SHF Consultant

N1WPN Repeater Engineer

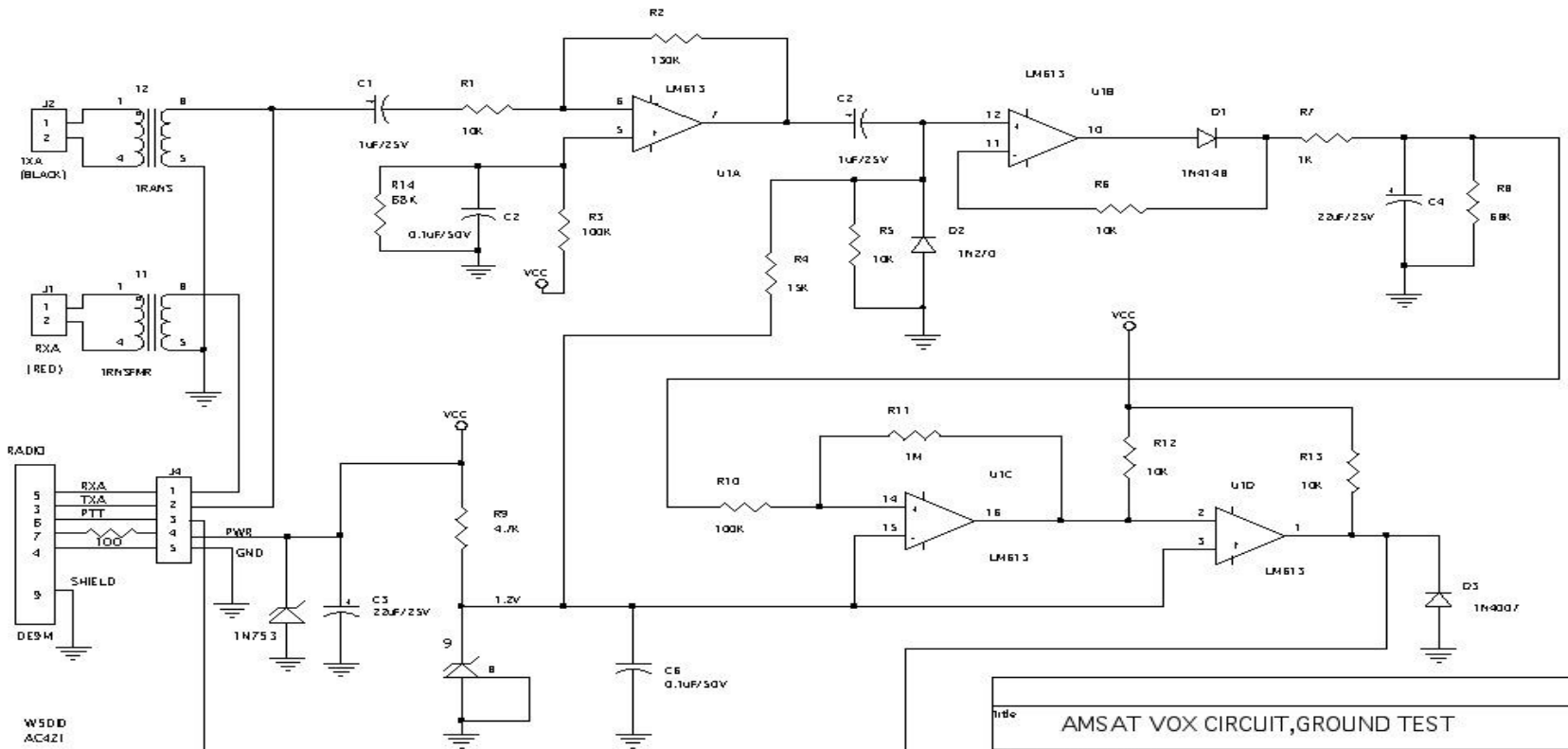
W5DID ARISS Hardware Manager

SpaceCam Testing Team

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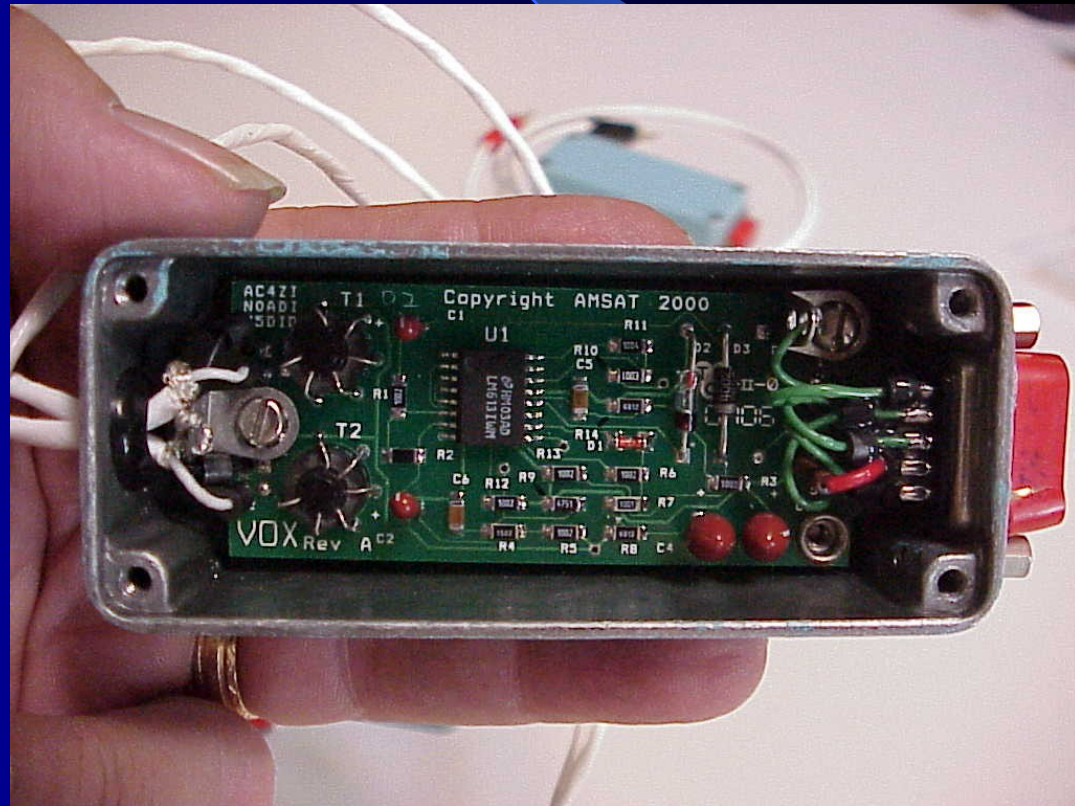
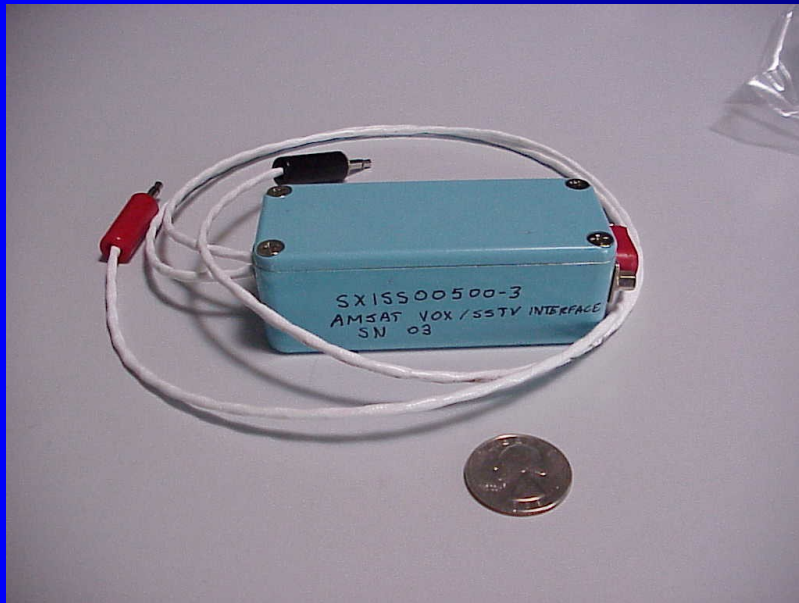
VOX/SSTV Module Schematic

AMSAT VOX/SSTV INTERFACE



Title	AMSAT VOX CIRCUIT, GROUND TEST	
Size	Document Number	Rev
A	SXIS00501-3	B
Date:	Saturday, November 04, 2000	Sheet 1 of 1

VOX/SSTV Module



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