INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076.

Ref. PR No. 1000053866 **Rfx. No. 6100002800**

Technical Specification for : Oscilloscope

Sr. No.	Parameter	Detailed Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
1.	**Oscilloscope (Qty 2) :** 4 FlexChannel			
1.1	**Analogue channels**	4 FlexChannel analogue inputs.		
1.2	**Bandwidth**	200 MHz bandwidth on all analogue channels, upgradeable by software options up-to 1 GHZ		
1.3	**Sample rate**	At least 6 GS/s on all analogue channels.		
1.4	**Record length**	At least 31 Mpoints per channel standard, upgradeable to 62.5 Mpoints		
1.5	**Vertical resolution**	12-bit ADC, up to 16-bit in High-Resolution acquisition mode.		
1.6	**Input sensitivity range**	From ≤500 µV/div to ≥10 V/div on analogue channels.		
1.7	**Waveform capture rate**	At least 500,000 waveforms per second.		
1.8	**Display**	At least 13 inch TFT capacitive multi-touch display, full HD 1920 × 1080 resolution.		
1.9	**Timebase range**	From ≤1 ns/div (or equivalent) to ≥1,000 s/div.		
1.10	**FFT / Spectrum view**	Integrated Spectrum View analysis with independent time and frequency controls per channel.		
1.11	**Trigger types**	Edge, pulse width, runt, timeout, window, logic, setup/hold, rise/fall time, UART/SPI/I2C/CAN/LIN and other serial bus triggers as per 4-Series B MSO options.		
1.12	**Automatic measurements**	≥36 automatic measurements (time, amplitude, jitter, power, etc.).		
1.13	**Math functions**	Standard math including +, −, ×, ÷, FFT, integrate, differentiate, filters, and advanced math.		
1.14	**Protocol decode and power measurement**	At least one serial protocol decode option (e.g. I2C/SPI/UART) supplied with power measurement and analysis.		
1.15	**Built-in DVM / counter**	4-digit DVM and 8-digit frequency counter,		
1.16	**Connectivity**	At minimum: 1× USB host, 1× USB device, Ethernet LAN (LXI), display port or equivalent for external monitor.		
1.17	**Remote operation**	Web-based remote access and control through standard browser over LAN.		
1.18	**Probes supplied (starter)**	4 × TPP0250A/TPP0250B 250 MHz passive probes (one per analogue channel)		
1.19	**Power requirements**	100–240 V AC ±10%, 50–60 Hz, ≤400 W power consumption.		
1.20	**Operating temperature**	At least 0 °C to +50 °C.		
1.21	**Warranty**	Minimum 3-year standard warranty on instrument; 1-year on included probes.		
1.22	**Certifications**	CE-marked and compliant to IEC 61010-1 or equivalent safety and EMC standards.		
1.23	**Support**	OEM should have service centre in India operational from last five years with NABL accreditation.		

2.	**Oscilloscope (Qty 1) :** 6 FlexChannel			
2.1	**Analogue channels**	6 FlexChannel analogue inputs.		
2.2	**Bandwidth**	200 MHz bandwidth on all analogue channels, upgradeable by software options up-to 1 GHZ		
2.3	**Sample rate**	At least 6 GS/s on all analogue channels.		
2.4	**Record length**	At least 31 Mpoints per channel standard, upgradeable to 62.5 Mpoints		
2.5	**Vertical resolution**	12-bit ADC, up to 16-bit in High-Resolution acquisition mode.		
2.6	**Input sensitivity range**	From ≤500 µV/div to ≥10 V/div on analogue channels.		
2.7	**Waveform capture rate**	At least 500,000 waveforms per second.		
2.8	**Display**	At least 13 inch TFT capacitive multi-touch display, full HD 1920 × 1080 resolution.		
2.9	**Timebase range**	From ≤1 ns/div (or equivalent) to ≥1,000 s/div.		
2.10	**FFT / Spectrum view**	Integrated Spectrum View analysis with independent time and frequency controls per channel.		
2.11	**Trigger types**	Edge, pulse width, runt, timeout, window, logic, setup/hold, rise/fall time, UART/SPI/I2C/CAN/LIN and other serial bus triggers as per 4-Series B MSO options.		
2.12	**Automatic measurements**	≥36 automatic measurements (time, amplitude, jitter, power, etc.).		
2.13	**Math functions**	Standard math including +, −, ×, ÷, FFT, integrate, differentiate, filters, and advanced math.		
2.14	**Protocol decode with power measurement**	At least one serial protocol decode option (e.g. I2C/SPI/UART) supplied with power measurement and analysis		
2.15	**Built-in DVM / counter**	4-digit DVM and 8-digit frequency counter,		
2.16	**Connectivity**	At minimum: 1× USB host, 1× USB device, Ethernet LAN (LXI), display port or equivalent for external monitor.		
2.17	**Remote operation**	Web-based remote access and control through standard browser over LAN.		
2.18	**Probes supplied (starter)**	6× TPP0250A/TPP0250B 250 MHz passive probes (one per analogue channel)		
2.19	**Power requirements**	100–240 V AC ±10%, 50–60 Hz, ≤400 W power consumption.		
2.20	**Operating temperature**	At least 0°C to +50°C.		
2.21	**Warranty**	Minimum 3-year standard warranty on instrument; 1-year on included probes.		
2.22	**Certifications**	CE-marked and compliant to IEC 61010-1 or equivalent safety and EMC standards.		
2.23	**Support**	OEM should have service centre in India operational from last five years with NABL accreditation.		
3.	**Measuring instruments** (Thermal camera) (Quantity: 2)			
3.1	Temperature range	at least -10°C ~ 380°C		
3.2	Accuracy	not more than ±2% variation		
3.3	Battery backup	at least 4 hours (AC adapter must be included)		
3.4	Infrared resolution	At least 110 X 85		
3.5	IR frequency band	At least 7~12 µm		
3.6	Frame rate	At least 9 Hz		
3.7	NETD	At max 65 mk		
3.8	Spatial resolution	7.6 mrad		
3.9	Min. focusing distance	0.5 m		
3.10	Warranty	1-year standard warranty		

 # Delivery Period : 4-6 weeks after receipt of PO.