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Bracelet Protocol Synchronization

Version 1.0

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Release History

Revision	Date	Content
1.0	2011/08/19	Initial release

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Standard Bracelet Acknowledgements: (Refer protocol page 9 Fig A)

The handshaking sequence must be finished between unit and server before the bracelet can report waypoints to the server. The standard handshaking methods occur by using one of the below methods.

1. After accepting a connection with the bracelet, the server can send the below message to the Bracelet.
\$AVREQ,?*42 (sent by the Server)

The Bracelet will send the below message as a response and then the bracelet will change to its regular working mode.

\$AVSYS,99999999,V1.50,SN0000103,32768*15 (responded by the unit)

2. If the Bracelet does not receive **\$AVREQ,?*42** from the server, it will send the following together.
\$AVSYS,99999999,V1.50,SN0000103,32768*15 (sent by the unit)
\$ECHK,99999999,0*35 (sent by the unit)

The server should reply with the same message back.

\$ECHK,99999999,0*35 (responded by the Server)

After the bracelet receives the **\$ECHK,99999999,0*35** sentence, it will change to its regular working mode.

Note: Regular working mode starts with the bracelet transmitting the smart logged data. Also note that the \$ECHK strings will be transmitted periodically and all of which must be acknowledged.

Protocol Command 56: Special \$AVRMC Message and Serve's Acknowledgement

During standard transmissions, the device will transmit a lower case GPS status identifier of either a, v, or r. Those messages must be responded to using the below \$EAVACK acknowledgements. The first field of the \$EAVACK string is for the identifier or event code of the previous \$AVRMC string. The second field of the \$EAVACK string is for the checksum of the previous \$AVRMC string.

\$AVRMC,99999999,164339,a,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*17 (sent by the unit)
\$EAVACK,0,17*2D (responded by the Server)

\$AVRMC,99999999,164339,v,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*00 (sent by the unit)
\$EAVACK,0,00*2B (responded by the Server)

\$AVRMC,99999999,164339,r,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*04 (sent by the unit)
\$EAVACK,0,04*2F (responded by the Server)

In the event of smart logging, the messages will be transmitted in a similar formation. Any \$AVRMC string reported in smart logged information that has a lower case GPS status will require the \$EAVACK acknowledgement.

\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*37
\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*37
\$AVRMC,99999999,164339,r,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*04
\$EAVACK,0,04*2F (responded by the Server)
\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*37
\$AVRMC,99999999,164339,a,4351.0542,N,07923.5445,W,0.29,78.66,180703,0,3.727,17,1,0,0*17
\$EAVACK,0,17*2D (responded by the Server)

Protocol Command 18: Feature Flag Configuration

The below acknowledgements are for SOS, Tamper, and Geo-fence alerts.

Tamper Detection Sequence

With the security option enabled in the utility, the wrist strap must be closed. Once it is closed, the bracelet will send the below message.

For unit's tamper detection switch closed event (Bracelet V1.xx)

\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,S,3.727,17,1,0,0*54 (sent by the unit)

The server must respond with the below string. Once the bracelet receives the below string, "Armed" will appear across the LCD screen of the bracelet.

\$AVCFG,00000000,t*21 (responded by the Server)

From this point on, once the band is opened or closed, the alerts must be acknowledged by the server as follows.

For unit's tamper detection switch open event (Bracelet V1.xx)

\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,T,3.727,17,1,0,0*53 (sent by the unit)

\$AVCFG,00000000,t*21 (responded by the Server)

For unit's tamper detection switch closed event (Bracelet V1.xx)

\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,S,3.727,17,1,0,0*53 (sent by the unit)

\$AVCFG,00000000,t*21 (responded by the Server)

SOS sequence

For SOS button pressed event

\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,3,3.727,17,1,0,0*34 (sent by the unit)

\$AVCFG,00000000,d*31 (responded by the Server)

Geo-fence Sequence

For unit's Geo-fence enter event

\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,X,3.727,17,1,0,0*5F (sent by the unit)

\$AVCFG,00000000,x*2D (responded by the Server)

For Geo-fence exit event

\$AVRMC,99999999,164339,A,4351.0542,N,07923.5445,W,0.29,78.66,180703,4,3.727,17,1,0,0*33 (sent by the unit)

\$AVCFG,00000000,x*2D (responded by the Server)

To see all of these messages in real time, please interface the bracelet locator with the protocol analyzer. The protocol analyzer is a server that displays the exact message strings from initial connection through to standard bracelet operation.

Note: This application note only outlines the hand shaking procedures with the bracelet and the server platform.