5. Data record transmission

SPORTident features with a fully bidirectional data exchange between the control card and the control station. Complete data records are stored both in the card and in the stations backup memory.

In addition stations can transmit a data record using the serial communication line. For this purpose the “auto send” flag in the stations settings must be activated. The SPORTident stations 7/8 feature with an extended auto send protocol. As a new part a record number is implemented. The supervision of the record number by the receiver enables to control the completeness of the data records. Because the backup memory location of the data record is used as record number incomplete data can be recovered simply by reading out a part of the stations backup memory. The instruction “Get backup data” (0x81, see chapter 3.1) has to be used. A complete verified data exchange in a closed information loop can be established.

PC-access to the station can delay the handling of a SI-card by the station. So the PC software has to be written in a way that the real time behaviour of the SI-station still meets the requirements. Especially the number of bytes read from the backup memory in one cycle should be as small as possible (8 bytes only).

Remote control of control stations settings is not limited to any instructions. So it is important to be able to control stations real time clock within a session from time to time.

Auto send record:

Transmit record	0xD3	Transmit punch or trigger data in auto send mode		STX, 0xD3, LEN, CN1, CN0, SN3, SN2, SN1, SN0, TD, TH, TL, TSS, MEM2, MEM1, MEM0, CRC1, CRC0, ETX | NAK

LEN	1 byte		length byte, 0Dh = 13 byte
CN1, CN0	2 bytes		stations code number 1...999
SN3...SN0	4 bytes		SI-Card number
TD	1 byte		day-of-week/half day
		bit5...bit4	4 week counter relative
		bit3...bit1	day of week 000b Sunday 001b Monday 010b Tuesday 011b Wednesday 100b Thursday 101b Friday 110b Saturday
		bit0	24h counter (0-am, 1-pm)
TH...TL	2 bytes		12h timer, binary
TSS	1 byte		sub second values 1/256 sec
MEM2...MEM0	3 bytes		backup memory start address of the data record
CRC1, CRC0	2 bytes		16 bit CRC value, computed including command byte and LEN

Instruction 0xD3 is also used to transmit a data record caused by an external trigger signal like a broken light beam. To indicate such a record the fictive SI-Card number SN4...SN0 = 0 is used. In that way the features offered by the older instruction 0x54 are now part of instruction 0xD3.