

Synthesised Crystal Controlled Vestigial Sideband Modulator - VSB96



- The VSB96 is the updated version of the very popular vestigial sideband modulator VSB88. It has been designed and manufactured at the Swires factory in Basildon, using the experience gained during 22 years of producing professional quality modulators for use in the UK and all over the world.
- With cable headends exceeding 50 channels and still expanding, there is a need for low cost alternatives to the ever increasing price of the 'top of the range' modulators.
- The VSB96 gives identical results to many more expensive units, but at a much reduced price. This modulator will cope easily with the requirements of having adjacent channel operation throughout the bands.
- The VSB96 uses a crystal referenced frequency synthesiser to provide high frequency accuracy and stability, and a modulator that can be switched to the desired RF frequency, in 250 kHz steps, using four rotary switches on the back panel.
- The frequency range of the unit is 47 to 860 MHz. Although for special applications many options can be accommodated, for example, modulators down to 15 MHz can be ordered.
- Great care has been taken with the design of the VSB96 to achieve very low phase noise on all oscillators and in particular to ensure excellent video parameters, these, together with the use of surface mount components, ensure the accuracy and reliability of the unit.

- Specifications
 - Video input:
 - Input level: 0.5 to 2 V composite video, at 75 Ω .
 - RLR: > 26 dB (47 to 750 MHz)
 - Vision input connector: BNC level.
 - Sound input:
 - Input level: > 150 mV into 600 Ω unbalanced.
 - Sound input connector: 5 pin din.
 - RF specifications:
 - Output level: > 50 dBmV, RMS of peak carrier at 75 Ω .
 - Harmonic & spurious outputs: > 60 dB down over whole TV band.
 - Output level range: -15 dB.
 - Vestigial sideband SAW filter: Intermodulation products > -60 dB.
 - Sound carrier level: Set at -13 dB of vision, user adjustable between -10 & -18 dB.
 - RF frequency output: 47 to 750 MHz, in 250 kHz. steps.
 - RF output socket: 'F' connector.
 - RF output test point: -30 dB (\pm 2 dB).
 - Stability: 20 ppm crystal locked between 0 & 40 $^{\circ}$ C.
 - IF output link:
 - Impedance: 75 Ω .
 - Socket Type: 'F' connector.
 - Output level: 32 dBmV.
 - Sound modulation:
 - Frequency of sound carrier: System B/G: 33.4 MHz.
System I: 32.9 MHz.
System L: 32.4 MHz.
 - Type of modulation: Systems B/G & I: FM sound.
System L: AM sound.
 - Frequency response: 30 Hz to 15 kHz: < \pm 1 dB.
 - Distortion: < 1%.
 - Sound signal-to-noise ratio: RMS detector CCIR weighting filter > 56 dB.
 - Vision modulation, measured at IF:
 - Frequency of vision carrier: 38.9 MHz.
 - Type of modulation: Negative: Systems B/G and I.
Positive: System L.
 - Sync. amplitude: > 85 %, DC clamping on sync. tip.
 - 2T pulse and bar amplitude: > 90 %.
 - Chroma luma gain: > 85 %.
 - Chroma luma delay: < \pm 35 ns.
 - Luminance non-linearity: < 3%.
 - Video signal-to-noise: > 65 dB (weighted).
 - Bar tilt: < 1%.
 - 2T 'K' rating: < 1%.
 - Differential gain: < 3%.
 - Differential phase: < 3%.
 - Physical
 - Power required: 230 V AC \pm 10 % at 20 VA.
 - Dimensions: 483 mm \times 195 mm \times 45 mm (1U).
 - Weight: 3.5 kg.
 - Temperature operating range: -5 to 40 $^{\circ}$ C.