
LTG31 Connections and Cables

The Polycorder program GPS31 requires usage of a cable connecting the Polycorder and GPS data logger. The instrument split cable can be obtained from Geonics, while the extension that can be used in either type of EM31 connection (description of two types of interfaces for the Polycorder and GPS data logger is given below) can be obtained from Geomar. The cable can be also easily built by the user following the below description. In addition to cable configuration, connection between the EM31, Polycorder, and GPS data logger is described here.

Cable configuration

Two cable configurations can be used with the EM31. The EM31-MK2 with the logger mounted in the instrument panel requires a simple two wire cable (Type 1), while for systems where the logger is used outside of the instrument panel and for updated models of EM31 the split cable is required (Type 2). The wiring of the cable for the first case is shown in Figure 1.

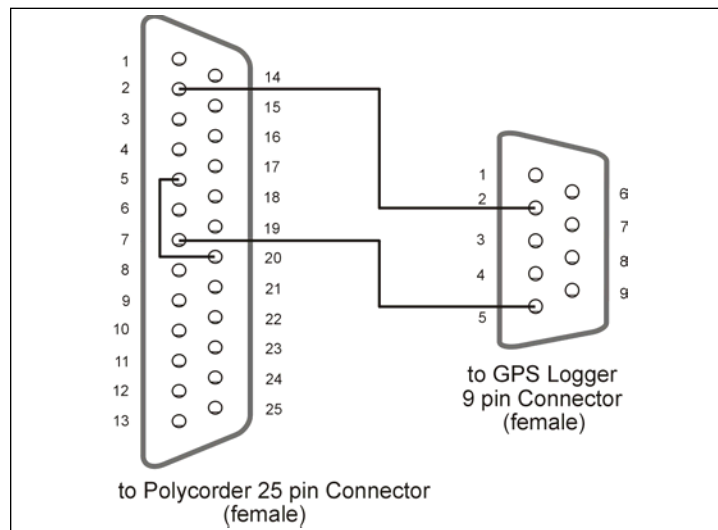


Figure 1: Wiring of the cable for the EM31-MK2 (Type 1)

When the logger is used externally it is connected to an EM31 by a Geonics instrument cable. In this case the single serial port of the Polycorder must be connected simultaneously to the instrument and to the GPS data logger. Therefore, the 25 pin connector

connected to the Polycorder must contain two cables, one leading to the instrument and another cable connecting the GPS data logger. The configuration of this cable is given in Figure 2.

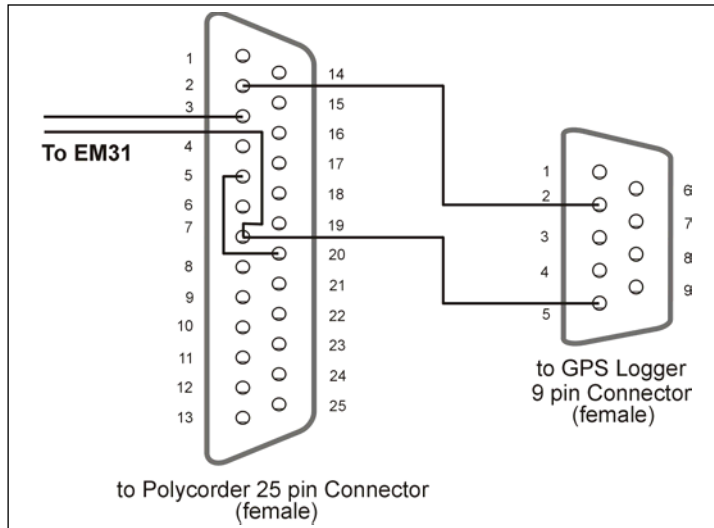


Figure 2: The configuration of the split cable (Type 2)

In both configurations it is important that in the 25 pin connector, pins 5 and 20 are connected. In the split cable (Type 2) pin 2 in the 25 pin connector must not be connected to the instrument.

Connection of the system

Depending on where the Polycorder is placed two types of connections can be employed. The first type of connection, where the Polycorder is placed in the instrument panel, is shown in Figure 3.

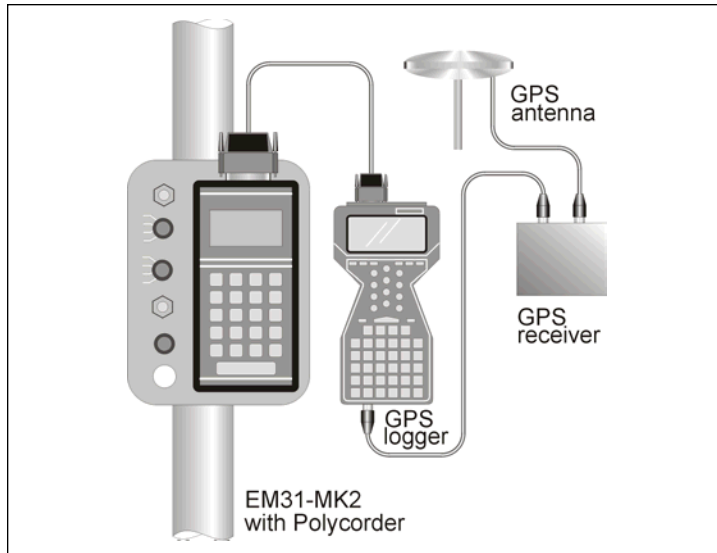


Figure 3: *The EM31-MK2 and GPS data logger connection diagram*

When the Polycorder is used externally, two possible connections are presented in Figures 4 and 5.

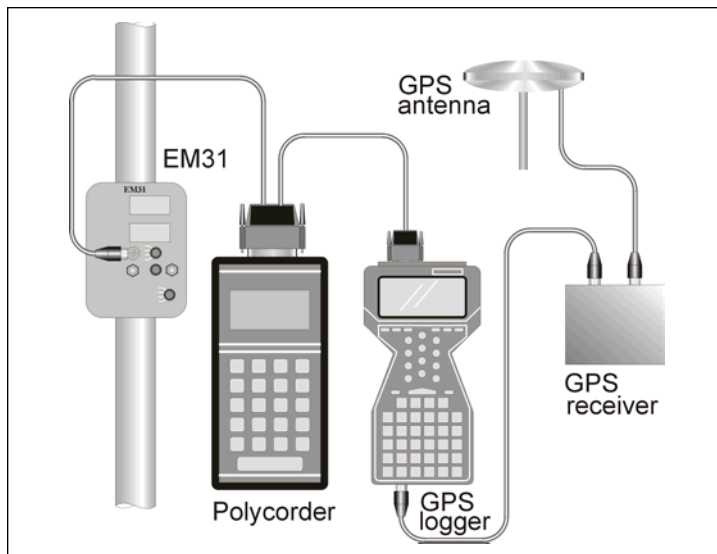


Figure 4: *The EM31, Polycorder, and GPS data logger (TDC2) connection diagram*

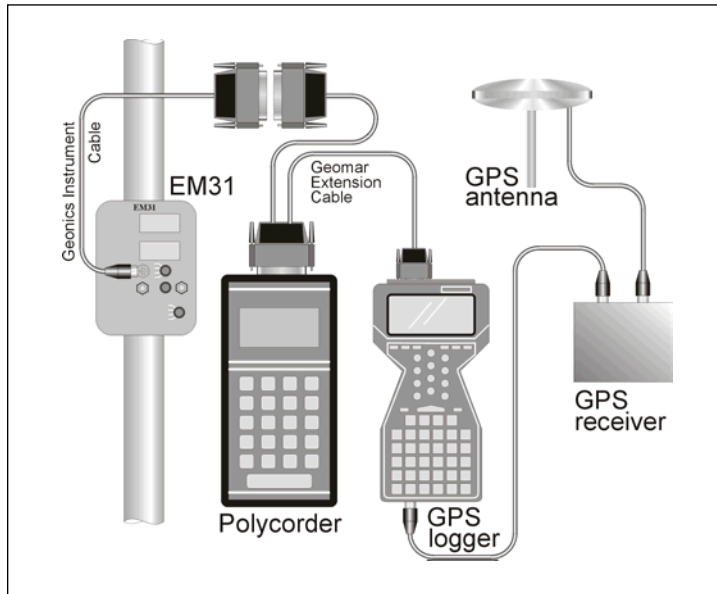


Figure 5: The EM31, Polycorder, and GPS data logger (TDC2) connection diagram when the Geomarc extension cable is used.

The second type of system connection (Figures 4 and 5) must be used when the modified EM31 instrument is used, or when the EM31-MK2 is used in a system where the instrument is mounted on a trailer and towed by a vehicle. In the Trimble data loggers TDC2 or TDC1 the left top port (9 pin connector) is to be connected to the Polycorder, and the top connector is to be used in the Trimble TSC1 field computer (it may require interface to the 9 pin RS232 connector).