

SPORTident BSF8 stations



December 2017

Firmware 6.56 and higher

Release notes



Product features

The SPORTident-Station BSF8 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 still compatible with the already 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 available in two different colors. A special conversion holder is also available so that the station can be seated in an existing larger holder that is used for BS7 stations.
- 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 fully qualified to proceed SPORTident-Cards. The maximal wake up time is 1 second but can be adjusted by the user. A faster wake up will increase station’s power consumption. 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 Service/OFF-Card. 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 Service/OFF-Card is used.
- It was a special goal to develop a device which best meets the growing requirement to protect our environment. The SPORTident station BSF8 features with a very low power consumption. In typical application cycles a battery will serve for several years. This enables the use of a smaller battery. The battery is soldered to the printed circuit board and this enables the SPORTident GmbH to guarantee and control a fully certified disposal of empty batteries. For the first time a non-polluting lithium battery is used. 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.

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- 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 6.65 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 station.

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 lilac service/off stick.
- 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.

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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 "SI-Master" (coupling stick needed).
- The battery has a capacity of 1000 mAh. This value should not be changed in the setups.
- SPORTident-Station BSF7 and 8 feature 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 master station BSM7 must be used. Information about the firmware version and features are available at www.sportident.com.

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Additional AIR+ configuration possibilities for stations BSF8

To support the special requirements for the SIAC at an event using AIR+ configuration, there are additional operating modes for the SI-Stations BSF7/8. These operating modes can be configured by SI-Config V2.6.2 (and higher). The station requires the firmware version 5.82 (and higher).

SIAC ON and SIAC OFF

These operating modes activate and terminate SIAC's AIR+ functionality. In the context of an event usage cycle, the AIR+ functionality is typically activated by the CHECK station and terminated by the FINISH station. Using SIAC_ON/SIAC_OFF is an alternative way, the only difference is that no record is written into the SIAC.

By means of these operating modes several training sessions with breaks in between are supported during one day. Data are collected over the day and a final evaluation can be done afterwards.



SIAC Radio readout

Station programmed in this working mode triggers SIAC to send out all data records stored by internal radio. To receive the data, a SI-SRR dongle is needed. This readout process is comfortable and fast. Data are transmitted record by record. Each record features additional millisecond time stamp information. These millisecond values are not available when data are read out by a BSM7/8 readout station.

Data read out are not stored in the Radio readout stations backup memory.



SIAC Battery test

SIAC's battery voltage is measured and shown at stations service display. An acoustic signal "normal beep" indicates the "ok" case. If the battery voltage is low there is a "warning" signal – several beeps at higher frequency.

In case of no feedback signal, the battery voltage is below the critical level and the SIAC can not be used. Battery service is needed.

Stations battery voltage evaluation software considers the temperature dependency of the battery voltage.

Voltages measured are stored in stations backup memory. Information consisting of SIAC ID and the battery voltage can be read out by using SI-Config.

We recommend conducting the test before every event. Stations should be placed in the event centre, so athletes can use it early before start.



SIAC test

A test record is sent to ensure the user about SIAC's functionality in contactless punching mode.

BSF8 Specifications

- Internal power supply: 1 x Lithium ½ AA cell, no rechargeable
- Battery capacity: 1000 mAh
- Battery life: 3 – 5 years
- Battery exchange: by SPORTident GmbH and authorized SPORTident dealers
- Operating range: -20°C - +50°C
- International protection class: IP 64 (DIN EN 60529)
 - Protection against penetration of dust
 - Protection against splashed water from all directions
- Dimensions: 101mm x 51mm x 19mm
- 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