

PSK / SGLS Signal Generator

Model 787

Features

- ◆ Dual Composite Outputs
- ◆ Three PSK SubCarrier Generators
- ◆ One SGLS (AM/FSK) Generator
- ◆ Ranging PRN Generator
- ◆ Full Remote / Local Control

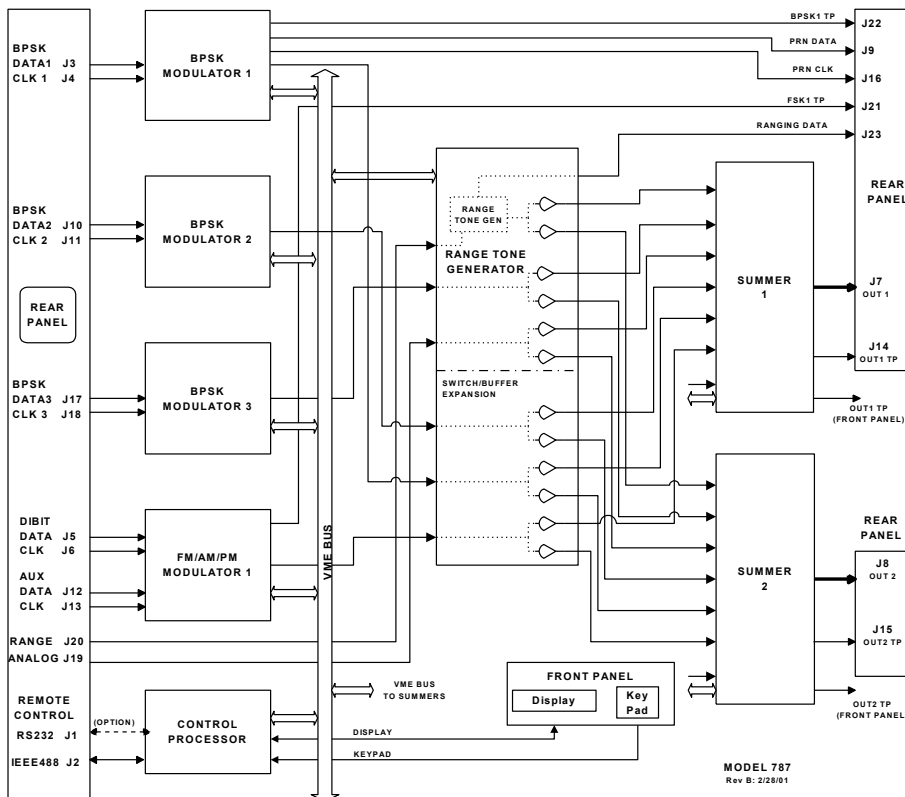
General Description

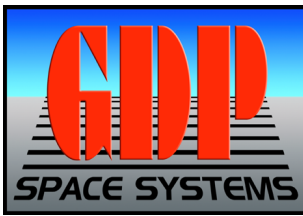
The GDP Space Systems Model 787 Dual SGLS Signal Generator provides multi-channel Space Ground Link System (SGLS) compatible Telemetry Tracking and Command (TT&C) and communication subcarrier signals.

The unit includes one FSK/AM/PM Modulator, three BPSK Modulators, a Ranging Tone Generator, and two Signal Summer/Level Control modules. The unit accepts SGLS dibit encoded data/clock and auxiliary data/clock inputs for FSK modulation; three data and clock inputs for BPSK subcarrier modulation; a ranging signal input for Range Tone output selection; and an external analog input channel. An internal pseudo-random noise (PRN) generator data and clock can be selected in place of any of the external data inputs. Two independent Summer modules each provide a composite output. The four Modulator output signals, the digital baseband output of the Ranging Tone Generator, and the external analog input signal are distributed to both Summers. For each Summer, up to four-of-seven signals are combined



to produce a Composite Output signal. Individual signal level and ON/OFF control is provided for the four selected signals on each Summer, as well as selectable attenuation of the composite output. All user selectable functions are controlled through either the local front panel display and keypad, or the IEEE-488 remote control port.





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SPECIFICATIONS

PSK MODULATORS

External Modulation Data Inputs:

Data & Clock (0-degree clock required for code conversion)

- Input data rates: DC to 2 Mbps TTL signal levels, unbalanced

Input Code conversion:

- NRZ-L/M/S; BiPhase-L/M/S; DM-M/S;

BYPASS

Internal PRN Generator:

Pattern: 2047 (N=11); 2,11 taps (4 Kbps, 32 Kbps, 64 Kbps)

Sub-Carrier Generator

Frequency: Selectable to 10 MHz;

Resolution: 1 Hz

Frequency Accuracy: +/- 100 ppm;

Optional, to 1 ppm.

FSK/AM/PM MODULATOR (SGLS)

External Data Inputs: TTL levels into 50 Ohms, unbalanced

SGLS Formatted Dibit Data and

Clock:

Auxiliary Serial Data and Clock Ternary Data (1,0,S) and Clock

95 KHz, 76 KHz, 65 KHz; or 385 KHz, 366 KHz, 365 KHz.

Binary FSK Modulation

Frequency Accuracy: +/- 100 ppm, standard.

PM Modulation to 10 MHz

Modulation Index: Selectable, 0.00 to 3.14 radians

COMPOSITE OUTPUT

Output Impedance: 75 Ohms (50 Ohms, optional)

Output Level, each sub-carrier: 1 V_{pk-pk} (nominal), at +3dBm setting

Output Level Adjustments

Each subcarrier: +3 dBm to -30 dBm, in

0.1 dBm steps

Composite: 0 to 7.5 dB Attenuation, in 0.5

dB steps

Test Ports: Fixed Attenuation (-10 dB

nominal) of Composite signal.

Performance

Signal On/Off Switching Isolation: 60 dBc

Spurious: -45 dBc

Harmonics: -40 dBc

IM³: -45 dBc

LOCAL FRONT PANEL CONTROL

VF Display and Keypad

Vacuum Fluorescent (VF) display

2-line by 40-character format

Twenty (20) position keypad

REMOTE CONTROL

IEEE- 488; RS-232

MISCELLANEOUS

Power: 115 Vac +/- 5%, Single Phase, 47-63

Hz, 300 watts, max

Size: 10.5 (H) x 22 (D) x 19 (W), inches

Weight : 70 lbs

Mounting: Std. 19" EIA rack w/ slides

Environment: Temp: +10 to +40 degrees C

RH: 15 to 85%, no cond.

Altitude: 0 to 10,000 ft.

Ordering Information

787-00 Basic Unit

OP787-01 1PPM Oscillators

Recognizing that no standard product can meet all the needs of all users, GDP stands ready to provide units tailored to unique applications.

The statements in this data sheet are not intended to create any warranty, expressed or implied. Equipment specifications are subject to change without notice.

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