



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION

Ref No .(PR No.1000048390)

Rfx No. 6100002391

Technical Specifications : (Qty : 16)
RF Signal Generator – SG 386 with Accessories.

Sr. No	Item Description	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
01	6 GHz Signal Generator – RF SG 386 (QTY.02)			
1.1	Frequency range (min)	9kHz to 6GHz		
1.2	Frequency resolution setting	1m Hz		
1.3	Frequency stability raging	1×10^{-11} (1sec.Allanvariation) or 1×10^{-6} /year		
1.4	Reference Frequency for both input and output time base	10 MHz		
1.5	Frequency sweep	Required		
1.6	RF Output connector	N type(F)		
1.7	Power output range(min)	+16.0dBm to -110dBm		
1.8	Power resolution and accuracy	0.01dBm & ± 1 dB		
1.9	Output coupling	AC, 50 Ohm		
1.10	VSWR	<1.6		
1.11	Maximum permissible power against Reverse protection	≥ 30 VDC, $\geq +25$ dBm RF		
1.12	Sub-Harmonics	None		

1.13	Harmonics	< -25 dBc(<+7 dBm output)		
1.14	Spurious	<-65dBc @<10kHzOffset < -75 dBc≥10kHzOffset		
1.15	Phase Noise(max)@1GHz	-80dBc/Hz@10Hzoffset -110dBc/Hz@20kHzOffset		
1.16	Internal modulation source	Sine, ramp, saw, pulse etc.		
1.17	External modulation input	AM,FM,PM(Phase),Pulse, blank		
1.18	AM range resolution Modulation source Modulation BW	0-100% 0.1% Internal or ext. >100kHz		
1.19	Pulse modulation ON/OFF power ratio (min)	57dBup to1GHz 40dBabove1GHz		
1.20	Pulse Repetition rate	Upto500kHz		
1.21	Pulse generator period	1 us to10s		
1.22	Pulse generator width	100nsto9.999sec		
1.23	Pulse time resolution	5 ns		
1.24	Turn ON/OFF delay	<100ns		
1.25	RF rise/fall time	100 ns(approx)		
1.26	Communication Interfaces	LAN,GPIB(IEEE488.2),RS-232		
1.27	AC power range(min)	200V to260V ,50Hz±5 Hz		
1.28	Approximate Dimension and weight	10"x3.5"x13"(approx.),5kg		
1.29	Operating temperature range	10°Cto55°C		
1.30	Damp heat	40°C,90%relativehumiditysteadystate		
1.31	Single/Double rack mount kit			

02	Rear-panel clock outputs (SMA Connectors) (QTY.02)			
2.1	Differential clocks	Rear-panel SMAs drive 50 Ω loads		
2.2	Frequency range	DC to 4.05 GHz		
2.3	Transition time (typ.)	<35 ps (20 % to 80 %)		
2.4	Amplitude	0.4 V _{pp} to 1 V _{pp}		
2.5	Offset	± 2 VDC		
2.6	Ampl/offset resolution	5 mV		
2.7	Ampl/offset accuracy	± 5 %		
2.8	Output coupling DC	50 Ω ± 2 %		
2.9	Compliance	ECL, PECL, RSECL, CML, LVDS, NIM		
03	8 GHz doubler & DC bias (QTY.02)			
3.1	Output	Rear-panel SMA		
3.2	Frequency range	6.075 GHz to 8.10 GHz		
3.3	Mixing products (3f _c /2)	<–20 dBc		
3.4	Harmonics (n $\times$ f _c)	<–25 dBc		
3.5	Spurious (8 GHz)	<–55 dBc (>10 kHz offset)		
3.6	Modulation modes	FM, Φ M, sweeps		
3.7	Output coupling	AC, 50 Ω		
3.8	Reverse protection	30 VDC, +25 dBm RF		
3.9	DC Bias Source Output	Rear-panel SMA		
3.10	Voltage range	± 10 V		
3.11	Offset voltage	<20 mV		
3.12	DC accuracy	± 0.2 %		
3.13	DC resolution	5 mV		
3.14	Current limit	20 mA		
04	External I/Q modulation (QTY.02)			
4.1	Carrier frequency range	400 MHz to 6.075 GHz		
4.2	Modulated output	Front-panel N-type only		
4.3	I/Q inputs	50 Ω , ± 0.5 V		

4.4	I or Q input offset	<500 μ V		
4.5	Carrier suppression	>40 dBc (up to 4 GHz)		
4.6	Modulation bandwidth	200 MHz (–3 dB)		
4.7	I/Q full scale	$(I_2 + Q_2)^{1/2} = 0.5$ V		
05	Rubidium time base (QTY.02)			
5.1	Oscillator type	Oven controlled, 3 rd OT, SC-cut crystal		
5.2	Physics package	Rb vapor frequency discriminator		
5.3	Stability (0 to 45 °C)	< $\pm$ 0.0001 ppm		
5.4	Aging	< $\pm$ 0.001 ppm/year		
06	Extended warranty	2 years		
07	Single rack mount kit (QTY.02)			
08	Dual rack mount kit (QTY.02)			

Terms & Condition:

- 1) 1-year standard warranty commences after the equipment installation, followed by a 2-year extended warranty starting upon completion of the standard warranty period.
- 2) Delivery Period:12-16 weeks ARO