

## Simple Station for the Ham Video Launch Campaign

We propose the following setup :

- a selfmade helix fed parabola dish
- a low noise downconverter, such as the KU LNC 23 TM
- a DVB-S receiver on a computer card, such as the Techno Trend S2-1600
- the free Tutuone software developed by Jean Pierre Courjaud, F6DZP.

With this setup, Ham Video from Columbus can be received, decoded and visioned on a computer screen. Moreover, the Tutuone software visualizes the characteristics of the received signal. These data are saved in a file that can be forwarded to ARISS for analysis.

### Helix fed Ham Video dish:

<http://helix.remco.tk/>

<http://www.amsat.org/amsat/articles/g3ruh/117.html>

More details in the next Bulletin.

### Low noise Downconverter:

Kuhne Electronic (EU)

KU LNC 23 TM (centered 2385 MHz) – specific DATV

Frequency range: 2320 – 2450 MHz

IF : 1404 – 1534 MHz

Gain : 40 dB

<http://www.kuhne-electronic.de/en/products/down-converters/mku-lnc-23-tm.html>

High Sierra Microwave (USA)

Model 2400-HAMTV-DC

Frequency range: 2320 – 2450 MHz

IF : 1433.5 to 1533.5 MHz

Gain : 40 dB min 42 dB typical

<http://www.hsmicrowave.com/hamtvconverter.html>

Satellite S band digital HD LNBF (China)

Frequency range: 2.3 to 2.7Ghz

IF : 3650 MHz

Gain : 50 dB

[http://www.aliexpress.com/store/product/satellite-S-band-3650MHz-digital-HD-LNBF-for-project-use-for-USA-market/402505\\_708948984.html](http://www.aliexpress.com/store/product/satellite-S-band-3650MHz-digital-HD-LNBF-for-project-use-for-USA-market/402505_708948984.html)

### DVB-S receiver card:

Techno Trend card S2-1600

Fits in a PCI computer slot and supports HD TV (MPEG2 and MPEG4/ H.264)

Computer OS : Windows XP, Vista, Windows 7, Windows 8

CPU for SDTV: at least 800 MHz

512MB main storage (1024MB recommended) at least 1GB free hard disc storage

Graphics card with at least 64MB and DirectX 9 support

Sound card with DirectX 9 support

Fits also in a PCI express computer slot using a PCIExpress to PCI slot adaptor like Startech PEX1PCI1

[http://www.technotrend.eu/2920/TT-budget\\_S2-1600.html](http://www.technotrend.eu/2920/TT-budget_S2-1600.html)

### Tutuone 1600 V0.1 software for use with the TT S2-1600 card:

A new version with specific features for HamVideo project will be available for download in few days.  
<http://www.vivadatv.org/viewtopic.php?f=60&t=214>

## Ham Video Ground Station Components



GOMRF dish for S-band



Down Converter  
mast mounted



PCI Satellite Receiver (DVB-S)  
TT S2-1600

# HVTioune Lite

Deviation value  
auto adaptation to Doppler effect

Frequency preset

L.O. of  
converter →

Symbol Rate  
Presets {

voltage  
for converter →

The screenshot shows the HVTioune Lite software interface with the following components:

- Top Left Panel:** SR (kS) 03000, Freq (kHz) 02422000, Offset 00916500. Includes SR3000 (2422 Mhz), SR1300 (2395 Mhz), and LNB options (0V, 13V, 18V).
- Top Center:** Frequency (kHz) section with Freq. set: 1505554 kHz, Deviation: 121 kHz, Freq found: 1505635 kHz. Symbolrate (kS) section with SR set: 3000 kS, Deviation: 0 kS, SR found: 3000 kS.
- Top Right Panel:** Digital display showing 'F607P', station name 'MIGNE-AUXANCES', and other parameters like Ant. Dir. omni, Gain 20 dB, Preamp 03 dB.
- Middle Left:** Network settings: IP n°1 = 192.168.0.12, IP n°2 = 192.168.1.5, UDP address: 230.0.0.1.
- Middle Center:** TS Status (IN, OUT) and DMA Status (M) with packet counts and Delta: 110 msec.
- Middle Right:** Control buttons for UDP, Web, Beep, Record, and Quit.
- Bottom Row:** Carrier Lock (126), Timing Lock (168), Power RF (-69 dBm), S/N MER (21.0 dB), Constellations, and Vber (0%) with Fec 1/2.

} Info for  
Web monitor

UDP : send  
transport Stream

Web : send data  
to Web Monitor

Record : record  
TS to file

Measures and constellations for signal observation and tracking