ANALOG COMMUNICATION LAB

The purpose of the Analog Communication Lab is to provide students with a solid understanding for analysis of signals in time domain and frequency domain. Students learn to simulate and design many types of communication circuits, and then assemble, measure, and evaluate the circuits using laboratory instruments. The concepts of all type of modulation & demodulation can be studied. The recent communication techniques can be demonstrated with available equipments. Students conduct experiments in a communication lab where they become acquainted with oscilloscopes, signal generator, spectrum analyzers and RF Generators. The training and experience that ECE students gain in this laboratory enhance their understanding of analog communication systems.



OIC Name: Dr. Abhijit Bhattacharya Technician: Suresh Kumar		
		Equipment Details
Hardware	Qty	
Attenuator Db	01	
A.F Power Meter	02	
A.F Output meter/A.F output power meter 1+5	06	

Dual Trace Oscilloscope 20 MHz (6+2+2) 10	Function generator 20 MHz	02
Generator single pulse (10 MHz) 1+2 with manual 03	Dual Trace Oscilloscope 20 MHz (6+2+2)	10
Distortion factor meter	Decade Capacitance box 100 PF to 10 uF	01
Pulse generator 05 Amplitude Modulator and Demodulator Trainer system with power supply 02 RF single generator 01 RF Attenuator 01 Servo controlled voltage stabilizer (7.5 KVA) 02 Study of pulse amplitude modulation and demodulation 01 Pulse amplitude modulator & demodulator trainer with power supply 02 Double pulse generator (10 MHz) 01 Decade resistance box 2+3 05 Function generator (Type-III (1 MHz) 07 Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 04 Function generator 02 FM system trainer (FM modulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 01 Saw tooth generator 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 PPM	Generator single pulse (10 MHz) 1+2 with manual	03
Amplitude Modulator and Demodulator Trainer system with power supply 02 RF single generator 01 RF Attenuator 01 Servo controlled voltage stabilizer (7.5 KVA) 02 Study of pulse amplitude modulation and demodulation 01 Pulse amplitude modulator & demodulator trainer with power supply 02 Double pulse generator (10 MHz) 01 Decade resistance box 2+3 05 Function generator (Type-III (1 MHz) 07 Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 04 Function generator 02 FM system trainer (FM modulation &FM demodulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 01 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 PPM module 02	Distortion factor meter	01
RF single generator 01 RF Attenuator 01 Servo controlled voltage stabilizer (7.5 KVA) 02 Study of pulse amplitude modulation and demodulation 01 Pulse amplitude modulator & demodulator trainer with power supply 02 Double pulse generator (10 MHz) 01 Decade resistance box 2+3 05 Function generator (Type-III (1 MHz) 07 Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 04 Function generator 02 FM system trainer (FM modulation &FM demodulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 01 Saw tooth generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 <	Pulse generator	05
RF Attenuator 01 Servo controlled voltage stabilizer (7.5 KVA) 02 Study of pulse amplitude modulation and demodulation 01 Pulse amplitude modulator & demodulator trainer with power supply 02 Double pulse generator (10 MHz) 01 Decade resistance box 2+3 05 Function generator (Type-III (1 MHz) 07 Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 04 Function generator 02 FM system trainer (FM modulation &FM demodulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver <td< td=""><td>Amplitude Modulator and Demodulator Trainer system with power supply</td><td>02</td></td<>	Amplitude Modulator and Demodulator Trainer system with power supply	02
Servo controlled voltage stabilizer (7.5 KVA) Study of pulse amplitude modulation and demodulation Pulse amplitude modulator & demodulator trainer with power supply Double pulse generator (10 MHz) Decade resistance box 2+3 Function generator (Type-III (1 MHz) Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 Function generator Function generator Function generator Function generator Function generator Function generator O2 FM system trainer (FM modulation &FM demodulator) Pulse amplitude modulator Multi output power supply 0-30V/2A5V/5A+15V/0-5A Sampling & time division multi &plexing training module 2+1 Saw tooth generator O1 Saw tooth generator O3 SSB generator & SSB receiver O1 set 225 MHz AM/FM single generator O1 Transistor radio 3 band /transmission & line (3+1) AM module O1 FM module O1 PPM module O2 Sigma delta module O1 AM transmitter & receiver O2 Transmission line trainer FM trainer and receiver O1 Power supply (0-30V/1Amp)	RF single generator	01
Study of pulse amplitude modulation and demodulation Pulse amplitude modulator & demodulator trainer with power supply Double pulse generator (10 MHz) Decade resistance box 2+3 Function generator (Type-III (1 MHz) Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 O4 Function generator Dusse amplitude modulator FM system trainer (FM modulation &FM demodulator) Pulse amplitude modulator Multi output power supply 0-30V/2A5V/5A+15V/0-5A Sampling & time division multi &plexing training module 2+1 Saw tooth generator Saw tooth generator Sas Benerator & SSB receiver O1 set 225 MHz AM/FM single generator Transistor radio 3 band /transmission & line (3+1) AM module FM module O1 FPM module O2 Sigma delta module O1 AM transmistion line trainer O1 FM trainer and receiver O1 Power supply (0-30V/1Amp) O7	RF Attenuator	01
Pulse amplitude modulator & demodulator trainer with power supply 02 Double pulse generator (10 MHz) 01 Decade resistance box 2+3 05 Function generator (Type-III (1 MHz) 07 Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 04 Function generator 02 FM system trainer (FM modulation &FM demodulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 Sigma delta module 01 AM transmistion line trainer 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Servo controlled voltage stabilizer (7.5 KVA)	02
Double pulse generator (10 MHz)	Study of pulse amplitude modulation and demodulation	01
Decade resistance box 2+3 05	Pulse amplitude modulator & demodulator trainer with power supply	02
Function generator (Type-III (1 MHz) 07 Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 04 Function generator 02 FM system trainer (FM modulation &FM demodulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Double pulse generator (10 MHz)	01
Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2 04 Function generator 02 FM system trainer (FM modulation &FM demodulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Decade resistance box 2+3	05
Function generator 02 FM system trainer (FM modulation &FM demodulator) 03 Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Function generator (Type-III (1 MHz)	07
FM system trainer (FM modulation &FM demodulator) Pulse amplitude modulator O3 Multi output power supply 0-30V/2A5V/5A+15V/0-5A Sampling & time division multi &plexing training module 2+1 O3 Function/sweep generator O1 Saw tooth generator O3 SSB generator & SSB receiver O1 set 225 MHz AM/FM single generator O1 Transistor radio 3 band /transmission & line (3+1) AM module O1 FM module O1 PPM module O2 Sigma delta module O1 AM transmitter & receiver O2 Transmission line trainer O1 FM trainer and receiver O2 Power supply (0-30V/1Amp) O3 O3 O3 O4 O5 O5 O6 O7	Frequency counter (600 MHz) & Frequency counter (80 MHz) 2+2	04
Pulse amplitude modulator 03 Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Function generator	02
Multi output power supply 0-30V/2A5V/5A+15V/0-5A 01 Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	FM system trainer (FM modulation &FM demodulator)	03
Sampling & time division multi &plexing training module 2+1 03 Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Pulse amplitude modulator	03
Function/sweep generator 01 Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Multi output power supply 0-30V/2A5V/5A+15V/0-5A	01
Saw tooth generator 03 SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Sampling & time division multi &plexing training module 2+1	03
SSB generator & SSB receiver 01 set 225 MHz AM/FM single generator 01 Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Function/sweep generator	01
225 MHz AM/FM single generator Transistor radio 3 band /transmission & line (3+1) AM module FM module PPM module Sigma delta module AM transmitter & receiver Transmission line trainer O1 FM trainer and receiver O1 Power supply (0-30V/1Amp)	Saw tooth generator	03
Transistor radio 3 band /transmission & line (3+1) 04 AM module 01 FM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	SSB generator & SSB receiver	01 set
AM module 01 FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	225 MHz AM/FM single generator	01
FM module 01 PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Transistor radio 3 band /transmission & line (3+1)	04
PPM module 02 Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	AM module	01
Sigma delta module 01 AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	FM module	01
AM transmitter & receiver 02 Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	PPM module	02
Transmission line trainer 01 FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	Sigma delta module	01
FM trainer and receiver 01 Power supply (0-30V/1Amp) 07	AM transmitter & receiver	02
Power supply (0-30V/1Amp) 07	Transmission line trainer	01
22 1 1 27	FM trainer and receiver	01
Intercom trainer system 05	Power supply (0-30V/1Amp)	07
	Intercom trainer system	05

Analog multiplexer	05
Frequency to voltage converter	01
30 MHz Cathode-ray oscilloscope	05
Universal counter	01
60 MHz cathode ray oscilloscope	05
Antenna system trainer with controller, UPS &Ink jet printer	01
Noisegenerator (M No. NG-282	01
Amplitude modulation & Demodulation	01
F.M & demodulation frequency	01
Amplitude Modulation transmitter kit	01
Amplitude Demodulation Receiver Kit	01
R.F.Siganl Generator 9 KHz to 3Ghz	01 No.
Solder less bread board	10
FM Mod & Dem. Trainer	05 Nos.
Frequency Shift Keying Trainer	05 Nos.
Tutor for clipping clamping & comparator	01Nos.
Analog communication Kit	11Nos.
ASK/PSK/BPSK/DBPSK Kit	05 Nos.
Error Correction and Hamming Code development system	05 Nos.