SIGMA

TELEPHONE EXCHANGE TRAINER
MODEL - EXCHANGE100

This trainer has been designed with a view to provide Practical and experimental Knowledge of a general circuit of Electronic Private Automatic Telephone Exchange (EPABX).

SPECIFICATIONS

Telephone:

1.	Line in Section	:	One DOT line connection socket
2.	Hand set	:	One Handset connection socket
3.	keyboard	:	4 x 3 Matrix Key Board
4.	Dialing Modes	:	Pulse and Tone.
5.	Facilities	:	Redial, Mute, Flash, Pause, On/Off hook switches.
6.	Indicators	:	Line In, Ringer
7.	Controls	:	Ringer Volume, Pulse/Tone
8.	Speech Path	:	Fully Non-Blocking
9.	Dial Pulse Ratio	:	10pps$\pm$10%
10.	Tone Frequency	:	430Hz
11.	Power supply requirement	:	From Phone lines.
12.	Lock Facility	:	By Key Switch.
13.	Faults	:	10 Nos.

EPBX:

1.	Telephone Lines	:	Two DOT Lines Four Extension Lines.(Expandable to 8)
2.	Telephones Instruments	:	4 nos.
3.	CPU Section	:	Microprocessor Z-80 based stored program Control technique CMOS cross point switching.
4.	Memory	:	64K Program memory, 32K Data RAM for buffer
5.	Line Section	:	Opto Isolation for Trunk Line and 4 Extension Line.
6.	Tone Generation	:	Dial Tone, Busy Tone, Ring Back Tone, Hold-on Music
7.	Speech Path	:	Fully Non-Blocking
8.	Longitudinal Balance	:	60dbm

9.	Loop Resistance	:	(a) Extension-600 ohms,(b) Co line-1200 ohms.
10.	Cross Talk Attenuator	:	Greater than 70dbm
11.	Idle Channel Voice	:	Greater than 70dbm
12.	Insertion Loss	:	Extension to Extension Not Less than 60db, Extension to DOT Line Not Less than 60 db
13.	Dial Speed	:	10 + 1 PPS
14.	Break Ratio	:	33:66
15.	Cabling	:	Single pair
16.	UPS	:	In built (without Batteries)
17.	Input Power	:	230 VAC + 10% 50Hz
18.	Test Points	:	30 Nos.
19.	Standard Accessories	:	1. Training Manual. 2. Operating Manual.

EXPERIMENTS

1. Introduction to EPBX system
2. To study Theory of EPBX Systems
3. To study Block diagram and Working principle
4. To study Power supply section
5. To study COL interface circuit section
6. To study Cross point switch circuit section
7. To study Intercom section
8. To study Data communication circuit section
9. To study Control (CPU) Section
10. To study Speech amplifier circuit & tone generator section
11. To study DTMF Generator section
12. To study DTMF Receiver section
13. To study Dual tone ring generator section
14. To study Installation procedure
15. To study Features of EPBX System
16. To study Monitoring Tones of EPBX
17. To study Different codes for operations
18. To study Operating procedure for different features
19. To study Console programming.
20. To study troubleshooting method
21. To study Data sheets of Ics used