

IMPROVEMENTS IN AND RELATING TO COMBINED TELEVISION
AND VIDEO DEVICES

5 This invention relates to a combined television and video device (hereinafter called a "TV-video" device) which contains a television set and a video set in a common cabinet, and to a cabinet therefor.

 In a prior art TV-video device, as shown in Fig. 7
10 (back view) and in Fig. 8 (sectional plan view), the video 1 is placed on a bottom plate 2a of a cabinet 2, the front surface being secured with a screw 3 to the front plate 2b of the cabinet 2 and the rear portion being secured with screws 3 to the rear 8 of the cabinet as shown in Fig. 8.

15 The chassis 1a of the video device 1 is attached to a plastic molded casing 1b. As shown in Fig. 8, the rear portion of the chassis 1a or the rear portion of the casing 1b is provided with a plurality of vertically arranged printed circuit boards.

20 A printed circuit board 5 for the television set is attached along an internal side wall of the cabinet 2, said board 5 being provided with a power transformer 6 for the television. As the power transformer for a television, a flyback transformer is generally used. A power source (not
25 illustrated) for the video set 1 is provided separately.

 In Fig. 7, numeral 7 is a shield plate provided on the video set.

 As described above, in a conventional TV-video

device, a stand alone video deck is situated in the cabinet of the television set and is attached to the cabinet.

Accordingly, the wiring paths between the circuit board for television 5 and the circuit board for video 4 are long and numerous as shown in Fig. 7 and Fig. 8. In addition, it is time consuming to install the circuit boards 4, 5.

Heretofore, since the video deck is designed to be a stand alone unit fitted into the cabinet as it stands, the power source for the video is provided separately of the power source for the television. Accordingly, there is a requirement for a high number of parts and the power supply for the television can cause interference in the video device.

According to a first aspect of the present invention there is provided a combined television and video cassette device comprising:

- a television set;
- a video cassette player and/or recorder device;
- a printed circuit board for the video cassette device;
- a printed circuit board for the television set;
- a cabinet containing the television set, the video cassette device and the printed circuit boards for both the television set and the video cassette device, said cabinet having a base and a rear;
- a video device circuit board support means supporting the printed circuit board for the video cassette device; and
- a television set circuit board support means supporting the printed circuit board for the television set;

wherein both of the video device circuit board support means and the television set circuit board support means are provided at the base of the cabinet and are adapted to receive their respective printed circuit boards when the circuit boards are inserted from the rear of the

cabinet.

According to a further aspect of the present invention there is provided a method of assembling a
5 combined television and video cassette device in a casing, the method including inserting into the base of the casing, from the rear of the casing, a printed circuit board for a television set and a separate printed circuit board for a video cassette device, whereby to engage the circuit boards
10 with television set circuit board support means and video cassette device circuit board supporting means respectively.

Advantageously the method of this further aspect of the present invention is used to assess the combined
15 television and video cassette device in accordance with the first aspect of the present invention.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings in which:

20 Fig. 1 is a transverse sectional view which shows the rear of the front face of a cabinet in accordance with the present invention;

Fig. 2 is a vertical side sectional view of the front of the cabinet;

25 Fig. 3 is a vertical side sectional view showing the

video device chassis and circuit board received in the cabinet;

Fig. 4 is a left side view of a shield plate;

Fig. 5 is a plan view of the shield plate of Fig. 4;

5 Fig. 6 is a right side view of the shield plate of Fig. 4;

Fig. 7 is a rear view of a prior art combined television and video device; and

Fig. 8 is a sectional plan view of the device of Fig. 7 .

In the figures, numeral 11 is a cabinet front, 12 is a window for a television tube, 13 is a window for a speaker, 121, 122 are chassis guides, 131, 132 are video circuit board guides and 141, 142 are television circuit board guides.

The chassis supports or guides 121, 122 are formed integrally with the front plate 11b of the cabinet front 11 and are arranged parallel to the bottom guides. The chassis guides 121, 122 may, however, be fixed to the front plate of the cabinet front 11.

At the lower portion of the chassis guides 121, 122 the board end of the video board supports or guides, 131, 132 are integrally formed with or fixed to the cabinet in a similar way to the chassis guides 121, 122. The television board supports or guides 141, 142 are arranged parallel to the video board guides 131, 132 and are of similar construction thereto.

In order to receive the chassis 123 (2 points chain line), the chassis guides 121, 122 are provided with tapered entry portions 121a, 122a and main supporting portions 121b, 122b. The numerals 121c, 122c denote means
5 which act as guides during insertion of the mechanical deck 123 (shown by two points chain lines) as it moves towards the entry portions 121a, 122a.

The guides 131, 132 for the video circuit board, provided in the region of the front plate 11b, have tapered
10 entry portions 131a, 132a and main supporting portions 131b, 132b. In addition, circuit board guides 141, 142 for the television are provided with tapered entry portions and main supporting portions (not illustrated).

The numeral 15 is a removable connector between the
15 video printed circuit board 133 (two points chain line) and the television printed circuit board (two points chain line).

In the figures, the numeral 16 is a transformer.

The numerals 121d, 122d denote upper guide portions
20 parallel to the bottom plate 11a and acting as ribs to reinforce the chassis guide.

The numeral 17 denotes the video device entry port.

The numeral 14 denotes a shield plate provided with hooked engagement tabs 14a, 14a.

25 Assembly of the chassis 123, video printed circuit board 135, television printed circuit board 143 and shield plate 14 is advantageously as follows.

The video printed circuit board 133 is clamped with screws 20 to the lower portion of the chassis 123 through the spacer 19. The board 133 is inserted from the rear of the cabinet 11 along the guides 121c, 122c, as shown in
5 Fig. 2, before being urged strongly so that the top end of the chassis 123 and the video circuit board 133 are respectively engaged with their main supporting portions 131b, 132b, 121b, 122b.

The shield plate 14 is also inserted into the cabinet
10 11 from the rear thereof. Engagement tabs 14a, 14a at the rear end thereof co-operate with the rib 18a of the cabinet rear 18, with the tabs 14a, 14a inserted into the rear end of the guides 121, 122, to thereby prevent the pulling out of the shield plate 14 to the outside.

15 If the shield plate 14 is required to be earthed, the shield plate 14, chassis 123 and the bottom cover 10 can be electrically connected by an earth plate 9 and clamped with a bolt 23.

The television printed circuit board 143 may then be
20 inserted along board guides 141, 142.

The installed video and television circuit boards 133, 143 may then be connected together by inserting the connector 15.

The rear end of the chassis 123 is fixed to the
25 bottom plate 11a with bolts 22, 23 through a spacer 21 as shown in Fig. 3.

In the above described and illustrated embodiment,

the following effects are contained:

1. Previously, the video deck contained within the cabinet has required a casing (the greater part of the casing being molded in plastics material). In the above
5 described embodiment there is no necessity for a casing because the chassis is received by a guide, resulting in a lightweight construction.

2. The circuit board for the video device is inserted into its guide fixed to the lower portion of the
10 video device chassis, easing assembly.

3. Because the circuit boards for both the video and television devices are located adjacent to one another and connected by a connector, there is no need for wiring between the video and television sets.

15 4. Because the power source for the video is not situated on the video set circuit board, but is provided on the circuit board for the television, and acts as a common power source, any negative effects caused by the magnetic field created by the power source are reduced. Further,
20 since the power source is common, the number of parts is reduced.

This application is divided from application No. 9214174.6 (publication no. 2262406), which application claims another aspect of the above-described and
25 illustrated embodiment of apparatus.



CLAIMS

1. A combined television and video cassette device comprising:

5 a television set;
a video cassette player and/or recorder device;
a printed circuit board for the video cassette device;

a printed circuit board for the television set;
10 a cabinet containing the television set, the video cassette device and the printed circuit boards for both the television set and the video cassette device, said cabinet having a base and a rear;

a video device circuit board support means supporting
15 the printed circuit board for the video cassette device;
and

a television set circuit board support means supporting the printed circuit board for the television set;

20 wherein both of the video device circuit board support means and the television set circuit board support means are provided at the base of the cabinet and are adapted to receive their respective printed circuit boards when the circuit boards are inserted from the rear of the
25 cabinet.

2. A device as claimed in claim 1, wherein the video device circuit board support means and television set circuit board support means are formed integrally with the base of the cabinet.

30 3. A device as claimed in claim 1 or claim 2, wherein at least one of the circuit board support means is provided with a main support portion and a tapered entry portion to assist engagement in said main support portion of the respective printed circuit board when the board is
35 inserted from the rear of the cabinet.

4. A device as claimed in any one of the preceding



claims, wherein the video cassette device has a chassis and the printed circuit board for the video cassette device is attached to said chassis.

5. A device as claimed in any one of the preceding
5 claims, wherein the printed circuit boards for the television set and the video cassette device are electrically connected to one another.

6. A device as claimed in any one of the preceding
10 claims, further comprising a shield plate covering the video cassette device.

7. A device as claimed in any one of the preceding claims, wherein the printed circuit boards are positioned horizontally.

8. A device as claimed in claim 7, wherein the
15 printed circuit board for the video cassette device is positioned between the video cassette device and the base of the cabinet.

9. A device as claimed in any one of the preceding claims, wherein the printed circuit boards are adapted to
20 be slid into engagement with their respective support means.

10. A method of assembling a combined television and video cassette device in a casing, the method including inserting into the base of the casing, from the rear of the
25 casing, a printed circuit board for a television set and a separate printed circuit board for a video cassette device, whereby to engage the circuit boards with television set circuit board support means and video cassette device circuit board supporting means, respectively.

30 11. A method of assembling a combined television and video cassette device constructed in accordance with any one of claims 1-9 using the assembly method claimed in claim 10.