FastAlert protocol

**Revision History:**

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| --- | --- | --- |
| **Date** | **Changes Done** | **Comments** |
| 1/21/2020 | 1. Previously called Impact alert renamed to Fall alert. 2. Impact alert added. 3. Heartbeat was constant before now it is configurable. Explanation added. 4. New Alert codes added: 12 to 17 5. Checkin timer related packet codes added (From cellphone to watch) 6. Watch to phone protocol details added at the end of the document. |  |

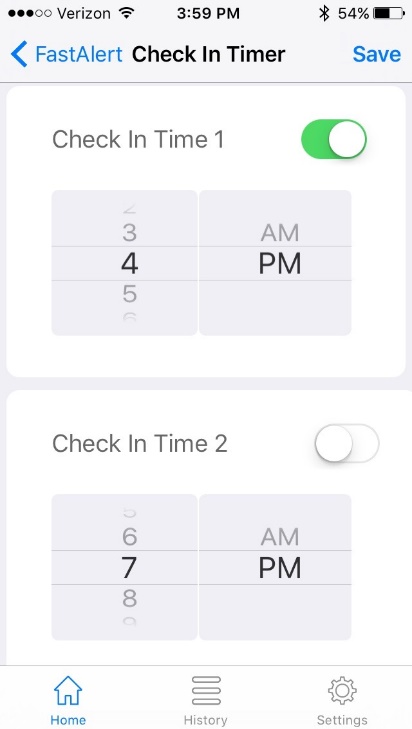
|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | UUID | | DATA | details | | notes |
| Service | | 152A | | | na | |
| Data characteristic | 1524 | | **2 bytes** | **Alerts:**  **0x(yy)(zz)**  **yy= battery status**  01 OK  00 LOW  **zz= packet code**  01 HELPAlarm  02 AllOk  03 Test  04 SendFreeFall  05 BatteryLow  06 BatteryOK  07 TrackingReport  08 FallAlert,  09 CheckIn,  10 Heartbeat,  11 CheckInStartStop  12 Impact  13 SendImpact  14 Checkin1Done  15 Checkin2Done  16 Checkin1Failed  17 Checkin2Failed | | **Alerts:**  **Read only**  01 **HELPAlarm** -Sent when user presses HELP button  02 **AllOk**-Sent when user presses HELP button  03 **Test**-Sent when user presses test button  04 **SendFreeFall**-Sent after 30 sec. if user doesn’t send/cancel alert.  05 **BatteryLow**-Sent periodically when keyfob/watch battery voltage is low.  06 **BatteryOK**-Sent when keyfob/watch battery voltage becomes OK  07 **TrackingReport -**Sent after alert(e.g. HELP alarm or freefall, Impact) is detected and tracking settings are enabled.  08 **FallAlert-** Sent when fall alert is detected.  10 **Heartbeat-** Sent at interval set by cellphone app.  11: **CheckInStartStop-** Not supported in watch app. Used to start/stop Checkin Timer from keyfob.  12: **Impact-** Sent when impact is detected.  13: **SendImpact-** Sent after 30 sec. if user doesn’t send/cancel alert. |
| Control Characteristic  Used for setting up the tracking & heartbeat feature of the keyfob/watch | 1527 | | **3 bytes** | **Tracking/Heartbeat:**  **0x((zz)(yy)(nn)**  **nn: start/stop tracking**  00 = start tracking  01 = stop tracking  **nn: start/stop heartbeat**  03 = start heartbeat  04 = stop heartbeat  **yy report interval in minutes**  tracking/heartbeat interval  **zz Number of reports**  Tracking reports to send | | **Tracking:**  **Read write**  This command should be sent from the phone app:  Whenever app connects to a keyfob/watch.  Whenever user edits the tracking/checkin time feature settings  Examples:  Tracking:   * **Command to set 1 minute interval, and 5 reports:**   Provide non zero interval & tracking packets count with 00. Watch will save this setting & will start sending tracking packets whenever there is an alert.  0x050100   * **Command to DISABLE tracking feature:**   When user disables tracking. Provide 00 value for interval & no. of packets.  0x000001   * **Command to STOP tracking reports currently being sent.**   Provide non zero interval & tracking packets count with 01.  This stops the current tracking in case when user clicks I AM OK on cellphone, but keeps the interval and number of reports settings at yy and zz values.  0xzzyy01  **Heartbeat:**  For heartbeat (zz) Total no. of reports parameter is don’t care parameter.  E.g. To send heartbeat at interval of 5 mins:  0x000503  To stop heartbeat:  zz & yy : don’t care parameters.  0x000504 or 0x000004 |
| Control Characteristic  Used for setting up the Fall alert feature of the keyfob/watch | 1527 | | **3 bytes** | **Fall alert:**  **0x((zz)(yy)(nn)**  **nn: Category (02)**  **yy: Parameter (1 to 7)**  **zz: Value**  **yy: Parameter (1 to 7)**  **1:** Enable Fall alert detection  **2:** Disable Fall alert detection  **3:** High peak g value  **4:** No movement duration in sec  **5:** Low peak g value  **6:** Fall alert canceled by user before 30 sec  **7:** Fall alert sent | | **Fall alert :**  **Read write**  This command should be sent from the phone app:  Whenever app connects to a keyfob/watch &  When settings changed by user.  Eg:  **Format 0x((zz)(yy)(nn)**  ***1:*** *Enable Fall alert detection:*  0X**000102**  ***2:*** *Disable Fall alert detection:*  0X**000202**  ***3:*** *High peak g value: 2.5g*  *To send, multiply by 10.*  0X**250302**  ***4:*** *No movement duration*  0X**030402**  ***5:*** *Low peak g value: 2g*  *To send, multiply by 10.*  0X**200502**  ***6:*** *Fall alert canceled by user before 30 sec*  0X**000602**  **7:** Fall alert sent  0X**000702**  **8:** *End peak g value: 2g*  *To send, multiply by 10.*  0X**200802** |
| Control Characteristic  Used for setting up the Checkin time feature of the keyfob/watch | 1527 | | **3 bytes** | **Checkin Timer:**  **0x((zz)(yy)(nn)**  **nn: Category (05)**  **yy: Parameter (1 to 8)**  **1:** CheckinTime1  **2:** CheckinTime2  **3:** Checkin time1 Started  **4:** Checkin time2 Started  **5:** Checkin time1 Stopped  **6:** Checkin time2 Stopped  **7:** Checkin1 Done  **8:** Checkin2 Done | | **Checkin Timer:**  **Read write**  This command should be sent from the phone app:  Whenever app connects to a keyfob/watch &  When settings changed by user.  Eg:  **Format 0x((zz)(yy)(nn)**  **1:** CheckinTime1 : at 3pm (24 hour clock)  0X**150105**  **2:** CheckinTime2 : at 9am (24 hour clock)  0X**090205**  **3:** Checkin time1 Started  0X**000305**  **4:** Checkin time2 Started  0X**000405**  **5:** Checkin time1 Stopped  0X**000505**  **6:** Checkin time2 Stopped  0X**000605**  **7:** Checkin1 Done  0X**000705**  **8:** Checkin2 Done  0X**000805** |
| Control Characteristic  Used for setting up the Impact alert feature of the keyfob/watch | 1527 | | **3 bytes** | **Impact alert:**  **0x((zz)(yy)(nn)**  **nn: Category (06)**  **yy: Parameter (1 to 5)**  **zz: Value**  **yy: Parameter (1 to 5)**  **1:** Enable Impact alert detection  **2:** Disable Impact alert detection  **3:** g value. Impact greater than g value will generate Impact alert.  **4:** Impact alert canceled by user before 30 sec  **5:** Impact alert sent | | **Impact alert :**  **Read write**  This command should be sent from the phone app:  Whenever app connects to a keyfob/watch &  When settings changed by user.  Eg:  **Format 0x((zz)(yy)(nn)**  ***1:*** *Enable Impact alert detection:*  0X**000106**  ***2:*** *Disable Impact alert detection:*  0X**000206**  ***3:*** *g value: 2.5g*  *To send, multiply by 10.*  0X**250306**  ***4:*** *Impact alert canceled by user before 30 sec*  0X**000406**  **5:** Impact alert sent  0X**000506** |

**From watch to cellphone:**

1. Fall alert:

* From watch to cellphone
  1. Fall detected: Alert code 08.
  2. Fall alert canceled by user within 30 sec: Send I AM OK : Alert code: 02
  3. Within 30 sec if user presses alert button or if user doesn’t take any action within 30 sec: ‘Send Fall alert’: Alert code: 04.

1. Check in timer: Refer iphone app for screens.



1. **Setting Times: User can set 2 checkin check-in times using cellphone app.**

Whenever user will start checkin timer or if checkin timer is already started but checkin times are changed or disabled by user then cellphone app will send 2 packets to watch. Which are as follows:

Eg: Case 1: If user set checkin time1 to 8am, disabled checkin time2 then cell phone app will send following packets:

Packet1: CheckinTime1: at 8am (24 hour clock): 0X**080105**

Packet2: CheckinTime1 Started: 0X**000305**

Packet3: CheckinTime2 Stopped: 0X**000605**

Case 2: If user disabled checkin time1, set checkin time2 to 12noon then cell phone app will send following packets:

Packet1: CheckinTime1 Stopped: 0X**000505**

Packet2: CheckinTime2: at 12noon (24 hour clock): 0X**120205**

Packet3: CheckinTimer2 Started: 0X**000405**

Case 3: If user disabled both, checkintime1 & checkintime2 then cell phone app will send following packets:

Packet1: CheckinTime1 Stopped: 0X**000505**

Packet2: CheckinTime2 Stopped: 0X**000605**

Case 4: If user set checkin time1 to 8am & set checkin time2 to 7pm then cell phone app will send following packets:

Packet1: CheckinTime1: at 8am (24 hour clock): 0X**080105**

Packet2: CheckinTime1 Started: 0X**000305**

Packet3: CheckinTime2: at 7pm (24 hour clock): 0X**190205**

Packet4: CheckinTimer2 Started: 0X**000405**

1. **Checkin using watch app:**

Watch will start vibrating at check-in time & will continue to vibrate 3min after check-in time until user does check-in. During this time if user opens watch app then app will show Check-in screen. Irrespective of successful checkin or failure continue checkin timer. In case of check-in failure, alert is sent to cell phone app & watch will vibrate.

Note: Keep vibration pattern different for sending packet & for reminder.

For eg:

* + - 1. If user has set checkintime1 at 8am then at 8am watch will start vibrating & will continue to vibrate till 8:03am.
      2. If user doesn’t take any action in 3 mins then watch app will send alert to cellphone app(Checkin1Failed : Alert code 16).
      3. If during this 3min. time if user opens watch app then app will show Check-in screen. If user do checkin then watch will stop vibrating & will send packet to cellphone app(Checkin1Done : Alert code 14)
      4. This will be repeated every day.
      5. For Checkintime2: apply Same logic. (Checkin2Done : Alert code 15, Checkin2Failed : Alert code 17)

1. **Checkin using cellphone app:** 
   1. As user can do check-in from watch or cell phone, action will be communicated to other end to keep both the devices in sync.
   2. If user does checkin using cellphone app then cellphone app will send packet to watch app.
   3. Checkin1 Done: 0X**000705,**  Checkin2 Done: 0X**000805**
   4. On receiving any of the above packets, stop reminding user for that checkin.
2. Impact alert

* From watch to cellphone
  1. Impact detected: Alert code 12.
  2. Impact alert canceled by user within 30 sec: Send I AM OK : Alert code: 02
  3. Within 30 sec if user presses alert button or if user doesn’t take any action within 30 sec: ‘Send Impact alert’: Alert code: 13.