Claims

1. Internet-of-Things module (1) comprising

a first interface (3a) via which the module (1) can be coupled to a hybrid single pair Ethernet line for exchanging data and/or commands and for supplying voltage,

a voltage regulator (4) for converting the first voltage applied at the first interface (3a) into a second voltage for supplying the module (1),

a controller (5) for IP-based communication via the hybrid single pair Ethernet line (11) which can be coupled to the first interface (3a),

a second interface (3b) via which the module (1) can be coupled to a device (15) for exchanging data, signals and/or commands and for supplying voltage,

a carrier circuit board (6) on which the first and second interfaces (3a, 3b), the voltage regulator (4), the controller (5) and a hybrid single pair Ethernet plug connector (7) are provided.

2. Internet-of-Things module (1) according to Claim 1,

wherein the device (15) has a sensor, an actuator, a wireless transmitter/receiver, and/or an input/output adapter.

3. Internet-of-Things module (1) according to Claim 1 or 2, also comprising

at least one PHY unit (2a) for encoding or decoding the signals that are transmitted via the hybrid single pair Ethernet line.

4. Internet-of-Things module (1) according to any one of Claims 1 to 3, also comprising

an Ethernet switch (32) and at least two PHY units (2a), which allow the connection of a plurality of hybrid cables.

5. Internet-of-Things module (1) according to any one of Claims 1 to 4, also comprising

a secure element (5c) for encryption and decryption of the IP-based communication via the at least one hybrid single pair Ethernet line.

6. Internet-of-Things module (1) according to any one of Claims 1 to 5, wherein

the controller (5) is designed to allow a purely IPv6-based communication.

7. Device, comprising

an Internet-of-Things module (1) comprising

a first interface (3a) via which the module (1) can be coupled to a hybrid single pair Ethernet line for exchanging data and/or commands and for supplying voltage,

a voltage regulator (4) for converting the first voltage applied at the first interface (3a) into a second voltage for supplying the module (1),

a controller (5) for IP-based communication via the hybrid single pair Ethernet line (11) which can be coupled to the first interface (3a),

a second interface (3b) via which the module (1) can be coupled to a device (15) for exchanging data, signals and/or commands and for supplying voltage, and

a carrier circuit board (6) on which the first and second interfaces (3a, 3b), the voltage regulator (4), the controller (5) and a hybrid single pair Ethernet plug connector (7) are provided.

8. Device according to claim 7, wherein
the device has no keyboard, display or other human-machine interface.

9. Device according to claim 8, wherein
parameters of the device can be configured via the second interface.

10. Device according to any one of the claims 7 to 9, wherein
the device is a sensor, an actor, a switch, a media converter or a wireless transmitter/receiver.