Copyright(C) 2021, Joybien Technologies http://www.joybien.com

PROTOCOL for V20_TRS_KEY_data Project V2015B01

Based on CCS831_IWR6843_ISK_ES2_SDK3303_I401_TRS (Traffic Roadway Sensing)
Firmware: V2015B
V2015B01 2021.05.05 1. basic

Abstract:

This document dedicated description for TRS (Traffic Roadway Sensing) KEY Data Protocol based on mmWave Platform and UART baud as 912600/8/n/1

Description:

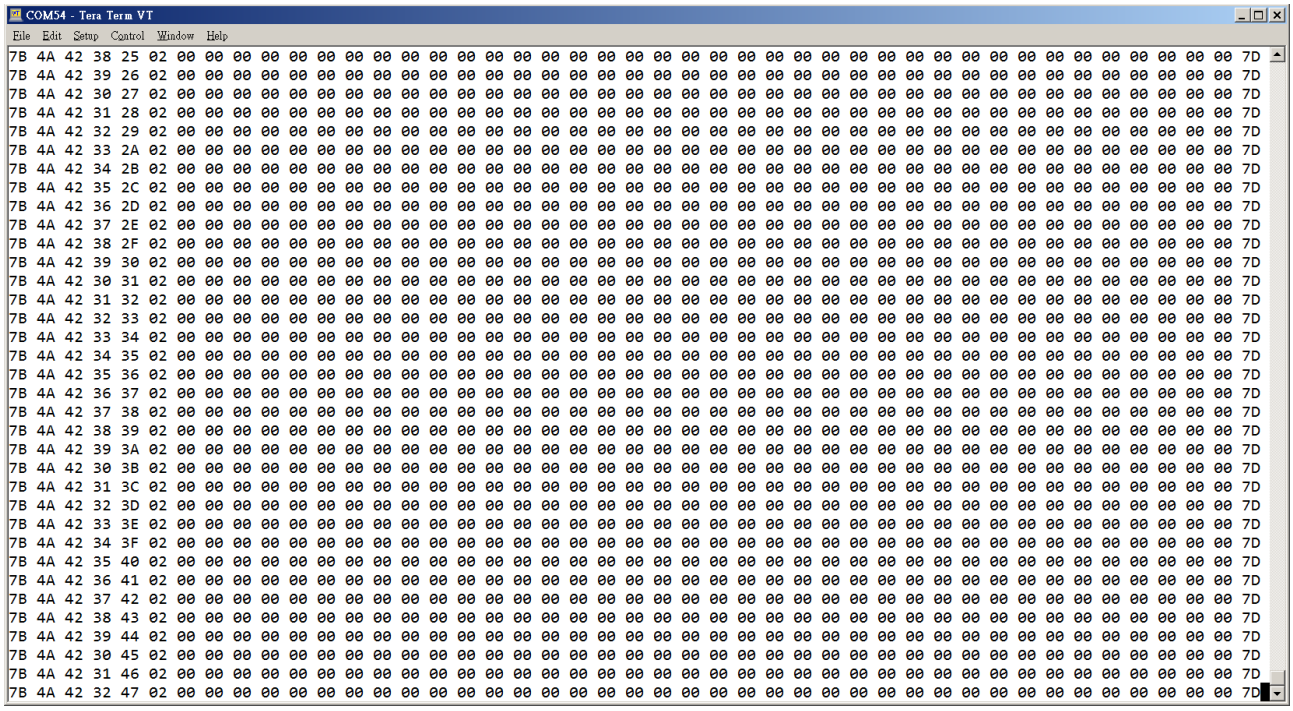
The Key Data Protocol structure definition as following,
<Data Structure> := H f F I i X Y R D A P C T (more detail see Appendix A1)

Appendix:

(A1) Protocol: total 45 bytes per record

```
//* PROTOCOL for KeyData syntax :=  H f F I i X Y R D A P C T
//* ---------------------------------------------------------------------------------------
//* Item    Abbr    Name        Location        Length      Type    Description
//* ---------------------------------------------------------------------------------------
//* 1       H       Header      0  1  2         3           U8      Header; “{JB” or “\x7B\x4A\x42”
//* 2       f       flowNum     3               1           U8      JB flow number; or '0'..'9' readable
//* 3       F       FrameNum    4  5  6  7      4           U32     Frame Number; unsigned long
//* 4       I       IndexMax    8  9  10 11     4           F32     Max Targets Number; float
//* 5       i       index       12 13 14 15     4           F32     Target Index; float
//* 6       X       X           16 17 18 19     4           F32     X position; unit: Meter
//* 7       Y       Y           20 21 22 23     4           F32     Y position; unit: Meter
//* 8       R       Range       24 25 26 27     4           F32     Range; unit: Meter
//* 9       D       Doppler     28 29 30 31     4           F32     Doppler; unit: Meter / Sec
//* 10      A       Area        32 33 34 35     4           F32     Area; unit: Meter ^ 2
//* 11      P       PointNum    36 37 38 39     4           F32     PointNumber per Target; float
//* 12      C       Cluster_ID  40 41 42 43     4           F32     Cluster ID; float
//* 13      T       Tail        44              1           U8      Tail; “}” or “\x7D”
//* ---------------------------------------------------------------------------------------
//* Notes:
//*     1. flowNum := (JB_FlowNum % 10) + '0';  for readable '0'..'9'
//*     2. FrameNum based on type of unsigned long, by LITTLE ENDIAN format
//*     3. Send out Key Data via TX1, baud rate 921600/8/n/1
//* ---------------------------------------------------------------------------------------
```

(A2) Example: logged KEY data from module via Tx1 Baud 921600/8/n/1 by TeraTerm Tool v4.104 in real case




```
7B 4A 42 38 25 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 39 26 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 30 27 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 31 28 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 32 29 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 33 2A 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 34 2B 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 35 2C 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 36 2D 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 37 2E 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 38 2F 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 39 30 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 30 31 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 31 32 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 32 33 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 33 34 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 34 35 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 35 36 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 36 37 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 37 38 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 38 39 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 39 3A 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 30 3B 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 31 3C 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 32 3D 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 33 3E 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 34 3F 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 35 40 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 36 41 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 37 42 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 38 43 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 39 44 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 30 45 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 31 46 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
7B 4A 42 32 47 02 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 7D
```