Isolator device for passing through a signal

TECHNICAL FIELD

The invention relates to devices for passing through a signal and in particular to devices for setting up a network for use as evacuation systems.

BACKGROUND

Emergency evacuation systems in accordance with class A comprise signalling devices wired in a loop comprising a signalling line. In case of evacuation, the loop is provided with an evacuation signal from a base station. The loop comprises isolator devices like the Astrea isolator type ASB-11 till 22. The isolator devices are connected by the signalling line. The loop wiring comprises two conductors like a pair of wires or a coax cable. The loop wiring is interrupted by the isolator. The isolator receives a signal on a receiving module via the signalling line.

Upon reception of the signal, the signal is retransmitted via a sending unit. The quality of the signal sent out is tested. In case the quality of the signal does not meet certain quality standards with respect to for example voltage and/or current, the sending of the signal is interrupted as an out of spec voltage and/or current may indicate a short or open in a signalling line that is part of the loop. Subsequently, the loop is fed from the other side via signalling lines in the loop that are still in good state. The loop is set up as a single loop, over which one analogue audio signal is provided

SUMMARY

It is preferred to have an improved device with more functionality.

In a first aspect, a router for an evacuation system is provided. The router comprises a first router input/output module comprising a first pair of router terminals for connecting a first signalling line and a second router input/output module comprising a second pair of router terminals for connecting a second signalling line. A first router modem is connected to the first router input/output module and a second router modem is connected to the second router input/output module. The router further comprises a router processing unit connected to the first router modem and the second router

modem for communicating data via the first router modem and the second router modem. The processing unit is arranged to instruct the first router modem to modulate the data in a first frequency spectrum; and instruct the second router modem to modulate the data in a second frequency spectrum not overlapping with the first frequency spectrum.

By sending data in different and disjoint frequency bands, effects of cross-talk are highly reduced; the first frequency spectrum has no influence on the second frequency spectrum. There may be an issue if the first frequency spectrum is lower and important harmonics are dominantly present in the second frequency spectrum. By using proper modulation techniques, this may be reduced or mitigated. Furthermore, by means of proper modulation, multiple data channels may be provided simultaneously over a signalling line.

In an embodiment, the first router modem is connected to the first router input/output module via a first high pass filter and the second router modem is connected to the second router input/output module via a second high pass filter.

By using a high-pass filter, a data signal may be superimposed on a supply voltage signal, providing a small-signal data modulation of a large signal supply signal. As long as the frequency of the supply signal is considerably lower than the frequency of the first spectrum and the second spectrum, the data can be well filtered out from the supply signal. Use of a direct current supply voltage is in this case particularly advantageous.

In a further embodiment, the high pass filter is an inductive coupling.

By using an inductive coupling, a data processing part of the router is galvanically separated from the power part of the router and from the terminals of the router. This means that power anomalies and other anomalies in the network like shorts and opens, do not have a large effect or no effect at all on the usually sensitive data processing electronics. This creates a robust device, which is important in evacuation systems. It is noted that embodiment works as well when the first router modem and the second

router modem do not modulate/demodulate and send/receive data in non-overlapping frequency spectra.

Another embodiment of the router comprises a power supply module for providing electrical energy from the evacuation system to the router connectable to the first router input/output module and to the second router input/output module for obtaining electrical energy therefrom. The router further comprises a first switch between the first pair of router terminals and the power supply module; and a second switch between the second pair of router terminals and the power supply.

If anomalies occur in the evacuation system at the first pair of router terminals or the second pair of router terminals, this embodiment allows that pair of terminals to be isolated by opening the applicable switch. This is particularly advantageous in case of shorts and/or opens in a signalling line connected to that pair of routers, but is also advantageous in case of anomalies in data traffic. It is noted that embodiment works as well when the first router modem and the second router modem do not modulate/demodulate and send/receive data in non-overlapping frequency spectra. In that case, the router would comprise the components of this embodiment, though it would be irrelevant whether the router processing unit would be arranged to instruct the modems to modulate/demodulate and send/receive data in non-overlapping frequency spectra.

Yet a further embodiment comprises a router power monitoring unit for monitoring a first voltage level over the first pair of router terminals and a second voltage level over the second pair of router terminals. In the router the power monitoring unit is operatively coupled to the router processing unit for providing the router processing unit with information on the first voltage level and the second voltage level; and the router processing unit is arranged to open the first switch if the first voltage level is below a first voltage threshold and to open the second switch if the second voltage level is below a second voltage threshold.

In other words: the router also acts as an isolator device, comprising a first terminal for receiving a signal; a second terminal for sending the received signal; a signal quality

In a second aspect, a messaging device is provided. The messaging device comprises: a first messaging input/output module comprising a first pair of messaging terminals for connecting a first signalling line and a second messaging input/output module comprising a second pair of messaging terminals for connecting a second signalling line. A messaging modem is connected to the first messaging input/output module and the second messaging input/output module and a messaging processing unit is connected to the messaging modem for communicating data via the messaging modem. The messaging device further comprises a messaging power monitoring unit for monitoring a first voltage level of the first pair of messaging terminals and a second voltage level over the second pair of messaging terminals and a rendering circuit for rendering communicated data for reproduction. In the messaging device, a first messaging terminal of the first pair of messaging terminals is conductively connected to the a first messaging terminal of the second pair of messaging terminals and a second messaging terminal of the first pair of messaging terminals is conductively connected to a second messaging terminal of the second pair of messaging terminals via a messaging switch. Furthermore, the messaging power control unit is operatively coupled to the messaging processing unit for providing the messaging processing unit with information on the first voltage level and the second voltage level and the router processing unit is arranged to open the messaging switch if the first voltage level is below a first voltage threshold or if the second voltage level is below a second voltage threshold.

This device is particularly well suited for setting up an evacuation network system with the router according to the first aspect. This works particularly well with the modem being configured to send, receive, modulate and demodulate data and data signals in the first spectrum and the second spectrum. Furthermore, this device isolates terminals if an anomaly is detected at those terminals.

A third aspect provides a network power device for powering a network comprising at least one router according to the first aspect and at least one messaging device according to the second aspect. The network power device comprises a first power input/output module comprising a first pair of power terminals for connecting a first

signalling line and a second power input/output module comprising a second pair of power terminals for connecting a second signalling line. A power modem is connected to the first power input/output module and the second power input/output module and power processing unit is connected to the messaging modem for communicating data via the messaging modem. The network power device further comprises a power monitoring unit for monitoring a first voltage level of the first pair of power terminals and a second voltage level over the second pair of power terminals and a power supply unit connected to the first power input/output module and the second power input/output module for providing electrical energy to the network. In the network power device, a first power terminal of the first pair of power terminals is conductively connected to the a first power terminal of the second pair of power terminals via a first power switch and a second power terminal of the first pair of power terminals is conductively connected to a second power terminal of the second pair of power terminals via a second power switch. Furthermore, the power control unit is operatively coupled to the power processing unit for providing the power processing unit with information on the first voltage level and the second voltage level; and the router processing unit is arranged to open the first power switch and the second power switch if the first voltage level is below a first voltage threshold or if the second voltage level is below a second voltage threshold.

This device is particularly well suited for setting up an evacuation network system with the router according to the first aspect and the messaging device according to the second aspect. The device according to the third aspect provides electrical power to both the router and the messaging device. This works particularly well with the modem being configured to send, receive, modulate and demodulate data and data signals in the first spectrum and the second spectrum. Furthermore, this device isolates terminals if an anomaly is detected at those terminals.

A fourth aspect provides an evacuation network system comprising a first router according to the first aspect and a second router according to the first aspect, a first messaging device according to the second aspect and a second messaging device according to the second aspect and at least one network power device according to the third aspect. In the evacuation network system, the first router input/output module of the first router is connected to the first messaging input/output module of the first

messaging device via a signalling line for communicating data in the first frequency spectrum, the second messaging input/output module of the first messaging device is connected to the first router input/output module of the second router via a signalling line for communicating data in the first frequency spectrum, the second router input/output module of the second router is connected to the first power input/output module of the network power device via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network, the second power input/output module of the network power device is connected to the first messaging input/output module of the second messaging device via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network; and the second messaging input/output module of the second messaging device is connected to the second router input/output module of the first router via a signalling line for communicating data in the second frequency spectrum.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be discussed in further detail by means of Figures. In the Figures,

Figure 1 shows: a first evacuation network system;

Figure 2 shows: a hub device;

Figure 3 shows: an announcement device;

Figure 4 shows: a power supply device;

Figure 5 shows: a second evacuation network system;

Figure 6 A shows: a first signal spectrum;

Figure 6 B shows: a second signal spectrum; and

Figure 6 C shows: a third signal spectrum;

Claims:

1. Router for an evacuation system comprising;

- A first router input/output module comprising a first pair of router terminals for connecting a first signalling line;
- A second router input/output module comprising a second pair of router terminals for connecting a second signalling line;
- A first router modem connected to the first router input/output module;
- A second router modem connected to the second router input/output module;
- A router processing unit connected to the first router modem and the second router modem for communicating data via the first router modem and the second router modem, the router processing unit being arranged to:
  - instruct the first router modem to modulate the data in a first frequency spectrum; and
  - instruct the second router modem to modulate the data in a second frequency spectrum not overlapping with the first frequency spectrum.

2. Router according to claim 1, wherein the first router modem is connected to the first router input/output module via a first high pass filter and the second router modem is connected to the second router input/output module via a second high pass filter.

3. Router according to claim 2, wherein the high pass filter is an inductive coupling.

4. Router according to claim 3, further comprising a power supply module for providing electrical energy from the evacuation system to the router connectable to the first router input/output module and to the second router input/output module for obtaining electrical energy therefrom, further comprising:

- a first switch between the first pair of router terminals and the power supply module; and

- a second switch between the second pair of router terminals and the power supply.

5. Router according to claim 4, further comprising a router power monitoring unit for monitoring a first voltage level over the first pair of router terminals and a second voltage level over the second pair of router terminals, wherein:

- the power monitoring unit is operatively coupled to the router processing unit for providing the router processing unit with information on the first voltage level and the second voltage level; and
- the router processing unit is arranged to open the first switch if the first voltage level is below a first voltage threshold and to open the second switch if the second voltage level is below a second voltage threshold.

6. Router according to claim 5, wherein:

- the first switch comprises a first transistor between a first router terminal of the first pair of router terminals and the power supply module and a second transistor between a second router terminal of the first pair of router terminals and the power supply; and
- the second switch comprises a third transistor between a first router terminal of the second pair of router terminals and the power supply module and a fourth transistor between a second router terminal of the second pair of router terminals and the power supply.

7. Router according to any of the claims 5 or 6, wherein a first router terminal of the first pair of router terminals is conductively connected to a first router terminal of the second pair of router terminals and a second router terminal of the first pair of router terminals is conductively connected to a second router terminal of the second pair of router terminals and the first voltage threshold is equal to the second voltage threshold.

8. Router according to claim 7, wherein the processing unit is arranged to, during start-up of the router:

- Close the first switch and open the second switch;
- Receive information on the first voltage level;

- If the first voltage level is below the first voltage threshold, open the first switch;
- Close the second switch;
- Receive information on the second voltage level;
- If the second voltage level is below the second voltage threshold, open the second switch.

9. Router according to any of the claim 5 to 8, wherein the first router modem is connected to the first pair of router terminals between the first pair of router terminals and the first switch and the second router modem is connected to the second pair of router terminals between the second pair of router terminals and the second switch.

10. Router according to any of the preceding claims, wherein:
- the first router modem is arranged for receiving a first signal modulated in the first frequency spectrum and for demodulating the first signal; and
- the second router modem is arranged for receiving a second signal modulated in the second frequency spectrum and for demodulating the second signal.

11. Router according to any of the preceding claims, further comprising:
- A third router input/output module comprising a second pair of router terminals for connecting a third signalling line; and
- A third router modem connected to the third router input/output module;
- The router processing unit being connected to the third router modem and further arranged to instruct the third router modem to modulate the data in a third frequency spectrum not overlapping with the first frequency spectrum and the second frequency spectrum.

12. Router according to any of the preceding claims, wherein the data comprises audio data comprising an evacuation instruction.

13. Messaging device comprising:
- A first messaging input/output module comprising a first pair of messaging terminals for connecting a first signalling line;

- A second messaging input/output module comprising a second pair of messaging terminals for connecting a second signalling line;
- A messaging modem connected to the first messaging input/output module and the second messaging input/output module;
- A messaging processing unit connected to the messaging modem for communicating data via the messaging modem;
- A messaging power monitoring unit for monitoring a first voltage level of the first pair of messaging terminals and a second voltage level over the second pair of messaging terminals;
- A rendering circuit for rendering communicated data for reproduction;

Wherein:

- a first messaging terminal of the first pair of messaging terminals is conductively connected to the a first messaging terminal of the second pair of messaging terminals and a second messaging terminal of the first pair of messaging terminals is conductively connected to a second messaging terminal of the second pair of messaging terminals via a messaging switch;
- the messaging power control unit is operatively coupled to the messaging processing unit for providing the messaging processing unit with information on the first voltage level and the second voltage level; and
- the router processing unit is arranged to open the messaging switch if the first voltage level is below a first voltage threshold or if the second voltage level is below a second voltage threshold.

14. Messaging device according to claim 13, wherein the messaging modem is connected to the first messaging input/output module and the second messaging input/output module via a high pass filter.

15. Messaging device according to claim 14, wherein the high pass filter is an inductive coupling.

16. Messaging device according to claim 13, wherein the rendering unit is an audio rendering unit arranged to process communicated data for reproduction as an audible signal by a speaker.

17. Network power device for powering a network comprising at least one router according to claim 1 and at least one messaging device according to claim 13, comprising:

- A first power input/output module comprising a first pair of power terminals for connecting a first signalling line;
- A second power input/output module comprising a second pair of power terminals for connecting a second signalling line;
- A power modem connected to the first power input/output module and the second power input/output module;
- A power processing unit connected to the messaging modem for communicating data via the messaging modem;
- A power monitoring unit for monitoring a first voltage level of the first pair of power terminals and a second voltage level over the second pair of power terminals;
- A power supply unit connected to the first power input/output module and the second power input/output module for providing electrical energy to the network;

Wherein:

- A first power terminal of the first pair of power terminals is conductively connected to the a first power terminal of the second pair of power terminals via a first power switch and a second power terminal of the first pair of power terminals is conductively connected to a second power terminal of the second pair of power terminals via a second power switch;
- The power control unit is operatively coupled to the power processing unit for providing the power processing unit with information on the first voltage level and the second voltage level; and
- The router processing unit is arranged to open the first power switch and the second power switch if the first voltage level is below a first voltage threshold or if the second voltage level is below a second voltage threshold.

18. Network power device according to claim 17, wherein the messaging modem is connected to the first messaging input/output module and the second messaging input/output module via a high pass filter.

19 Network power device according to claim 18, wherein the high pass filter is an inductive coupling.

20. Network power device according to any of the claims 17 to 19, wherein a voltage level provided by the power supply unit to the first power input/output module and the second power input/output module is between 15 and 32 Volt DC.

21. Network power device according to claim 20, wherein a voltage level provided by the power supply unit to the first power input/output module and the second power input/output module is 24 Volt DC.

22. Evacuation network system comprising:

- A first router according to claim 1 and a second router according to claim 1;
- A first messaging device according to claim 13 and a second messaging device according to claim 13;
- At least one network power device according to claim 17;

Wherein:

- The first router input/output module of the first router is connected to the first messaging input/output module of the first messaging device via a signalling line for communicating data in the first frequency spectrum;
- The second messaging input/output module of the first messaging device is connected to the first router input/output module of the second router via a signalling line for communicating data in the first frequency spectrum;
- The second router input/output module of the second router is connected to the first power input/output module of the network power device via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network;
- The second power input/output module of the network power device is connected to the first messaging input/output module of the second messaging device via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network; and

- The second messaging input/output module of the second messaging device is connected to the second router input/output module of the first router via a signalling line for communicating data in the second frequency spectrum.

23. Evacuation network system, wherein the signalling line comprises two conductive wires.

Isolator device for passing through a signal

TECHNICAL FIELD

The invention relates to devices for passing through a signal and in particular to devices for setting up a network for use as evacuation systems.

BACKGROUND

Emergency evacuation systems in accordance with class A comprise signalling devices wired in a loop comprising a signalling line. In case of evacuation, the loop is provided with an evacuation signal from a base station. The loop comprises isolator devices like the Astrea isolator type ASB-11 till 22. The isolator devices are connected by the signalling line. The loop wiring comprises two conductors like a pair of wires or a coax cable. The loop wiring is interrupted by the isolator. The isolator receives a signal on a receiving module via the signalling line.

Upon reception of the signal, the signal is retransmitted via a sending unit. The quality of the signal sent out is tested. In case the quality of the signal does not meet certain quality standards with respect to for example voltage and/or current, the sending of the signal is interrupted as an out of spec voltage and/or current may indicate a short or open in a signalling line that is part of the loop. Subsequently, the loop is fed from the other side via signalling lines in the loop that are still in good state. The loop is set up as a single loop, over which one analogue audio signal is provided

SUMMARY

It is preferred to have an improved device with more functionality.

In a first aspect, a router for an evacuation system is provided. The router comprises a first router input/output module comprising a first pair of router terminals for connecting a first signalling line and a second router input/output module comprising a second pair of router terminals for connecting a second signalling line. The router further comprises a first router modem connected to the first router input/output module via a first coupling; a second router modem connected to the second router input/output module via a second coupling and a router processing unit connected to the first router modem and the second router modem for communicating data via the first router modem and the second router modem. The router processing unit being arranged to instruct the first router modem to modulate the data in a first frequency spectrum; and instruct the second router modem to modulate the data in a second frequency spectrum not overlapping with the first frequency spectrum. The first coupling comprises a first primary connection connected to the first pair of terminals and a first secondary connection connected to the first router modem, the first primary connection being galvanically separated from the first secondary connection and the coupling being arranged for enabling the first router modem to receive a data signal available on the first signalling line that is filtered from a supply signal. Alike, the second coupling comprises a second primary connection connected to the second pair of terminals and a second secondary connection connected to the second router modem, the second primary connection being galvanically separated from the second secondary connection and the coupling being arranged for enabling the second router modem to receive a data signal available on the second signalling line that is filtered from a supply signal.

By sending data in different and disjoint frequency bands, effects of cross-talk are highly reduced; the first frequency spectrum has no influence on the second frequency spectrum. There may be an issue if the first frequency spectrum is lower and important harmonics are dominantly present in the second frequency spectrum. By using proper modulation techniques, this may be reduced or mitigated. Furthermore, by means of proper modulation, multiple data channels may be provided simultaneously over a signalling line.

Furthermore, because of the galvanic separation, data processing part of the router is galvanically separated from the power part of the router and from the terminals of the router. This means that power anomalies and other anomalies in the network like shorts and opens, do not have a large effect or no effect at all on the usually sensitive data processing electronics. This creates a robust device, which is important in evacuation systems. It is noted that embodiment works as well when the first router modem and the second router modem do not modulate/demodulate and send/receive data in non-overlapping frequency spectra.

In an embodiment, the first coupling and the second coupling have a high-pass filter characteristic.

By using a high-pass filter, a data signal may be superimposed on a supply voltage signal, providing a small-signal data modulation of a large signal supply signal. As long as the frequency of the supply signal is considerably lower than the frequency of the first spectrum and the second spectrum, the data can be well filtered out from the supply signal. Use of a direct current supply voltage is in this case particularly advantageous.

Another embodiment of the router comprises a power supply module for providing electrical energy from the evacuation system to the router connectable to the first router input/output module and to the second router input/output module for obtaining electrical energy therefrom. The router further comprises a first switch between the first pair of router terminals and the power supply module; and a second switch between the second pair of router terminals and the power supply.

If anomalies occur in the evacuation system at the first pair of router terminals or the second pair of router terminals, this embodiment allows that pair of terminals to be isolated by opening the applicable switch. This is particularly advantageous in case of shorts and/or opens in a signalling line connected to that pair of routers, but is also advantageous in case of anomalies in data traffic. It is noted that embodiment works as well when the first router modem and the second router modem do not modulate/demodulate and send/receive data in non-overlapping frequency spectra. In that case, the router would comprise the components of this embodiment, though it would be irrelevant whether the router processing unit would be arranged to instruct the modems to modulate/demodulate and send/receive data in non-overlapping frequency spectra.

Yet a further embodiment comprises a router power monitoring unit for monitoring a first voltage level over the first pair of router terminals and a second voltage level over the second pair of router terminals. In the router the power monitoring unit is operatively coupled to the router processing unit for providing the router processing unit with

information on the first voltage level and the second voltage level; and the router processing unit is arranged to open the first switch if the first voltage level is below a first voltage threshold and to open the second switch if the second voltage level is below a second voltage threshold.

In other words: the router also acts as an isolator device, comprising a first terminal for receiving a signal; a second terminal for sending the received signal; a signal quality

In a second aspect, a device for forming part of an evacuation announcement network. The device comprises: a first input/output module comprising a first pair of terminals for connecting a first signalling line, a second input/output module comprising a second pair of terminals for connecting a second signalling line, a modem coupled to the first input/output module via a first coupling and the second input/output module via a second coupling and a processing unit connected to the messaging modem for communicating data via the messaging modem. The first coupling comprises a first primary connection connected to the first pair of terminals and a first secondary connection connected to the modem and the second coupling comprising a second primary connection connected to the second pair of terminals and a second secondary connection connected to the modem, the primary connections being galvanically separated from the secondary connections and the couplings being arranged for enabling the modem to receive a data signal available on the first signalling line and/or the second signalling line that is filtered from a supply signal. A first terminal of the first pair of terminals is connected to a first terminal of the second pair of terminals and a second terminal of the first pair of terminals is connected to a second terminal of the second pair of terminals via a first switch.

This device is particularly well suited for setting up an evacuation network system with the router according to the first aspect. This works particularly well with the modem being configured to send, receive, modulate and demodulate data and data signals in the first spectrum and the second spectrum. Furthermore, this device isolates terminals if an anomaly is detected at those terminals.

A third aspect provides an evacuation network system comprising a first router according to the first aspect and a second router according to the first aspect, a first device according to the second aspect as a first messaging device and a second device according to the second aspect as a second messaging device and at least one device according to the second aspect as a network power device. The first router input/output module of the first router is connected to the first messaging input/output module of the first messaging device via a signalling line for communicating data in the first frequency spectrum, the second messaging input/output module of the first messaging device is connected to the first router input/output module of the second router via a signalling

line for communicating data in the first frequency spectrum and the second router input/output module of the second router is connected to the first power input/output module of the network power device via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network. Furthermore, the second power input/output module of the network power device is connected to the first messaging input/output module of the second messaging device via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network; and the second messaging input/output module of the second messaging device is connected to the second router input/output module of the first router via a signalling line for communicating data in the second frequency spectrum.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be discussed in further detail by means of Figures. In the Figures,

Figure 1 shows: a first evacuation network system;

Figure 2 shows: a hub device;

Figure 3 shows: an announcement device;

Figure 4 shows: a power supply device;

Figure 5 shows: a second evacuation network system;

Figure 6 A shows: a first signal spectrum;

Figure 6 B shows: a second signal spectrum; and

Figure 6 C shows: a third signal spectrum;

Claims:

1. Router for an evacuation system comprising;

- A first router input/output module comprising a first pair of router terminals for connecting a first signalling line;
- A second router input/output module comprising a second pair of router terminals for connecting a second signalling line;
- A first router modem connected to the first router input/output module via a first coupling;
- A second router modem connected to the second router input/output module via a second coupling;
- A router processing unit connected to the first router modem and the second router modem for communicating data via the first router modem and the second router modem, the router processing unit being arranged to:
  - instruct the first router modem to modulate the data in a first frequency spectrum; and
  - instruct the second router modem to modulate the data in a second frequency spectrum not overlapping with the first frequency spectrum;

Wherein:

- The first coupling comprises a first primary connection connected to the first pair of terminals and a first secondary connection connected to the first router modem, the first primary connection being galvanically separated from the first secondary connection and the coupling being arranged for enabling the first router modem to receive a data signal available on the first signalling line that is filtered from a supply signal; and
- The second coupling comprises a second primary connection connected to the second pair of terminals and a second secondary connection connected to the second router modem, the second primary connection being galvanically separated from the second secondary connection and the coupling being arranged for enabling the second router modem to receive a data signal available on the second signalling line that is filtered from a supply signal.

2. Router according to claim 1, wherein the first coupling and the second coupling have a high-pass filter characteristic.

3. Router according to claim 2, wherein the first coupling and the second coupling is an inductive coupling.

4. Router according to claim 3, further comprising a power supply module for providing electrical energy from the evacuation system to the router connectable to the first router input/output module and to the second router input/output module for obtaining electrical energy therefrom, further comprising:

- a first switch between the first pair of router terminals and the power supply module; and
- a second switch between the second pair of router terminals and the power supply.

5. Router according to claim 4, further comprising a router power monitoring unit for monitoring a first voltage level over the first pair of router terminals and a second voltage level over the second pair of router terminals, wherein:

- the power monitoring unit is operatively coupled to the router processing unit for providing the router processing unit with information on the first voltage level and the second voltage level; and
- the router processing unit is arranged to open the first switch if the first voltage level is below a first voltage threshold and to open the second switch if the second voltage level is below a second voltage threshold.

6. Router according to claim 5, wherein:

- the first switch comprises a first transistor between a first router terminal of the first pair of router terminals and the power supply module and a second transistor between a second router terminal of the first pair of router terminals and the power supply; and
- the second switch comprises a third transistor between a first router terminal of the second pair of router terminals and the power supply module and a fourth transistor between a second router terminal of the second pair of router terminals and the power supply.

7. Router according to any of the claims 5 or 6, wherein a first router terminal of the first pair of router terminals is conductively connected to a first router terminal of the second pair of router terminals and a second router terminal of the first pair of router terminals is conductively connected to a second router terminal of the second pair of router terminals and the first voltage threshold is equal to the second voltage threshold.

8. Router according to claim 7, wherein the processing unit is arranged to, during start-up of the router:

- Close the first switch and open the second switch;
- Receive information on the first voltage level;
- If the first voltage level is below the first voltage threshold, open the first switch;
- Close the second switch;
- Receive information on the second voltage level;
- If the second voltage level is below the second voltage threshold, open the second switch.

9. Router according to any of the claim 5 to 8, wherein the first router modem is connected to the first pair of router terminals between the first pair of router terminals and the first switch and the second router modem is connected to the second pair of router terminals between the second pair of router terminals and the second switch.

10. Router according to any of the preceding claims, wherein:

- the first router modem is arranged for receiving a first signal modulated in the first frequency spectrum and for demodulating the first signal; and
- the second router modem is arranged for receiving a second signal modulated in the second frequency spectrum and for demodulating the second signal.

11. Router according to any of the preceding claims, further comprising:

- A third router input/output module comprising a second pair of router terminals for connecting a third signalling line; and
- A third router modem connected to the third router input/output module;

- The router processing unit being connected to the third router modem and further arranged to instruct the third router modem to modulate the data in a third frequency spectrum not overlapping with the first frequency spectrum and the second frequency spectrum.

12. Router according to any of the preceding claims, wherein the data comprises audio data comprising an evacuation instruction.

13. Device for forming part of an evacuation announcement network, the device comprising:

- A first input/output module comprising a first pair of terminals for connecting a first signalling line;
- A second input/output module comprising a second pair of terminals for connecting a second signalling line;
- a modem coupled to the first input/output module via a first coupling and the second input/output module via a second coupling; and
- a processing unit connected to the messaging modem for communicating data via the messaging modem;

Wherein:

- The first coupling comprises a first primary connection connected to the first pair of terminals and a first secondary connection connected to the modem and the second coupling comprising a second primary connection connected to the second pair of terminals and a second secondary connection connected to the modem, the primary connections being galvanically separated from the secondary connections and the couplings being arranged for enabling the modem to receive a data signal available on the first signalling line and/or the second signalling line that is filtered from a supply signal; and
- A first terminal of the first pair of terminals is connected to a first terminal of the second pair of terminals and a second terminal of the first pair of terminals is connected to a second terminal of the second pair of terminals via a first switch.

14. The device according to claim 13, wherein the modem is arranged to adapt to a frequency spectrum of a signal received from the router according to any of the claims 1 to 12 via the first input/output module or the second output module.

15. The device according to claim 13 or 14, further comprising a rendering unit arranged to process communicated data for reproduction as an audible signal by a speaker.

16. The device according to any of the claim 13 to 15, further comprising a power monitoring unit for monitoring a first voltage level of the first pair of messaging terminals and a second voltage level over the second pair of messaging terminals;
Wherein:

- The power control unit is operatively coupled to the processing unit for providing the processing unit with information on the first voltage level and the second voltage level; and
- The processing unit is arranged to open the first switch if the first voltage level is below a first voltage threshold or if the second voltage level is below a second voltage threshold.

17. The device according to claim 16, further comprising a second switch provided between the first terminal of the first pair of terminals and the first terminal of the second pair of terminals and wherein:

- the processing unit is arranged to open the second switch if the first voltage level is below a first voltage threshold or if the second voltage level is below a second voltage threshold.

18. The device according to any of the claims 1 to 17, further comprising a first power supply unit connected to the first input/output module and the second input/output module for providing electrical energy to the evacuation announcement network.

19. The device according to claim 18, further comprising a second power supply unit connected to the first input/output module and the second input/output

module for providing electrical energy to the evacuation announcement network, wherein:

- The first power supply unit is connected to the first input/output module and the second input/output module between the first pair of terminals on one hand and the first switch and the second switch on the other hand; and
- The second power supply unit is connected to the first input/output module and the second input/output module between the second pair of terminals on one hand and the first switch and the second switch on the other hand.

20. Device according to any of the claims 13 to 19, wherein the first coupling and the second coupling have a high-pass filter characteristic.

21. Device according to any of the claims 13 to 20, wherein the first coupling and the second coupling is an inductive coupling.

22. Evacuation network system comprising:

- A first router according to claim 1 and a second router according to claim 1;
- A first device according to claim 15 as a first messaging device and a second device according to claim 15 as a second messaging device;
- At least one network power device according to claim 17;

Wherein:

- The first router input/output module of the first router is connected to the first messaging input/output module of the first messaging device via a signalling line for communicating data in the first frequency spectrum;
- The second messaging input/output module of the first messaging device is connected to the first router input/output module of the second router via a signalling line for communicating data in the first frequency spectrum;
- The second router input/output module of the second router is connected to the first power input/output module of the network power device via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network;
- The second power input/output module of the network power device is connected to the first messaging input/output module of the second messaging device

via a signalling line for communicating data in the second frequency spectrum and for powering the elements of the network; and

- The second messaging input/output module of the second messaging device is connected to the second router input/output module of the first router via a signalling line for communicating data in the second frequency spectrum.

23. Evacuation network system according to claim 22, wherein the signalling line comprises two conductive wires.