1.2 SPECIFICATIONS

1.2.1 FREQUENCY

Range	.2 - 1100 MHz
Resolution	10 Hz
Frequency Stability/Temp	±0.5 ppm (±.00005%), 0-50° C
Frequency Stability (Aging)	<1 ppm/yr.
Switching Speed	200 mSec (±100 Hz of final value in CW and for changes > 10 Hz in FM). Typically 100 mSec.

1.2.2 RF OUTPUT

Impedance	50Ω (VSWR <1.5:1; typ <1.4:1 at <-7 dBm output)
Output Connector	Type "N"
Calibrated Level Range	+13 to -137 dBm
Level Resolution	.1 dB
Level Accuracy	±1.0 dB (>1 MHz) ±1.5 dB (<1 MHz)
Flatness	±1 dB
Leakage	<0.1 µV into a 2-turn 1 inch diameter loop at 1100 MHz Conforms to MIL-STD-461, Class B, Sections CS01, CS02, CS06, RE02, RS03 (to 1 GHz); VDE 0871, Class B.

1.2.3 SPECTRAL PURITY

Harmonics	<-30 dBc
Sub-Harmonics (550 MHz - 1100 MHz)	<-25 dBc
Non-Harmonics (Spurs) (>5 kHz from carrier)	<-50 dBc for carrier frequencies <137.5 MHz <-60 dBc for carrier frequencies >137.5 MHz; <-70 dB typically
(<5 kHz from carrier)	<-50 dBc, typically

1.2.4 PHASE NOISE @ 500 MHz

10 kHz offset	<-107 dBc/Hz guaranteed (Typ -110 dBc/Hz)
20 kHz offset	Typ <-115 dBc/Hz

1.2.5 RESIDUAL AM

(.05 - 15 kHz PDBW)	<-65 dBc

1.2.6 RESIDUAL FM

(.05 - 15 kHz PDBW)	<30 Hz rms (<137.5 MHz) <10 Hz rms (137.5 - 274.99999 MHz) <20 Hz rms (275 - 550 MHz) <40 Hz rms (>550 MHz)
(.3 - 3 kHz PDBW)	<15 Hz rms typical (<137.5 MHz) < 7 Hz rms typical (137.5 - 274.99999 MHz) <10 Hz rms typical (275 - 550 MHz) <20 Hz rms typical (>550 MHz)

1.2.7 MODULATION (See 1.2.8 also)

Modes	AM, FM, FSK, COMPLEX (EXT AM and INT FM; EXT FM and INT AM; FSK and EXT FM; FSK and INT AM; FSK and INT AM and EXT FM).
Internal Source	400 Hz, 1 kHz; derived from frequency standard
External Source	AM Mode: DC to 20 kHz, 600 Ω input FM Mode: 20 Hz to 100 kHz, 600 Ω input

1.2.7.1 AM CHARACTERISTICS

AM Frequency Response	DC to 15 kHz (Typ to 20 kHz), (3 dB BW, 50% modulation)
AM Resolution	0.1%
AM Range	0 - 99.9% (+3 dBm max output at 99.9% modulation)
Modulation Accuracy, AM (0 - 90%)	±1%+(±5% of indicated setting) at internal rates
AM Distortion	<1.5%, below 30% modulation <3%, 30% to 70% modulation <5%, 70% to 90% modulation

1.2.7.2 FM CHARACTERISTICS

FM Resolution	10 Hz (deviations <10 kHz) 100 Hz (deviations <100 kHz) 1 kHz (deviations <1 MHz)
FM Rate	20 Hz - 100 kHz (3 dB BW)
FM Deviation Range for 1 kHz Rate	1 MHz peak (3-137.49999 & >275 MHz) 500 kHz peak (137.5 - 275 MHz) 100 kHz peak (1 - 3 MHz) 10 kHz peak (.2 - 1 MHz)

Modulation Accuracy, FM	At internal rates, ±6% of indicated setting, excluding residual FM
FM Distortion	<2% at internal rates for deviation <100 kHz, excluding residual FM <0.5% for external FM for deviation <100 kHz, excluding residual FM

1.2.8 FSK SYSTEM SPECIFICATIONS

Frequency Shift Deviation	±4.95 kHz max
Frequency Shift Resolution	10 Hz
Baud Rate	0 - 20 KBPS
Tilt	Zero - can dwell indefinitely on mark or space
Waveshape	Rectangular or square with dynamic properties dependent upon user-supplied FSK code waveshape. Will process DPL stop code.
FM/FSK Deviation Accuracy	±5% of indicated setting with ±1 VP code input
Carrier Frequency Stability (long term)	Same as frequency reference $\pm 5 \times 10^{-7}$, 0-50°C, on internal reference
Analog FM Frequency Response	20 Hz-100 kHz
Analog FM Deviation	If external FM + FSK is used, the sum of the peak deviations of each must not exceed 9.99 kHz, except in the carrier frequency range from 137.50000 - 274.99999 MHz. In this range the sum deviations must not exceed 4.95 MHz.
FSK Modes	Symmetrical: +1 V = shift up -1 V = shift down 0 V = center frequency (within 50 ms of code arrival at 0 V.
Mixed Modes	FSK/EXT FM FSK/INT AM FSK/INT AM/EXT FM
FSK Code Input Levels	±1 V, 0 ±10 mV Zero state 600Ω unbalanced

1.2.9 FRONT PANEL CONTROL

Type	Push-buttons, Spin-Knob

1.2.10 REVERSE POWER PROTECTION

Max RF Power	50 W
Trip Level	~ 0.7 W

Trip Time	2 mSec(Typically <1 mSec)
Max DC Voltage	50 V

1.2.11 STORED SETTINGS

64 total, non-volatile; complete front panel settings stored

1.2.12 EXTERNAL REFERENCE INPUT (REAR PANEL)

Frequency	1, 5, or 10 MHz
Required Level/Impedance	1-5 Vp-p, into 50 Ω
Waveform	Sine or Square Wave

1.2.13 INTERNAL REFERENCE OUTPUT (REAR PANEL)

Frequency	10 MHz
Voltage Out/Impedance	100 mVp-p, into 50 Ω
Waveform	Square Wave

1.2.14 GENERAL

Dimensions	14 cm (5.5 in.) High; 31.8 cm (12.5 in.) Wide; 53.3 cm (21 in.) Deep
Weight	12.7 kg (28 lbs.) net; 14.38 kg (31.7 lbs.) shipping
Power	100 or 120, 220 or 240 VAC; 50-400 Hz; 75 W

1.2.15 OPTIONS

1.2.15.1 GPIB GPIB	The GPIB Option gives the 2500C remote programming of front panel functions via GPIB. Command codes conform to TEK codes and formats Tektronix Standard 80009, Rev. C, 1979.
Interface	GPIB IEEE-488-1978
Control	All functions except On/Off, AutoCal® and Diagnostics
Functions	T6, L4, SH1, AH1, RL1, DC1, DT1, E2, SR1, TE0, LE0, PP0, C0
1.2.15.2 R02 0.05 PPM Reference	The R02 Option uses a new DCXO (Digitally Compensated Crystal Oscillator) which improves the stability over normal TCXO's. There is also no warmup time as in ovenized oscillators.

Frequency Stability	0.05 ppm
Aging	0.5 ppm/year

1.2.15.3 K-0278 Rack Mount
K-0279 Rack Mount with Slides

The K-0278 option is used to mount the 2500C in a fixed position in a standard 17 inch rack. The K-0279 option is used to mount the 2500C on slides in a standard 17 inch rack. With the slides extended, the unit can be tilted to several different angles for easy servicing.