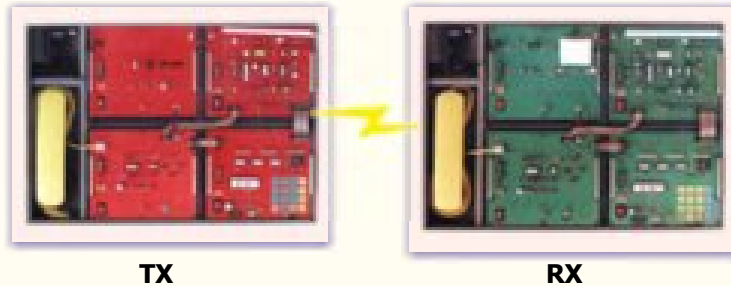# SIGMA

MOBILE TELECOMMUNICATION TRAINER

MODEL - MCT2000

This trainer has been designed to understand mobile wireless-telecommunication's hardware and software concept and procedure.

TX   RX

SPECIFICATIONS

1.	Transmitter / Receiver	:	Two different units for communication, one acting as transmitter & other acting as receiver
2.	Communication Methods	:	Full duplex & half duplex.
3.	Channel access	:	Multi Channel access.
4.	Freq. Range	:	Base unit: 46.51 to 46.97MHz, Mobile unit: 46.695 to 49.99MHz.
5.	Channels	:	15 duplex channels.
6.	Bandwidth/channel	:	25 Khz.
7.	Modulation	:	FM
8.	Freq. Stability	:	< 5 ppm
9.	Receiving sensitivity	:	over 20 db ,SINAD at -100 dBm
10.	Auto Channel Scan Time	:	less than 200 ms.
11.	Modes	:	selectable auto & Manual.
12.	Indicators	:	LED indicators for different functions
13.	Battery Protection	:	Overcharge protection for battery function.
14.	Blocks	:	Different Blocks should be provided for Power Supply, Audio Ckt ,Control ckt , Radio frequency.
15.	Experimental Support	:	Detailed manual with experiments designed should be provided to conduct experiment.

In keeping view of SIGMA policy of continuous development and improvement, the Specifications may be changed without prior notice or obligation.

EXPERIMENTS

1. Introduce to Full Duplex Mobile Telecommunication System.
2. Power supply
3. Limiter and Condenser Mic
4. Compressor
5. Pre-emphasis and De-emphasis
6. Expander
7. Band Pass Filter and Squelch Circuit
8. PLL Oscillation 1
9. PLL Oscillation 2
10. Transmitter
11. Receiver
12. Microprocessor and Control Circuits
13. Half Duplex Transmitting
14. Half Duplex Receiving
15. Full Duplex Communication
16. RF Interferences