

1 Technical Description Lokal-200PC

1.1 Overview

- ① laptop with in-built accumulator
- ② USB connection correlator box
- ③ internal power supply laptop (*if the device has been supplied by F.A.S.T.*)
- ④ BNC aerial connection
- ⑤ reset key for correlator box
- ⑥ external power supply/charging 12 volts
- ⑦ LED 12v power supply, external (*lit red when in operation*)
- ⑧ plug-in connector for Bluetooth dongle (*dongle available as an accessory*)
- ⑨ radio reception indicator LEDs (*LED channel colour A red, B yellow, C blue*)
- ⑩ channel selection switch for volume (internal loudspeaker or headphones)
Position I left: channel A or B
Position 0 central: off
Position II right: channel B or C
- ⑪ volume regulator for internal loudspeaker or headphones
- ⑫ 6.3mm jack plug, headphones
- ⑬ connection for the transmitter of radio headphones (*radio headphones available as an accessory*)
- ⑭ LED 12 volts power supply, internal accumulator (*LED red, flashes when voltage has fallen below 12 volts*)
- ⑮ LED correlator box ON / OFF (*LED red, is illuminated as soon as the programme starts the box*)
- ⑯ ON key (*to switch on the correlator box in the Bluetooth operation mode*)

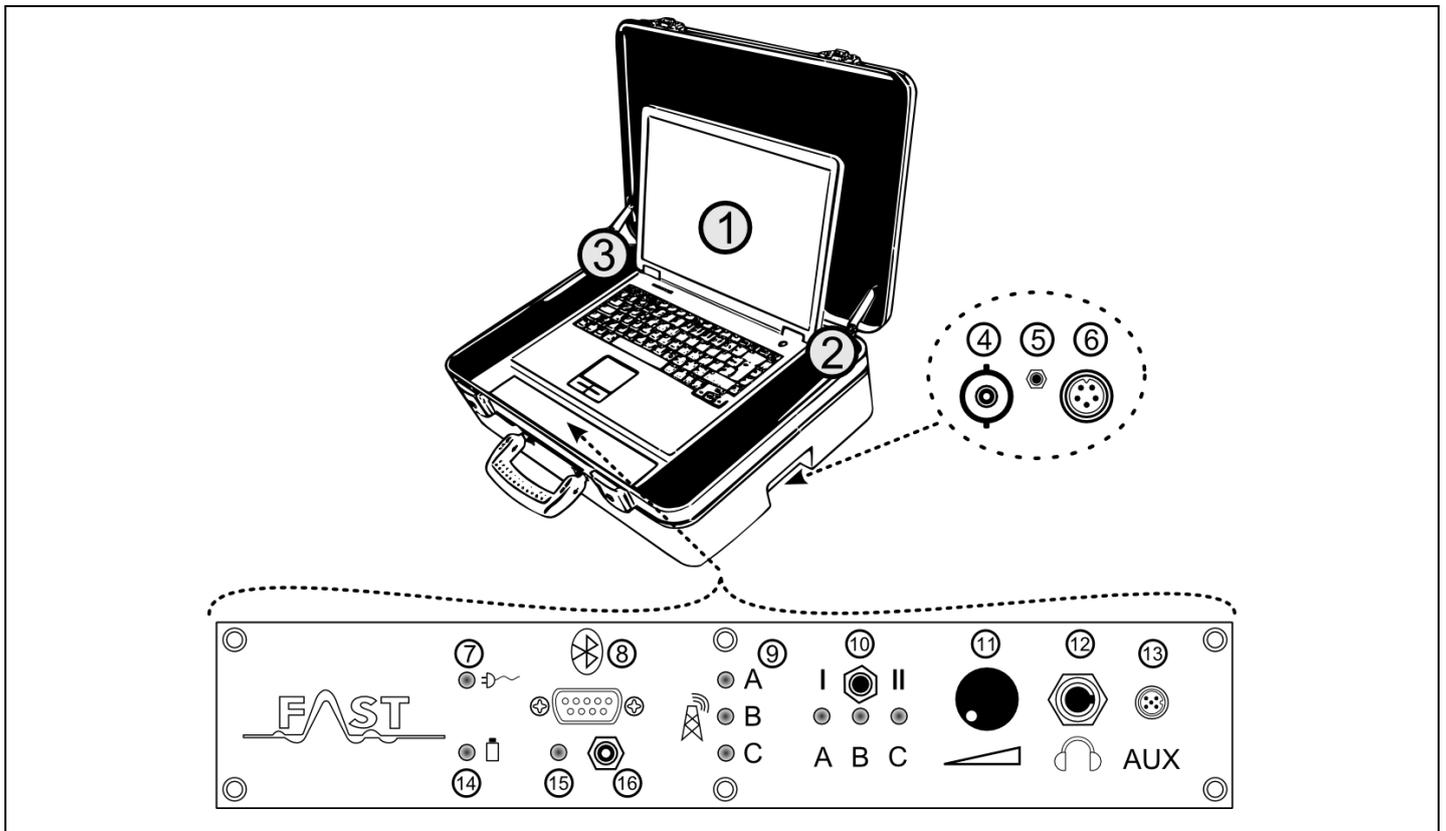


Illustration 1-1: Lokal-200PC overview

1.2 Scope of delivery

① 1x unit correlator case, contains:

- correlator box
- receiver channel A
- receiver channel B
- receiver AZ logger

② 1x unit 12 volt accumulator charger

③ 1x unit 12 volt power supply cable

④ 3x units radio antenna

⑤ 2x units sensor with cable

⑥ 2x units MB-4 measurement boxes

⑦ 1x unit MB-4 accumulator charger

Optional accessories:

⑧ 1x unit Dell ATG laptop

⑨ 1x unit 100-240 volt charger

⑩ 1x unit 12 volt charger (*integrated in the case*)

⑪ 1x unit Bluetooth dongle

⑫ 1x channel C (*additional, third channel, with receiver and measurement box*)

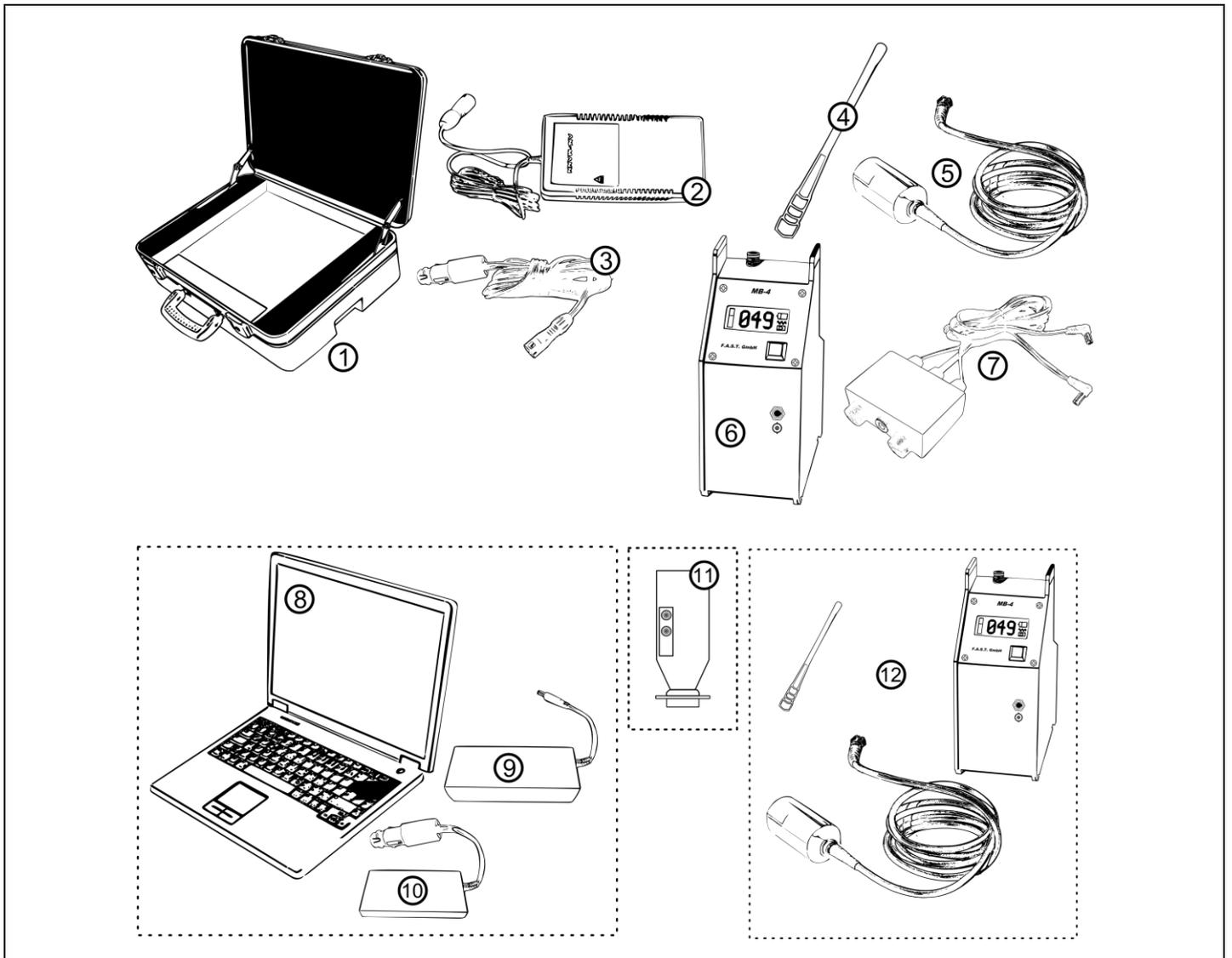


Illustration 1-2: Scope of delivery

1.3 Description

The Lokal 200 PC is supplied in an ABS case which consists of the following components. A central component of the Lokal 200 PC is the laptop (Illustration 1-3, point 1) with the correlator programme to control the correlator box and to process the measurement values received. Normally, the correlator box, which receives the measurement signals from the measurement boxes, is firmly installed inside the case. Only the USB connection cable (Illustration 1-3, point 2) is visible and has to be connected to the laptop inside the case. If the laptop has not been supplied by F.A.S.T., please make sure that your laptop meets the system requirements as listed in Chapter 1.3.5.

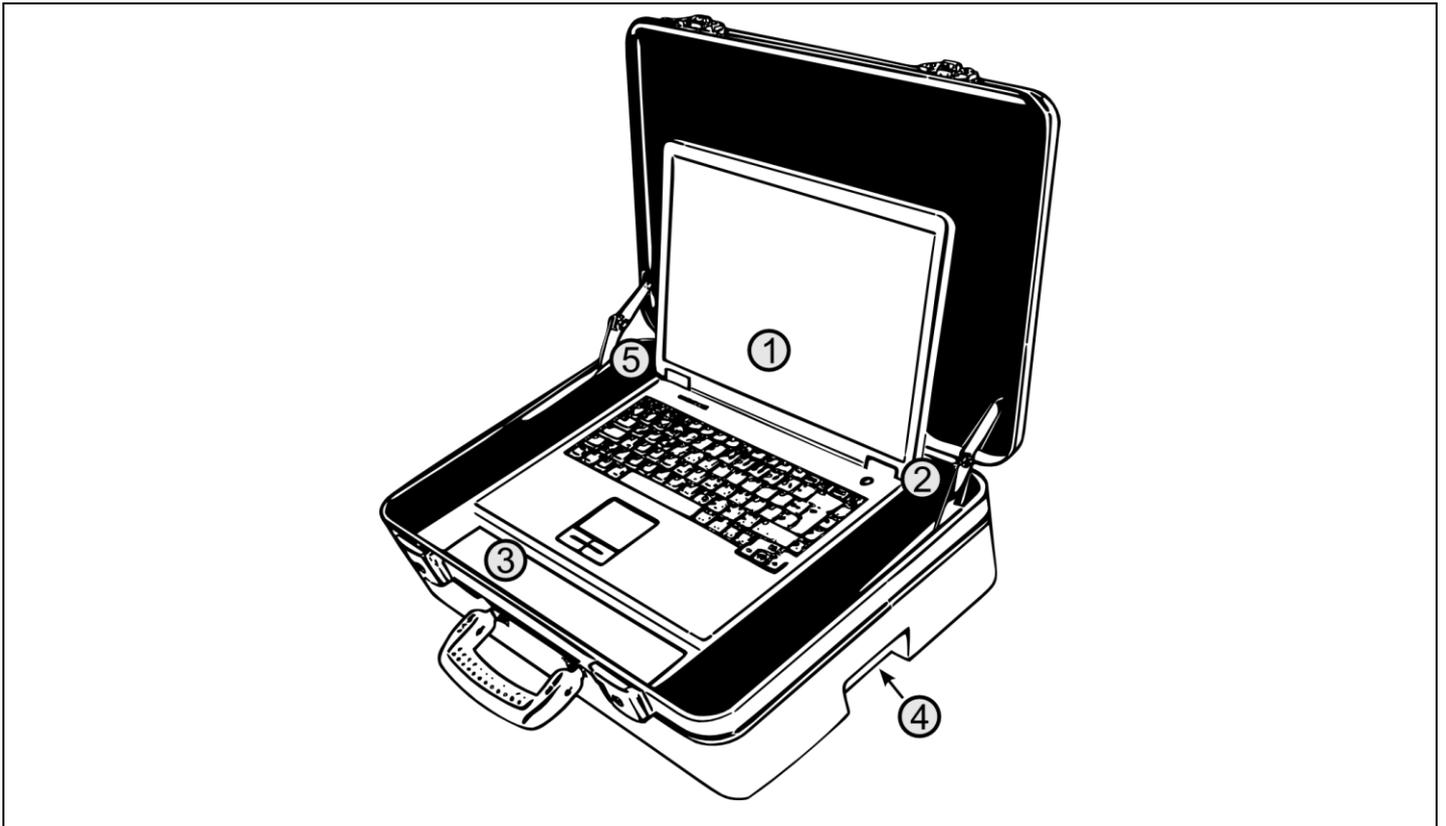


Illustration 1-3: Lokal-200PC

Another component integrated in the case is the control panel as can be seen in Illustration 1-3, point 3. This control panel hosts additional control elements and operating controls which are described in detail in Chapter 1.3.1. The plug-in connectors as can be seen under point 4 (see Illustration 1-3) to connect the aerial and for power supply purposes are described in Chapter 1.3.2.

1.3.1 Control panel

If the Lokal 200 PC is connected to a vehicle and operated with the 12 volt power cable, the red LED as described under point 1 (Illustration 1-4) is lit permanently. If, however, no power cable has been connected and the correlator is operator by means of accumulators, the LED as shown under point 8 is lit red. If the voltage for the correlator box drops below operating voltage, this LED (Illustration 1-4, point

8) starts flashing. Both LEDs, however, indicate only the voltage status of the correlator box accumulators. The charging status of the laptop accumulator is indicated in the task bar on the display of the laptop.

If wireless communication between the laptop and the correlator box is desired, you can establish such wireless communication by means of the optional Bluetooth dongle (see Chapter 1.3.4). In order to establish wireless communication, detach the USB connection cable (Illustration 1-3, point 2) from the laptop. Then connect the Bluetooth dongle to the interface as shown in Illustration 1-4, point 2. As soon as the Bluetooth mode has been activated on the laptop, the correlator box can be switched on through the key (Illustration 1-4, point 10). Now the red LED as shown under point 9 is lit, and the correlator box is ready for communication via the Bluetooth interface.

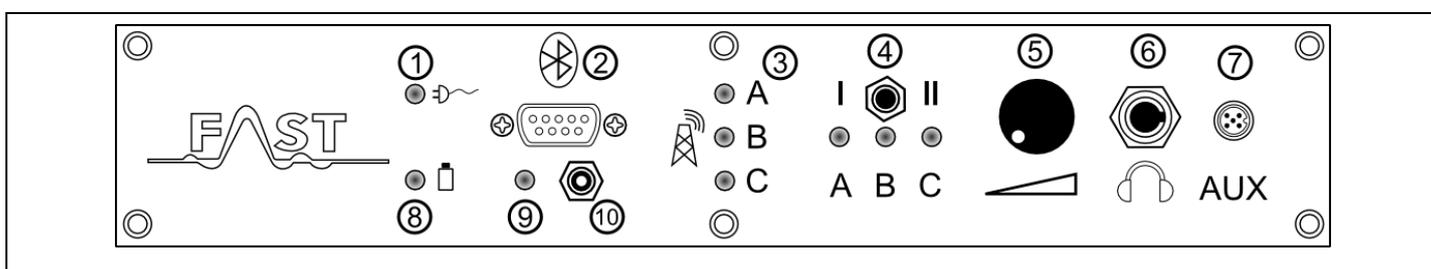


Illustration 1-4: Control panel

Point 3 in Illustration 1-4 shows the so-called Squelch indicator. This indicator visualises the availability of radio signals transmitted by the measurement boxes as soon as the correlator programme has been started on the laptop. When the red measurement box for channel A has been switched on, the first LED is lit red. As soon as the blue measurement box with the sensor for channel B has been switched on, the second LED is lit blue, and the third LED is lit yellow when a measurement box with channel C has been activated. According to the selection of the channels in the correlator programme, only two LEDs are lit at the same time. If a measurement box is activated and the corresponding LED is not lit, please check the aerials of the measurement boxes and the aerial of the correlator (see Illustration 1-5, point 1), as well as the selected channel(s) in the correlator programme,

The radio signals can be received and listened to through headphones to be connected to the jack as shown under point 6 (Illustration 1-4). In order to listen to the signals with the headphones, just select the corresponding channel with the channel selection knob as shown under point 4. If the knob is in the central position, no channel has been selected and neither the internal loudspeakers nor the headphones issue a tone. If the channel selection knob is turned left to position 1, either signals of channel A or signals of channel B can be listened to. The settings in the correlator programme determine which channel can be heard. Position 2 (right) lets you select channel B or channel C for rendering purposes. The signals are normally rendered through the internal loudspeaker which is installed under the laptop. As soon as the headphones have been plugged into the jack as shown under point 6, the correlator box automatically

switches to headphones and de-activates the internal loudspeaker. The volume for the loudspeaker and for the headphones respectively is controlled through the regulator as shown under point 5.

The jack as shown under point 7 (Illustration 1-4) is to provide the connection to the transmitter of radio headphones, which are available as an accessory.

1.3.2 Plug-in connector

On the right-hand side of the case (see Illustration 1-3, point 4) you will find the connections and keys as shown in Illustration 1-5. Point 1 shows the BNC connection for the aerial. The aerial of the correlator has to be fixed here. F.A.S.T. supplies an aerial ex works (art. no. 5437D) with BNC connection and a 90° BNC angle (art. no. 5441D) so that the aerial can be arranged orthogonally to the ground.

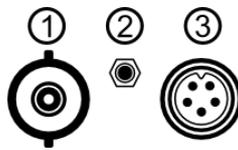


Illustration 1-5: Connections

Point 2 in Illustration 1-5 shows the reset key of the correlator box. If any errors or interferences occur during the measurement process which are due to malfunctions of the correlator box, the device can be reset by pressing the reset key. In order to do so, just disconnect all external power supply from the jack as shown in Illustration 1-5 under point 3; we recommend also to switch off the laptop. Then press the reset key for 5 seconds and reboot the system.

Point 3 shows the jack for the power supply. Here both the charger and the 12 volts power supply can be connected to the device. As the power supply for the entire case is slightly more complex, the power supply for the case is described below separately.

1.3.3 Power supply

The correlator can be operated in two ways concerning power supply. One option is operation with accumulators, the other option is power supply through external sources. For the latter, the 12 volts power cable as shown in Illustration 1-6 is used. The 12 volts plug marked with point 1 is plugged into the lighter of the particular vehicle, and the plug marked with point 2 is plugged into the corresponding jack (see Illustration 1-5, point 3) at the correlator case. If the device is operated through the power cable, all components, i.e. both the laptop (if supplied by F.A.S.T.) and the correlator box, are supplied with power, and the corresponding LED on the control panel is lit (see Illustration 1-4, point 1) indicating that the device is supplied with energy through the power cable. If this particular LED is not lit, the vehicle probably supplies insufficient voltage. In this case, you may have to start the engine of the vehicle in order to generate sufficient voltage.

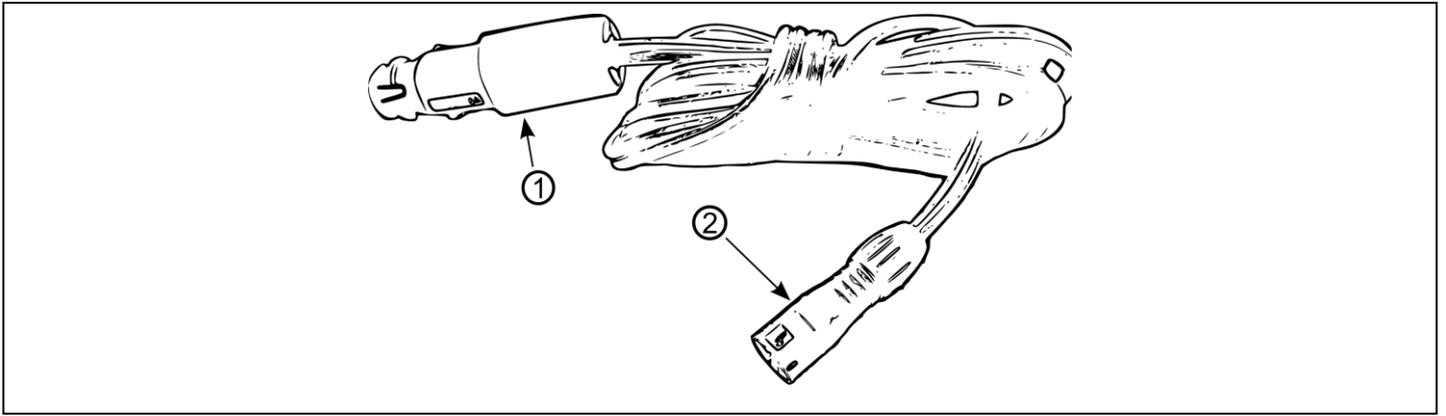


Illustration 1-6: 12V power cable

If the correlator is operated through the power cable, the accumulator is also charged at the same time. This means that both the accumulator of the correlator box and the accumulator of the laptop (if supplied by F.A.S.T.) are charged while the device is being operated.

Another mode of operation is the accumulator-based operation of the device, i.e. both the laptop and the correlator box are supplied with power through the in-built accumulators. This operation mode is indicated by the accumulator LED (see Illustration 1-4, point 8) on the control panel. As the laptop and the correlator box are equipped with two separate accumulators, these two accumulators can be exhausted at different points of time. If the laptop accumulator has run out of power, a message will occur on the display irrespective of the programme currently used on the laptop. If the accumulator of the correlator box has run out of power, this will be indicated through the correlator programme only, i.e. the correlator programme has to be activated and operational so that the operator can receive the message concerning low accumulator voltage.

When the accumulators are exhausted, they need to be re-charged either by connecting the 12 volts power cable to the case or by applying the mains cables (part of the delivery). The advantage of the 12 volts power cable is that both the correlator box and also the laptop are charged. The disadvantage is that re-charging the accumulators of the correlator box takes a while and can thus not be recommended. Another, quicker option is using the chargers. However, please keep in mind that, when using the chargers, the charger for the correlator box (see Illustration 1-7) re-charges only the accumulator of the correlator box and not also the accumulator of the laptop. The same happens when re-charging the accumulator of the laptop: only the accumulator of the laptop is re-charged, but not the accumulator of the correlator box.

The power cables for the laptop and for the correlator box differ in shape and are equipped with different plug-in connectors. In Illustration 1-7, the power cable for the correlator box is illustrated. The plug as shown under point 4 in Illustration 1-7 has to be inserted into the jack on the right-hand side of the correlator case as shown under point 3 in Illustration 1-5. The 100-240 volts mains cable can be connected to a socket at point 5 (Illustration 1-7).

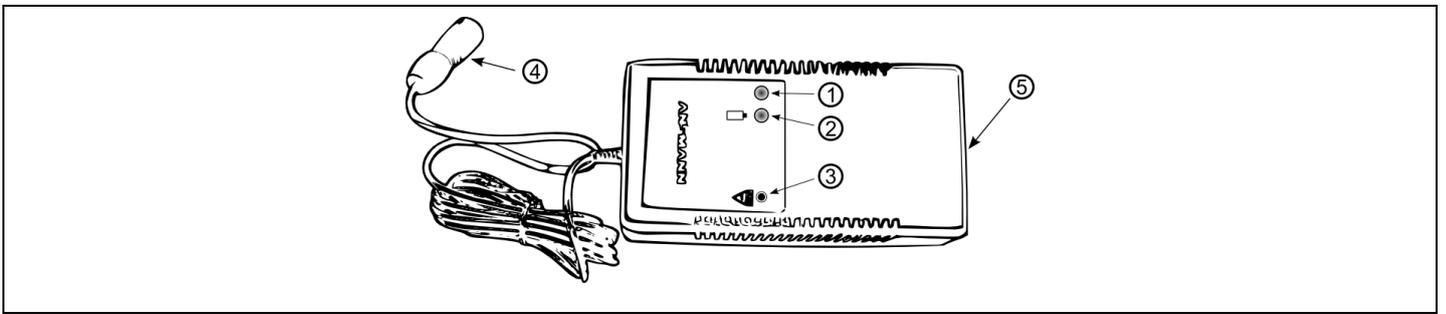


Illustration 1-7: Ansmann accumulator charger

When all cables of the power supply unit have been connected, the charger starts re-charging. The first process is a 10-second test phase of the accumulator. This test is indicated through the red LED (see Illustration 1-7, point 1), which flashes for 10 seconds after all cables have been connected. As soon as the accumulator is being re-charged without any problems, the red LED is lit permanently. If the flashing of the LED does not turn into a permanent light after 10 seconds, the accumulator is probably defective and you should contact your dealer. When the accumulator has been fully charged, the red LED goes out and the green LED as shown in Illustration 1-7 under point 2 is lit permanently. The accumulator of the correlator box has been fully re-charged, and the charger can now be disconnected from the case. Point 3 in Illustration 1-7 shows the discharge key of the charger. This key is to discharge the accumulator of the correlator box, which is necessary in exceptional cases to maintain the accumulator. Please keep in mind that this charger re-charges only the accumulator of the correlator box in the case and not also the accumulator of the laptop.

In order to re-charge the accumulator of the laptop, please use the 100-240 volts power cable supplied separately. Connect the plug as shown under point 2 (see Illustration 1-8) to the jack on the rear side of the laptop (see Illustration 1-3, point 5). Please note that you have to disconnect the 12 volts power supply of the case from the laptop beforehand. The green Power LED marked with point 1 (Illustration 1-8) is lit as soon as the power cable has connected the power supply unit (Illustration 1-8, point 3) to the mains. The laptop itself indicates whether or not the accumulator has been fully charged. An LED with an accumulator symbol is located either on the right or on the left of the cover (depending on model). This LED is lit or flashes during the entire charging process. As soon as the accumulator has been fully re-charged, this LED goes out.

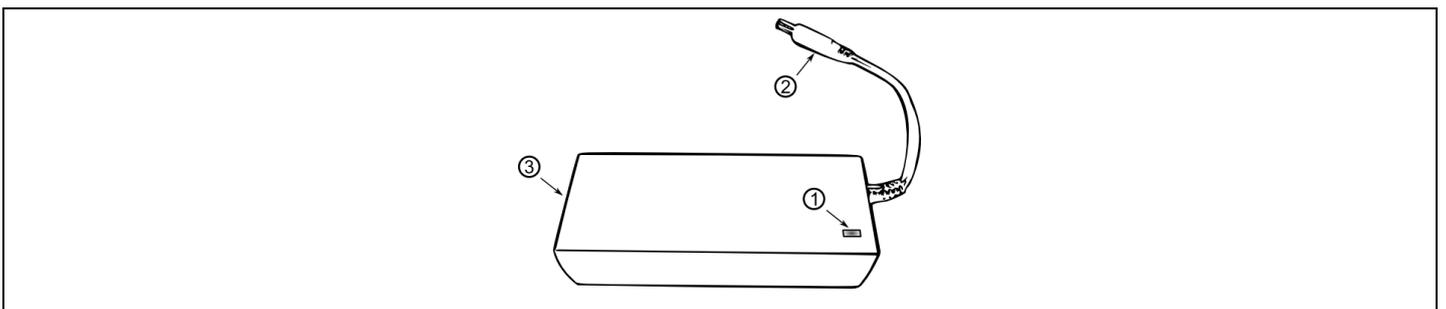


Illustration 1-8: 230V laptop power supply unit

1.3.4 Bluetooth dongle

The Bluetooth dongle, which is available as an optional accessory (art. no. 9330D), is a Class-1 module and communicates on a frequency of 2.4 GHz. The Bluetooth dongle (subsequently referred to as “module“) is compatible with Bluetooth specification 1.2 and capable of communicating with the laptops supplied by F.A.S.T., which are also equipped with a Bluetooth module.

The graphic below shows the upper and the lower side of the module and its control and indication elements. Point 1 in the graphic shows the green status LED, which indicates the status of the module. When the module is being configured, the green LED flashes 10 times per second. When the module is searching for another device or when it is idle, the green LED flashes just once per second. If a connection could be established, the green LED is lit permanently. The orange LED as shown under point 2 indicates the status of the communication connection, i.e. if data is being transmitted or received, the orange LED starts flashing.

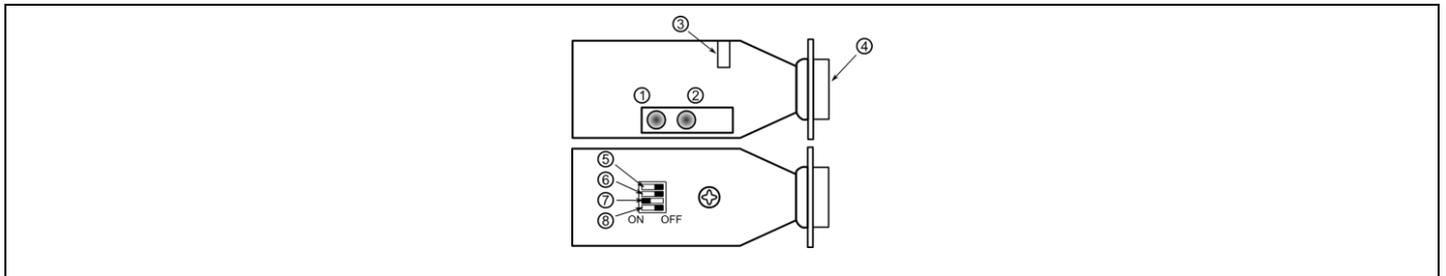


Illustration 1-9: Bluetooth dongle

Point 3 in Illustration 1-9 shows the jack for external power supply. In general, 4 - 9 volts DC can be applied to this jack. Please make sure that the positive voltage has been applied to the central pin of the jack, and earth has been applied to the outside. If the power supply is 5 volts, the module requires a maximum of 300mA. If, however, you do not operate the module in combination with a F.A.S.T. correlator, the module has to be supplied with power through the RS-232 connector (see also Illustration 1-9, point 4), i.e. no external power supply is required.

Additional parameters of the module can be changed through the Dip switches (point 5 - point 8). The switch marked with point 5 is to change the transmission rate (baud rate). The module allows transmission rates of 115,200 baud and 9,600 baud. If the switch is switched to the left position, i.e. to ON, 9,600 baud are used for data transmission. If the switch is set to the right position, as can be seen in Illustration 1-9, a baud rate of 115,200 is applied. The 115,200 baud rate is the standard recommended by F.A.S.T. and should be applied. The communication parameters *data bits*, *stop bits* and *parity* cannot be changed. The module uses 8 data bits, 1 stop bit, and no parity as communication parameters for a connection.

The switch marked with `point 6` activates the Master mode if the switch position is *ON* (left position). This means that a module which operates in the Master mode controls communication. As the correlator programme, i.e. the laptop, controls communication, the switch may remain at the *OFF* position, as can be seen in Illustration 1-9. It is necessary to set the switch under `point 7` to the left to *ON* (see Illustration 1-9) to make the module change into the so-called Slave mode. The Slave mode allows control of the module through the laptop. In order to reset the module to the ex works settings, use the switch as shown under `point 8`. Set the switch to the *ON* position and apply power to the module, either externally or through the plug-in connector (`point 4`). Then move the switch twice between *ON* and *OFF*. The module now resets to the ex works settings. For regular operation with the correlator programme, the switch should be set to *OFF*.

1.3.5 System requirements for the correlator programme

The case containing the correlator box can also be purchased from F.A.S.T. GmbH without a laptop. In this case, however, the following hardware-related requirements of the correlator programme should be met by your own laptop:

- Pentium or compatible CPU with 1 GHz or higher
- 1 GB RAM
- Hard disc storage unit with 69.8 MB of available storage capacity
- USB connection
- CD/DVD drive
- VGA / SVGA graphics card featuring a minimum resolution of 800 x 600 pixels
- Mouse and keyboard

The installation of the correlator software requires the prior installation of any of the system softwares listed below, including the necessary Service Pack, on your own device. If the software is installed on any other system software, the programme may refuse booting.

- Windows 2000 / Service Pack 4 --> 32bit
- Windows XP / Service Pack 3 --> 32bit and 64bit
- Windows Vista / Service Pack 1 --> 32bit and 64bit
- Windows 7 / Service Pack 1 --> 32bit and 64bit