

The present invention relates to a printed circuit wiring board on which electronic components are mounted and which is intended for assembly in apparatus with limited available space.

The firm Kabelwerke Reinshagen have produced a brochure "Flexible gedruckte Schaltungen" (flexible printed circuit boards) which describes flexible printed circuits on a sheet base.

The printed conductors are disposed on a sheet (which has a thickness of 0.3mm) which is formed from a special material which may be bent and may thus be matched to the respective position required in the use thereof. It can be used as a substitute for wiring harnesses.

It is a drawback of this form of printed circuit board that electronic components cannot be mounted on the sheet.

It is known to provide two rigid wiring boards upon which components can be mounted which are joined by flexible printed circuit.

It is a drawback of this arrangement that no electronic components may be assembled and soldered to the conductors on the flexible printed circuit.

The object of the invention is to provide a printed circuit board in a simple and convenient form.

According to the invention a printed circuit board for use in apparatus where there is limited space comprises a base formed from material which can be bent to a desired contour, components mounted on said board, the axes of said components being disposed substantially parallel to the axis about which the board is to be bent, and conductors carried by said board, said conductors being coated with a

solder resist except in the areas of zones where the connections to the components are made.

In the accompanying drawings:-

Figure 1 shows a printed circuit board according to the invention located within a telephone handset; and

Figure 2 shows a plan view of the board with circuit components mounted thereon.

With reference to Figure 1 of the drawings, there is indicated at 6 the wall of the portion of a handset of a telephone between the housings for the earphone and microphone. A printed circuit board constructed as will be described, is located at one end in a holder 4 secured to the wall 6 and adjacent its other end it is secured to a projection 5 which in turn is secured to or is formed integrally with the wall. The board can be secured to the projection by means of a screw or screws. It will be noted that the longitudinal axis of the handset is curved and that the board is also curved.

As shown in Figure 2 the end 1A of the board is provided with a projection or lug 1B which locates within a transverse slot in the holder 4. The board also mounts circuit components 2 which are interconnected by printed circuit conductors (not shown). The conductors prior to the soldering of the components to the conductors which process can be carried out using a solder bath, are coated with a solder resist, the resist being of course absent from the portions of the conductors to which the components are connected.

The components are disposed on the board so that preferably their axes lie substantially parallel to the so-called bending axis 3, this being the axis about which in use the board is bent to enable it to be mounted in the handset.

The board is formed from flexible material but apart from the need to flex without cracking no special material is required. The fact that the conductors are not coated with solder other than in the areas or zones where the electrical connections are made, means that the board can be bent and the risk of cracking the conductors is minimised.

The fact that the axes of the components lie substantially parallel to the bending axis means that the components themselves add little if any to the stiffness of the board.

It is possible using boards constructed as described, to utilize printed circuit boards in situations where normal planar boards could not be used.

CLAIMS:

1. A printed circuit board for use in apparatus where there is limited space comprising a base formed from material which can be bent to a desired contour, components mounted on said board, the axes of said components being disposed substantially parallel to the axis about which the board is to be bent, and conductors carried by said board, said conductors being coated with a solder resist except in the areas or zones where the connections to the components are made.
2. A board according to claim 1, in which the board is provided with a projection or lug to facilitate the mounting of the board on a holder.
3. A printed circuit board comprising the combination and arrangement of parts substantially as hereinbefore described with reference to the accompanying drawings.

