

Part B: Part 1 - Technical Bid

Analog Communication Kits for ECE department at Indian Institute of Information Technology Pune

FORMAT & REQUIREMENTS

1. Tender Ref. No:
2. Name of Tenderer:
3. Complete office address of Tenderer.....
4. Contact details of authorized person of tenderer who have signed the tender.
 - a. Name.....
 - b. Designation.....
 - c. Phone (Office).....
 - d. Phone (Mobile).....
 - e. E mail.....
5. Due date & Time of submission of quotation:
6. Submission of technical confirmation to the requirement.
7. Please specify the make and model. Attach technical brochure.
8. Higher technical specification may be considered subject to competitive price offer.
9. Documents to be enclosed with the Technical bid are as under:
 - a. Copy of authorization letter from principal.
 - b. Duly signed & stamped Tender documents (All pages) as a mark of your acceptance.
 - c. Details of latest Three customers to whom similar supply were made should be submitted in the following format:-

Sr. No.	Name of Client along with contact details
1.	
2.	
3.	
 - d. Supporting information with respect to the technical data, booklets of product. Any product manual brief, test certificates available may be enclosed.
 - e. Copies of GST,PAN, VAT/ TIN duly Signed & Stamped.

Signature of the tenderer
with stamp

Annexure- II

Format of Quotation along with specifications for Equipments supply for ECE Department at Indian Institute of Information Technology Pune

Sr. No	Requirement	Quantity
1.	<p>DSB-FC AMPLITUDE MODULATION/ DEMODULATION TRAINER</p> <p>Specifications:</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave Frequency Range: Up to 10 KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. Frequency Range: Up to 500KHz. Amplitude: 0 to 6 Vpp. (Both Variable) • Modulator Type: Balanced modulator. • Demodulator Type: Envelope Detector (Diode detector). • All parts are soldered on single PCB with complete Block diagram screen-printed. • Accessories: Training Manual and Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2mm Test Point is used to see Signal on DSO and Spectrum analyzer. 	03
2.	<p>DSB-SC AMPLITUDE MODULATION/ DEMODULATION TRAINER</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave Frequency Range: up to 10 KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. Frequency Range: Up to 500 KHz. Amplitude: 0 to 6 Vpp. (Both Variable) • Modulator Type: Balanced modulator using IC1496 • Demodulator Type: Product detector using Ic1496 with Low pass filter • All parts are soldered on single PCB with complete Block diagram screen-printed. • Standard Accessories: Training Manual and Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO and Spectrum • Spectrum Analysis of DSB with the help of Spectrum Analyzer 	03
3.	<p>SSB-SC AMPLITUDE MODULATION DEMODULATION TRAINER by Phase Shift Method</p>	03

	<p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave Frequency Range: up to 10KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. • Frequency Range: Up to 500 KHz. • Amplitude: 0 to 6 Vpp. (Both Variable) • Modulator Type : Sine Modulation , cos modulation , adder • Demodulator Type: Product detector with Low Pass Filter -Cut off Freq. 3.4 KHz. • All parts are soldered on single PCB with complete circuit diagram screen-printed. • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO and Spectrum • Spectrum Analysis of SSB with help of Spectrum Analyzer 	
4.	<p>SSB-SC AMPLITUDE MODULATION DEMODULATION TRAINER by filter method</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave Frequency Range: up to 10KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. • Frequency Range: Up to 500 KHz. • Amplitude: 0 to 6 Vpp. (Both Variable) • On Board Band Pass Filter: 452-458 KHz Bandwidth • Modulator Type: Filter Method • Demodulator Type: Product detector with Low Pass Filter -Cut off Freq. 3.4 KHz. • All parts are soldered on single PCB with complete circuit diagram screen-printed. • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO and Spectrum • Spectrum Analysis of SSB with help of Spectrum Analyzer 	03
5.	<p>Time Division Multiplexing and De-multiplexing.</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • On Board four Input signals generators. 	03

	<ul style="list-style-type: none"> • Sine wave: Frequency 250 Hz - 2 Vpp • Sine wave: Frequency 500 Hz - 2 Vpp • Sine wave: Frequency 1 KHz - 2 Vpp. • Sine wave : Frequency 2KHz - 2 Vpp • On Board Sampling Pulse signal generator. • Frequency Range: 2 KHz to 64 KHz. • Modulator Sections : Multiplexer • Demodulator Sections: De-multiplexer & Low Pass Filter • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • The parts soldered on the front side of SINGLE PCB with complete circuit diagram screen printed. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO 	
6.	<p>Frequency Division Multiplexing and De-multiplexing</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply: +15V, -15V, +5V. • On Board AF Modulating signal generator - Sine wave • Frequency Range: 150 Hz & 400Hz - 2 Nos. • Amplitude: 3 Vpp. • On Board Main RF carrier signal generator. • Frequency Range : 150 KHz & 300KHz (Two Signal) • Amplitude : 2Vpp • On Board Sub-carrier signal generator. • Frequencies: 16 KHz and 32 KHz. • Amplitude: TTL level. • On Board ADDER , Demodulator and LPF • Multiplexer Type: Balanced modulators and Band pass filters. • De-multiplexer Type: Balanced modulators and Band pass filters. • Standard Accessories: 1. Experimental and Circuit Description Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO 	03
7.	<p>Frequency Modulation using reactance modulator, computation of modulation index</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave • Frequency Range : 1KHz • Amplitude: 0 to 5 Vpp. • Modulator Type : Reactance modulator • Demodulator Type : Detuned Resonant Detector 	03

	<ul style="list-style-type: none"> • Standard Accessories: 1. A Training Manual. • 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO 	
8.	<p>Phase modulator</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • On Board Modulating Digital Data signal generator. • Modulator Type: Balanced Modulator as Phase Modulator. • Demodulator Type: Balanced Modulators, Squarer. • All parts are soldered on single PCB of with complete circuit diagram Screen-printed. • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO 	03
9.	<p>Quadrature Amplitude Modulation and demodulation kit [8-QAM]</p> <p>Specification</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • Built in two pattern generator. • Four different Phase are transmitted with two different amplitude 	03

Part B: Part 2 - Commercial Bid

Equipments/ setups/ systems for ECE department at IIIT Pune

Part 2: Commercial Bid

FORMAT & REQUIREMENTS

Tender Ref. No.:

Name of the Tenderer/Bidder:

The offer with rates for the schedule of requirements of items, as elaborated under, to be submitted. Adhering to the format given below is a pre-requisite for considering your quotations:

However quantity may increase/ decrease

The format of commercial offer is as below:

Sr. No	Requirement	Quantity	Unit Price in INR	Total Basic Price in INR
1.	<p>DSB-FC AMPLITUDE MODULATION/ DEMODULATION TRAINER</p> <p>Specifications:</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave Frequency Range: Up to 10 KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. Frequency Range: Up to 500KHz. Amplitude: 0 to 6 Vpp. (Both Variable) • Modulator Type: Balanced modulator. • Demodulator Type: Envelope Detector (Diode detector). • All parts are soldered on single PCB with complete Block diagram screen-printed. • Accessories: Training Manual and Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2mm Test Point is used to see Signal on DSO and Spectrum analyzer. 	03		
2.	<p>DSB-SC AMPLITUDE MODULATION/ DEMODULATION TRAINER</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. 	03		

	<ul style="list-style-type: none"> • On Board AF Modulating signal generator - Sine wave Frequency Range: up to 10 KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. Frequency Range: Up to 500 KHz. • Amplitude: 0 to 6 Vpp. (Both Variable) • Modulator Type: Balanced modulator using IC1496 • Demodulator Type: Product detector using Ic1496 with Low pass filter • All parts are soldered on single PCB with complete Block diagram screen-printed. • Standard Accessories: Training Manual and Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO and Spectrum • Spectrum Analysis of DSB with the help of Spectrum Analyzer 			
3.	<p>SSB-SC AMPLITUDE MODULATION DEMODULATION TRAINER by Phase Shift Method</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave Frequency Range: up to 10KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. • Frequency Range: Up to 500 KHz. • Amplitude: 0 to 6 Vpp. (Both Variable) • Modulator Type : Sine Modulation , cos modulation , adder • Demodulator Type: Product detector with Low Pass Filter -Cut off Freq. 3.4 KHz. • All parts are soldered on single PCB with complete circuit diagram screen-printed. • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO and Spectrum 	03		

	<ul style="list-style-type: none"> • Spectrum Analysis of SSB with help of Spectrum Analyzer 			
4.	<p>SSB-SC AMPLITUDE MODULATION DEMODULATION TRAINER by filter method</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave Frequency Range: up to 10KHz Amplitude: 0 to 3 Vpp. (Both Variable) • On Board RF carrier signal generator. • Frequency Range: Up to 500 KHz. • Amplitude: 0 to 6 Vpp. (Both Variable) • On Board Band Pass Filter: 452-458 KHz Bandwidth • Modulator Type: Filter Method • Demodulator Type: Product detector with Low Pass Filter -Cut off Freq. 3.4 KHz. • All parts are soldered on single PCB with complete circuit diagram screen-printed. • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO and Spectrum • Spectrum Analysis of SSB with help of Spectrum Analyzer 	03		
5.	<p>Time Division Multiplexing and De-multiplexing.</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • On Board four Input signals generators. • Sine wave: Frequency 250 Hz - 2 Vpp • Sine wave: Frequency 500 Hz - 2 Vpp • Sine wave: Frequency 1 KHz - 2 Vpp. • Sine wave : Frequency 2KHz - 2 Vpp • On Board Sampling Pulse signal generator. • Frequency Range: 2 KHz to 64 KHz. • Modulator Sections : Multiplexer • Demodulator Sections: De-multiplexer & Low Pass Filter • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • The parts soldered on the front side of SINGLE PCB with 	03		

	<p>complete circuit diagram screen printed.</p> <ul style="list-style-type: none"> • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO 			
6.	<p>Frequency Division Multiplexing and De-multiplexing</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply: +15V, -15V, +5V. • On Board AF Modulating signal generator - Sine wave • Frequency Range: 150 Hz & 400Hz - 2 Nos. • Amplitude: 3 Vpp. • On Board Main RF carrier signal generator. • Frequency Range : 150 KHz & 300KHz (Two Signal) • Amplitude : 2Vpp • On Board Sub-carrier signal generator. • Frequencies: 16 KHz and 32 KHz. • Amplitude: TTL level. • On Board ADDER , Demodulator and LPF • Multiplexer Type: Balanced modulators and Band pass filters. • De-multiplexer Type: Balanced modulators and Band pass filters. • Standard Accessories: 1. Experimental and Circuit Description Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO 	03		
7.	<p>Frequency Modulation using reactance modulator, computation of modulation index</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • On Board AF Modulating signal generator - Sine wave • Frequency Range : 1KHz • Amplitude: 0 to 5 Vpp. • Modulator Type : Reactance modulator • Demodulator Type : Detuned Resonant Detector • Standard Accessories: 1. A Training Manual. • 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover 	03		

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8.	<p>Phase modulator</p> <p>SPECIFICATIONS</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • On Board Modulating Digital Data signal generator. • Modulator Type: Balanced Modulator as Phase Modulator. • Demodulator Type: Balanced Modulators, Squarer. • All parts are soldered on single PCB of with complete circuit diagram Screen-printed. • Standard Accessories: 1. A Training Manual. 2. Connecting Patch cords. • All component are used in kits are visible with acrylic Cover • 2mm test points are for Interconnection on Kits and 2cm Test Point is used to see Signal on CRO 	03		
9.	<p>Quadrature Amplitude Modulation and demodulation kit [8-QAM]</p> <p>Specification</p> <ul style="list-style-type: none"> • Power supply requirement: 230V AC, 50 Hz. • Built in IC based power supply. • Built in two pattern generator. • Four different Phase are transmitted with two different amplitude 	03		
Total Basic Amount (1+2+3+4+5+6+7+8+9) =				
Taxes =				
Grand total (Total Amount + Taxes) =				

The rate quoted shall be in accounting units (A/U) and should be quoted as basic price, all other costs including freight, insurance, packaging and forwarding duties/levies and taxes.

Signature of the tenderer
with stamp