

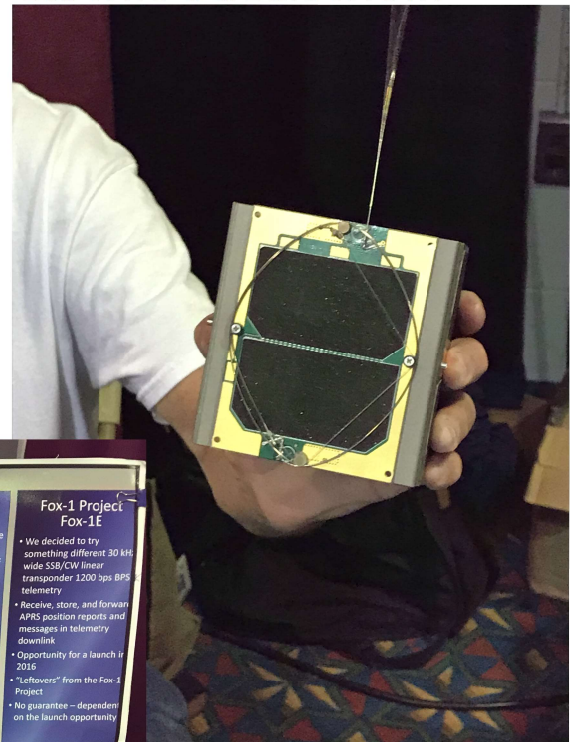
Boxboro Hamfest 2018



Ned KA1CVV



Bob W1RPG & Dave W1CTN



Fox Project

- 1U CubeSat
- 9 Boards
- 4 Science
- Battery, Power
- IHU
- RF Rx, RF Tx

Fox-1 Project Fox-1A

- Mode U/V FM transponder
- Scheduled for September 2015 launch
- Fox-1, a.k.a. Fox-1A
- Hosted experiments from two universities:
 - Penn State Erie MEMS gyro experiment (Micro Electro Mechanical System)
 - Vanderbilt SDE radiation experiment in partnership with AMSAT

Fox-1 Project RadFxSat (Fox-1B)

- Mode U/V FM transponder
- Scheduled for November 15, 2016 SSO launch
- Hosted experiments from two universities:
 - Penn State Erie MEMS gyro experiment (Micro Electro Mechanical System)
 - Vanderbilt SDE radiation experiment in partnership with AMSAT

Fox-1 Project Fox-1C

- Mode U/V FM transponder, selectable L band uplink for mode U/V
- DOWNSHIFTER converts signal to UHF RX input frequency
- Spaceflight Sherpa launch in late 2015 on SpaceX Falcon 9
- Hosted experiments from three universities:
 - Penn State - Erie MEMS gyro experiment
 - Vanderbilt SDE radiation experiment (Fox-1A flight spare)
 - Virginia Tech JPEG camera (640x480 resolution)
- Engineering model in testing

Fox-1 Project Fox-1D

- Mode U/V FM transponder, selectable L band uplink for mode U/V
- DOWNSHIFTER converts signal to UHF RX input frequency
- Flight spare for Fox-1C launch, or will be submitted in NASA CubeSat Launch Initiative (CSLI)
- Hosted experiments from three universities:
 - Penn State - Erie MEMS gyro experiment
 - University of Iowa HERC (High Energy Radiation CubeSat Instrument) Re-creation of original Van Allen flights using modern components
 - Virginia Tech JPEG camera

Fox-1 Project Fox-1E

- We decided to try something different 30 kHz wide SSB/CW linear transponder 1200 bps BPS telemetry
- Receive, store, and forward APRS position reports and messages in telemetry downlink
- Opportunity for a launch in 2016
- "Leftovers" from the Fox-1 Project
- No guarantee - depends on the launch opportunity

AMSAT Fox-1 Series CubeSats

Fox-1 Frequencies

	Uplink FM (67 Hz tone)	Downlink FM
Fox-1A	435.180 MHz	145.980 MHz
RadFxSat/Fox-1B*	435.250 MHz	145.960 MHz
Fox-1C*	435.300 MHz	145.920 MHz
Fox-1D*	1267.300 MHz **	145.920 MHz
	435.350 MHz	145.880 MHz
	1267.350 MHz **	145.880 MHz

* Pending IARU Coordination. If needed, changes will be announced
** U/V and U/V operations switchable by command station, not operational simultaneously



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