A protective cover (10) for a mobile telephone (12) includes a receiving portion (14) having an opening (16) through which the telephone (12) is insertable into the receiving portion (14), the receiving portion (14) being configured to overlay or surround the telephone (12) and a closure portion (18) forming an integral part of the receiving portion (14) for sealing off the opening (16) in the receiving portion (14).
Protective Cover

Field of the Invention

This invention relates to a protective cover for an electronic device and in particular to a protective cover for a cellular telephone.

Background to the Invention

A problem associated with many electronic devices is their sensitivity to moisture and in particular the sensitivity to moisture of printed circuit boards (PCB).

The PCB is multi-layered with micro tracts interconnected by LAN contact points between tracts and electrical components, the LAN contact points being landings points between the electrical components and the micro-track. The main board has numerous pit holes drilled through the board. Moisture collection in these holes contributes to low insulation faults resulting from corrosion and eventual disintegration of the micro tracts between the layers rendering the PCB irreparable.

The inventor therefore believes that a need exists for providing a means for inhibiting moisture from entering the interior of electronic devices.

Summary of the Invention

According to the invention there is provided a protective cover for an electronic device including:-

a receiving portion having an opening through which the electronic device is insertable into the receiving portion, the receiving portion being configured to overlay or surround the electronic device; and

a closure portion forming an integral part of the receiving portion for sealing off the opening in the receiving portion.
The closure portion may include male and female engaging formations located at an end of the receiving portion configured to engage one another once the electronic device has been inserted into the receiving portion, thereby sealing the opening in the receiving portion.

Alternatively, the closure portion may include a lip that may be folded or lifted open to allow insertion of the electronic device into the receiving portion whereafter the lip may be folded back into a position wherein it closes the opening in the receiving portion by overlapping the opening and lying snugly against the receiving portion.

Sealing engagement between the lip and the receiving portion may be enhanced by the provision of an attachment means such as, for example, a hook and loop mechanism, currently available under the trade name Velcro™.

The receiving portion may be configured to fit snugly over the electronic device.

The receiving portion may include a generally nipple or teat shaped extension part that is configured to receive snugly an antenna or aerial of the electronic device complementally therein.

The receiving portion and closure portion may be manufactured from any suitable synthetic plastics material that is fluid impervious. In particular, the synthetic plastics material may include any one of the group including rubber, polyethylene, neoprene, latex, EPDM (an ethylene propylene polymer) and polypropylene.

The synthetic plastics material may contain hentenorene or any other suitable substance to afford said plastics material with protection against UV rays, thereby prolonging the lifespan thereof.

The receiving portion may have a transparent window portion to enable a user to see the buttons on the electronic device to permit operation thereof.
The transparent window portion may be manufactured from any suitable substantially fluid impervious flexible synthetic plastics material.

The transparent window portion may be attached to the receiving portion by means of a slotted groove so as to form a fluid impervious joint between the transparent window portion and the receiving portion.

Alternatively, the synthetic plastics material from which the receiving portion is manufactured may be transparent, thereby eliminating the need for providing a window portion. Suitable chemicals may be added to the synthetic plastics material during its production to enhance the transparency thereof.

The electronic device to which the protective cover may be fitted may be any hand-held electronic device and is typically a communications device such as, for example, a mobile or satellite telephone or a radio.

The closure portion is typically located at an end of the protective cover that in use covers recesses of the communications device configured to receive plugs for the purpose of, for example, recharging the communications device, thereby allowing access to these recesses without having to remove the protective cover from the communications device.

The receiving portion may further have an ear and a mouthpiece situated at opposite ends of the transparent window. The mouthpiece may alternatively be situated on the closure portion.

The ear and mouthpiece may be manufactured from any suitable synthetic plastics material that will allow sound to travel through it substantially unhindered.

The ear and mouthpiece may be attached to the receiving portion/closure portion by means of a snap fit arrangement or any other suitable method of attachment such as by gluing.
The points of connection between the receiving portion/ closure portion and the transparent window, mouth and ear piece may be sealed by means of any suitable sealant such as silicon which will bond the receiving portion/ closure portion to the transparent window, mouth and ear piece so as to render said points of connection substantially fluid impervious.

In a preferred embodiment of the invention, the receiving portion is manufactured from a synthetic plastics material that will allow sound to travel through it substantially unhindered, thereby eliminating the need for separate mouth and earpieces.

**Detailed Description of the Invention**

A preferred embodiment of the invention will now be described by way of the following non-limiting example with reference to the accompanying drawings.

In the drawings:-

Figure 1 shows a three-dimensional view of an embodiment of a protective cover for a mobile telephone when fitted onto a mobile telephone in accordance with the present invention;

Figure 2 shows the mobile telephone of Figure 1 without the protective cover;

Figure 3 shows an end view of the protective cover of Figure 1 fitted onto a mobile telephone wherein the closure portion is in an open position;

Figure 4 shows the closure portion of Figure 3 in a closed position;

Figure 5 shows a three-dimensional view of a second embodiment of a protective cover for a mobile telephone in accordance with the present invention;

Figure 6 shows a mobile telephone fitted with the protective cover of Figure 5;

Figure 7 shows an enlarged sectioned side view of a portion of the protective cover including a transparent window shown in Figures 5 and 6; and

Figure 8 shows an enlarged sectioned side view of a portion of the protective cover including an ear or mouth piece shown in Figures 5 and 6.
In the drawings, reference numeral 10 generally indicates a protective cover in accordance with the present invention.

A protective cover 10 for mobile telephone 12 includes a receiving portion 14 having an opening 16 through which the telephone 12 is insertable into the receiving portion 14, the receiving portion 14 being configured to overlay or surround the telephone 12 and a closure portion 18 forming an integral part of the receiving portion 14 for sealing off the opening 16 in the receiving portion 14.

The closure portion 18 includes a lip 20 that can be folded or lifted open as shown in Figures 1 and 3 to allow insertion of the telephone 12 into the receiving portion 14 whereafter the lip 20 is folded back into a position wherein it closes the opening 16 in the receiving portion 14 by overlapping the opening 16 and lying snugly against the receiving portion 14 as shown in Figure 4 thereby sealing the opening 16.

The receiving portion 14 is configured to fit snugly over the telephone 12.

The receiving portion 12 includes a generally nipple or teat shaped extension part 22 that is configured to receive snugly an antenna or aerial 24 of the telephone 12.

The receiving portion 14 and closure portion 18 are manufactured from any suitable synthetic plastics material that is fluid impervious, preferably latex. The synthetic plastics material contains hendorenee to afford said plastics material with protection against UV rays, thereby prolonging the lifespan thereof.

The latex is transparent, thereby allowing a user (not shown) to see the buttons 26 located on the telephone 12 through the cover 10 to permit operation of the telephone 12. Suitable chemicals are typically added to the latex during its production to enhance the transparency thereof.

The closure portion 18 is located at an end of the protective cover 10 that in use covers recesses 28 of the telephone 12 configured to receive plugs for the purpose
of, for example, recharging the telephone 12, thereby allowing access to the recesses 28 without having to remove the protective cover 10 from the telephone 12. The latex is sufficiently thin so as to allow sound to travel through it substantially unhindered.

In use, lifting of lip 20 allows an upper region of the telephone 12 to be received by the receiving portion 14 in the direction indicated by arrow A in Figure 1. Once the telephone 12 has been inserted completely into the receiving portion 14, the lip 20 is folded back onto the receiving portion 14 thereby to overlay a portion of the receiving portion 14 as shown in dotted lines 30 in Figure 4 thus providing a substantially fluid impervious capsule around the mobile telephone 12.

Referring now to Figures 5 to 8, a protective cover 10 for a mobile telephone 12 includes a receiving portion 32 having an opening 34 through which the mobile telephone 12 receivable, the receiving portion 32 being configured to overlay or surround the mobile telephone 12 complementally therein and a closure portion 36 for sealing off the opening 34 in the receiving portion 32.

The receiving portion 32 is configured to fit snugly over the mobile telephone 12 and includes a teat shaped extension 38 configured to receive snugly an antenna 40 of the mobile telephone 12.

The receiving portion 32 and closure portion 36 are manufactured from EPDM.

The receiving portion 32 has a transparent window portion 42 to enable a user to see the buttons 43 on the mobile telephone 12 to permit operation thereof.

The transparent window portion 42 is manufactured from any suitable substantially fluid impervious flexible synthetic plastics material.

The transparent window portion 42 is attached to the receiving portion 32 by means of a slotted groove as shown in Figure 7 so as to form a fluid impervious joint between the transparent window portion 42 and the receiving portion 32.
The receiving portion 32 further has an ear 44 and a mouthpiece 46 situated at opposite ends of the transparent window 42.

The ear 44 and mouthpiece 46 are manufactured from any suitable synthetic plastics material that will allow sound to travel through it substantially unhindered.

The ear 44 and mouthpiece 46 are attached to the receiving portion 32 by means of a snap fit arrangement as shown in Figure 8.

The points of connection between the receiving portion 32 and the transparent window 42, mouth 46 and ear 44 pieces are sealed by means of a silicon sealant which bonds the receiving portion 32 to the transparent window 42, mouth 46 and ear 44 piece so as to render said points of connection substantially fluid impervious.

In use, an upper region of the mobile telephone 12 is received by the receiving portion 32 in the direction indicated by arrow B in Figure 5 and the closure portion 36 is connected to the receiving portion 32 thereby to overlay a lower region of the mobile telephone 12. The receiving portion 32 and closure portion 36 are subsequently forced to interlock with each other by means of snap fit arrangement 48 so as to provide a substantially fluid impervious capsule around the mobile telephone 12 as shown in Figure 6.

It is to be appreciated, that the invention is not limited to any specific embodiment or configuration as hereinbefore generally described or illustrated.
CLAIMS

1. A protective cover for an electronic device including:-
   - a receiving portion having an opening through which the electronic
device is insertable into the receiving portion, the receiving portion being
configured to snugly receive and overlay or surround the electronic device;
and
   - a closure portion forming an integral part of the receiving portion for
sealing off the opening in the receiving portion.

2. A protective cover as claimed in claim 1 wherein the closure portion includes
male and female engaging formations located at an end of the receiving
portion configured to engage one another once the electronic device has
been inserted into the receiving portion, thereby sealing the opening in the
receiving portion.

3. A protective cover as claimed in claim 1 wherein the closure portion includes
a lip configured to be folded or lifted open to allow insertion of the electronic
device into the receiving portion whereafter the lip is folded back into a
position wherein it closes the opening in the receiving portion by overlapping
the opening and lying snugly against the receiving portion.

4. A protective cover as claimed in claim 3 wherein sealing engagement
between the lip and the receiving portion is enhanced by the provision of an
attachment means.

5. A protective cover as claimed in claim 4 wherein the attachment means is in
the form of a hook and loop mechanism, currently available under the trade
name Velcro™.

6. A protective cover as claimed in any one of the preceding claims wherein the
receiving portion includes a generally nipple or teat shaped extension part
that is configured to receive snugly an antenna or aerial of the electronic
device complementally therein.

7. A protective cover as claimed in claim 6 wherein the receiving portion and
closure portion are manufactured from any suitable synthetic plastics material
that is fluid impervious selected from the group including: rubber, polyethylene, neoprene, latex, EPDM (an ethylene propylene polymer) and polypropylene.

8. A protective cover as claimed in claim 7 wherein the synthetic plastics
material contains a suitable substance to afford said plastics material with
protection against UV rays, preferably heneadrene.

9. A protective cover as claimed in any one of the preceding claims wherein the
receiving portion has a transparent window portion to enable a user to see the
buttons on the electronic device to permit operation thereof.

10. A protective cover as claimed in claim 9 wherein the transparent window
portion is manufactured from any suitable substantially fluid impervious
flexible synthetic plastics material.

11. A protective cover as claimed in claim 9 or claim 10 wherein the transparent
window portion is attached to the receiving portion by means of a slotted
groove so as to form a fluid impervious joint between the transparent window
portion and the receiving portion.

12. A protective cover as claimed in any one of claims 1 to 8 wherein the
synthetic plastics material from which the receiving portion is manufactured is
transparent.

13. A protective cover as claimed in claim 12 wherein suitable chemicals are
added to the synthetic plastics material during its production to enhance the
transparency thereof.
14. A protective cover as claimed in any one of the preceding claims wherein the electronic device to which the protective cover is to be fitted is a hand-held electronic device.

15. A protective cover as claimed in claim 14 wherein the electronic device is a mobile telephone.

16. A protective cover as claimed in any one of the preceding claims wherein the receiving portion includes an ear and a mouthpiece situated at opposite ends of the protective cover.

17. A protective cover as claimed in claim 16 wherein the ear and mouthpiece are manufactured from any suitable synthetic plastics material that will allow sound to travel through it substantially unhindered.

18. A protective cover as claimed in claim 16 or claim 17 wherein the ear and mouthpiece are attached to the receiving portion/closure portion by means of a snap fit arrangement, the perimeter of which is sealed by means of a suitable fluid impervious sealant.

19. A protective cover as claimed in any one of claims 1 to 15 wherein the receiving portion is manufactured from a synthetic plastics material that will allow sound to travel through it substantially unhindered.

20. A protective cover according to the invention, as hereinbefore generally described.

21. A protective cover as specifically described with reference to or as illustrated in the accompanying drawings.

22. A protective cover including any new and inventive integer or combination of integers, substantially as herein described.