5.6 GHz ATV

Dave G8GKQ

5.6 GHz FM ATV

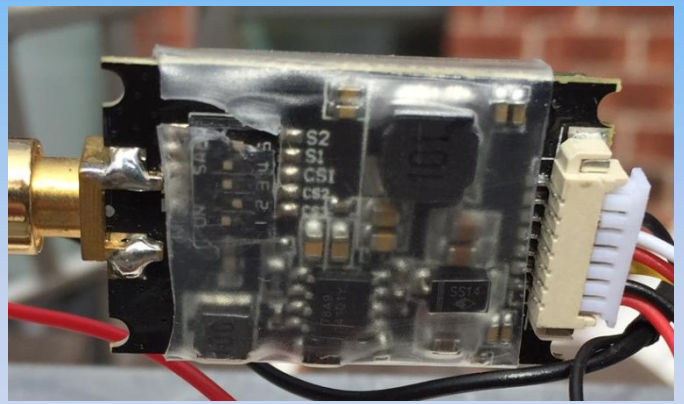
- Why
- What kit?
- How
- Aerials
- Enhancements
- Operating
- Next steps?
- Q & A

Why

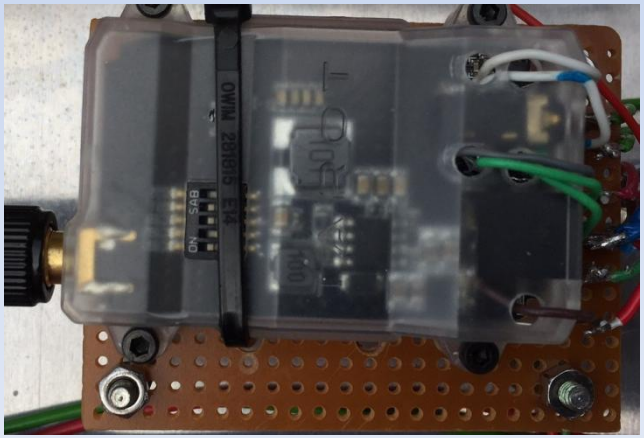
- Cheap kit available for drone FPV use
- New technical challenge
- Easily accessible
- Very simple

What Kit

- Transmitters typically 600mw output
- Video + Audio in, RF out
- Preset Channels



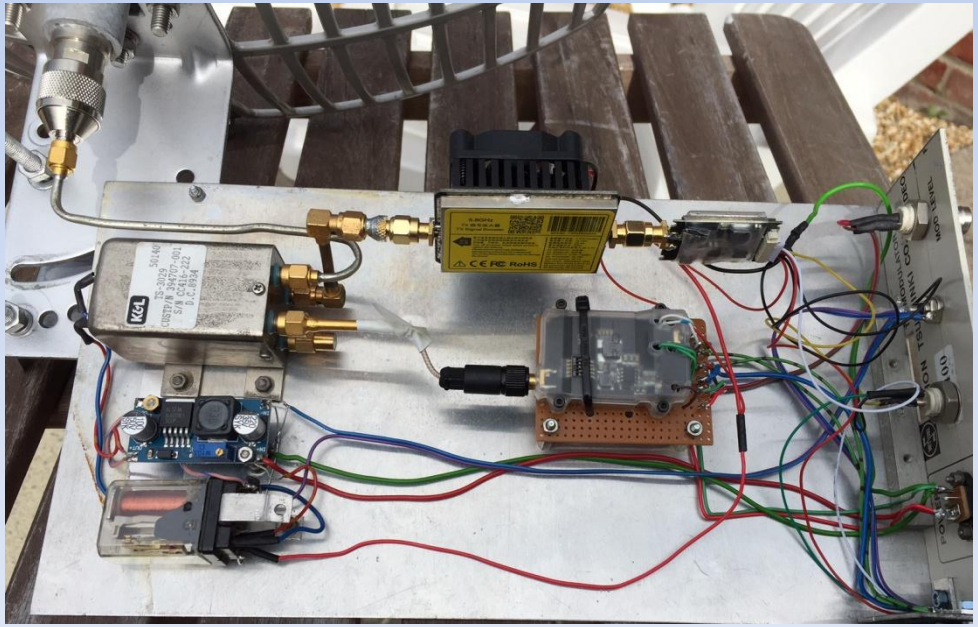
- Receivers have preset channels
- RF in, video and audio out



- All runs from 12v

How

- Wire up power, video and audio
- Connect aerial
- Changeover relay?



How

- Wire up power, video and audio
- Connect aerial
- Changeover relay?
- Point aerial
- Analogue monitors

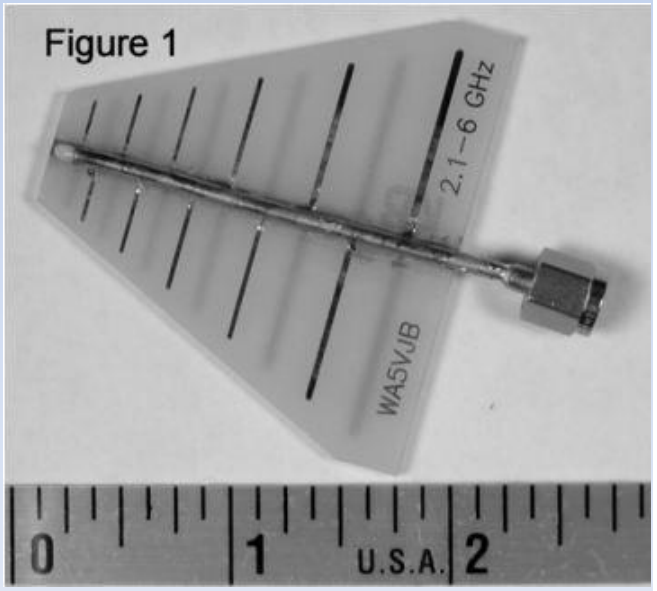
Aerials

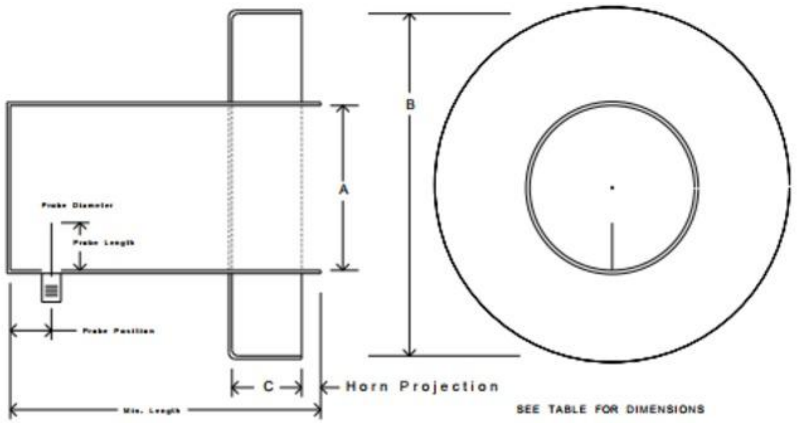
- Good selection of WiFi aerials available
- Sky dish with a W1GHZ feed
- Dipole at feedpoint of 10 Ghz dish?

Dish Feeds

G4NNS

WA5VJB
W1GHZ





Frequency	A	B	C	Reference
1296 MHz	178 mm	419 mm	121 mm	3,9
2304 MHz	100 mm	240 mm	62.5 mm	3,9
3456 MHz	66 mm	160 mm	42 mm	10
5760 MHz	39 mm	90 mm	26.5 mm	11,12
10368 MHz	20.5 mm	50 mm	12.5 mm	13

Figure 6.3-6 VE4MA (Kumar) Feed

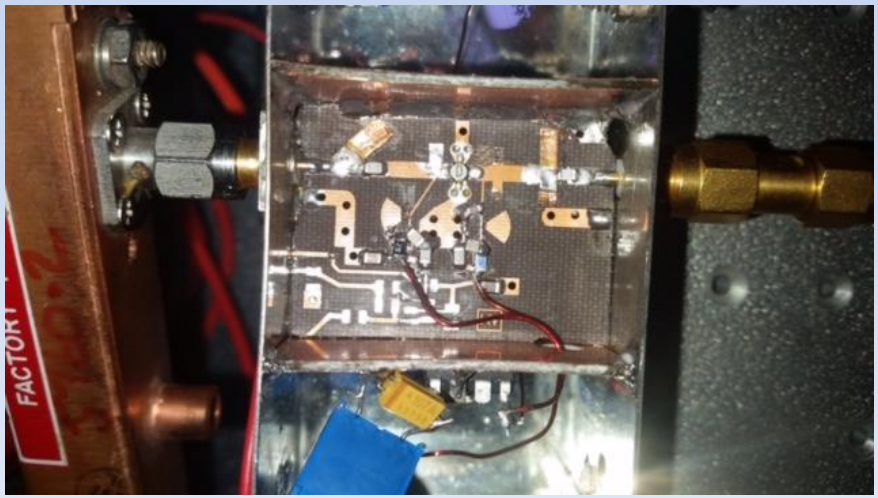
Enhancements

- Power Amplifiers available on eBay
- 600mW to 2.25 W for £20

Enhancements

- Receive preamps
- Franco's finest

PHOTO 1: G4DDK's 5.7GHz preamp made from a 'Franco' board.



Enhancements

- Video sync processor – CQ-TV 129

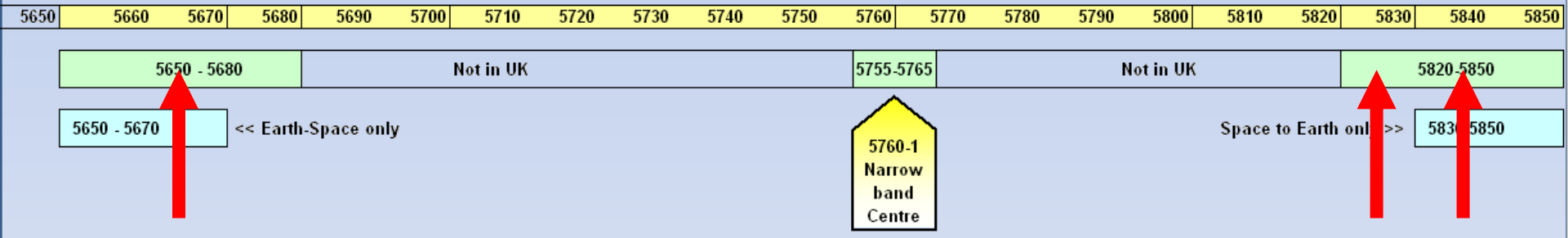
SYNC PROCESSOR

By Nick Harrold G4IMO
& John Wood G3YQC

This sync processor provides the means whereby a locall
off-air television signal having poor synchronising pulses may h
set of new - near broadcast specification - pulses adde
synchronism with it, thus permitting a TV monitor to displ
without the distortion which may otherwise occur.

Operating

- Frequency: 5665 MHz
- Audio WB-FM using 5825 and 5840 MHz
- Some modules do not cover 5665, so use 5840 as our secondary frequency?



- Band plan last updated 2009
- No 5.6 GHz amateur satellites yet

Operating

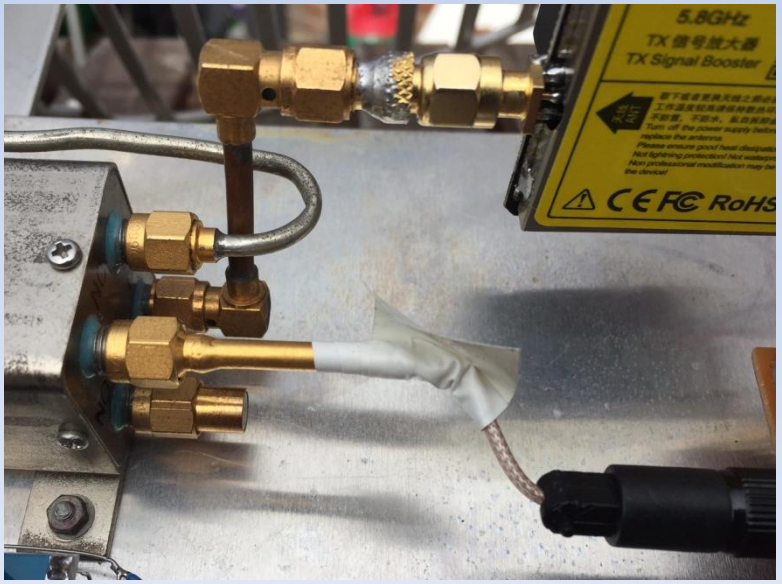
- Horizontal Polarity
- Dishes typically 4 – 8 degrees beamwidth
- Peak on sound subcarrier quieting?

Known Users/Builders

- G8GKQ, G8GTZ, GOUHY, G8XZD, G4UVZ, G3VPF
  - Southern England
- GB3KM, G1LPS, MODTS
  - North-east
- GOLGS, MORKX and G4NZV
  - WBFM Audio around Cheltenham
- G4JLG, MOUFC, MW1FGQ, G6GVI
  - Bolton Wireless Club and PW “Siren” Article
- G8XYJ (Hereford) and G8BYN (Yorks)
- G4NJJ, G8AJN and M1BKF (Norfolk)

Next Steps

- Digital?
- ADALM Pluto or up-conversion?
- Linear amplifiers?
- Check intercarrier sound: 6.0 and 6.5 MHz?
- Don’t forget: RP-SMAs



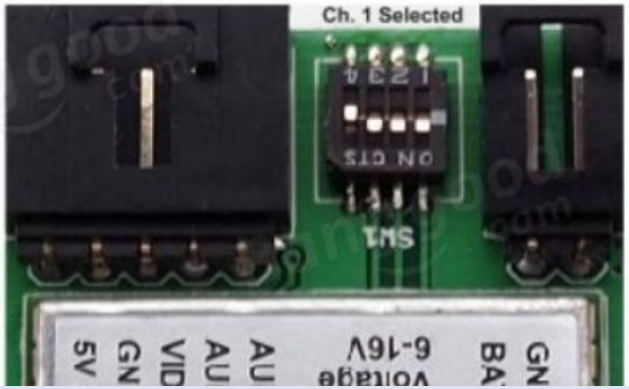
Q & A

Frequencies

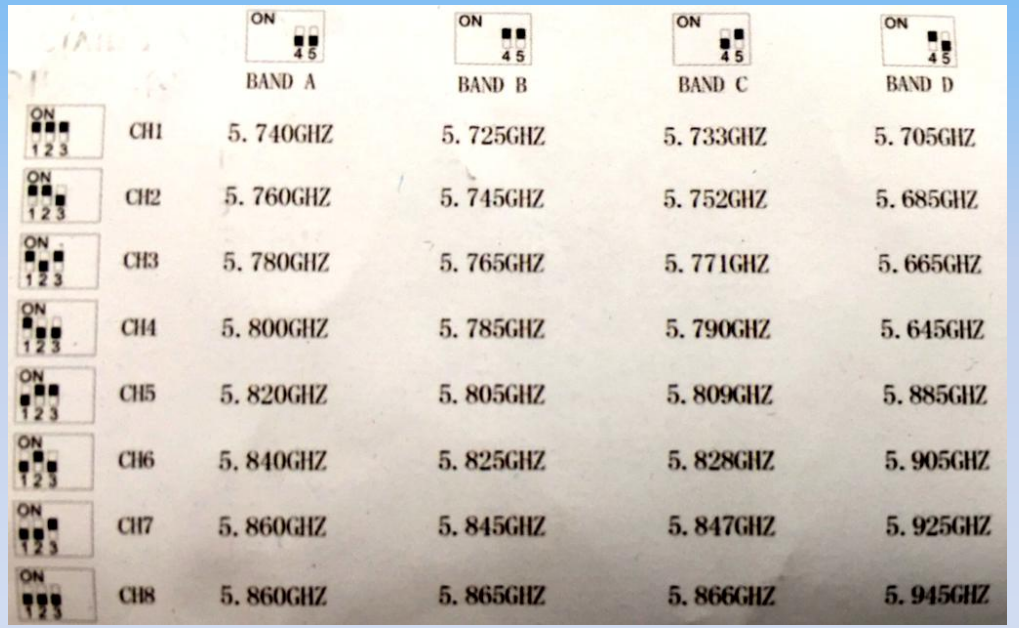
Fat Shark

Channels	3	2	1
CH1: 5740MHz	On	On	On
CH2: 5760MHz	Off	On	On
CH3: 5780MHz	On	Off	On
CH4: 5800MHz	Off	Off	On
CH5: 5820MHz	On	On	Off
CH6: 5840MHz	Off	On	Off
CH7: 5860MHz	On	Off	Off

Note: Switch 4 unused



Tarot



	BAND A	BAND B	BAND C	BAND D
CH1	5. 740GHZ	5. 725GHZ	5. 733GHZ	5. 705GHZ
CH2	5. 760GHZ	5. 745GHZ	5. 752GHZ	5. 685GHZ
CH3	5. 780GHZ	5. 765GHZ	5. 771GHZ	5. 665GHZ
CH4	5. 800GHZ	5. 785GHZ	5. 790GHZ	5. 645GHZ
CH5	5. 820GHZ	5. 805GHZ	5. 809GHZ	5. 885GHZ
CH6	5. 840GHZ	5. 825GHZ	5. 828GHZ	5. 905GHZ
CH7	5. 860GHZ	5. 845GHZ	5. 847GHZ	5. 925GHZ
CH8	5. 860GHZ	5. 865GHZ	5. 866GHZ	5. 945GHZ