

QPSK Demodulator & Bit Synchronizer

Model No: JC-SC-DB12



Land



Air



Marine

The QPSK Demodulator and Bit Sync Unit has been designed to meet the Data Reception requirements for the Remote Sensing Satellite Ground Stations. This system receives a QPSK Modulated IF signal of 720 MHz as its input and output the Demodulated I and Q base-band signals for the baseband data-rate upto 105 Mbps. The Bit Synchronizer receives the Demodulated I & Q base-band as it's input and outputs the Clock and Synchronized Data for both I & Q with Parallel Clock (52.5 MHz) and the serial data at 105 Mbps along with Serial Clock.

Applications

- In-Radio communication for demodulation
- Orbiting satellite tracking for remote sensing

Features

- High Data rate demodulators for ground checkout / Earth stations
- Digital Costas loop & DSP based processing
- QPSK Demodulation
- Data rate 10 Mbps to 105 Mbps (Upgradable to 320 Mbps)
- 60 dB dynamic range
- Configurable for different differential decoding algorithms
- Digital Bit-synchronizer (160Mbps- I & Q), Clock & Data Outputs



Technical Specifications

Functional	
Input Frequency	720 MHz
AGC Dynamic range	-10 to -50 dBm (40dB)
Demodulation Scheme	QPSK
Data Rate	Upto 105 Mbps (Upgradable to 320 Mbps)
Acquisition Time	<250msec
Acquisition Range	± 500 KHz
Doppler Rate Capability	up to 8 KHz/sec
BER Performance	Within 2.0dB of the theoretical Eb/No for a BER of 1x10 ⁻⁶
Input Data Format	PCM NRZ-M
Differential Decoding	4 state gray coded (I RS Specific) Programmable
Clock Acquisition	±0.3% of Symbol rate
Outputs	I channel -Data, Clock, Inverted Clock, Inverted data, Q channel -Data, Clock, Inverted Clock & Inverted Data I+Q (Merged) Data & Clock
Output Logic	NRZ-L ECL Single ended (Un-terminated)
Clock Duty Cycle	50% ±10%
Continuous Clock Stability	Better than ± 10 PPM
Front Panel Indication	Carrier, Clock lock & Local / Remote
Front Panel Display	Frequency, RSSI, Data rate & Decoding
Front Panel Selections	Decoding, Phase adjust, IP Configure
Input/Output Impedance	50 ohms
Input/Output Connectors	BNC(F)
Remote Interface	RS232 / TCP-IP (Selectable)
Electrical	
Power	230V AC, 50 Hz, Single Phase
Mechanical	
Mounting	19-inch 3U Rack mountable
Size	485 L X 485 D X 88 H in mm
Weight	<6 Kgs
Environmental	
Temperature - Operating	0° C to +50° C
Temperature - Storage	-10° C to +60° C
Humidity	90% RH Non-Condensing

