SPORTident Station BSF8

Description

- The SPORTident Base Station Field 8 is based on an advanced hardware core. The design offers a number of significant improvements and new features compared with the older series of SPORTident stations. The BSF8 station is compatible with the existing SPORTident system parts and can be used mixed with older equipment.

- The BSF8 station is designed as a smooth and compact device. It is about the size of a keypad based phone but still large enough to incorporate a number of future enhancements. Different mounting options allow the station to be used for a variety of applications in different environments. A special semi-transparent plastic is used to show off the insides.
- The BSF8 station is “always on” and works in a low power Stand-by Mode. There is no need to switch on the station or to make any special preparations before the unit can be used. Also in Stand-by Mode the station is ready to process SPORTident-Cards. The maximal wake up time is 1 second. The station is switched from Stand-by Mode to Active Mode when the first SPORTident-Card is inserted.
- Once the station is in Active Mode the reaction time to the insertion of subsequent SI-Cards is very quick. After an adjustable period without a SI-Card being inserted, the station drops back to Stand-by Mode.
- The BSF8 station features with an on-board service display visible from the back side (BSF8-DB) or from the top side (BSF8-DT). The display shows quickly main stations' settings like real time and code number. After a card has punched the card number is displayed for 3 seconds.
- From Stand-by Mode the station can also be switched to Service Mode. This is done by switching on the station with the Instruction card "Service/OFF". In Service Mode the station’s LCD display offers additional information like the serial number, battery consumption and firmware version. Information about station’s battery is given both by measuring the battery voltage and by computing the station’s battery consumption in relation to the battery performance. Service Mode is automatically terminated after 10 minutes or earlier if the Instruction card "Service/OFF" is used.
- The SPORTident station BSF8 features with a very low power consumption. In typical application cycles a battery will serve for several years. This battery type does neither contain Cadmium nor Mercury. Other points of importance are decreased use of plastic material as a

result of the smaller volume and weight.

- The station's real time clock system is calibrated and temperature compensated (starting with firmware V5.53). This offers higher accuracy also at very high and very low temperatures. The internal time resolution is 1/256 s, approximately 4 ms.
- The station's backup memory is increased and stored more than 20.000 punching records.
- The BSF8 station supports contactless punching according to the latest IOF specification for foot-o. No hardware investments are required but firmware 6.56 or higher must be loaded. In addition to the direct punching functionality beacon records are sent out by the station one a time slot base. A "mixed" usage of the station direct/contactless punching within one event is possible. To enable mixed working mode the station has to be programmed in a working mode with a prefix "BC_…". The default working time for beacon mode should be set to 12 hours. The station explicitly must be switched into active mode by a direct punch. Stations backup memory does not record contactless punching records by default for power consumption reasons. Instead SIAC's backup radio channel can be used together with a radio dongle or the SI-GSM.

Power consumption

- BSF8 stations power consumption in general depends how often and how long the station is used. The station is always on but features a very low power consumption in standby mode. Within 5 years only 15% of the battery capacity are consumed in standby mode.
- In active mode stations power consumption is higher. But the biggest impact on the power consumption has the number of feedback cycles, flash and beep. In any case it should be avoided that a SI-Card is kept in direct punching contact with a station resulting in a never ending loop of feedback signals.
- If a BSF8 station is used twice a month in a typical orienteering event with about 500 participants, the typical working time of the station before battery change is 4…5 years.
- A station in BC_… mode consumes about five times the energy compared to direct punching mode only. But the total impact to stations life time is less significant. In contactless punching the station does not emit feedback signals. As a rule of thumb the life time of a station becomes shorter by 20%, this means from 5 years to 4 years. But after the end of an event it becomes much more important to switch the station from active to standby mode by using the Instruction card "Service/OFF".
- The BSF8 station features an in built working time counter and a battery voltage measurement unit. The working time counter considers the different consumption elements like standby, active, beacon and feedback. SI-Config+ should be used to monitor stations life cycle.

Handling and service

- The BSF8 station only needs minimal services. In typical application cycles only station's real time has to be monitored.
- The station's settings can be changed by using PC-software SI-Config+. In the inductive coupling process between a SPORTident master Station and a slaved station a coupling stick

can be used to improve data transmission.

- To achieve highest synchronism in the station's real time clock it is recommended to adjust station's real time by using the SPORTident Station BS8 SI-Master (coupling stick needed).
- The battery has a capacity of 1000 mAh. This value should not be changed in the setups.
- SPORTident Station BSF8 features with an easy firmware upgrade mechanism. Station's firmware can be uploaded by the user via simple inductive coupling. This feature keeps the station up to date and enables the implementation of additional functionality. To upgrade the firmware a main station BSM8 in combination with SI-Config+ must be used. Please also refer to our User Guide with detailed information about the latest firmware features.

Operating modes

This base station can operate in different modes.

Classic punching system

The following operating modes are available for the classic system using direct punching.

Operating mode	Functionality
CLR - CLEAR	Removes all data from the SI-Card.
CHK - CHECK	Verifies that the SI-Card is empty.
STA - START	Verifies that the SI-Card is empty and writes the start time on the SI-Card if this is the case.
CN - CONTROL	Reads the competitor's SI-Card and writes the control code and time on the SI-Card.
FIN - FINISH	Writes the finish time on the SI-Card.

Contactless punching system AIR+

The following additional operating modes are available for the AIR+ system using both direct and contactless punching.

Operating mode	Functionality
BC STA - Beacon Start	Start time will be written on the SIAC in the contactless way.
BC CN - Beacon Control	Works like a normal control station, but also in the contactless way.
BC FIN - Beacon Finish	Finish time will be written on the SI-Card in the contactless way. The SIAC automatically turns off after receiving BC FIN.

Operating mode	Functionality
SIAC ON	SIAC's AIR+ functionality will be activated.
SIAC OFF	SIAC's AIR+ functionality will be terminated.
SIAC Radio Readout	SIAC will be triggered to send out all data records stored by internal radio.
SIAC Battery Test	Measured and shown the SIAC's battery voltage.
SIAC Test	Tests the SIAC's Air+ functionality is activated. If not already activated, the SIAC's AIR+ functionality can be activated.

Specifications

Internal power supply	1 x Lithium ½ AA cell, no rechargeable
Battery capacity	1000 mAh
Durability	3 - 5 years
Battery exchange	by SPORTident GmbH and authorized SPORTident partners
Operating range	- 20°C to + 50°C
International protection class	IP 64 (DIN EN 60529) Protection against penetration of dust Protection against splashed water from all directions
Dimensions	101 mm x 51 mm x 19 mm
Weight	62 g
Accuracy at normal temperature	less than +/- 20 seconds a month
Switch on time	< 1 second (standard)
Backup memory	maximum number of punches: 21802 maximum number of SI-Cards data records: 1022