PROJECT UNDER THE HERITAGE CLUB

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CLASS → B.SC Vth SEMESTER

ROLL NO → 82

INVENTION OF RADIO

"Guglielmo Marconi successfully sent the first radio message across the Atlantic Ocean in December 1901 from England to Newfoundland. Marconi's radio did not receive voice or music. Rather it received buzzing sounds created by a spark gap transmitter sending a single using morse code

In the years 1904 to 1914 the radio went through many refinements with the invention of the diode and triod vacuum tubes. These device enabled better transmission and reception of voice and music. Also during this time period the Radio became standard equipment on ships crossing the Oceans.

The radio came of age during world war I. military realized its value for communicating with off shore infantry and ships at sea during the WWI many improvements were made to radio making it more powerful and compact in 1923 Edwin Armstrong invented a radio worked the basic circuitry used in the superheterodyne radio are still in use today.

Radios come in all shapes and sizes from a little AM/FM "walkman" to a highly sophisticated multi mode transceiver where both the transmitter and receiver are combined in one unit. the most common modes for a broadcast radio are AM (amplitude modulation) and FM (frequency modulation). other modes used by ham radio operators, industry, and the military are CW (continous wave using morse code). SSB (single sideband) digitial modes (such as telemetry radio teletype and PSK shift keying.

"Raw Material"

Today's radio consists of an antenna printed circuit board, resistor capacitors, coils and transformers transistors. transistor, integrated circuits, and a speaker all of these part are housed in plastic case.

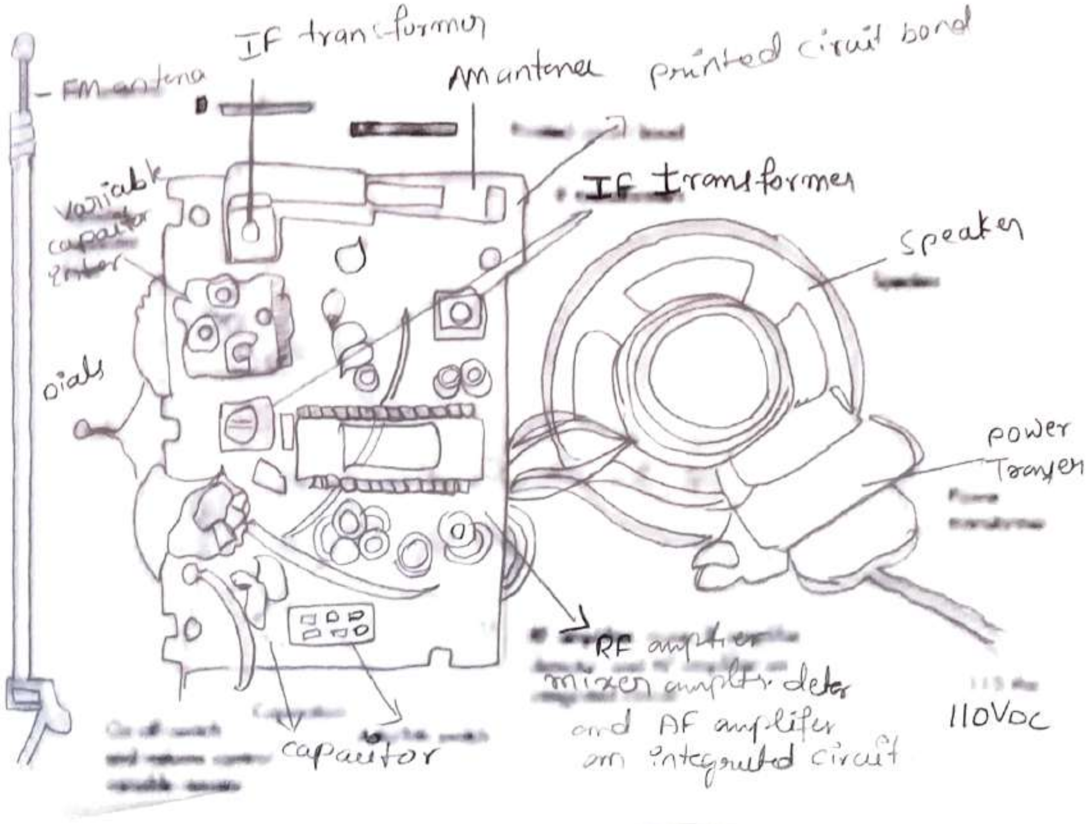
An internal antenna consists of small - diameter - aled copper wire wound around a ferrite core. An External antenna. consists of several aluminum tubes that slide with one another.

capacitors stores an electrical charge and allows alternating current to flow through electrical circuit but prevent direct current from flowing in the circuit. fixed capacitor consists of two extended aluminum foil electrodes insulated by polypropelene film. housed in a plastic (or) ceramic housing with copper wire leads. variable capacitors have a set of fixed aluminum plates and a set of rotating aluminum plate with in air insulator.

The Integrated circuit houses thousand of resistors capacitors. and transistors into a small and compact unit called a chip this chip is about the size of the nail on the little finger.

"The manfcturing Process"

There is no single Process for manufacturing radio the manufacturing Process depends upon the design and complexity of the radio.



The blank printed circuit board consist of a glasses Epoxy with a thin copper film conneted to one or both sides. A light sensitive photoresis film is placed over the copper film. A mask containing the Electrical circuits placed over the photoresist film. the photoresist image is developed transfering the image to the copper film. the unexposed areas dissolve during Etching and produce a Printed circuit on the board.

* Holes are drilled in designated locations on the printed circuit board to accept the components the board is pre-soldered by dipping it in a bath of hot solder

* Smaller electronic components such as resistor capacitors transistors integrated circuits, and coils are installed in their designated holes on the printed circuit board and soldered to the board. these operations can be performed by hand (or) by robots

* Larger components such as power transformer speaker and antenna are mounted either on the PCB. (or) cabinet with screws (or) metal spring tabs.

* External components not mounted on the printed circuit board can be the antenna speaker power transformer volume and frequency controls are mounted in the case with either screws rivets or plastic snaps. the printed circuit board can the antenna. speakers. power transformer volume. and frequency controll are mounted in the case with either screws rivets or plastic snaps. the printed circuit board is mounted in the case with screws (or) snaps. the external components are connected and soldered to the printed circuit board with insulated wires made of copper plastic insulation.

Since most of the components (or) a radio are manufactured by specialized vendors. the radio manufacture must rely on those vendors to produce quality parts. However the radio manufacture will test random samples of each components received and will test them to ensure they meet the require specifications

Today's Environment awarenss dicates that all aste be disposed of properly. most byproducts from e construction of a radio can be reclaimed. the tching solutions used in the printed circuit board an facture are sent to chemical reclamination enters. scraps from the leads of electronic compnents re sent to metal waste recovery centers. where hey are melted to create new products.

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Advantages of Radio

* Radio is one of the media which covers high population
* Radio can be enjoyed at home in office and driving car and can be enjoyed any where
* Radio channels varies from region to region hence you can listen radio in your regional language
* Like other entertainment media. Radio is also free of charge number of population
* you can advertise your product on radio and the rate of advertisement is usually lower than other mode of communication.
* Important information (or) news can be easily spreed on radio.
* For local market radio is one of the powerful media of communication.

"Disadvantages of Radio"

* only on audio medium for communication
* During bad weather you cannot listen radio properly often unclear and is affected by weather
* you need to adjust freequney properly
* Less and limited radio channels are avaible compare to other communication mediums

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