



Tunable PSK Subcarrier Generator Model 782



FEATURES

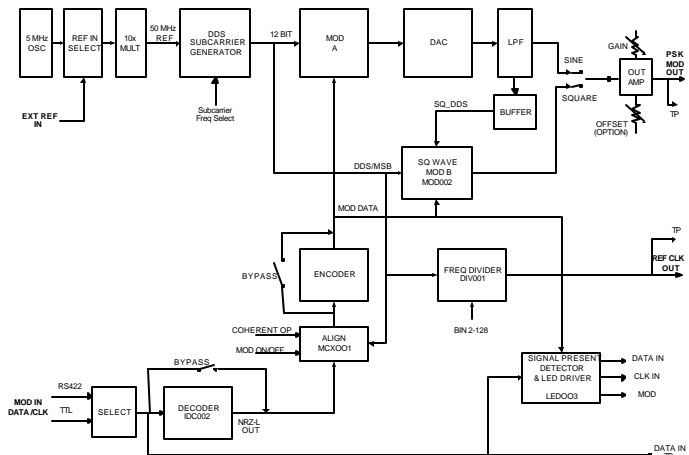
- Non-Coherent and Coherent BPSK Modulation
- Tunable from 10 Hz to 10 MHz in 0.1 Hz Steps
- Data Codes - NRZ (L,M,S) and BIØ (L,M,S)
- NRZ Differential Encoding for Modulation
- Sine or Square Wave Modulation
- Accuracy & Stability 100 ppm (Optional 1 ppm)
- RS232 Remote Control
- Adjustable Output Signal Amplitude & Offset
- TTL & RS422 I/O

GENERAL DESCRIPTION

The Model 782 Tunable PSK Subcarrier Generator BPSK modulates a data stream at subcarrier frequencies up to 10 MHz. Local front panel control is provided through a high contrast vacuum-florescent display and keypad. English language menu selections allow rapid unit configuration and operation. Test automation is supported through an RS232 control port that allows remote setup by computer.

The Model 782 performs both coherent and non-coherent modulation. In coherent modulation applications, the Model 782 provides a TTL or RS-422 clock that is a submultiple of the subcarrier frequency. The data source, using this clock, provides a coherent modulation-input to the Model 782. The modulated output signal is selectable between a sine wave and a square wave and can be adjusted in amplitude and offset up to ± 10 volts. Data and clock is input to the unit as either TTL or RS-422. The data can be NRZ- (L,M,S) or BIØ-(L,M,S). The input data is converted to NRZ-L. This NRZ-L can be differentially encoded to NRZ-M or S. The subcarrier is then modulated by the differentially encoded data. The modulating data is also output to the rear panel allowing the Model 782 to function as both a Data encoder and decoder.

The unit can also serve as a general purpose frequency synthesizer for rates of 10 Hz to 10 MHz. The frequency output is selectable between sine and square waves.





Tunable PSK Subcarrier Generator

Model 782

SPECIFICATIONS

BPSK MODULATOR

Data and Clock Inputs:

Selectable interface:

- TTL signal levels, unbalanced;
BNC connectors, DATA, CLK
- RS422 signal levels, balanced voltage;
Twinax connector, DATA, CLK

Input data rates: DC to 1 Mbps

Data input code conversion

- Requires 0 degree clock input
- Converts NRZ-L/M/S or BiPhase-L/M/S to NRZ-L
- Selectable bypass (no conversion)

Subcarrier Generator:

Frequency: Tunable, 10 Hz to 10 MHz.

Resolution: 1 Hz

Combined Accuracy and Stability: +/- 1 ppm

Modulator Output:

BPSK, 0/180 degree phase shift, sine or square wave output

Modulation Encoder

- Require 0 degree clock input
- Converts NRZ-L to NRZ-L/M/S
- Selectable bypass (no conversion)

Output level:

- Adjustable Amplitude: 25 mV to 10 Vp-p
- Adjustable Offset: 0 V to ±5V

Combined Signal + Offset restricted to ±10 V

Coherent Modulation:

Phase change at subcarrier zero crossing

MOD REF CLK synchronizes Data input

Reference Clock Output:

MOD REF CLK: TTL and RS422 Outputs

Frequency: Subcarrier divided by 2^N , where N=1 to 7, selectable

Code Converted Modulation Data and Clock Outputs:

Coded Data and Clock: TTL and RS422

TTL Data and Clock; RS422 Data and Clock

LOCAL FRONT PANEL CONTROL

VF Display and Keypad

(VF) display; 2-line by 40-character format

Twenty (20) position momentary-action keypad

IF Output & Level Controls:

Ten (10) turn potentiometers, with "lock"

Status Indicators and Test Points:

Three (3) Front Panel indicators

Modulation Data In, Modulation Clock In
(Red-Sig Loss; Green-Sig Present)

Modulation

(Red-Modulation OFF; Green-Modulation ON)

Three (3) Front Panel Test Points

IF Output-BPSK

Modulation Data In

Reference Clock

REMOTE CONTROL

RS232 Serial Interface (Standard):

Asynchronous Half-duplex, 9600 baud

MISCELLANEOUS

AC Input:

115 / 230 Vac (Auto-select)

Single phase, 47-63 Hz

100 watts, max.

Size:

19 in. (W) x 3.5 in. (H) x 20 in. (D)

Weight:

15 lbs.

Mounting:

19 inch EIA equipment rack.

Non-tilting slides provided.

Environment:

Operating

Temperature: +10 to +40, degrees C

R H: up to 95%, no condensation

Altitude: 0 to 10,000 ft

UPCONVERTER (Option)

70 MHz Out

BPSK RF Output

50 mVpp to 2 Vpp (50 Ohm Termination)

IF Output

BPSK IF Output

50 mVpp to 10 Vpp (50 Ohm Termination)

Ref Clk In

AC coupled

Switch selectable 1, 2, 5 or 10 MHz

Ref Clk Out

AC coupled output

Switch selectable: 1, 2, 5 or 10 MHz