

VIDIF WBFM VIDEO DEMODULATOR

0483

This module will form the receive heart of any FM video receiver system. It consists of a wide band thick film input stage, limiting amplifier, phase lock loop demodulator and video output stage. The polarity of the video output can be selected. There is an a.f.c. output available.

The input signals should be in the range 40 - 55MHz with inductors as supplied but could be as low as 35MHz with a slight degradation in system bandwidth. This is nominally 15MHz. Typically sensitivity for lock in the phase lock 100p is -70dBm.

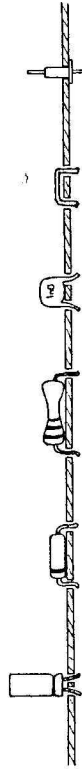
The board requires a 12 volt nominal power supply and has a voltage stabiliser for the phase lock loop supply.

The board will find application in many new communication projects. Typically this could be for DBS down link, Amateur TV Stations or with slight modification for high speed data links.

Construction

There is nothing complex in assembling the board as the majority of components are at video frequencies. Care should be taken however, to keep lead lengths short and to mount all components close to the PCB. There are expensive integrated circuits on the board and these can easily be damaged if care is not taken. If you are doubtful as to your constructional ability then please return the kit for and assembled tested module. Component changes will be notified on the kit check list.

1. Check the PCB for any faults such as missed holes or bridged tracks.
2. Fit all resistors with short leads closed to the PCB. The value of the S.O.T. resistor will be given on the check sheet associated with the kit.
3. Use a resistor clipping for the four PCB links and solder both sides of the PCB.
4. Fit all capacitors observing the correct polarity for the electrolytics. Do not overheat the trimmer as the body will easily melt.
5. Fit all active components such as i.c.'s and transistors. Observe the correct orientation from the layout outlines.
6. Fit all inductors. Polarity of the wound coils is indicated by writing on the can wall or by colour coding dots. The chokes have values written on them or have colour coding bands.
7. Fit all the terminal pins. They look nearest from track side as shown. Fit a link to select '-1' modulation.
8. Clean the PCB if possible using Iso-propyl alcohol or similar solvent. When clean inspect for bridged tracks or missed soldered joints.



Testing

Make connections to the video output (A or B) and i.f. input using miniature coax. Set the grey trimmer to half mesh and all cores in the screened inductors flush with the top of the can.

Apply 12 volts to the pin marked 'VCC' and the return to the ground plane. Monitor the video output on an oscilloscope and check for wide band noise. Inject either a video modulated FM signal or a wide deviation audio modulated signal or possibly just a carrier at 52MHz. This should be at the mV level initially. Adjust the grey trimmer to give a quieting of the noise indicating lock. Peak L1, L2, L3 for minimum noise, reducing the input level as needed. Final sensitivity should be better than -70dBm for a limited picture.

To optimise the bandwidth of the i.f. and demodulator the module should be swept and the 'S' curve checked. A local signal giving a 'dots' test card pattern is a possible alternative. Peak white and sync should be maintained to the lowest possible level.

L4 sets the intercarrier sound sub-carrier rejection notch and for most amateur applications will not be needed. Associated components will need changing for anything other than 6MHz spacing.

The afc output is centred using P1 and has sufficient range and drive capability to not require any further processing prior to connection to 'Front end' assemblies.

Conclusion

You should now have a sensitive, exceptionally linear MDTV demodulator board. The board can be driven directly from down converters with >20dB conversion gain. Microwave heads will usually need extra amplification and matching to give correct interface.

An problems or queries on the product should be addressed to our industrial premises. Module service charge is £5.25 incl. VAT and return postage. This does not include any components requiring replacement but does cover initial inspection, cleaning and aligning.

This product is one of our increasing range for Microwave TV Links. Commercial users should enquire for our professional range of boxed finished links throughout the 400MHz to 24GHz range.

WOOD & DOUGLAS, Unit 13 Youngs Industrial Estate, Aldermaston, Berkshire. RG7 4PQ
Tele: (07356)

NEW TELEPHONE
NUMBER
(07356) 71444

