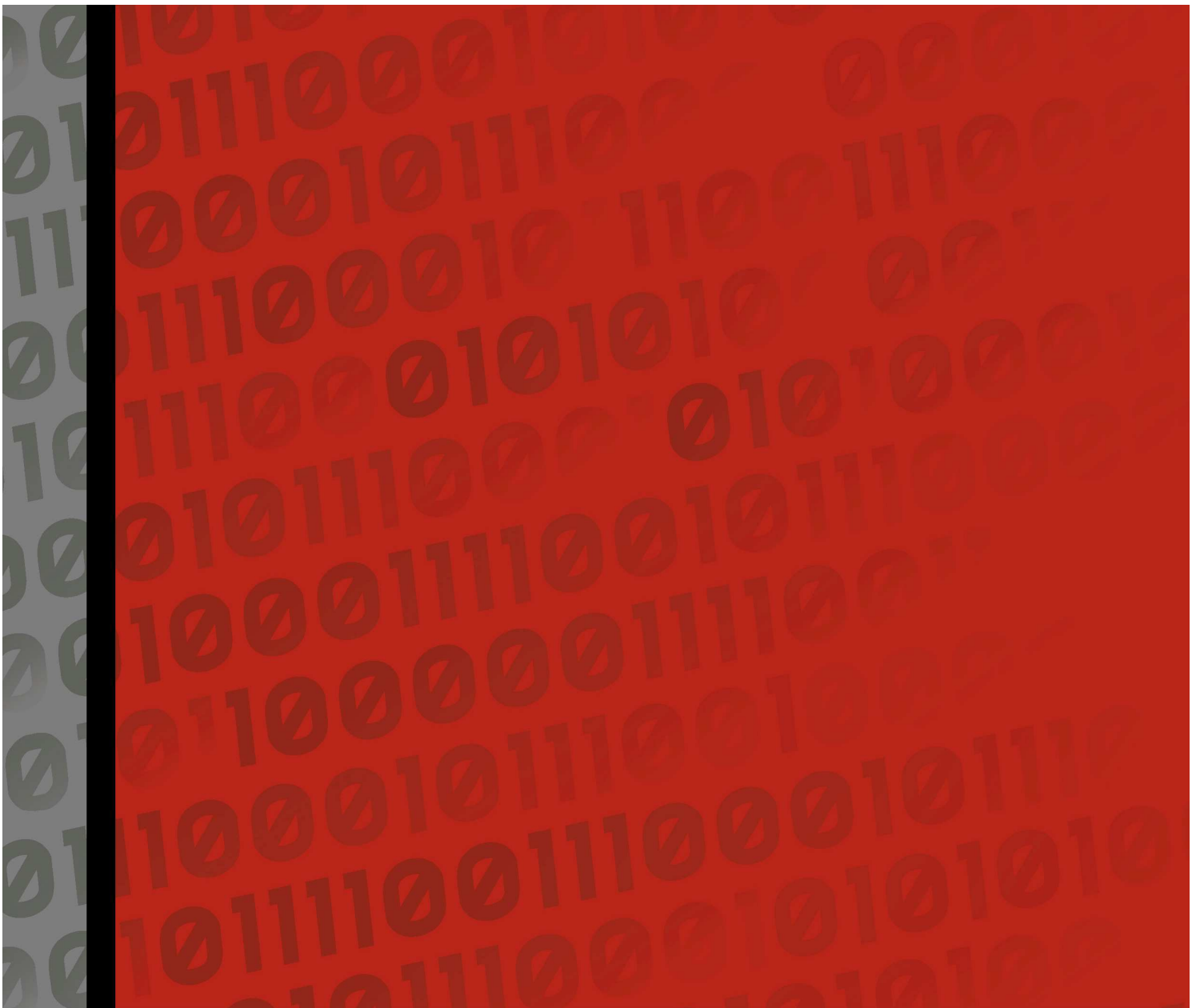




## ***RTK GPS***

*SBF display messages V1.1*



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## 1. Introduction

The MGB-Tech RTK gps uses boards from Septentrio. We currently support two Septentrio boards. The AsteRx and PolaRx series. The display on our RTK GPS receives its data by listening to SBF (Septentrio Binary Format) on COM3 and COM4. This document describes which SBF messages should be activated on the Septentrio board so all data is present on the different screens of the display.

## 2. Port settings

### 2.1 Software below v00.01.06

COM 3 :  
115200 baud  
8 data bits  
1 stop bit  
no parity

COM 4 :  
9600 baud  
8 data bits  
1 stop bit  
no parity

### 2.2 Software from v00.01.06

As from v00.01.06 there is an automatic baudrate detection system introduced. This means that the RTK GPS can detect the baudrate of the Septentrio board on both COM3 and COM4. Following baudrates are supported:

- 4800
- 9600
- 19200
- 38400
- 57600
- 115200
- 230400

The auto-baudrate detection needs SBF messages on COM3/COM4. So the user should activate SBF messages on COM3 and/or COM4. At startup the system will try to detect the current selected baudrate as soon as the baudrate is found the RTK GPS will run with the current baudrate. If the system is unable to detect the baudrate it will try to determine the baudrate every 10s. The user will see following details on the display:



```
AUTO Baudrate
Detection
Enable SBF Msgs!
```

When the baudrate is changed on the Septentrio board during normal operation the system will automatically adapt to the selected baudrate as long as the baudrate is in the supported range.

### 3. SBF messages

- **PVT in geodetic coordinates**  
PolaRx ID : 5904 (PVTGeodetic V1)  
AsteRx ID : 4007 (PVTGeodetic V2)  
Fields we use : NrSV, Mode, Latitude, Longitude, Altitude, BasestationID and COG
- **Dilution of precision**  
PolaRx ID : 5909 (DOP V1)  
AsteRx ID : 4001 (DOP V2)  
Fields we use : PDOP, HDOP and VDOP
- **PVT measurement residuals**  
PolaRx ID : 5910 (PVTResiduals V1)  
AsteRx ID : 4009 (PVTResiduals V2)  
Fields we use : NA
- **ENU relative position and velocity with respect to base(s)**  
PolaRx ID : 5950 (Baseline V1)  
AsteRx ID : 4028 (BaseVectorGeod V1)  
Fields we use : Reference ID, East, North and Up
- **End of PVT**  
PolaRx ID : 5921 (EndOfPVT V1)  
AsteRx ID : 5921 (EndOfPVT V1)  
Fields we use : NA
- **Attitude in Euler angles**  
PolaRx ID : 5938 (AttitudeEuler V1)  
AsteRx ID : 4070 (IntegratedAttEuler V1)  
Fields we use : NrSV, Mode, Heading, Pitch
- **End of attitude Euler**  
PolaRx ID : 5943 (EndOfAttitude V1)  
Fields we use : NA
- **Diff corrections basestation**  
PolaRx ID : 5949 (Basestation V1)  
AsteRx ID : 5949 (Basestation V1)  
Fields we use : BaseStationID, BaseType, Source
- **Diff corrections link quality**  
PolaRx ID : 5948 (BaseLink V1)  
AsteRx ID : 4090 (InputLink V1)  
Fields we use : CorrAvailable, AgeOfLastMsg, NrBytesReceived, NrBytesAccepted
- **Status of tracking for all receiver channels**  
PolaRx ID : 5912 (TrackingStatus V1)  
AsteRx ID : 4013 (ChannelStatus V1)  
Fields we use : N, RXChannel, SVID, AttitudeStatus, Status, Azimuth, Elevation, Health, ElevChange
- **Overall status information of the receiver**  
PolaRx ID : 5913 (ReceiverStatus V1)  
AsteRx ID : 4014 (ReceiverStatus V2)  
Fields we use : CPULoad, UpTime, RxStatus