

Player Analysis Technology Approval report

Babolat POP

Test code: PAT-15-013

Serial no: OTBLHE1562200107

Software versions:
 Android 1.0.1287;
 iOS 1.1



Firmware version: 6.34.1752

Issue date: 16 October 2015

Objective: To test and evaluate the Babolat POP Player Analysis Technology according to Rule 31 of the 2015 Rules of Tennis.

Result: Approved

SUMMARY

The Babolat POP ‘pod’ (mass 9 g) containing electronic sensors is inserted into a wristband worn by the user to record the orientation and acceleration of the arm, from which are calculated activity- and shot-related parameters. Data collected by the pod are sent to an auxiliary device, e.g. smartphone, via a wireless (Bluetooth®) connection.

The pod can be paired sequentially with multiple auxiliary devices with no authorisation required. Data can only be transmitted from the pod to a single auxiliary device at a time, which removes the data from the pod. There is no notification to the user of the pod as to which auxiliary device the pod is connected.

Coaching information, including shot type, shot frequency, racket speed and ball spin type, is available on the auxiliary device. Summary activity statistics, such as the number of sessions and shots played, are automatically shared with the Babolat online community.

Restrictions on the access by a player to the Babolat POP components during periods when coaching is and is not allowed are as follows:

COMPONENT	NO COACHING	COACHING
Pod	Permitted	Permitted
Auxiliary device (e.g. smartphone)	Not permitted	Permitted

MAIN COMPONENTS

The main components of the system are described in table 1 and depicted in figure 1.

COMPONENT	FUNCTION(S)
Pod (mounted in wristband)	Record motion of the user's playing arm; store and transmit data
Babolat POP app	Analyse and transmit data
Babolat server	Store and synchronise data across devices
Auxiliary device (e.g. smartphone)	Communicate (display), store and transmit data

Table 1. Description of the components of the Babolat POP system.



Figure 1. Components of the Babolat POP system: Babolat POP pod (left); auxiliary device (smartphone).

DATA CAPTURE AND TRANSMISSION

A 'pod' containing electronic sensors (a triaxial accelerometer and triaxial gyroscope) is inserted into an elasticated wristband (see figure 2). The sensors in the pod measure the orientation and acceleration of the user's playing arm. The mass of the pod is 9 g. The mass of the wristband is 10 g.



Figure 2. Babolat POP pod inserted in wristband.

Data capture is started by pressing the power button (see figure 3). A flashing blue LED light indicates that the pod is 'on' (sensors are active) and the motion of the pod is being recorded. Data capture is stopped by holding the power button (to turn the pod 'off').

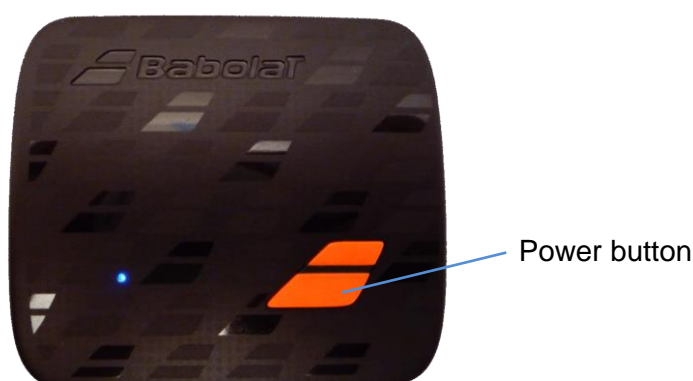


Figure 3. Power button (bottom right corner) and blue LED (left).

To transmit the data, the pod must be wirelessly connected to a Bluetooth® enabled auxiliary device, e.g. smartphone or tablet. The auxiliary device must be initially paired with the pod. The auxiliary device can be paired with the pod at any time while the pod is switched 'on' (and not already wirelessly connected to another device). There is no authorisation process, e.g. password protection, to pair the auxiliary device with the pod. Once the auxiliary device has been paired with the pod, the pod automatically re-connects to the device when available. If the pod has been paired with more than one auxiliary device, it will connect to the first available device. The pod cannot be connected to multiple auxiliary devices simultaneously.

Once data are transmitted (downloaded) to an auxiliary device they are removed from the pod, i.e. data from the pod cannot be downloaded to multiple auxiliary devices.

The pod can be paired (and connected sequentially) with multiple/different auxiliary devices, hence data can be transmitted to any device (that has been paired with the pod). For example, the pod could be connected to an initial auxiliary device which moves out of range of the Bluetooth® radio signal allowing a second device (within range) to take over the connection (with no notification to the user of the pod).

COMMENTS

The pod must be switched on to record data. A blue flashing LED light indicates the pod is 'on'.

The pod can be paired sequentially with multiple auxiliary devices with no authorisation required. Data can only be transmitted from the pod to a single auxiliary device at a time, which removes the data from the pod. There is no notification to the user of the pod as to which auxiliary device the pod is connected.

DATA PROCESSING AND COMMUNICATION

Access to processed data is via the Babolat POP app installed on an auxiliary device. The user must create a password-protected account (register) to run the Babolat POP app. During the registration process, the user must create a public profile (which is used for the 'Community' features of the app). The Babolat server is used to backup (store) data and synchronise data across devices that are logged on to the same user account.

Information available on the auxiliary device includes: frequency and classification of shots (i.e. forehand/backhand/serve); racket speed (estimated from arm speed); ball spin type (topspin/slice/flat); and PIQ score (a combination of speed, stroke fluidity and spin generation).

Summary activity statistics, e.g. number of sessions and shots played, are automatically shared with the online Babolat community.

COMMENTS

The pod does not have a means to communicate data collected directly to the user. An auxiliary device with Bluetooth® connectivity is required to receive the data from the pod, and subsequently display the data.

Coaching information is available on the auxiliary device. Therefore, players must not have access to auxiliary devices, e.g. smartphone, tablet, when coaching is prohibited.

Summary activity statistics, e.g. number of sessions and shots played, are automatically shared with the online Babolat community.

ADDITIONAL INFORMATION

Client:

Babolat VS
93 rue André Bollier
69007 Lyon
France

Date received: 21 September 2015

Report prepared by: Jamie Capel-Davies

Report authorised by: Stuart Miller

Revision number: 0

Please note:

Approval does not attempt to, nor does it in fact, establish the accuracy or reliability of data or fidelity of its transmission.