

1. DIGITAL STORAGE OSCILLOSCOPE(60 MHz)-5 NOS.

- Band width – 60 MHz , 4channels.
- External Trigger Input
- Sample rate on each channel – 1.0 GS/s
- Record Length – 2.5K
- Vertical resolution – 8 bits
- DC Vertical Accuracy - +3%
- Vertical Zoom – Vertical expansion or compression for a live or stopped waveform.
- Input Coupling- AC, DC, GND.
- Time Base Range – 5ns to 50sec/div.
- Time Base Accuracy – 50 ppm.
- Horizontal Zoom – Horizontal expansion or compression of a live or stopped waveform.
- I/O Interfaces – USB

2. OSCILLOSCOPE (60MHZ)-3 NOS.

- VERTICAL DEFLECTION
 - Deflection : 1mV/div to 20V/div.
 - Coefficient 5mV/div to 20V/div in 12 calibrated steps in 1-2-5 sequence. x5 Magnification increases the sensitivity to 1mV/div & 2mV/div (LED indicated)
 - Accuracy : $\pm 3\%$.
 - Bandwidth : DC-60MHz (-3dB), dc coupled.10Hz-60MHz (-3dB), ac coupled.DC-20MHz on 1mV/div & 2mV/div.
 - Rise Time : 5.8nsec or less & 17.5nsec.
 - Display Modes : CH1 only, CH1 & CH2 Alternator Chop mode, Algebraic addition CH1 + CH2 , Algebraic subtraction CH1-CH2, CH2 invert & X-Y.
 - Input Impedance : 1M Ω & 15pF (approx).
 - Maximum Input : 400 Volts (dc + peak ac).Voltage(CH1 & CH2)
 - Internal Trigger : CH1 or CH2.Signal
- TIME BASE
 - Sweep Display Mode : Main, Search, Delay.
 - Sweep Speed : Main Sweep 0.1 μ s/div to 0.5s/div in 1-2-5 sequence in 21 steps.
 - Sweep Magnifier : x10 for Main Time base extends sweep up to 10ns/div.
 - Accuracy : $\pm 5\%$.
 - Variable : 2.5 : 1 Uncelebrated continuously variable (up to 4ns approx.).
 - Hold-off Time : 5 : 1 Continuously.

- Sweep Delay : 7 decade steps : 100ns to 0.1s with variable fine control (approx 10:1) extends the sweep delay to 1 sec. MODES : Search & Delay with LED indication.
- TRIGGER SYSTEM
 - Triggering Mode : Automatic or Normal with Level Control.
 - Source: CH1 / CH2 / LINE / EXT.
 - Slope: Positive or Negative.
 - Coupling: ac / dc / HF reject or TV Frame/ TV Line.
 - Trigger Sensitivity :Internal : Auto 0.5 div 30Hz - 10MHz 0.5 div 10MHz - 60MHz Norm 0.5 div 3Hz - 10MHz 0.5 div 10MHz - 60MHz External : Auto 0.5V p-p 30Hz - 10MHz 0.5V p-p 10MHz - 60MHz Norm 0.5V p-p 3Hz - 10MHz 0.5V p-p 10MHz - 60MHz (Typical 70MHz at 2 div).
- HORIZONTAL DEFLECTION
 - Deflection : Same as CH2.Coefficient
 - Bandwidth : DC - 3MHz (-3dB).

3. MULTI OUTPUT DC POWER SUPPLY-12 NOS.

- OUTPUT: 0 – 30v, variable by means of coarse and fine knobs and 0 – 2amps current fixed +/- 15v with 1a current limit fixed +5v with 2a current limit
- LOAD REGULATION: +/-0.05% +/-3mv from no load to full load.
- LINE REGULATION : +/-0.05% +/-3mv for +/- 10% variation in input line voltage
- RIPPLE VOLTAGE : Less than 1 mv RMS
- METERING : 3 ½ digit digital meters for current & voltage. 7 segment bright led type display of 12.5 mm ht.
- METER ACCURACY: +/- 0.2% of reading +/-2 least counts in digital type of meters.
- PROTECTION: Against short circuit and continuous overload.
- POWER REQUIREMENT: 230V +/- 10% AC 50/60 Hz.
- FRONT PANEL CONTROLS:
 - METERS : Digital Voltmeter and Digital current meter reading output voltage / current
 - -V/+V (30) : Provides 0 to -30v floating output
 - Ground (30) : Provides ground reference for taking -30v/+30v
 - V (COARSE) : Coarse adjustment of output voltage.(30v)
 - V (FINE) : Fine control to adjust the voltage. (30v)
 - Current (COARSE) : Coarse control of current adjustment to set maximum required value. (30v supply)
 - CURRENT (FINE) : Fine control to limit maximum value of current. (30v supply)
 - -15V –GND -+15V : Provides fixed -15/+15v supply with respect to ground.

- GND (+5V) : Provides +5v with respect to ground terminal having current capability of 2A
- POWER ON : Control to energize the instrument when 'Power ON' is in ON position digital meters are turned 'ON'.

4. FUNCTION GENERATOR (20 MHz)-8 NOS.

- WAVE FORM: Sine, rectangle, Triangle, pulse, SIN(x)/x rise log, fall log etc.
- FREQUENCY
 - Sine: 1 μ Hz~20 MHz
 - Rectangle: 1 μ Hz~10 Mhz
 - Other wave: 1 μ Hz~1MHz
 - Max resolution: 8 digital or 0.1 μ Hz
 - Long stability: 50ppm
- SIGNAL CHARACTER
 - Rectangle rise time: =20ns
 - Over shot: =5%
 - Rectangle: <1%
 - Asymmetry (1kHz):
 - Pulse duty cycle: 0.1~99.9%(<10KHz), 1%~99%(10kHz~100kHz) , 3%~97%(<1MHz)
 - Triple, ramp linearity (1kHz) : <0.1%
- OUTPUT A
 - Ampitude setup: 2mVpp~2Vpp(Hight resistance); 1mVpp~10Vpp(50O)
 - Attenuation error(1kHz) : <5%
 - Frequency response (1Vpp, base:1kHz) (1kHz) : <5%
 - Setup ratio setup(<5Vpp) : -100%~100%
 - Input impedance: 50 Ohm
- OUTPUT B
 - Wave form: Build-in wave form
 - Amplitude: 200mVpp~2Vpp(Height resistance); 100mVpp~10Vpp(600O)
 - Output impedance: 1 μ Hz~1MHz
 - Frequency Range: 8 digital or 0.1 μ Hz

- SWEEP FREQUENCY
 - Type: Line or linearity
 - Direction: Positive or negative
 - Start/End: 1Hz~ 20MHz
 - H Time setup range: 10ms~40s
- FSK, PSK, ASK, BURST
 - Pulse, interval: 10 μ s~100s
 - Trig mode: Int, Ext. single
 - Carrier frequency: 1Hz~Max. Frequency
 - Carrier wave form: Build-in wave form
 - Phrase: -360~360 degree
 - Burst pulse number: 1~65535
- AM
 - Module wave form: Any build-in function
 - Module Frequency: 100mHz~10kHz
 - Modulation: 0%~100%
 - Source: Internal/External
- FM
 - Carrier wave form: Any build-in function wave form
 - Module frequency: 100mHz~10kHz
 - Frequency shift setup range: 1Hz~ 20MHz
 - Source: Internal
- PHASE MODULE
 - Carrier wave form: Sine, Rectangle
 - Module frequency: 100mHz~10kHz
 - Max. phrase shift: 360 degree
 - Source: Internal
- FREQUENCY COUNTER
 - Frequency: 1Hz~100MHz
 - Input voltage: >100mV