

MAIN GENERATOR

Waveforms: Sine, square, triangle, positive and negative pulses and ramps, AM, supp carrier AM, FM, sweep, phase lock, gate, trigger.

Frequency Range: 0.003Hz to 30MHz in 8 ranges.

Frequency Control: Dial calibrated linearly from 1 to 30, and an 8 position pushbutton multiplier switch.

BAND	MULTIPLIER	FREQUENCY RANGE	LOCK CAPTURE AND SWP RANGE
1	.1	0.003Hz-3Hz	0.03Hz-3Hz
2	1	0.03Hz-30Hz	0.3Hz-30Hz
3	10	0.3Hz-300Hz	3Hz-300Hz
4	100	3Hz-3kHz	30Hz-3kHz
5	1K	30Hz-30kHz	300Hz-30kHz
6	10K	300Hz-300kHz	3kHz-300kHz
7	100K	3kHz-3MHz	30kHz-3MHz
8	1M	30kHz-30MHz	300kHz-30MHz

Frequency Accuracy: 2% of full scale on bands 1-7, 3.5% of full scale on band 8.

Frequency Stability:

10 minutes	0.05% bands 1-7
24 hours	0.25% bands 1-6, 1% bands 7-8
vs line	0.01% for 10% line change
jitter (cycle to cycle)	0.025%

Maximum Output: 30V p-p (15V p-p into 50 ohms).

Impedance: Constant 50 ohms, $\pm 2\%$.

Amplitude Control: Pushbutton attenuator calibrated in 20dB steps to 60dB and vernier. dB attenuator accuracy ± 0.2 dB. Minimum output less than 2mV.

DC Component: Zero ± 100 mV, ± 4 mV/ $^{\circ}$ C, reduced in proportion to dB attenuator setting.

Frequency Response: Sinewave; 0.1dB to 300kHz, 0.2dB to 3MHz, 1dB to 30MHz. Triangle, 0.1dB to 300kHz, 1dB to 3MHz, 3.5dB to 30MHz.

Sinewave Distortion: Less than 0.5% 0.1Hz to 300kHz, 2% to 3MHz. All harmonics at least 22dB down to 30MHz.

Squarewave and Pulse: Rise and fall time less than 10ns, total aberrations less than 5% with 50 ohm matching load.

Triangle Linearity: 99% 0.1Hz to 300kHz, 98% to 3MHz, 90% to 30MHz.

Time Symmetry: 99% on bands 1-7, 90% on band 8.

VARIABLE SYMMETRY: Potentiometer for adjusting negative duration of pulses and positive slope of ramps. Main tuning dial controls positive duration of pulses and negative slope of ramps. Symmetry ratio adjustable 100:1.

VC (EXTERNAL VOLTAGE CONTROL): Frequency controlled about the dial setting with zero to ± 3 volts. Range 1000:1. Slew rate 0.2V/ μ s. Impedance 6k ohms. Upper frequency limited to maximum of selected band.

DC OFFSETS:

Fixed offset sets the waveform to one half its p-p amplitude and sets the plus peak at zero for negative offset, and the minus peak at zero for plus offset. Variable offset allows setting about ground to ± 15 volts peak. (Fixed and variable offsets may be used simultaneously; Maximum peak output limited to ± 15 volts).

AUXILIARY GENERATOR

Waveforms: Sine, square, triangle, pulses and ramps.

Frequency Range: 0.3Hz to 300kHz in 5 ranges.

Frequency Control: Single turn dial calibrated linearly from 3 to 30, and a 5 position, pushbutton multiplier switch.

BAND	MULTIPLIER	FREQUENCY RANGE
1	1	0.3Hz-30Hz
2	10	3Hz-300Hz
3	100	30Hz-3kHz
4	1K	300Hz-30kHz
5	10K	3kHz-300kHz

Frequency Accuracy: 10% of full scale.

Maximum Output: 20V p-p (10V p-p into 50 ohms).

Impedance: Constant 50 ohms, $\pm 2\%$.

Amplitude Control: Single turn vernier. Minimum output less than 100 μ V.

Frequency Response: 0.1dB to 100kHz, 0.2dB to 300kHz.

Sine Wave Distortion: $< 1\%$ to 10kHz, $< 2\%$ to 100kHz, $< 3\%$ to 100kHz.

Square Wave and Pulse: Rise and fall times less than 500ns.

Triangle Linearity: 99%, bands 1-4, 90% on band 5.

Time Symmetry: 98%, bands 1-4, 90% on band 5.

SYMMETRY CONTROL: Sets waveform duty cycle for 10% or 90% and divides output frequency by factor of 10.

MODULATION CHARACTERISTICS

AM and SUPPRESSED CARRIER AM

Modulation Factor: 0% to $> 100\%$.

Modulation Frequency: 0.3Hz to 300kHz, internal.
DC to 2MHz external.

Carrier 3dB Bandwidth: .003Hz to 30MHz.

Carrier Distortion (10% MOD): Less than 1% to 300kHz, 2% to 3MHz.

External Input Sensitivity: 4V peak for 100% modulation.

Impedance, 10K ohms.

FM

Deviation: 0% to 20%.

Modulation Frequency: 0.3Hz to 300kHz.

SWEEP CHARACTERISTICS

Range: 100:1

Rate: 0.3Hz to 10kHz (3.33s to 0.1ms)

Start and stop frequencies independently selected by SWP START and SWP STOP controls. Auxiliary Generator frequency and waveform controls determine sweep parameters.

PHASE LOCK CHARACTERISTICS

Locking Frequency Range: $\pm 90^{\circ}$ 10Hz to 300kHz, internal; $\pm 90^{\circ}$ 10Hz to 1MHz, $\pm 75^{\circ}$ to 3MHz, $< \pm 75^{\circ}$ to 30MHz, external.

Capture Range: 1/3 to 30 times Main Generator MULTIPLIER.

External Input: Control calibrated for 4V peak sine or triangle. Minimum voltage, .8V peak. Input Impedance, 100K ohms.

TRIG/GATE CHARACTERISTICS

Manual, internal or external. Waveform start/stop point adjustable $\pm 90^{\circ}$ to 15MHz. Input trigger level variable from -4V to +4V. Triggers on positive slope. Maximum trigger frequency 5MHz. Maximum triggered output frequency, 10MHz. Input impedance 100K ohms.

AUXILIARY OUTPUTS**MAIN GENERATOR:**

CV (control voltage) OUT: 2mV to 3 volts, proportional to generator frequency. Accuracy 1% bands 1-7. Impedance, 2.4K ohms.

TTL OUT: Frequency and symmetry same as Main Output. Drives up to 10 TTL loads. Rise and fall time less than 6ns. Total aberrations less than 10%. 180° out of phase with Main squarewave output. Impedance 50 ohms.

AUXILIARY GENERATOR:

TTL OUT: Frequency and symmetry same as Aux Output. Drives up to 10 TTL loads. Rise and fall time less than 60ns. Total aberrations less than 10%. 180° out of phase with Auxiliary squarewave output. Impedance 50 ohms.

GENERAL

Operating Temperature Range: 0° C to 50° C

Power Requirements: Switch selectable 90-110, 108-132, 180-220 or 216-264 volts, single phase, 50-400Hz, 60 watts.

Floating Ground Operation (Rear Panel): Switch disconnects signal ground from chassis ground.

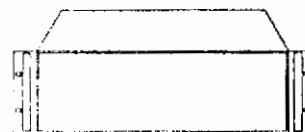
Dimensions and Weights:

Cabinet Size/Weight	H	W	D	Net	Gross
US	5 1/4"	16 5/8"	11 1/2"	13 lbs	15 lbs
Metric	13.3cm	42.2cm	29.2cm	5.9 kgs	6.8 kgs

Specifications apply at 25° C $\pm 5^{\circ}$ C, CONT mode, Main and Auxiliary Generators at maximum output voltage, Main dial set between 1 and 30, Auxiliary dial set between 3 and 30 and both SYMMETRY controls off.

Optional Rack Mounting Kit:

Part No. RK-519; permits installation of the Model 2400 into a standard 19" rack spacing.



Specifications subject to change without notice.

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