











5.6 GHz ATV

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5.6 GHz FM ATV

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





Why

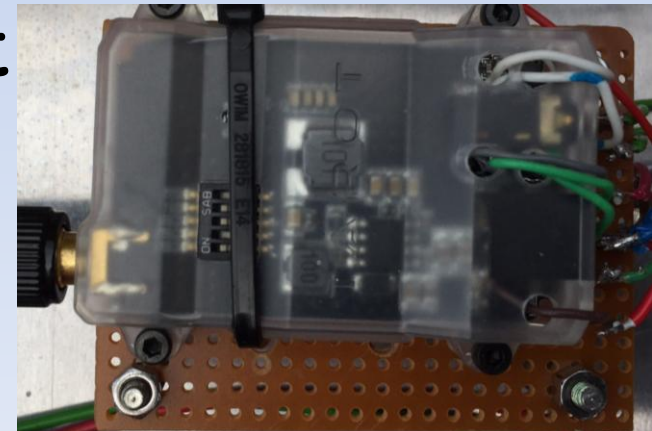
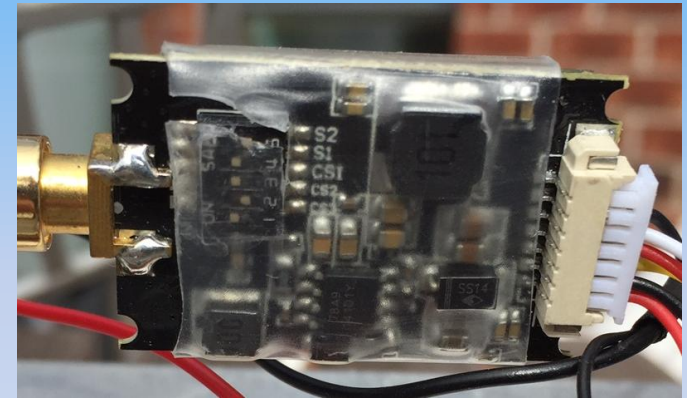
-  Cheap kit available for drone FPV use
-  New technical challenge
-  Easily accessible
-  Very simple








What Kit

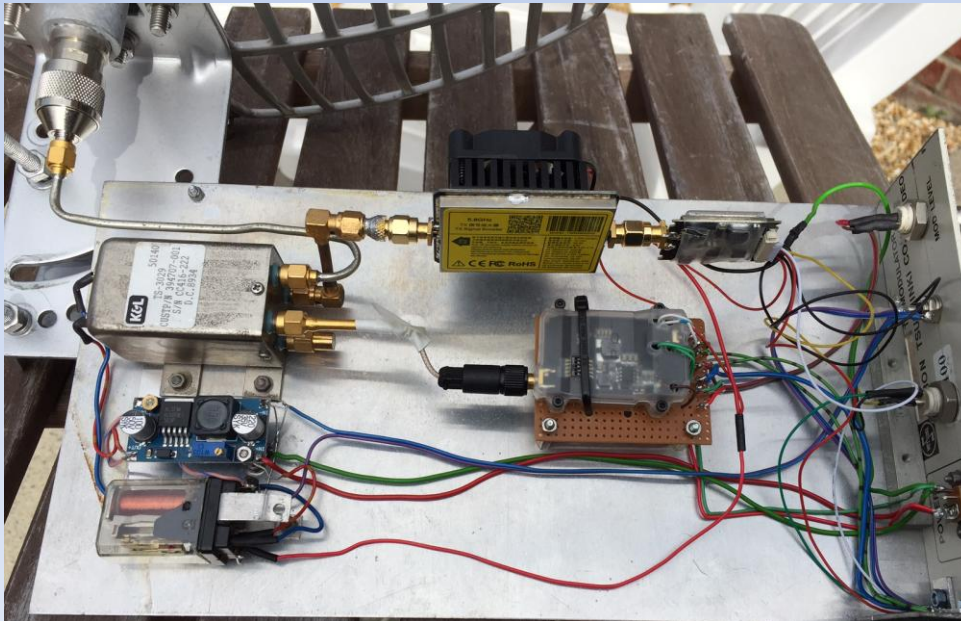
-  Transmitters typically 600mw output
-  Video + Audio in, RF out
-  Preset Channels
-  Receivers have preset channels
-  RF in, video and audio out
-  All runs from 12v










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?



TP-LINK®

5GHz 23dBi Outdoor Panel Antenna
TL-ANT5823B

Features:

- Compliant with 802.11 a/n, 5GHz wireless application
- 23dBi signal gain
- Direction operation
- N Type Female connector
- Provided mounting kits enable easy installation for various environments

Description:

The TL-ANT5823B is a high-gain outdoor panel antenna designed for 5GHz wireless applications. It features a durable metal housing and a high-quality N-type female connector. The antenna is designed for easy installation and is suitable for various outdoor environments.

Radiation Patterns:

Two radiation pattern diagrams are shown: one for the H-plane and one for the E-plane. Both diagrams show a main lobe with a gain of 23dBi and a side lobe with a gain of 15dBi. The diagrams also show the antenna's physical dimensions and the mounting bracket.

www.tp-link.com

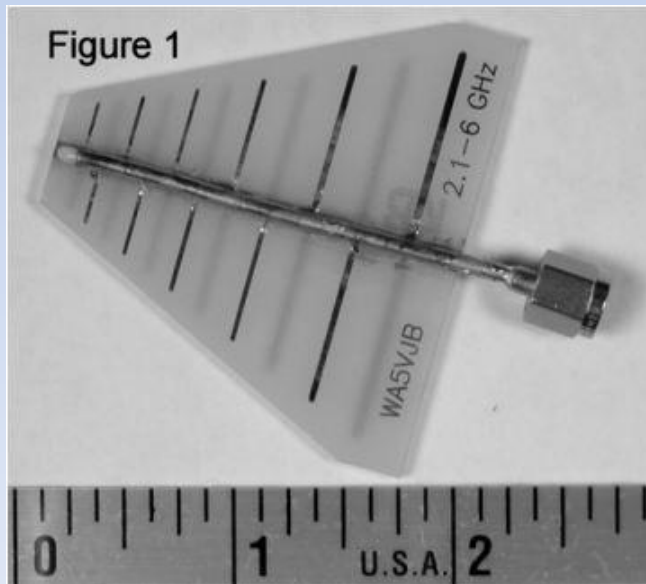




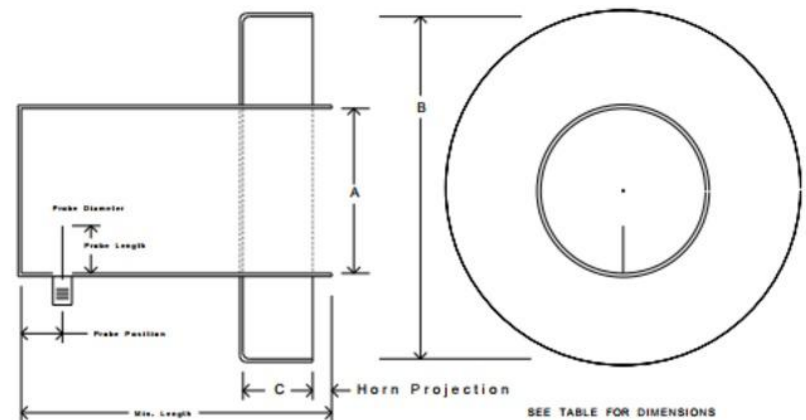
Dish Feeds



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



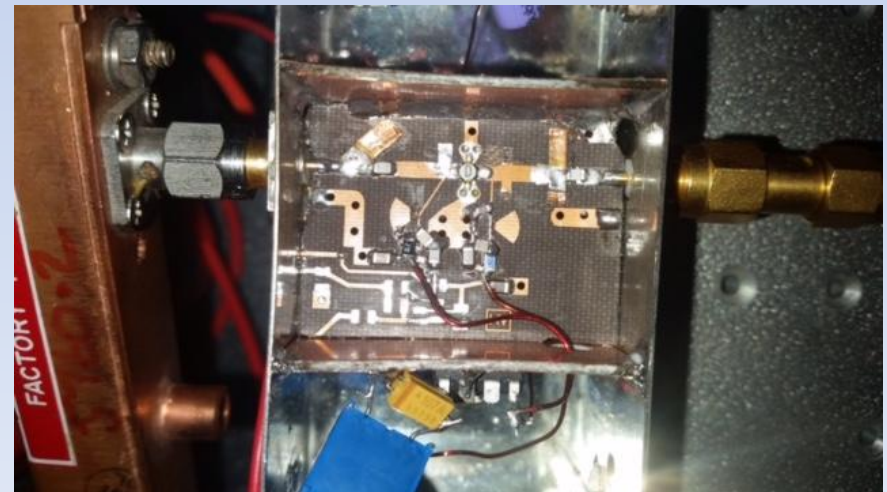
Receive preamps



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

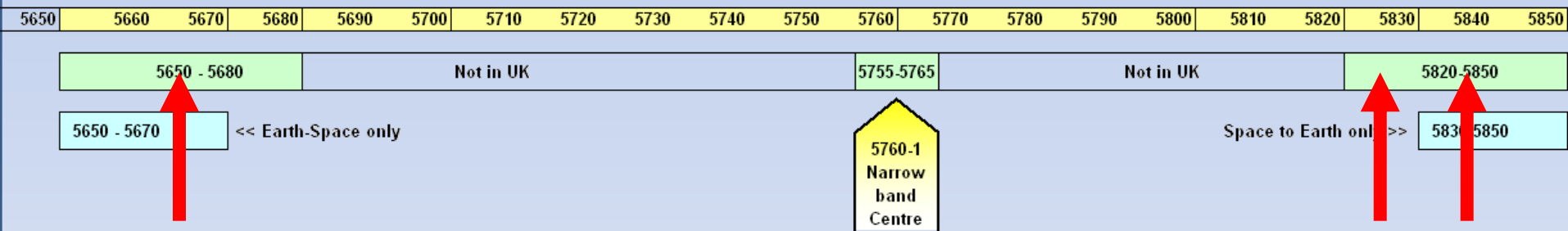
This sync processor provides the means whereby a local off-air television signal having poor synchronising pulses may have a set of new - near broadcast specification - pulses added to it, thus permitting a TV monitor to display without the distortion which may otherwise occur.





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?










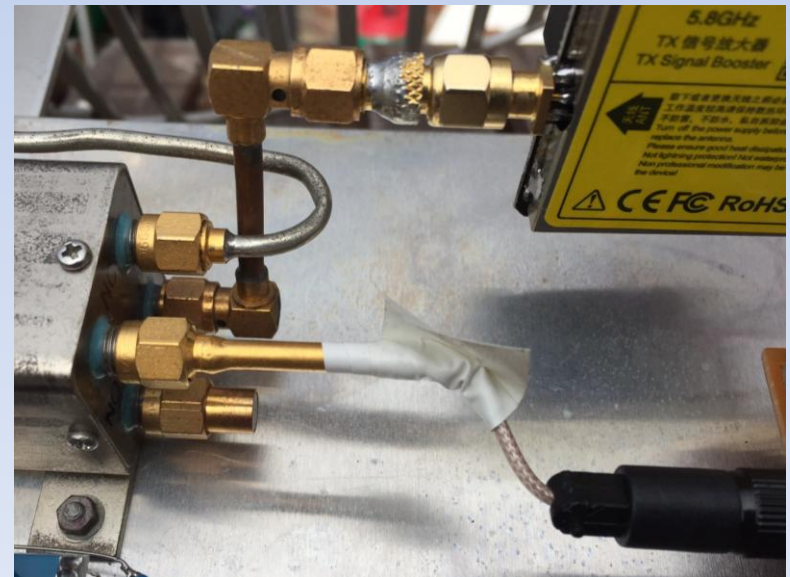
Known Users/Builders

-  **G8GKQ, G8GTZ, G0UHY, G8XZD, G4UVZ, G3VPF**
 - Southern England
-  **GB3KM, G1LPS, MODTS**
 - North-east
-  **GOLGS, MORRX and G4NSV**
 - WBFM Audio around Cheltenham
-  **G4JLG, MOUFC, MW1FGQ, G6GVI**
 - Bolton Wireless Club and PW “Siren” Article
-  **G8XYJ (Hereford) and G8BYN (Yorks)**



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

Tarot

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



| | ON | ON | ON | ON |
|-----|----------|----------|----------|----------|
| | 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 |