



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

Ref. PR No. 1000052211

Rfx. No. 6100002694

Item Description – **Vector Signal Generator (Qty: 1 No)**

1. Please note that the equipment and accessories, have to be supplied and installed at IIT Bombay by the same tenderer to ensure guaranteed operation, technical support/service during warranty period and after-sales calibration/ repairs/ maintenance.
2. All the necessary consumables, tools/ accessories of the equipment should be supplied at the time of delivery and should be available in India for future maintenance/ procurement.

Sr. No.	Description	Value / Range	Technical Compliance (Yes / No)	Additional information (if any)
Vector Signal Generator				
A	Technical Specifications			
A.1	Frequency range	100 kHz (or lower) to 3 GHz (or higher).		
A.2	Frequency Resolution	0.001 Hz (or lower)		
A.3	RF Output Test Port	A.3.a Minimum 1 (or higher number of ports) A.3.b. 50 Impedance, VSWR < 2.1 A.3.c. Appropriate ruggedized port saver / port protector must be provided. A.3.d. If test port is N-port, N-port to precision-SMA adaptors and DC-block must be provided. A.3.e. Torque wrenches for SMA standard must be provided.		
A.4	Port Output Impedance:	A.4.a. 50 Impedance, A.4.b. VSWR < 2.1 (VSWR: Voltage Standing Wave Ratio) for frequencies > 1 MHz		

A.5	Power Range	120 dBm (or lower) to 18 dBm (or higher) with 0.01 dB resolution, for frequencies > 1 MHz. High power options must be made available as necessary.		
A.6	SSB Phase Noise	A.6.a. Lower than -125 dBc/Hz at 10 KHz offset (@1 GHz) A.6.b. Lower than -115 dBc/Hz at 10 KHz offset (@3 GHz)		
A.7	Spectral Purity (measured at 10 dBm Output Power)	A.7.a. Harmonics: Lower than -35 dBc (100 kHz to 3 GHz) A.7.b. Non-Harmonics: Lower than -50 dBc (100 kHz to 3 GHz)		
A.8	Reference Frequency	10 MHz (input), 10 MHz (output)		
A.9	Internal RF Modulation Bandwidth	200 MHz (or higher)		
A.10	I/Q Signal Generation	A.10.a. Both Internal Baseband generation and MATLAB-file based options must be available. A.10.b. Digital Modulation formats: BPSK, QPSK, 8PSK, 16/32/64/128/256/512/1024/2048/4096 QAM, and user-defined constellations. A.10.c. Must support ability to set I/Q impairments(Gain imbalance, quadrature offset etc.). A.10.d. I/Q Resolution: 16 bits A.10.e. License for any enabling software must be perpetual, and a interfacing windows machine (laptop) must be made available.		
A.11	Accessories	A.11.a. Instrument dust cover should also be provided. A.11.b. Rubber caps for all the connectors.		
A.12	Firmware updates	Should be provided free of-cost during the equipment lifetime		
A.13	Power	A.13.a. Mains input 220/240 V AC, 50 Hz (nominal) A.13.b. Provide Indian standard mains cord		
A.14	Electromagnetic Capability	Should be complied with all the necessary EMC standards		
A.15	Interfaces	LAN, GPIB, USB, External monitor: DVI-D or DisplayPort or HDMI		
A.16	Display	5 inches or more		

A.17	Warranty	1 Year standard, but one post-installation calibration within 3 years.		
A.18	Manuals	Programming manual, Operating Manual & Service Manuals [Softcopy and/ or hardcopy]		
A.19	Calibration certificate	Certificate with Test Data should be provided.		
B	Additional requirements			
B.1	Tenderers should provide	<p>B.1.a. Complete technical specifications, make, model of each equipment, necessary parts and accessories of the equipment as mentioned in the tender document.</p> <p>B.1.b. Soft copy of the technical brochures and website reference of the same must be included in the bid.</p> <p>B.1.c. A local service/ maintenance center with the availability of the spares in India. A declaration from the manufacturer stating that the service support/spares will be made available for the equipment for at least 5 years from the date of installation.</p> <p>B.1.d. A copy of the Authorization Certificate issued by the Original Equipment Manufacturer (OEM). The certificate must be up-to-date. A letter in the official letterhead of the OEM declaring the Indian supplier as their authorized agency to bid containing the official Tender enquiry number must be included with the technical bid.</p>		
B.2	The tenderer should have a minimum 03 (three) years of experience in supplying and successful installation of the equipment of similar specifications and should provide references (installation sites) from premier Institutes in India or abroad (preferably [not mandatory] Government Organizations in India).			
B.3	The tenderer should provide at least 3 nos. of soft copies of PO (not older than 3 years) of similar or higher specification supplied within India.			
B.4	A duly signed detailed User List (at least 3 nos.) with the concerned person's valid contact details in India where the instrument is still in the operational condition must be provided.			
B.5	A duly signed separate compliance sheet of the specification (at every point) mentioned in the technical part (Section-A of the document) along with the deviation (if any). This			

	compliance sheet will not be considered as the technical specification of the instrument.		
B.6	Each bidder has to mandatorily quote for all the items as mentioned in the tender document. Partial Submission of bid is not permitted. Bidders should apply for all items and accessories.		
B.7	Only New Equipment is to be Quoted (No Quote for Refurbished equipment). All the equipment should be supplied with the necessary accessories, starter-kit to start using the equipment.		
B.8	During technical evaluation of the bids, if required then the vendor will have to give offline demonstration of the quoted model with all the options and accessories required to meet the tender specifications, with the prior intimation. Demonstration of instruments doesn't guarantee Purchase Order (PO).		
B.9	Tenderers should state categorically whether they have at least one fully trained technical staff with certification from OEM for installation/ training of the equipment. Free-of-cost, on-site satisfactory installation/ commissioning and handover of the equipment should be completed within 7-days from the date of receipt of the material at the Institute premises or within the time as may be extended by IIT Bombay.		
B.10	After-sales service support for repair/ replacement of non-functional parts should be available in India (including all services under warranty).		
B.11	Manufacturer should have Accredited Service and Calibration Centre in India to provide service during warranty period and after-sales. The manufacturer should provide the certificate for the genuineness of the warranty and service centers in India. 1 Year standard warranty, but one post-installation calibration within 3 years.		
B.12	Warranty will commence from the date of the satisfactory installation of the equipment and the tenderer should give the warranty declaration.		