SPECIFICATIONS

VERSATILITY

Waveforms : Sine \uparrow , square \downarrow , triangle \uparrow , DC, pulse_17, Sawtooth $\neg 11$ and distrorted sine achieved by symmetry variations.

Frequency Range: 0.002Hz-7MHz. Option: 0.1 13 MHz Sine Wave Option: 0.2 20 MHz Sine Wave

Main Output: variable to 20Vpp. Impedance 500(6000Special request).

ATTENUATOR - (90 dB) 0-60 dB in 20 dB steps, plus 30 dB vernier (amplitude).

TTL PULSE OUTPUT function as SYNC. out also. TTL pulse at generator's frequency, rise and fall time typical 40nsec (counters' "INT/EXT" slide swich in "EXT".), duty cycle variable by "WIDTH" control.

DC Offset and DC Output: DC output appears at main (50Ω) output by depressing "DC" pushbutton and releasing all other function pushbuttons. DC offset is achieved by adding "DC" function to any of the main output waveforms sine, square, triangle, sawtooth and pulse). Waveform offset and DC output continuously variable to $\pm 10V$, signal peak plus DC offset limited to $\pm 10V$ and are proportionally attenuated by the altenuator.

Sweep Input (VCG): Up to 1000:1 frequency change with external (AC or DC) 0 to +5V signal. To achieve maximum width, dial setting should be at the minimum and a 0 (or 50mV negative) to +5V sawtooth must be applied. Same can be done with 0 to +5V sawtooth when the dial is set to maximum.

Input impedance: $5k\Omega$ Linearity: 0.5% Slewrate: 2% of range per μ sec.

2.0

Width (Symmetry) Control: Width of square-wave and symmetry of all waveform outputs is continously adjustable from 10% to 90% (approx.) Varying width provides variable duty cycle pulses, sawtooth ramps and non-symmetrical sinewaves.

Pulse Generator Performance: TTL pulse, dual pulse, (positive + negative), high level (20V) pulse, one-shot pulses, self-delined logic (amplitude + DC), all repetition rate and duty cycle controlled.



FREQUENCY AND AMPLITUDE PRECISION

Dial Accuracy:

Models with counter: ±1 least significant digit (virtually 100% accuracy).

Time Symmetry: 1% to 200 KHz. Sine Flatness: 0.5dB to 5MHz, 3.0dB up to 13MHz.

WAVEFORM CHARACTERISTICS

Sine Distortion: ≤ 1.0% for 20Hz to 100KHz.

Triangle Linearity: Better than 99% up to 200 KHz.

Square Wave Rise and Fall Time: Typical 40nsec terminated with a 50Ω load.

Stability: Amplitude, frequency and DC offset 0.25% for short term, 0.5% for 24 hours.

FREQUENCY COUNTER Measures generator's frequency in the "INT" mode or extermal signals in the "EXT" mode. Range: 100MHz

Accuracy: ± (1 digit + time base accuracy). Resolution: 1Hz (100Hz on 1-100MHz rahge).

Sensitivity: 70mVRMS 50Hz to 50MHz. Impedance: 1MΩ/25pF.

Time Base: 10MHz -30PPM crystal.

Overload: Maximum 250Vrms to 1kHz.

Display: 5-digit led shows frequency in kHz.

*Models with AM/FM Sweep (MSP, MSPC, MSTPC)

AM-Internal/External: Auxillary 400Hz (approx.) interal sinewave will modulate generator's sinewave at the main output. Modulation depth is adjustable from 0 to 100%, External waveforms will perform tone bursts.

FM-Internal/External: Auxillary 400Hz (approx.) interal sinewave will modulate any frequency selected at the generator's output. Deviation is adjustable by "MOD LEVEL" control. 8Vpp (400Hz approx.) modulating source is then available at the "AF OUT" connector. Impedance 600Ω . FSK and lin/log sweep are available at the external FM mode.

Sweep: Sweep start and stop frequencies are held for precise sweep limit adjustment. Sweep width: Max. width 1000:1 achieved by positive (internal) OV-4V sawtooth. Sweep rate: Continuously variable 30msec to 10sec.

* Operational Modes (MSTPC):

CONTINUOUS: Generator runs continuously at selected frequency.

TRIGGERED (EXTERNAL): Generator is quiescent until triggered by external signal or manual trigger, then generates one complete waveform cycle at selected frequency.

GATED (EXTERNAL): As triggered mode, except output continues for dufation of gate signal. Last waveform started is completed.

INTERNAL-TRIGGERED/GATED (BURST): Same as external except triggering/gating is done by the sweep sawtooth signal, which is internally applied to perform bursts (in the gate mode) and single cycles at selected frequencies. Sweep "rate" control determines the burst repetition rate, "width" determines the number of cycles in each burst. ("rate" may slightly influence as well).

MANUAL ("MAN"): Pressing "MAN" will perform one cycle in the external "TRIG" mode. In the external "GATE" mode the output will continuously oscillate as long as "MAN" is pressed.

FREQUENCY LOCKING/SYNCHRONIZING: Generators' output frequency can be stabilized by locking it to external references applied to "lock" input connector.

Trigger Gate: Impedance $10K\Omega$.

Pulse Width: 200 nsec minimum. Repetition Rate: 1MHz maximum. "MAN": Allows manual gating or triggering or creating fully adjustable :one-Shot" pulses when in the pulse generator mode.

GENERAL.

OUTPUT PROTECTION: The generator main output is protected against short circuit or voltage between ± 14V DC 1A S.T.

Environmental: Specifications apply at $(25\pm5)^{\circ}$ C. Instrument will operate from 0°C to 50°C.

Dimensions: 270mm Wx125mm Hx245mm D Weight: 4 Kg

Power: 230VAC (115V option) ±10%, 50-60Hz. consumption, 20 watts max.

Note: Specifications apply for dial at 0.2-2.0 with DC offset removed, with 50Ω resistive load and after 20min. warm-up. All specifications are subject to change without notice.

