



ELECTRON TUBE DIVISION

CLIFTON, NEW JERSEY

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

**F-2520
BACKWARD WAVE
OSCILLATOR**

TENTATIVE

GENERAL

The F-2520 is a voltage-tunable, wide-band oscillator with a minimum output power of 20 milliwatts over its rated operating frequency range. This permanent magnet focused, highly stable device finds applications as a swept signal source in signal generators; master oscillator for frequency diversity transmitters; or typically as a local oscillator in radar or ECM receivers. The tube features a unifilar helix contained in a rugged envelope of simple mechanical design thus providing a highly reliable, compact unit. No cooling is required when the environment is below +60°C ambient temperature.

ELECTRICAL

	TYPICAL	ABSOLUTE	UNITS		TYPICAL	ABSOLUTE	UNITS
Frequency	7.0 - 12.4	Note 1	Gcs	*Grid Voltage for no			
Power Output	25 - 150	20 min.	mw	Oscillation (RF Cutoff)			
Power Output Variation	8	10 max.	db	(with respect to Cathode)	-15	-30 max.	Volts
Fine Grain Variation, Note 2	±1.5	±2 max.	db/540 mc	*Collector Voltage (with			
VSWR	2.5:1	3:1 max.	—	respect to Helix)	+100	+150	Volts
Output Impedance	50	50	Ohms	Capacitance, Cathode to			
Heater Voltage	6.3	6.0 min/ 6.6 max.	Volts	all Electrodes	40	50 max.	μμfd.
Heater Current	.96	1.2 max.	Amps	Capacitance, Grid to all			
Anode Voltage (with				Electrodes	30	45 max.	μμfd.
respect to Cathode)	200	250 max.	Volts	Capacitance, Helix to all			
Anode Current	0.5	1.0 max.	Ma	other Electrodes and			
Cathode Current	8.0	15 max.	Ma	Capsule	80	150 max.	μμfd.
*Helix Voltage	Zero	Zero	Volts	Spurious Output below			
Helix Current	4.0	6.0 max.	Ma	Signal	50	40 min.	db.
*Cathode Voltage (with							
respect to Helix)	-390 to -2400	-300 to -2500	Volts				

*The above data shows tube operation with helix at ground potential (Zero volts). If desired as an alternate, any one of the asterisked elements may be operated at ground potential, provided the other electrode potentials are set at the appropriate relative levels.

NOTE 1 The F-2520 will operate over the frequency range of 6.93 to 12,524 Gcs. with a 3 db reduction in the rated minimum output power.

NOTE 2 This value is determined by selecting the 540 mc region of the frequency range which has the greatest differences in power output. The difference between these power levels is divided by two and the plus or minus sign is affixed to denote the difference from an average power level.

MECHANICAL

Package Length	9.90	9.95 max.	Inches	Output Cable Length			
Package Diameter	3.00	3.02 max.	Inches	(to end of Type			
Package Weight	9 lbs. -14 oz.	10 max.	Pounds	"N" Connector)	15	14 min/16 max.	Inches
Power Cable Length							
(to end of							
Winchester PM6P Con-							
connector)	12	11 min/13 max.	Inches				

Additional information for specific applications can be obtained from the

Electron Tube Applications Section
ITT Electron Tube Division
Post Office Box 104
Clifton, New Jersey

