**XML Example: Transmitting GNSS Data Over CAN Bus and recording in eMMC.**

In this example, we will see how we can configure a ReXgen data logger to transmit the GNSS positioning data over the CAN Bus and record the GNSS data in the internal storage.

Following GNSS Data will be transmitted via CAN 0 Bus and recorded in internal memory:

Latitude

Longitude

Altitude

Speed Over Ground

Ground Distance

Course Over Ground

Number Of Satellites

Quality

The below image shows how each element are linked in the XML file.



They are connected using Unique IDs (UID).

Default Settings:

CAN Baud Rate: 500 Kbps

GNSS Sampling Rate: 100ms

CAN ID For various signals:

0x12B – Altitude, GPS Speed

0x12C – Longitude, Latitude

0x12D – Ground Distance

0x12E – Number Of Satellites, Course

0x12F - Quality

Example DBC provided with XML.

Following parameters can be modified by editing the XML as required.

Modifying CAN Bus Channel:

Edit the value of the PhysicalNumber element in the XML file under the CAN interface block.

0 for CAN 0, 1 for CAN 1, 2 for CAN 2 and 3 for CAN 3

<CANINTERFACE UID="2">

<Type>CAN</Type>

<PhysicalNumber>0</PhysicalNumber>

<CANBusSpeed>500000</CANBusSpeed>

<CANFDBusSpeed>8000000</CANFDBusSpeed>

<CANFDNonISO>false</CANFDNonISO>

Modifying CAN Baud Rate:

Edit the value of the CANBusSpeed element in the XML file under the CAN interface block.

Value has to be specified in bps

<CANINTERFACE UID="2">

<Type>CAN</Type>

<PhysicalNumber>0</PhysicalNumber>

<CANBusSpeed>500000</CANBusSpeed>

<CANFDBusSpeed>8000000</CANFDBusSpeed>

<CANFDNonISO>false</CANFDNonISO>

Modifying GNSS Sampling Rate:

Edit the value of the SamplingRate element under the GNSSINTERFACE Block

Value has to be specified in milliseconds

<GNSSINTERFACE UID="3">

<PhysicalNumber>0</PhysicalNumber>

<SamplingRate>100</SamplingRate>

</GNSSINTERFACE>

Modifying the CAN Identifier for the messages:

Edit the values of MessageIdentStart and MessageIdentEnd Elements under the CANMESSAGE block for the message you wish to edit. Please note that the example DBC will be invalid after this change.

Value has to be entered in Decimal

<CANMESSAGE\_LIST>

<CANMESSAGE UID="4">

<MessageIdentStart>299</MessageIdentStart>

<MessageIdentEnd>299</MessageIdentEnd>

<Direction>OutputPeriodic</Direction>

<DLC>8</DLC>

<IsExtended>false</IsExtended>

Modifying the CAN Message transmission period:

Edit the values of Period Elements under the CANMESSAGE block for the message you wish to edit.

Value has to be entered in milliseconds

<CANMESSAGE\_LIST>

<CANMESSAGE UID="4">

<MessageIdentStart>299</MessageIdentStart>

<MessageIdentEnd>299</MessageIdentEnd>

<Direction>OutputPeriodic</Direction>

<DLC>8</DLC>

<IsExtended>false</IsExtended>

<InterfaceUID>4</InterfaceUID>

<Period>100</Period>

Image URL: https://itltdgithub.s3.ap-south-1.amazonaws.com/gnss2cansd.png