MAREXMG

SpaceCam2
Status Report

project manager
G. Miles Mann WF1F

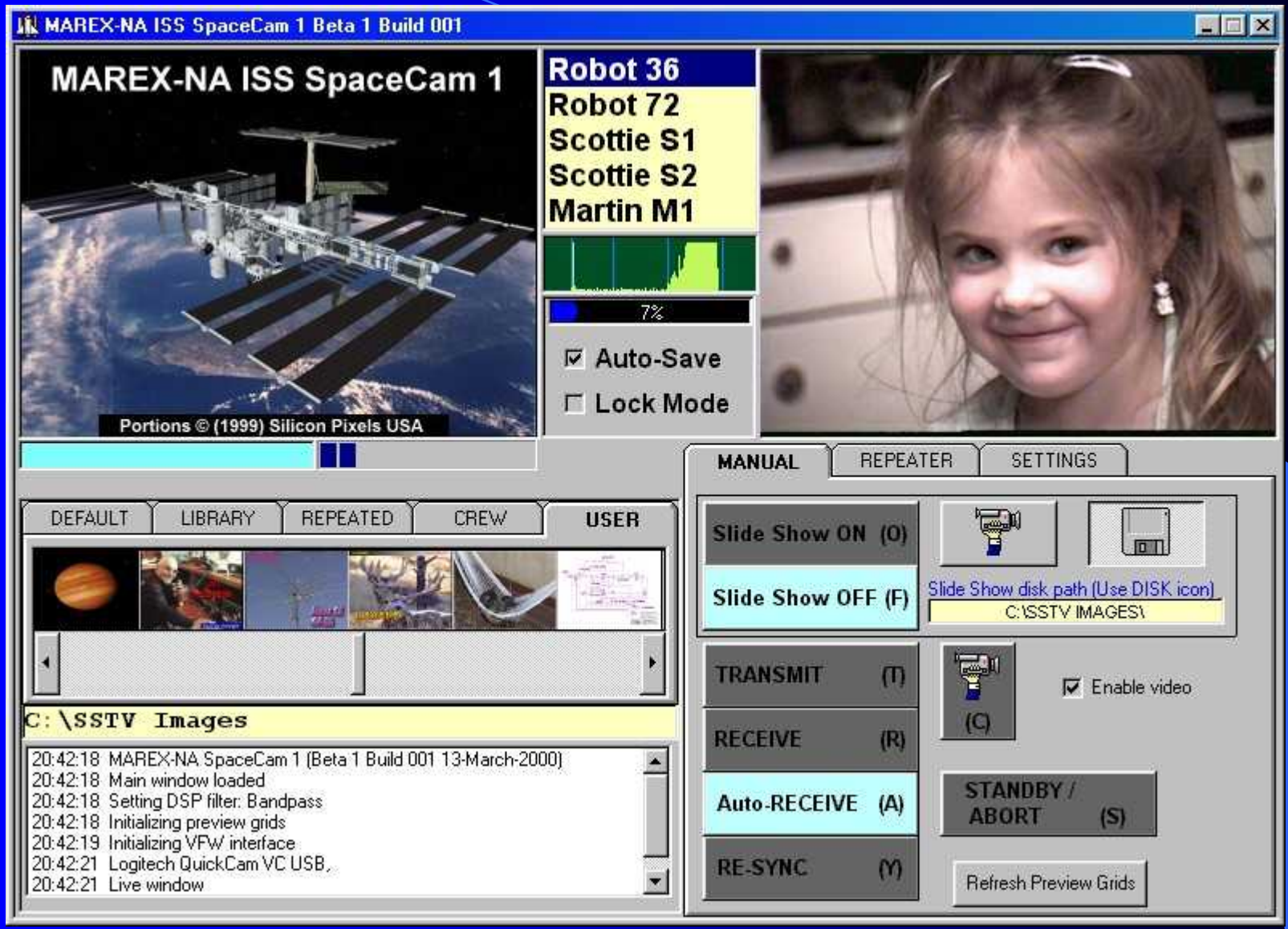
Introduction

The MAREXMG SSTV System is an entry-level PC based Slow Scan Television system designed to be used on board the International Space Station. The name of the MAREXMG SSTV project will be called the SpaceCam2 project. This system will support the common SSTV transmission modes including Digital SSTV. The SpaceCam2 project has been specifically
designed to be accessible to as many stations as possible around the world. The original proof-of-concept system was built by the MAREXMG team and successfully flown on the Russian Space Station Mir (December 1998 until August 1999). The proof-of-concept system has proven the ability of the hardware design and it has taught us how to make additional improvements for the next generation SSTV system for ISS.

Hardware / Software Overview

The basic components of the SpaceCam2 project will consist of a software application, which will run on the Station Support Computer (SSC), and ,an audio interface cable.

The SpaceCam2 project will build upon the ISS-Ham VHF project.
The SpaceCam2 project will be plug-compatible with the ISS-Ham project and will add two-way SSTV support to the ISS-HAM VHF project.


MAREX-NA ISS SpaceCam 1 Beta 1 Build 001
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
MANUAL
REPEATER
SETTINGS
DEFAULT
LIBRARY
REPEATED
CREW
USER
Slide Show ON (O)
Slide Show OFF (F)
Slide Show disk path (Use DISK icon)
C:\SSTV IMAGES\
TRANSMIT (T)
RECEIVE (R)
Auto-RECEIVE (A)
RE-SYNC (Y)
(C)
Enable video
STANDBY / ABORT (S)
Refresh Preview Grids
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

Laptop CPU and Memory Requirements

Operating System	CPU Speed	Ram Megabyte	Ram Megabyte Video
Windows 95	400 MHZ	64	2
Windows 98	400 MHZ	128	4
Windows NT/2000	400 MHZ	256	4

SpaceCam2 System requirements:

Memory requirements during operation	11MB
Disk requirements for full installation	10MB
Additional disk storage for images.	Variable

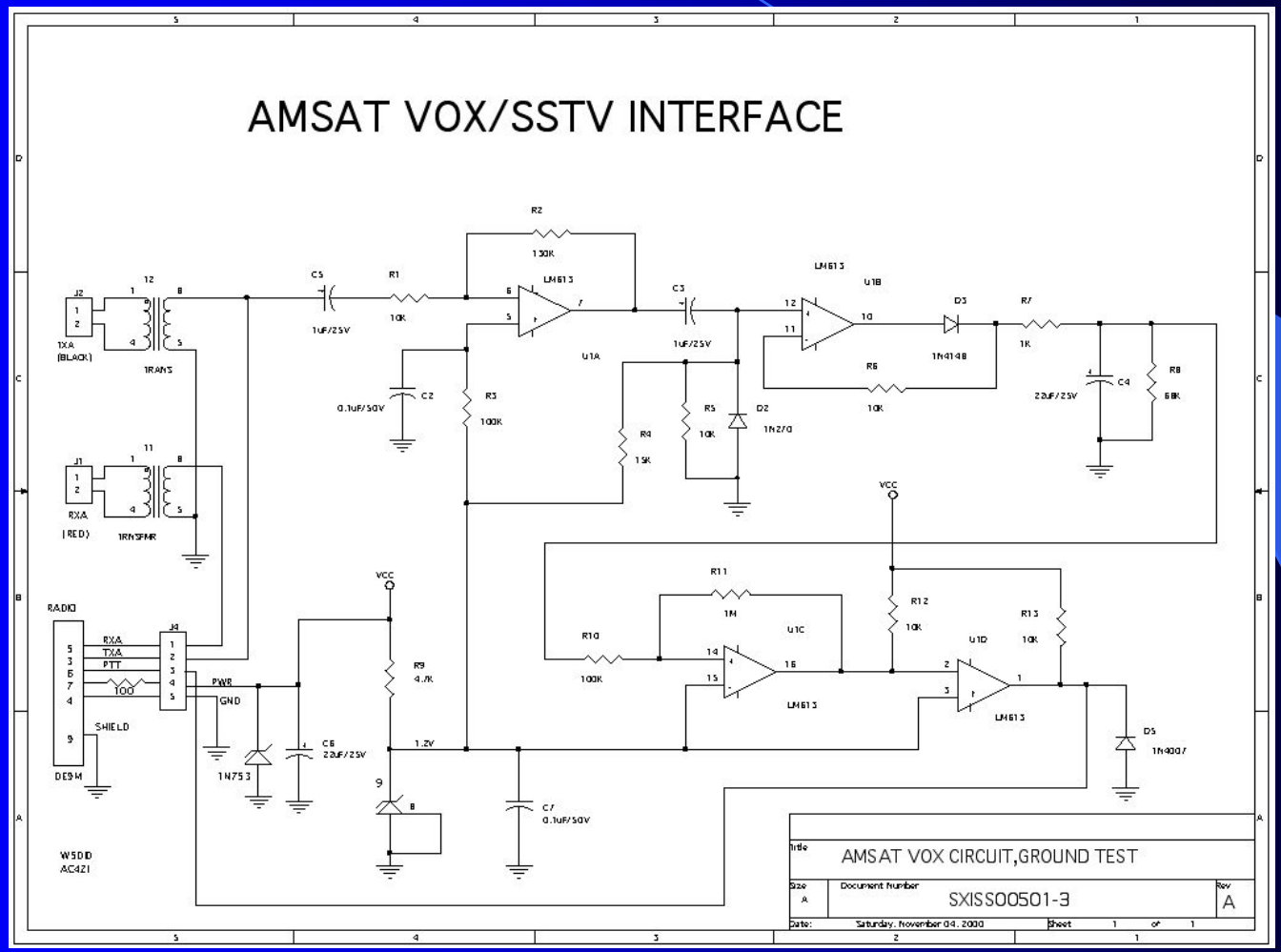
Software Status

- The SpaceCam2 Software development is 10% completed.
- Features pending: Digital support.
- Any future ARISS requested features

Hardware Status

- No Hardware changes required to the existing ISS-Ham station.
- Need to confirm which Laptop will be used.
- Digital SSTV needs a 400Mhz CPU

Schematic


AMSAT VOX/SSTV INTERFACE
LM613
1N4148
1N270
1N753
1N4007
RADIO
DE9-M
SHIELD
RXA
TXA
PTT
PWR
GND
VCC
TRANS
TRNSFMR
AMSAT VOX CIRCUIT,GROUND TEST
SXISS00501-3
W5DID
AC4ZI

Testing

Farrell Winder and the MAREX team have been actively testing the old software with Lou's 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.

TESTING SSC

- Digital testing expected to begin in the Summer of 2004

Outstanding Issues

- ARISS Approvals
- Test Radios

Development Schedule

First Build	**Q3 2004**
SpaceCam2 Alpha 20 Completed	**Q4 2004**
SpaceCam2 Alpha 30 Completed	**Q1 2005**

Development Schedule cont.

SpaceCam2 Flight Ready **June 2005**
The final version of software will be delivered to ARISS

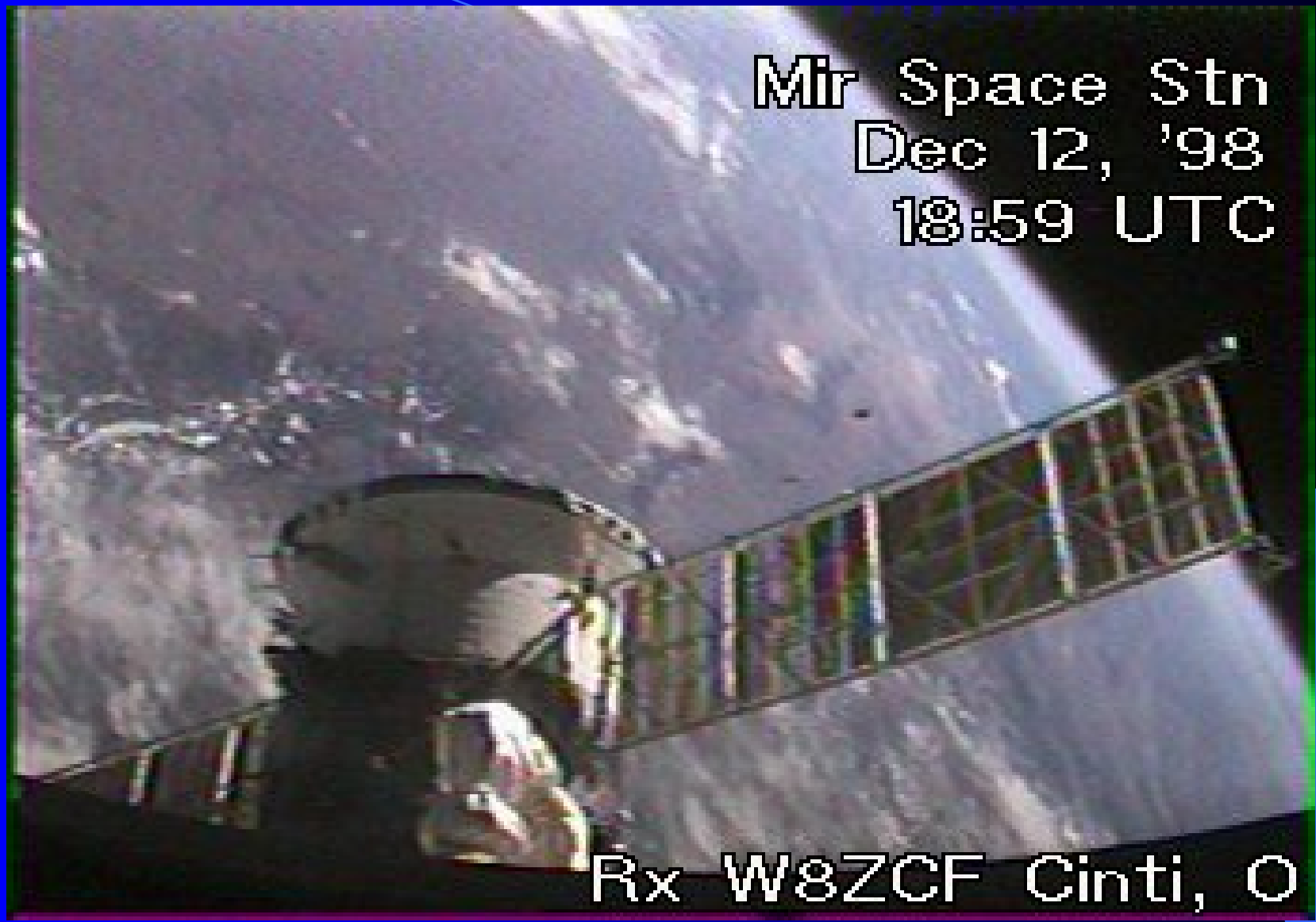
NASA and Energia will be issued software licenses to
use and copy the SpaceCam2 software as needed for the ISS-Ham project.


DEC.12.1998
1722-1731 UTC
RECEIVED BY W9NTP


Amateur Radio SSTV from the Mir Space Station
over Lake Michigan Jan 31, 99 Rec by W8ZCF Cincinnati, O


JAN 31, 1999
Bowling Green KY
RCV: W4HTB


Sergei Avdeyev
Jean-Pierre Heignere
Mir SSTV Feb 22 99 11:33 UTC Rec by W8ZCF


Mir Space Stn
Dec 12, '98
18:59 UTC
Rx W8ZCF Cinti, O


Mir Space Station
09:01U
Jan 1 99
Gennadiy/Sergei
Say Happy New Year
via Amateur Radio SSTV
Rec by W8ZCF


Aug 27, 1999 W8ZCF