



Innovation, Quality and Service

AltaCore™ and **AltaAPI™**

Quick Reference Guide

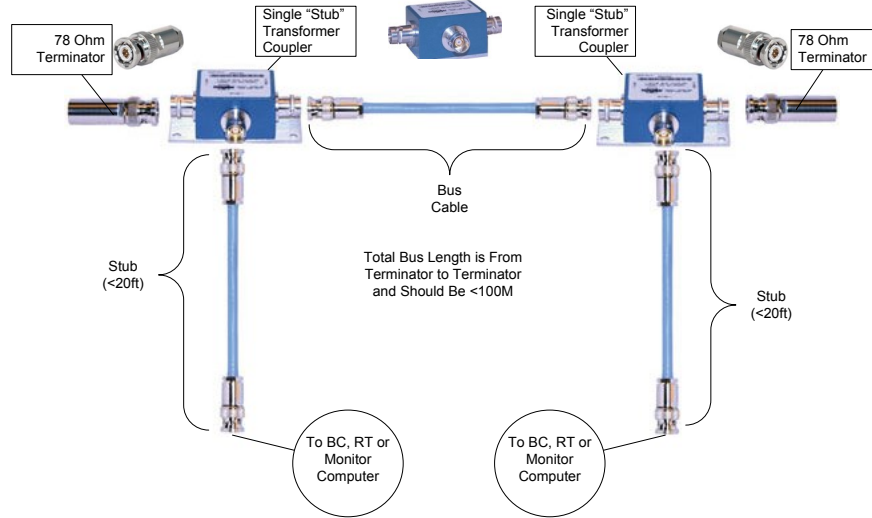
**MIL-STD-1553 & Protocol Engine
Data Structures**

and

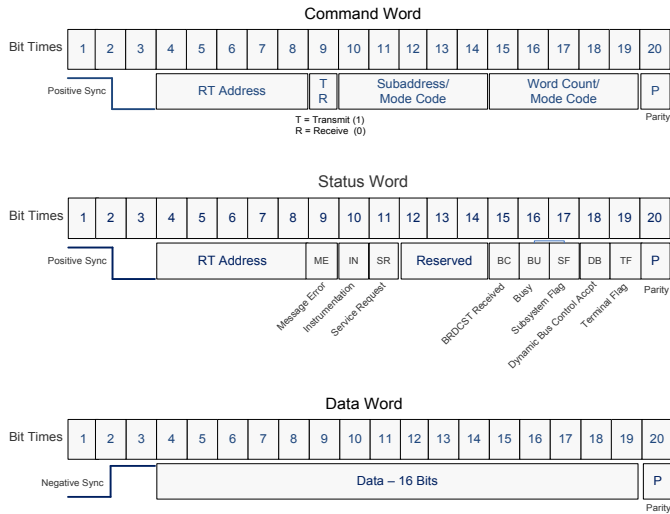
API Operational Flow

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MIL-STD-1553 Transformer-Coupled Bus Connections



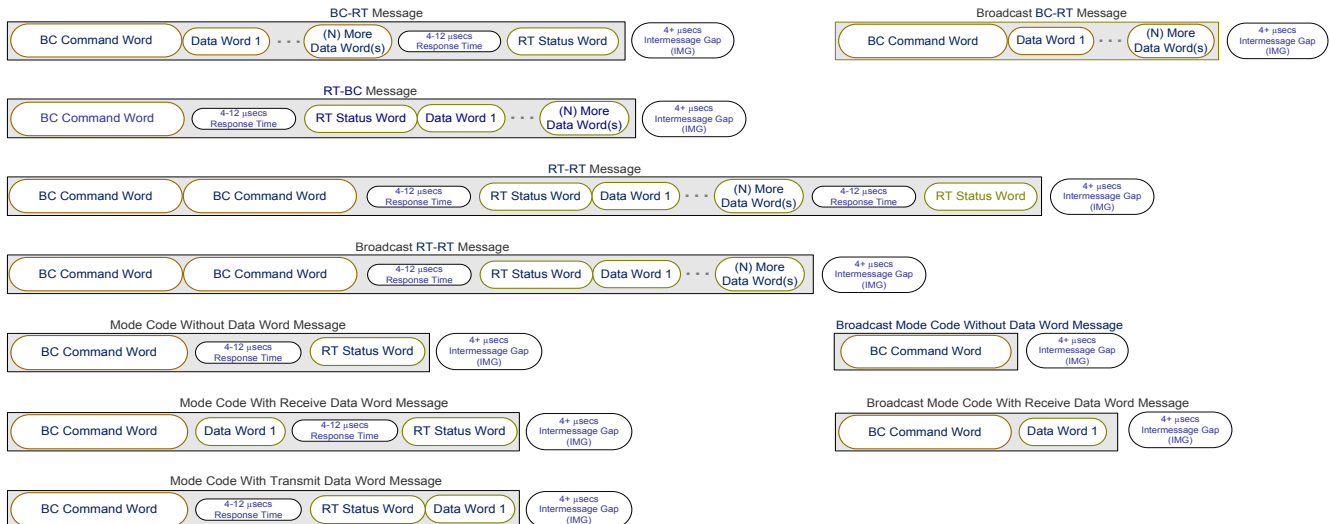
MIL-STD-1553B Words and Mode Codes



MIL-STD-1553B Assigned Mode Codes

T/R Bit	Mode Code	Function	Assoc. Data Word	Broadcast Command Allowed
1	0000 (0)	Dynamic Bus Control	No	No
1	0001 (1)	Synchronize (without Data)	No	Yes
1	0010 (2)	Transmit Status Word	No	No
1	0011 (3)	Initiate Self-Test	No	Yes
1	00100 (4)	Transmitter Shutdown	No	Yes
1	00101 (5)	Override Transmitter Shutdown	No	Yes
1	00110 (6)	Inhibit Terminal Flag Bit	No	Yes
1	00111 (7)	Override Inhibit Terminal Flag Bit	No	Yes
1	01000 (8)	Reset Remote Terminal	No	Yes
1	01001 (9)	Reserved	No	TBD
.
1	01111 (15)	Reserved	No	TBD
1	10000 (16)	Transmit Vector Word	Yes	No
0	10001 (17)	Synchronize (with Data)	Yes	Yes
1	10010 (18)	Transmit Last Command	Yes	No
1	10011 (19)	Transmit BIT Word	Yes	No
0	10100 (20)	Selected Transmitter Shutdown	Yes	Yes
0	10101 (21)	Override Selected Transmitter Shutdown	Yes	Yes
0 or 1	10110 (22)	Reserved	Yes	TBD
.
0 or 1	11111 (31)	Reserved	Yes	TBD

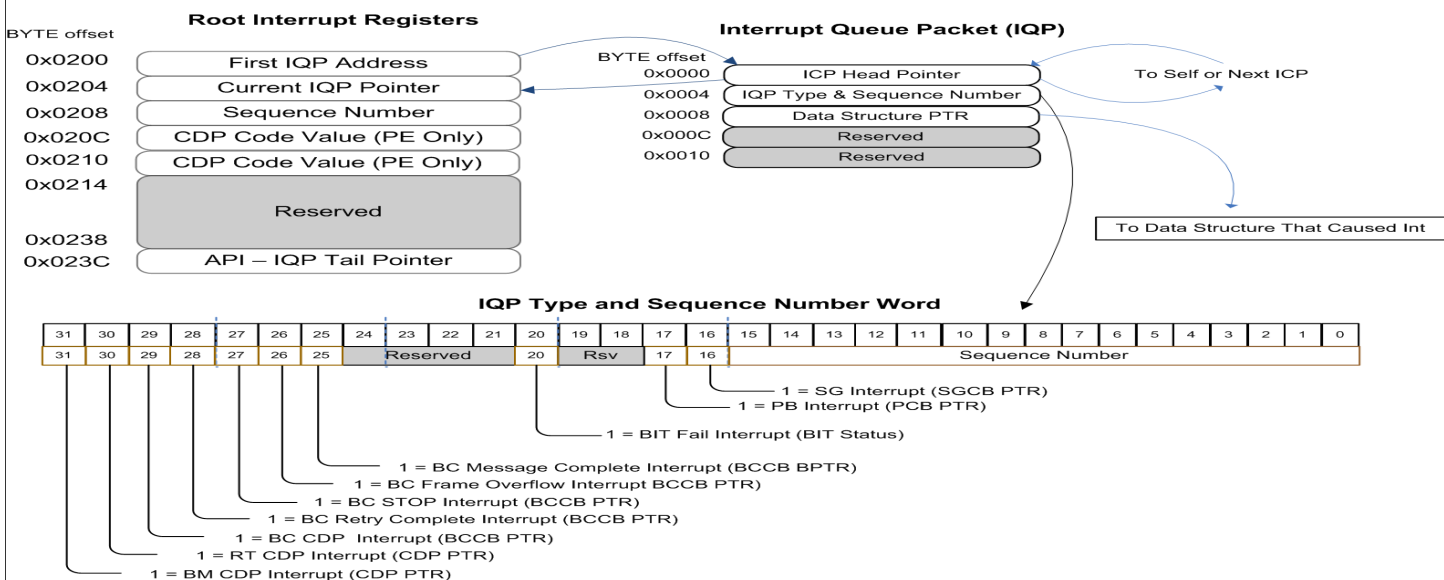
MIL-STD-1553B Standard Message Formats



1553 Root PE Registers



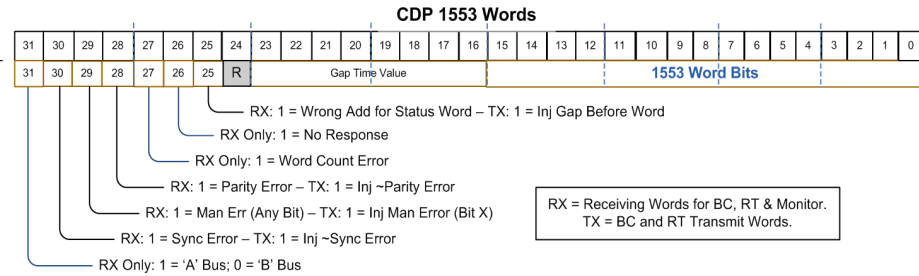
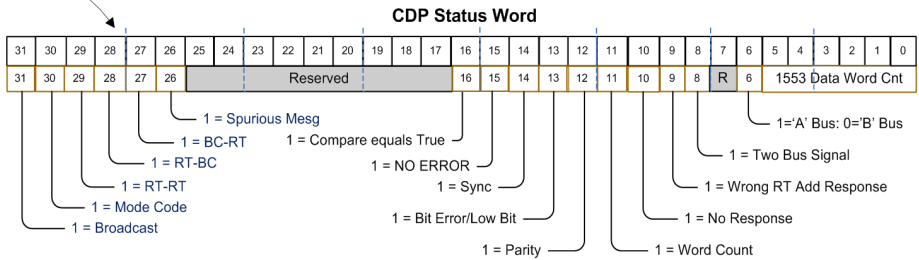
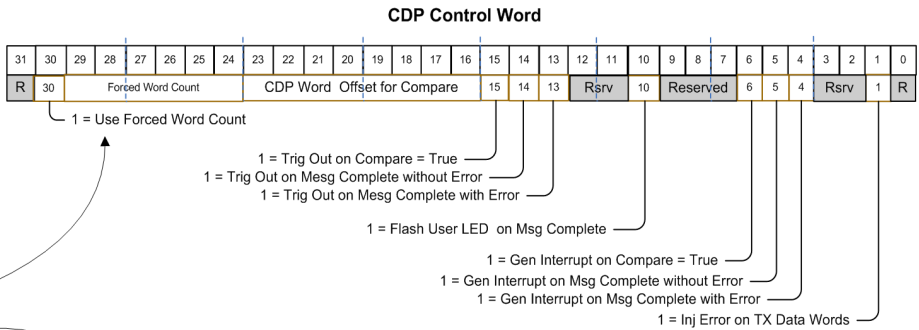
1553 Interrupt Queue Data Structures



Common Data Packet (CDP)

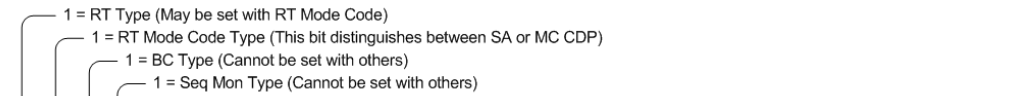
Common Data Packet (CDP)
49 Words/196 Bytes Total for CDP

0x0000	CDP Head Pointer
0x0004	(PE Only: Cur Offset/BM Seq Num)
0x0008	API Info Word
0x000C	Reserved
0x0010	Reserved
0x0014	Mask Value
0x0018	Mask Compare Value
0x001C	CDP Control Word
0x0020	CDP Status Word
0x0024	Time Tag High
0x0028	Time Tag Low
0x002C	Intermessage Gap
0x0030	Reserved/Intvl Timer
0x0034	CMD1 Info : Command Word 1
0x0038	CMD2 Info: Command Word 2
0x003C	STS1 Info: Status Word 1
0x0040	STS2 Info: Status Word 2
0x0044	DATA1 Info: Data Word 1
0x0048	DATA2 Info: Data Word 2
...	...
0x00C0	DATA32 Info: Data Word 32

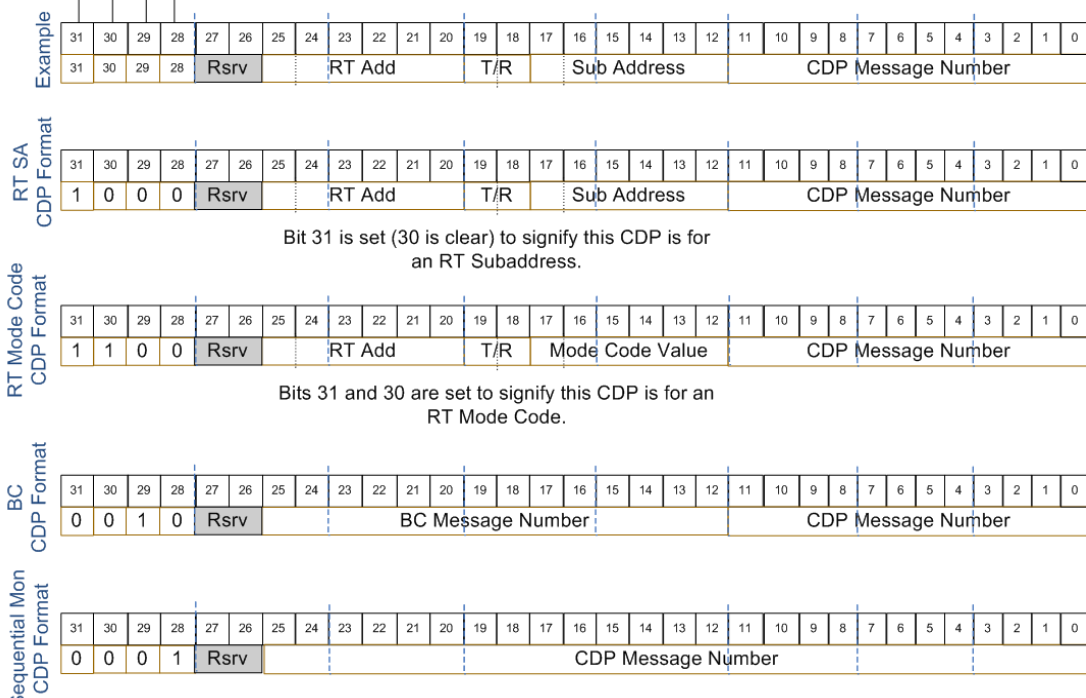


RX = Receiving Words for BC, RT & Monitor.
TX = BC and RT Transmit Words.

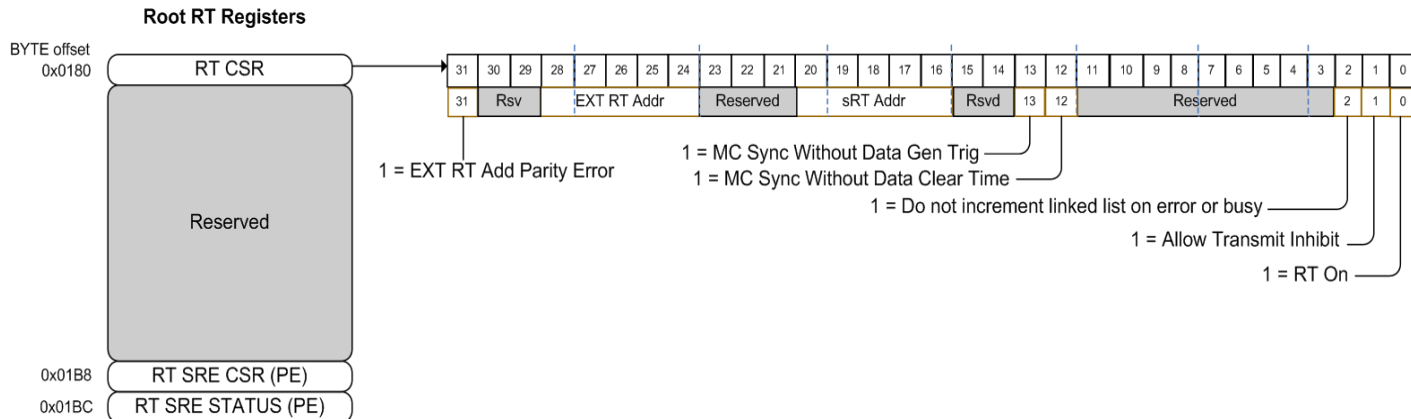
CDP/Interrupt API Info Word Format



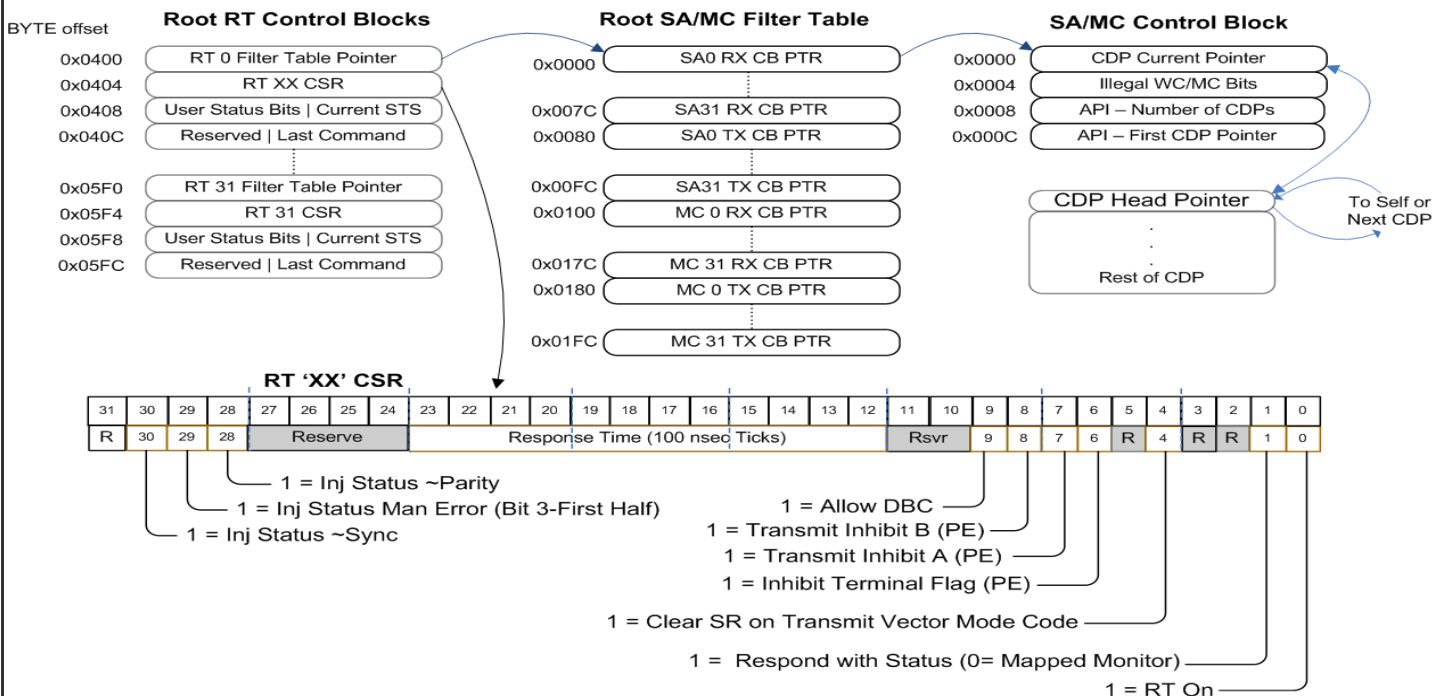
CDP API Info Words



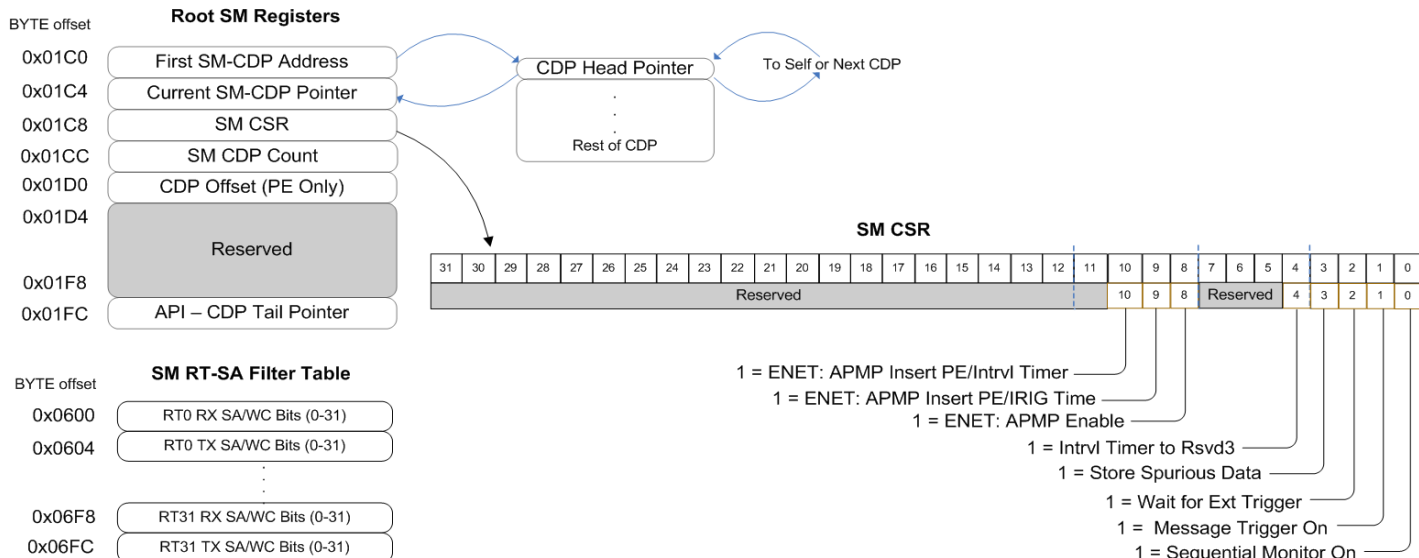
Root 1553 RT Registers



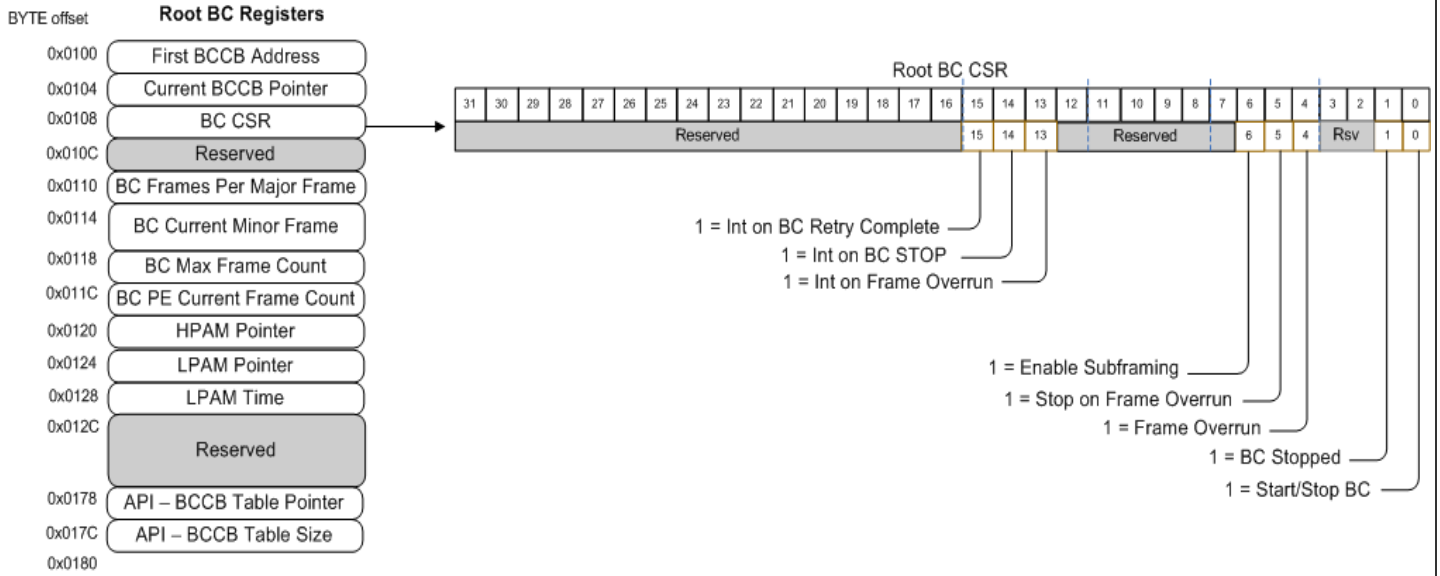
1553 RT Data Structures



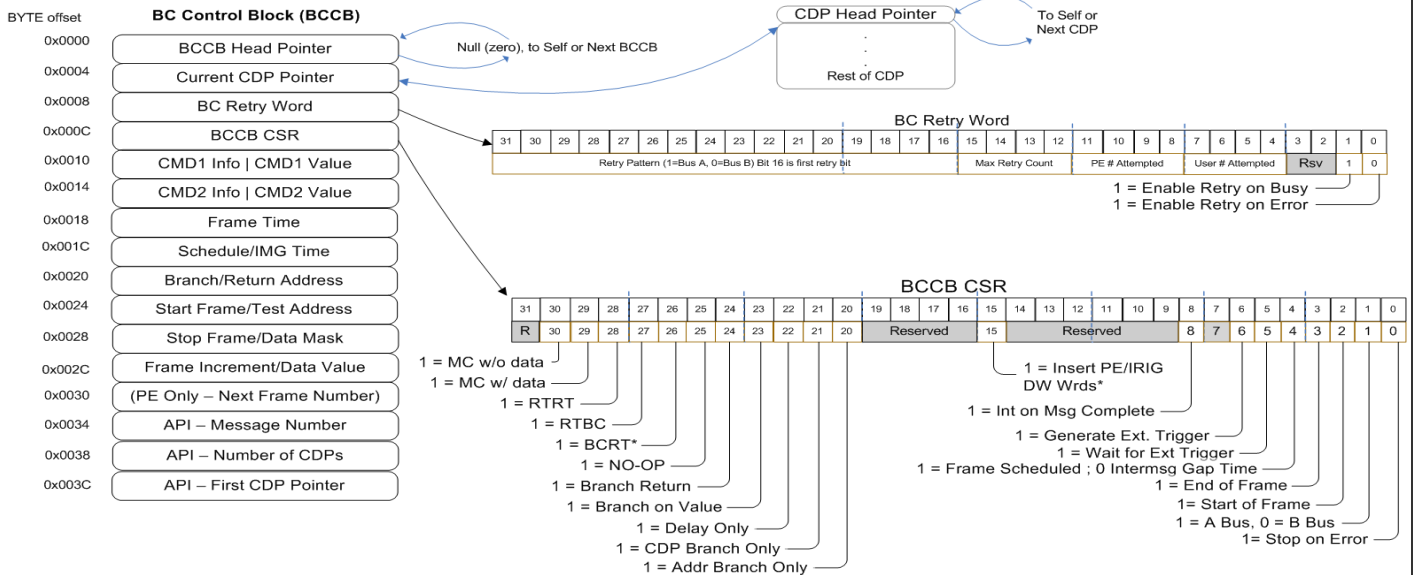
1553 Sequential Monitor (BM) Data Structures



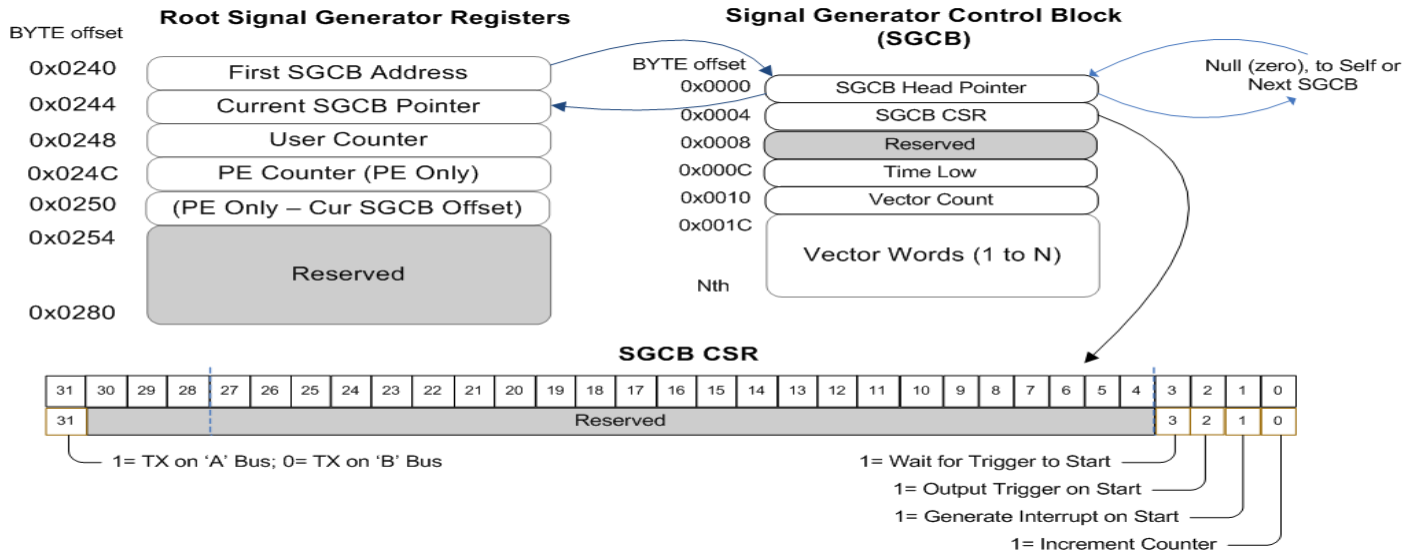
AltaCore 1553 Root BC Registers



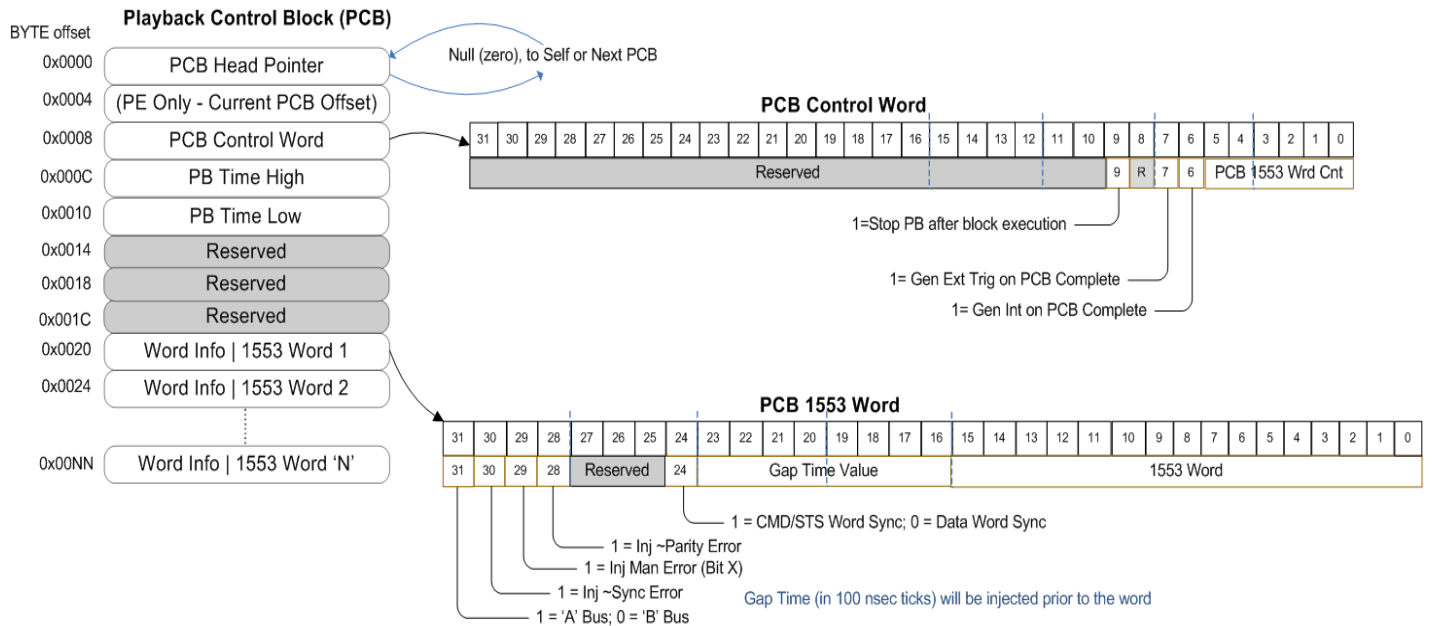
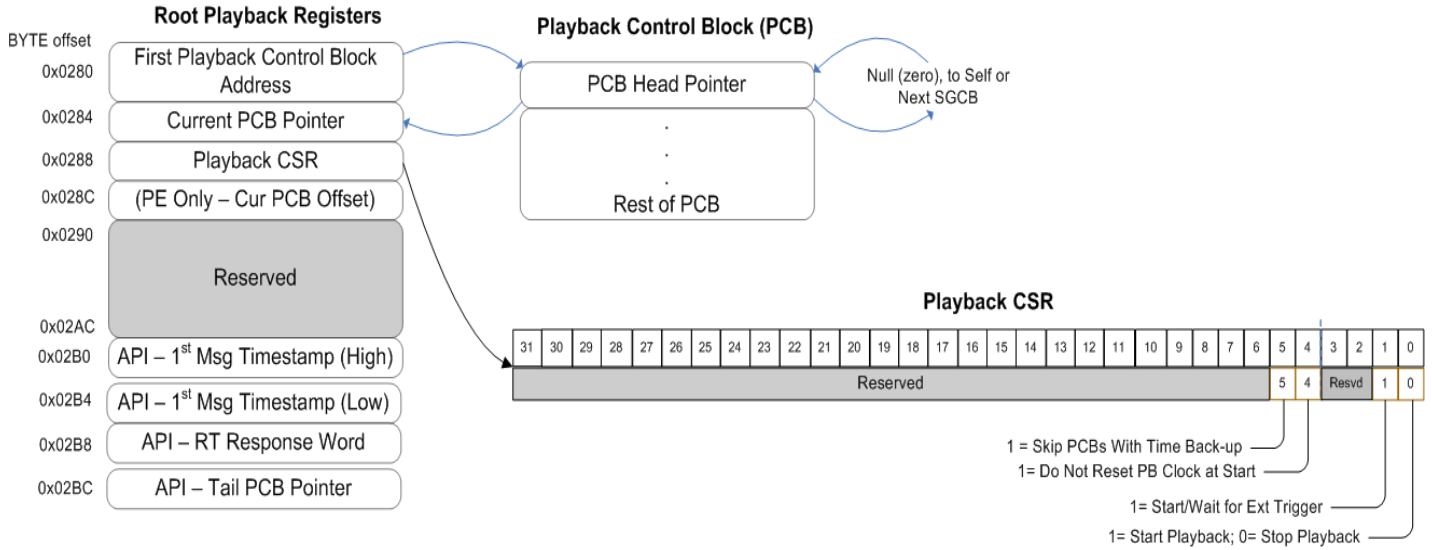
1553 BC Control Block (BCCB)



AltaCore 1553 Signal Generator Data Structures



1553 Playback Data Structures

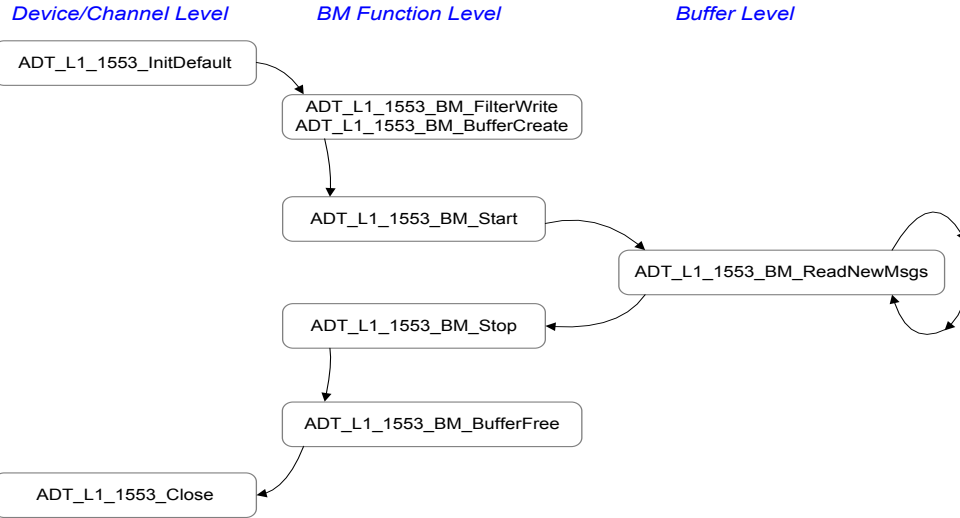


Key AltaCore Features

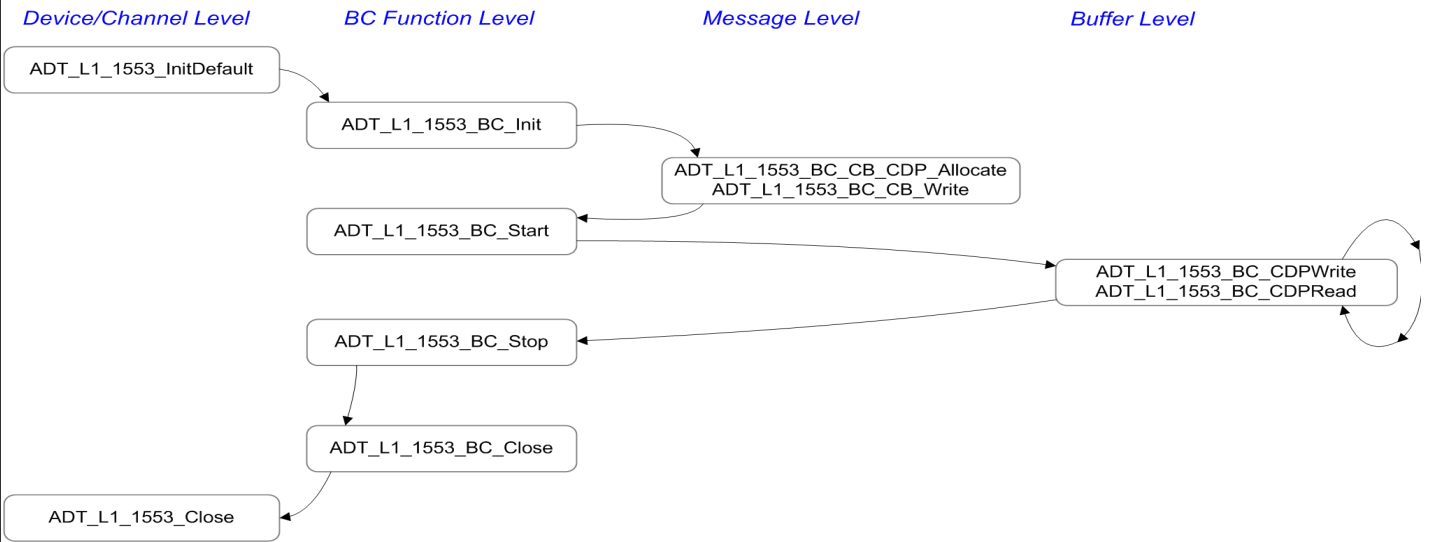
- **General**
 - Advanced BIT Functions—A/D on PCI
 - Temperature Sensors
 - Most Major Backplanes—IP Cores
- **The Best BC Features**
 - Variable Framing, SubFraming, Message Scheduling, Retries, Aperiodic High and Low Priority
 - Detailed Error Detection and Injection
- **The Best RT Features**
 - 31 & 32 RT Functions
 - 1553A, MIL-STD-1760, Link-16
- **The Only Standard Product to Execute and Pass SAE AS4111 Validation Protocol Test Plans**
- **Sequential and Map Monitor—64-bit Time Tags**
- **Hardware Playback—Highly Accurate Reproduction**
- **Industry First Signal Generator - Advanced Testing**
- **Advanced API, Analyzer and Validation Software**
- **Windows, Linux, ANSI C, RTOS, Windows .Net 2.0 Support (Industry First)**

5 Year Limited Warranty!! - Best in the Industry

AltaAPI Operational Flow – 1553 Bus Monitor



AltaAPI Operational Flow – 1553 Bus Controller



AltaAPI Operational Flow – 1553 Remote Terminal

