

# **Alta**<sup>dt</sup>

data technologies

*Innovation, Quality and Service*

**AltaCore™** and **AltaAPI™**

## **Quick Reference Guide**

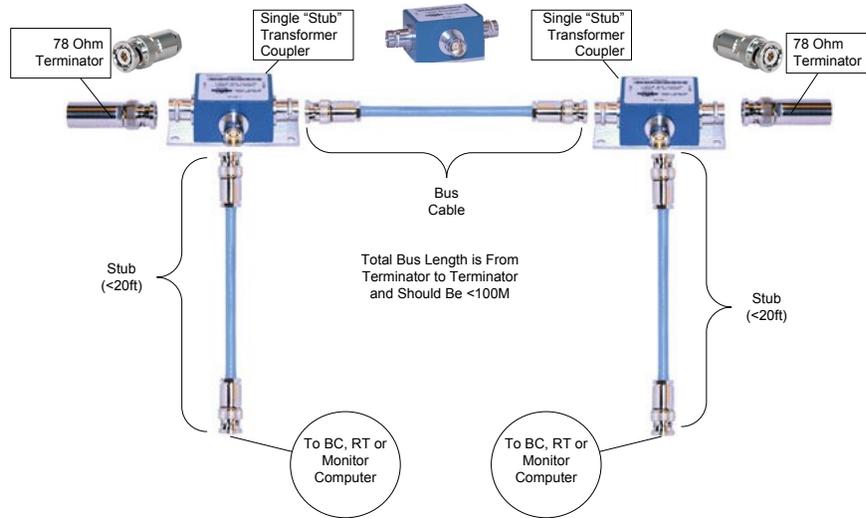
### **MIL-STD-1553 & Protocol Engine Data Structures**

and

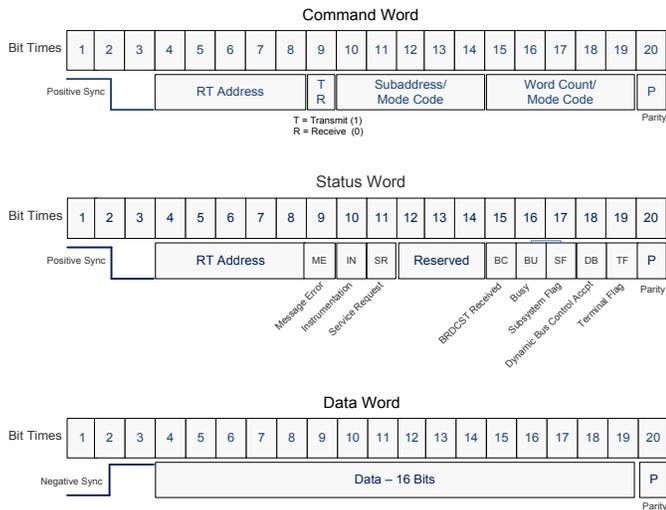
### **API Operational Flow**

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### MIL-STD-1553 Transformer-Coupled Bus Connections



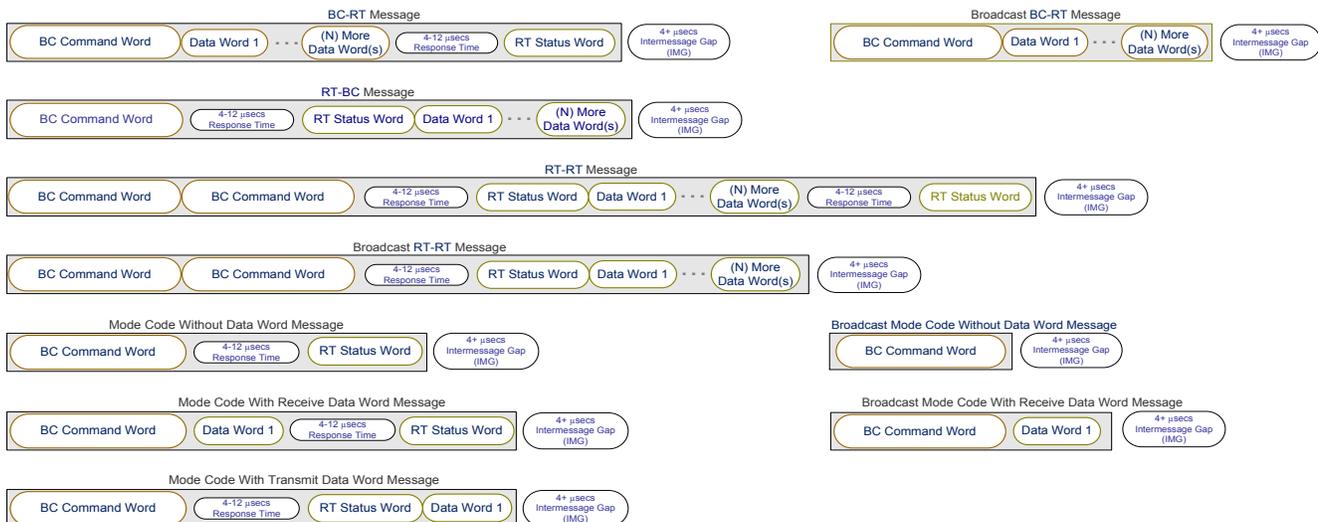
### MIL-STD-1553B Words and Mode Codes



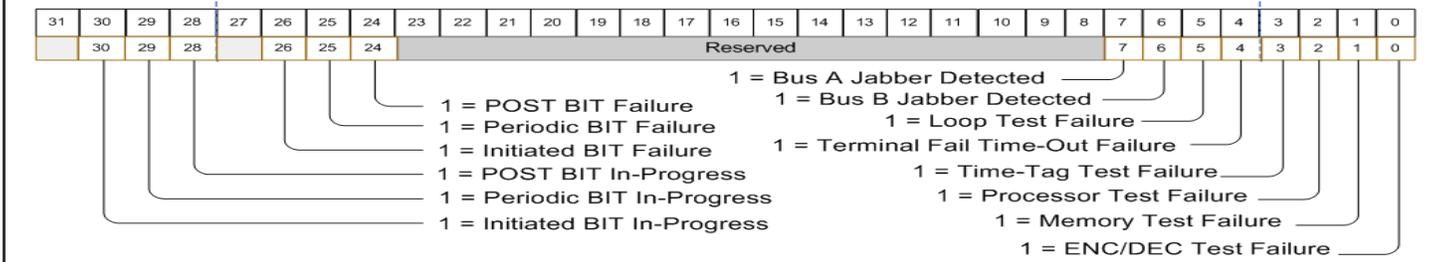
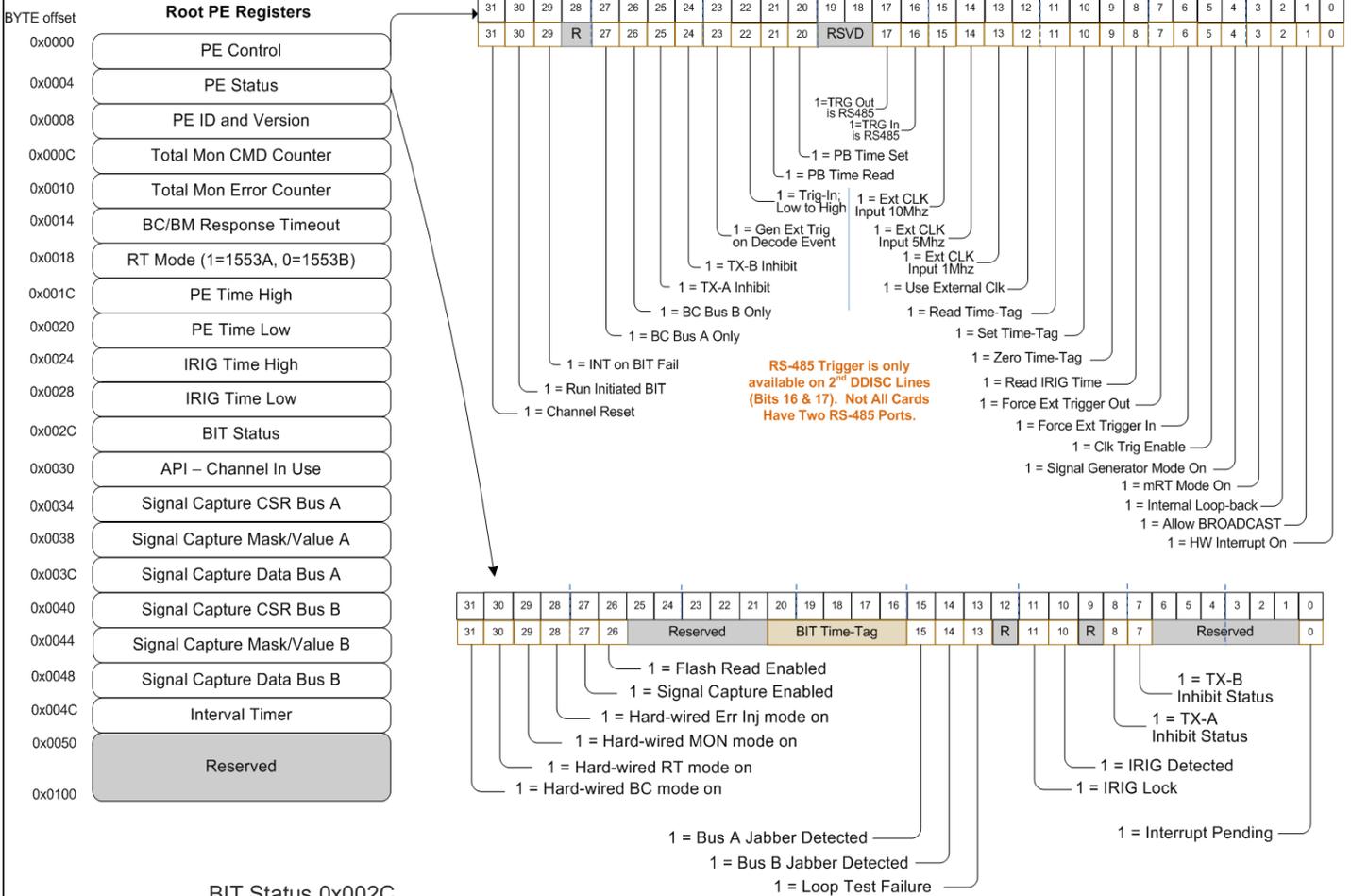
MIL-STD-1553B Assigned Mode Codes

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	00010 (2)	Transmit Status Word	No	No
1	00011 (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

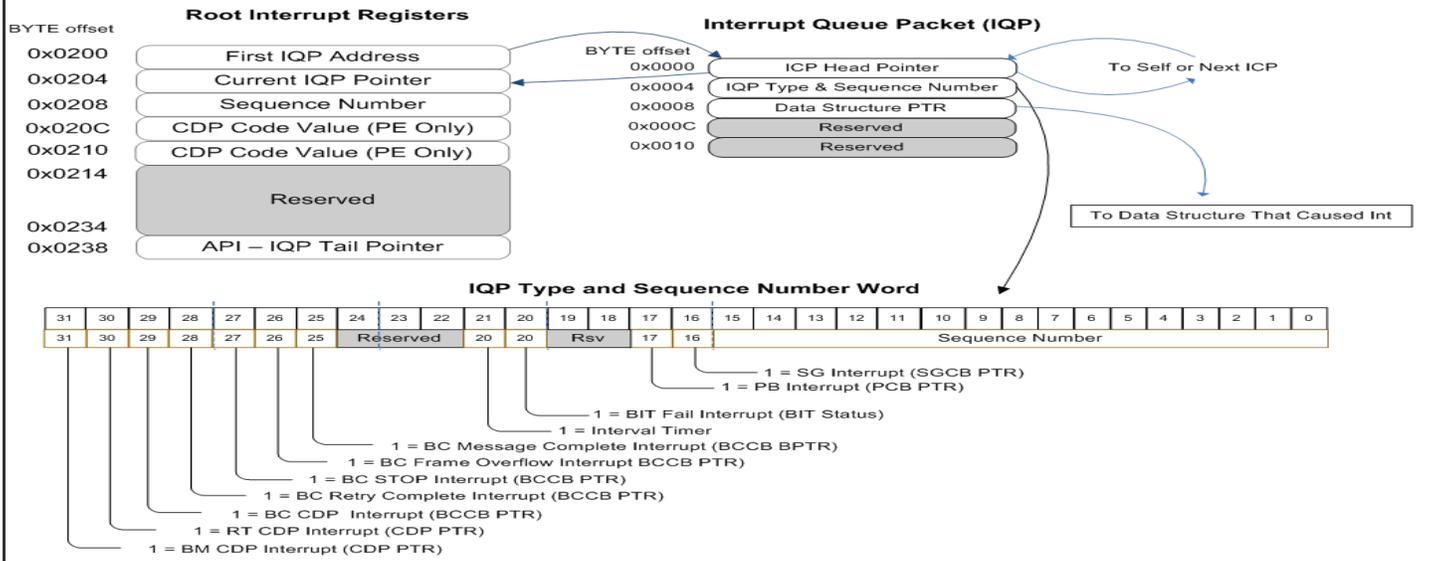
### MIL-STD-1553B Standard Message Formats



### 1553 Root PE Registers



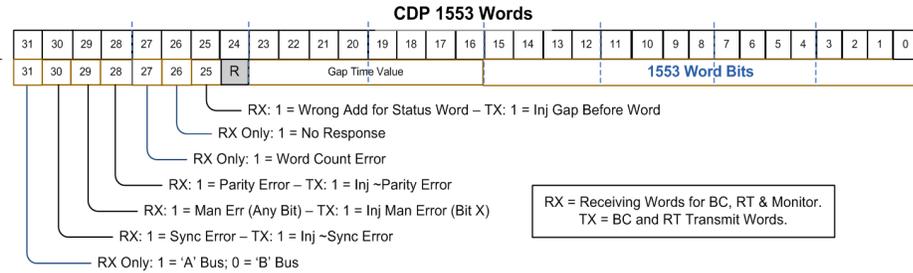
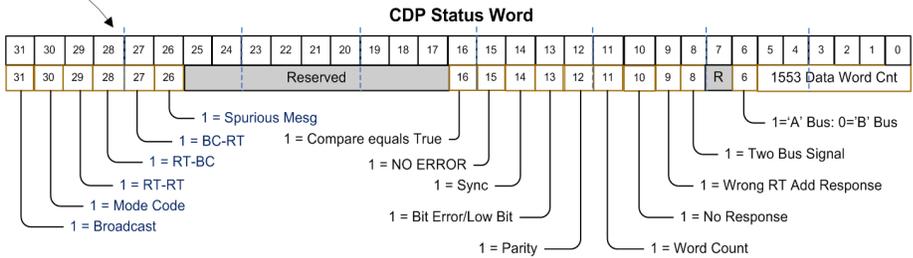
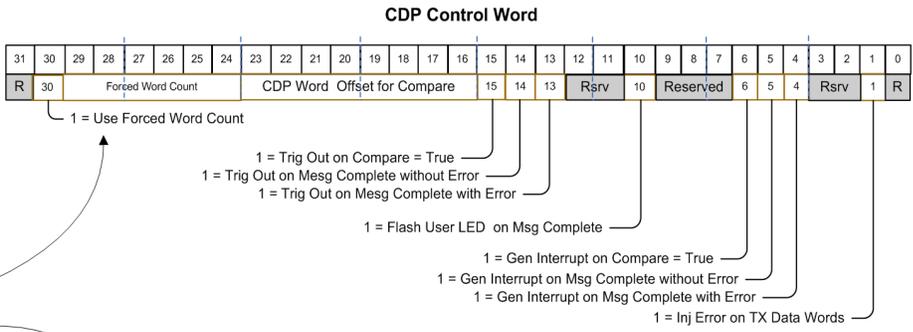
### 1553 Interrupt Queue Data Structures



# Common Data Packet (CDP)

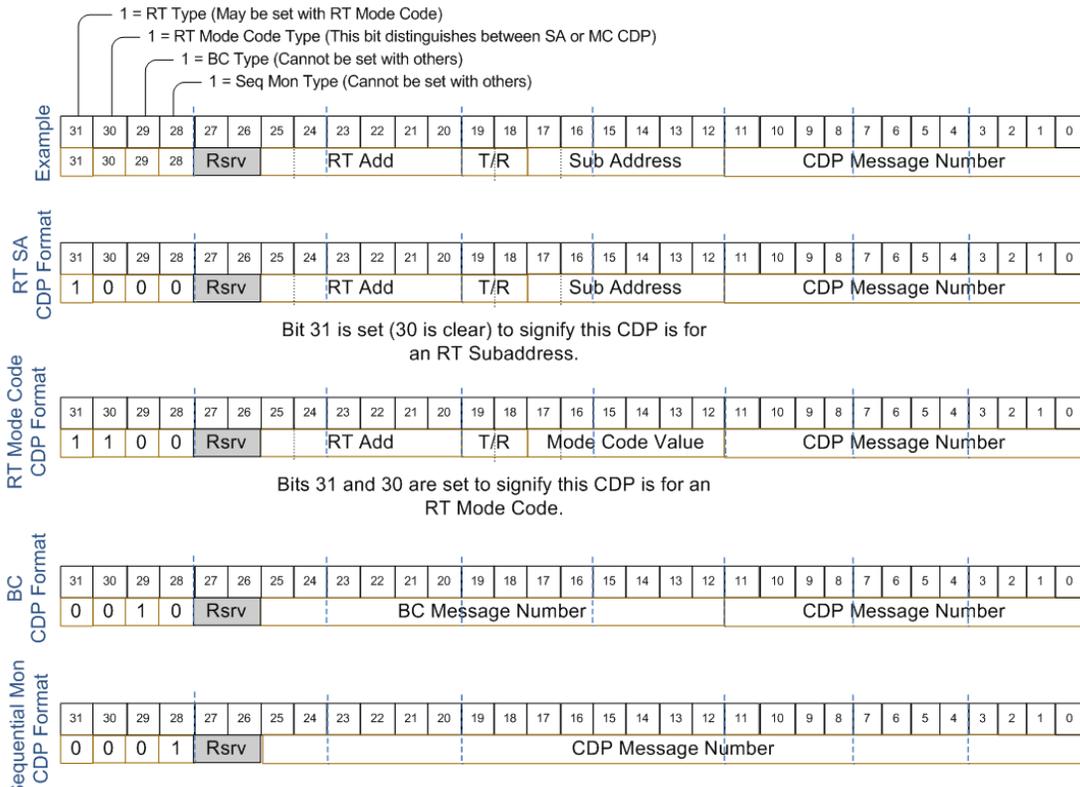
**Common Data Packet (CDP)**  
49 Words/196 Bytes Total for CDP

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	<b>CDP Control Word</b>
0x0020	<b>CDP Status Word</b>
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



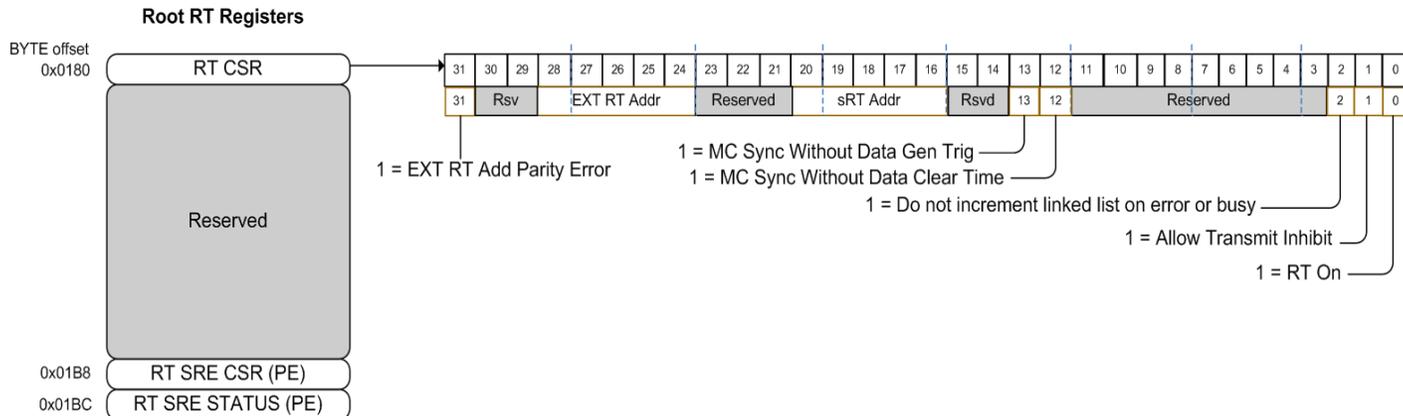
RX = Receiving Words for BC, RT & Monitor.  
TX = BC and RT Transmit Words.

**CDP/Interrupt API Info Word Format**

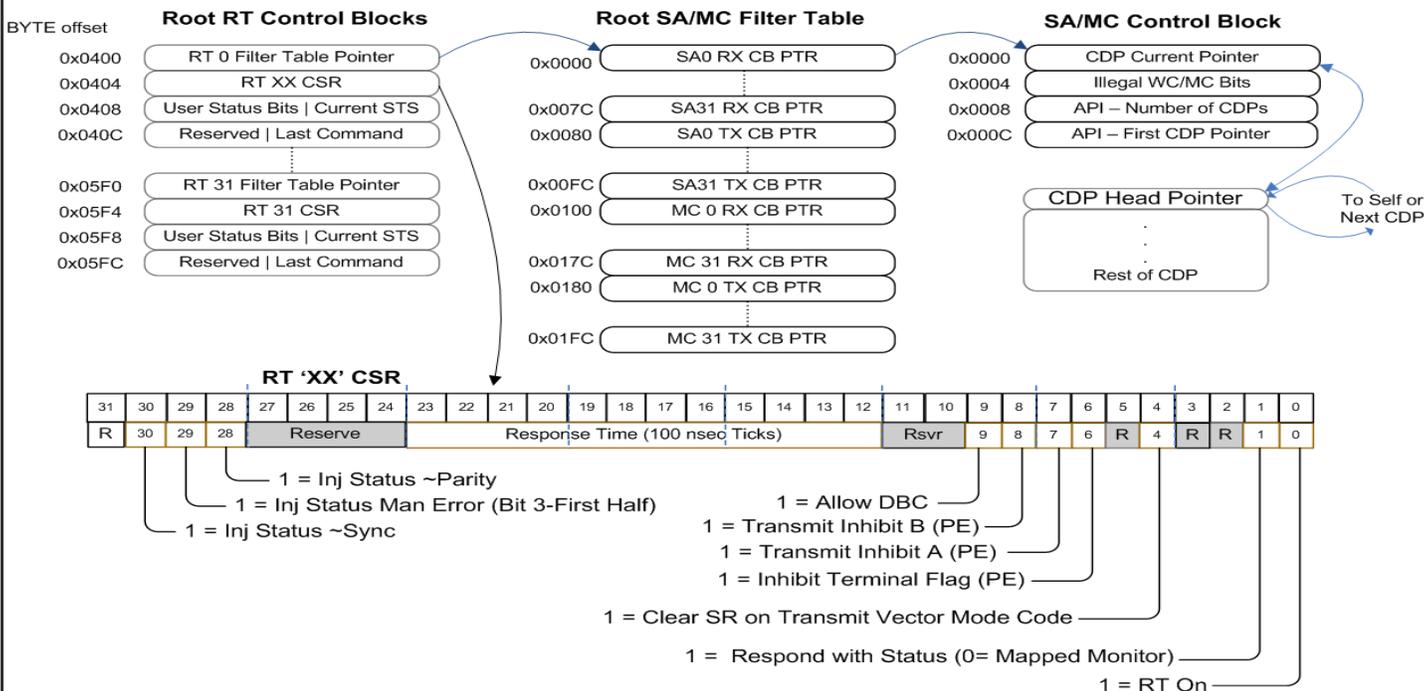


CDP API Info Words

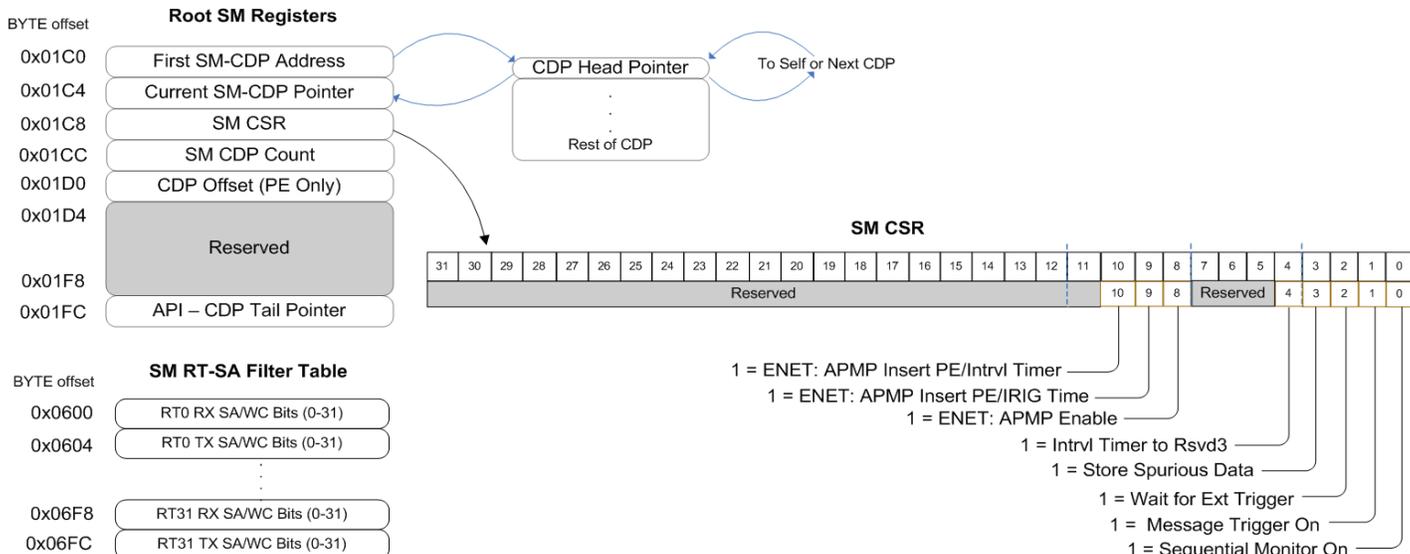
### Root 1553 RT Registers



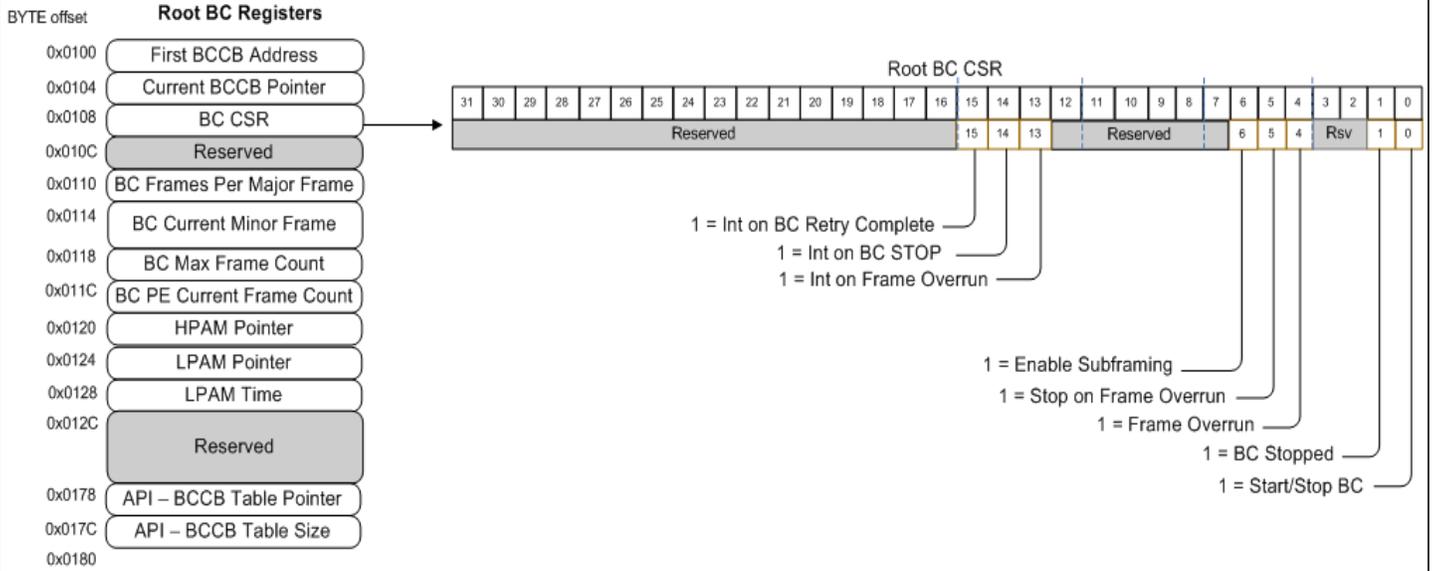
### 1553 RT Data Structures



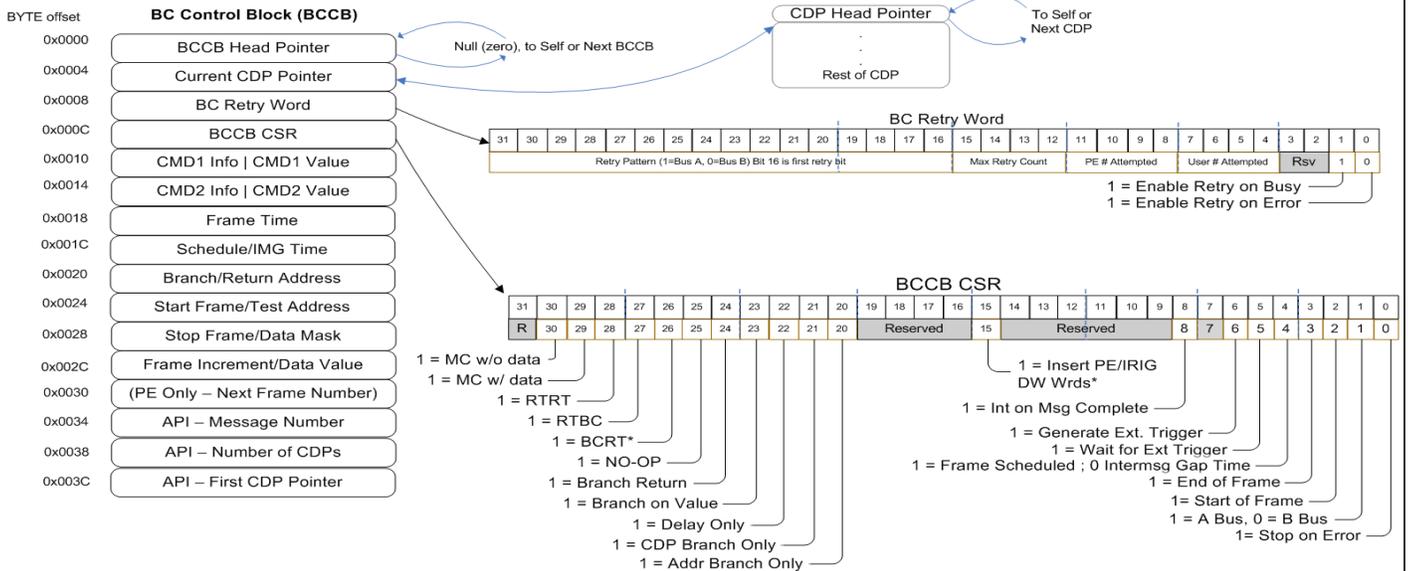
### 1553 Sequential Monitor (BM) Data Structures



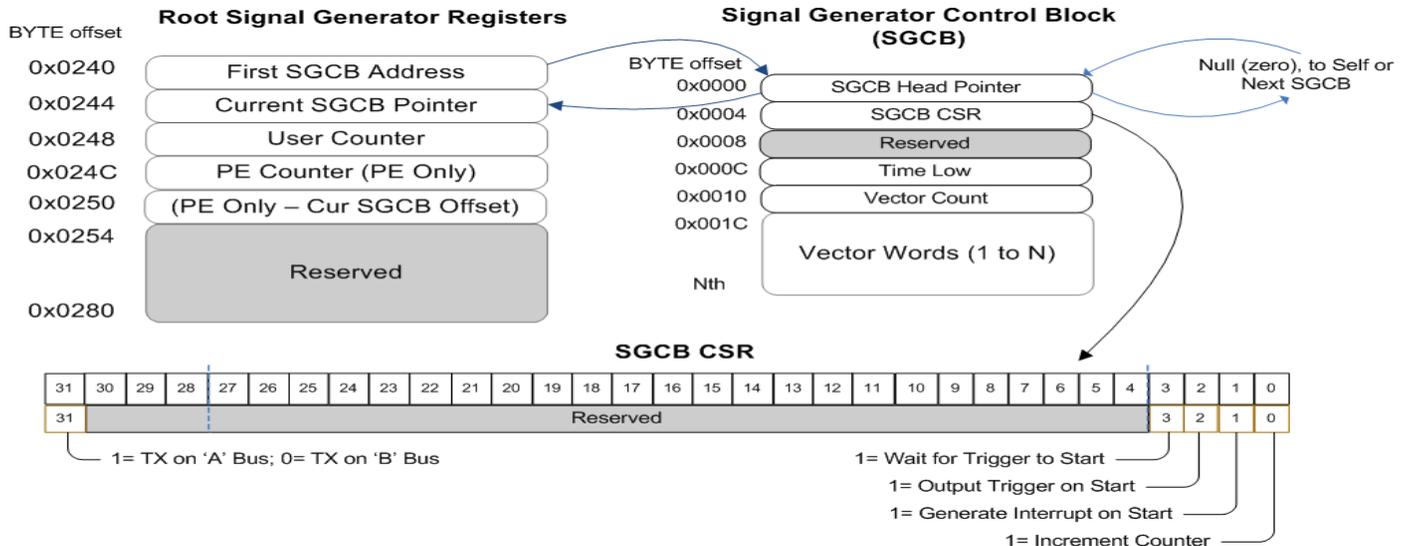
AltaCore 1553 Root BC Registers



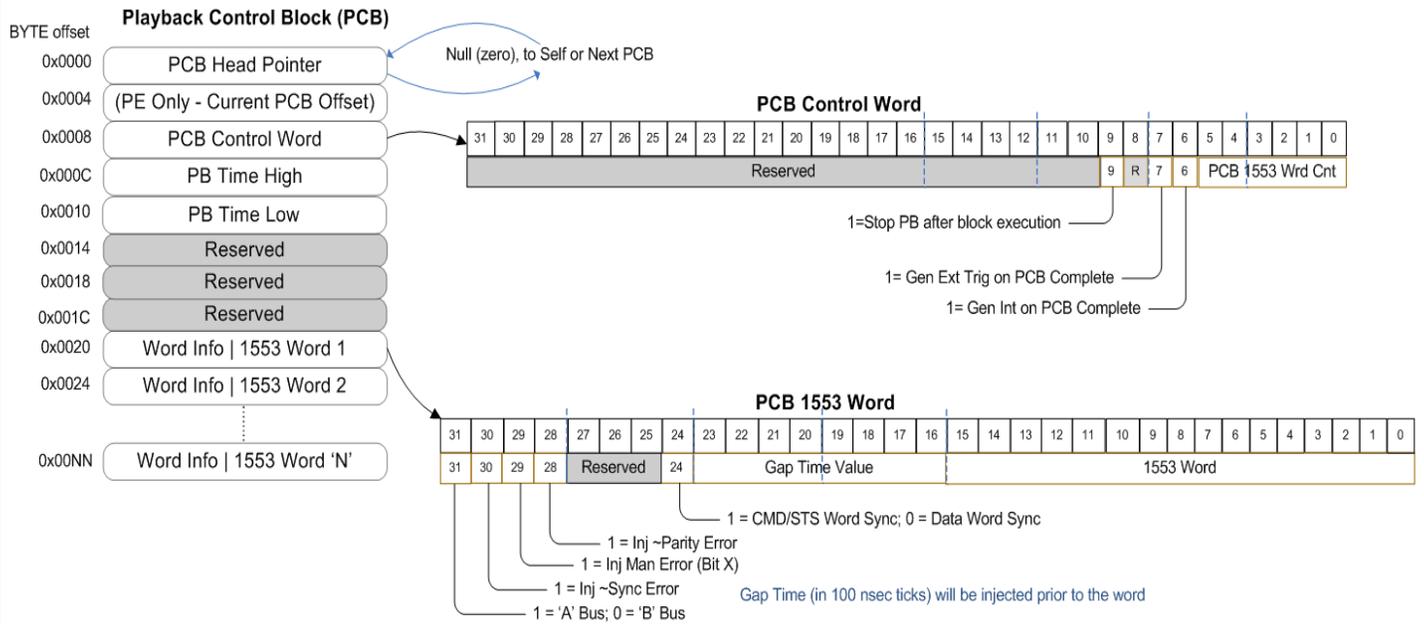
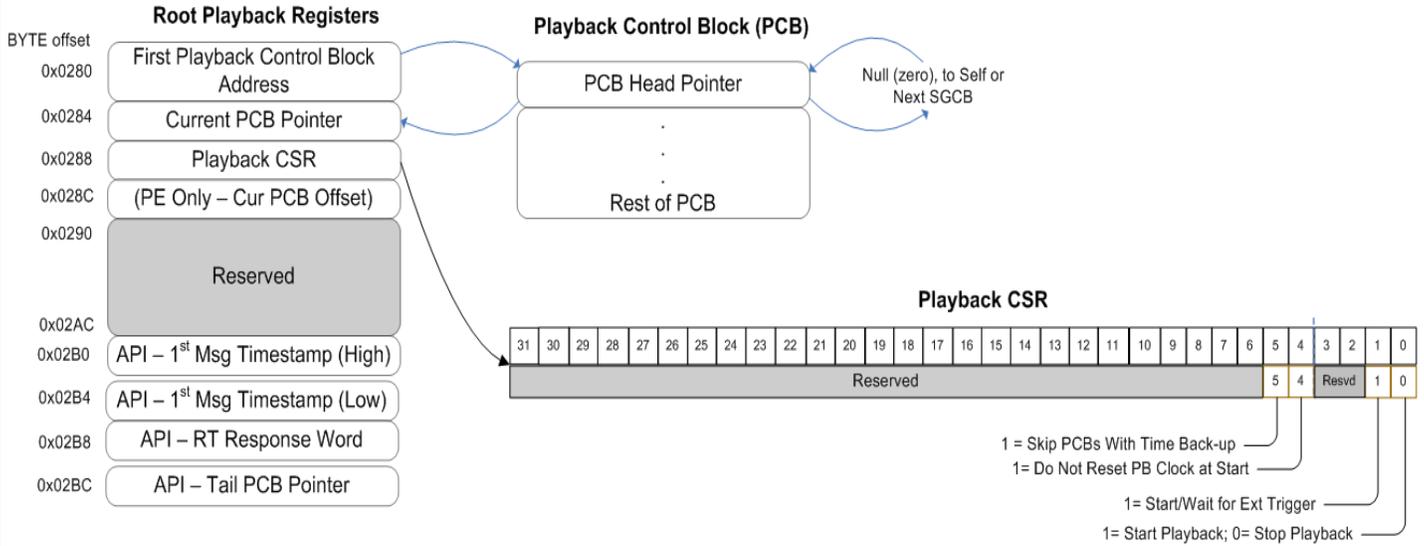
1553 BC Control Block (BCCB)



AltaCore 1553 Signal Generator Data Structures



# 1553 Playback Data Structures

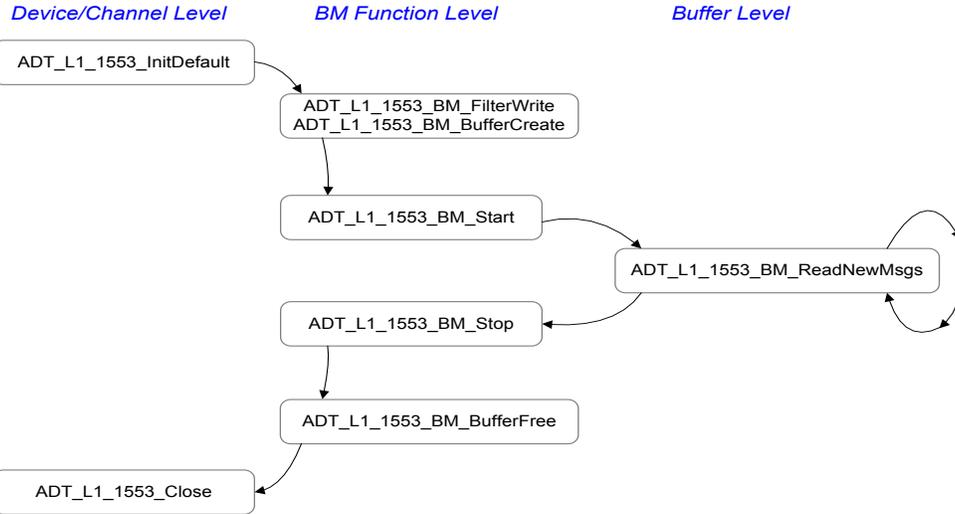


## Key AltaCore Features

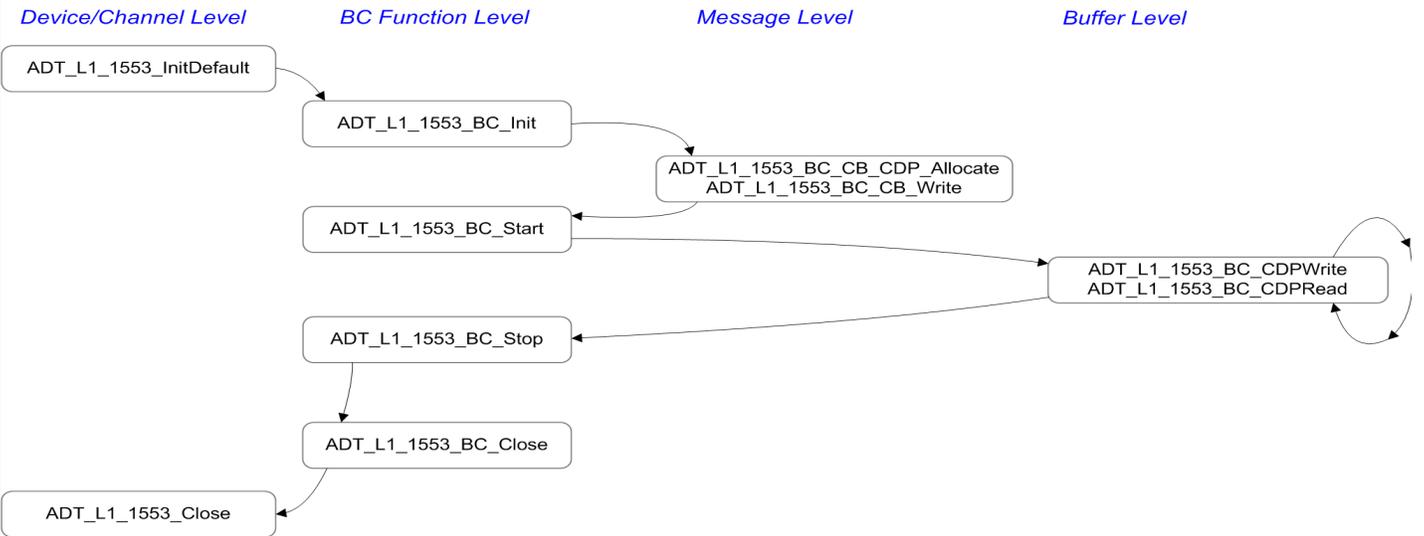
- **General**
  - Advanced BIT Functions—A/D on PCI
  - Temperature Sensors
  - Most Major Backplanes—IP Cores
- **The Best BC Features**
  - Variable Framing, SubFraming, Message Scheduling, Retries, Aperiodic High and Low Priority
  - Detailed Error Detection and Injection
- **The Best RT Features**
  - 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

