

## **SR192A Instrument Driver History**

The purpose of this document is to describe the SR192A instrument driver history and describe any effects each release has on previous releases.

It is Talon Instruments goal to provide hardware and software that is 100% operational, however it is sometimes required to correct “undocumented features” that occasionally surface. In addition the modular concept of the SR192A requires that the firmware be updated every time a new module is developed in order for the system to initialize and program it.

### **Revision History**

The following text will describe each revision by describing the new features added in the release and the “bugs” corrected from the previous release.

#### **1.06 Released 12/11/01**

Initial customer release of the SR192A Instrument Driver.

#### **1.07 Released 03/15/02**

##### **Code fixes**

1. Fixed “setTestParameters” function setting and clearing timeout logic.
2. Made “name” parameter non case sensitive in the following functions:
  - a. DefineTimingSet
  - b. QueryTimingSet
  - c. ProgramTimingCells
  - d. QueryTimingCells
  - e. TimingCellTest
  - f. DeleteTimingSet
  - g. DefineTable
  - h. QueryTable
  - i. ProgramTableDataGroup
  - j. QueryTableDataGroup
  - k. SetJumpControl
  - l. FillTableDataGroup
  - m. DeleteTables
  - n. DefineSequence
  - o. QuerySequence
  - p. SelectSequenceStep
  - q. InsertSequenceStep
  - r. SetSequenceStep
  - s. QuerySequenceStep

- t. DeleteSequence
- u. UpdateSequence
- v. DefineModuleGroup
- w. SetSyncPulse
- x. ExecuteFmaWordCount
- y. ExecuteTable

## **New Features**

1. Added SR126A module id.
2. Added SR214A module id.
3. Added “executeBit” function..

## **Compatibility**

Full compatibility with revision 1.06

## **1.08 Released 03/25/02**

### **Code fixes**

1. SFP; Fixed “displayTsText” function deleting columns and rows if not created.
2. SFP; Fixed “editTablesInit” function deleting rows if not created.
3. Modified “setSyncPulse” function.
4. Modified “dumpModuleId” function.
5. Modified “executeBit” function.
6. Modified “setfc” function.
7. Modified “invalidStringRange” function to perform lower to upper case conversion.

## **New Features**

1. Added synchronizing code to solve persistence problem.
2. Added the following functions:
  - a. SetChannelTrigger
  - b. queryChannelTrigger

## **Compatibility**

Full compatibility with revision 1.07

## **1.09 Released 04/05/02**

### **Code fixes**

1. SFP; Modified “queryInstalledModule” function.
2. SFP; Modified “configTestInit” and “configTimTestChange” functions, added “Error Strobe” and Error Storbe Delay” controls.
3. SFP; Modified “newGrpEvent” function.
4. SFP; Modified “newTimEvent” function.
5. SFP; Modified “newTabEvent” function.
6. SFP; Fixed “displayTableText” function deleting rows if not created.

7. SFP; Fixed “displaySeqText” function deleting rows if not created.
8. SFP; Fixed “editSeqEvent” function (LEFT\_DOUBLE\_CLICK).
9. SFP; Fixed “newSeqEvent” function (COMMIT).
10. SFP; Modified self test panel.
11. SFP; Modified update firmware.
12. Modified “close” to de-allocate memory.
13. Fixed “loadConfigFile” bug.
14. Fixed “setTestParameters” TSB linked timeout.
15. Modified “setTestSource” to only program iff change made.
16. Modified “queryTestSource” to read image instead of register.
17. Modified “updateModuleGroups” to for msb/lbs settings on eight channel modules.
18. Fixed “queryErrorCounter” bug, MSB bits.
19. Fixed “queryErrorAddress” bug.
20. Modified “executeBit” function and timing.
21. Modified “initModule” function, added “configErrorParameters” call.
22. Modified “queryModule” function.
23. Modified “ioPower” function.
24. Modified “setControl” function.

## **New Features**

1. SFP; Added “Execution Results” panel.
2. Changed soft front panel exe name from “sr192asfp” to “tasr192a Front Panel”.
3. Added the following functions:
  - a. SetChannelTrigger
  - b. QueryChannelTrigger
4. Added “querySerialNumber” function.

## **Compatibility**

Full compatibility with revision 1.08

## **1.10 Released 04/09/02**

### **Code fixes**

1. SFP; Fixed “displayTsText” function saving active cell.
2. SFP; Fixed “editTimingSetEvent” function (LEFT\_DOUBLE\_CLICK).
3. SFP; Fixed “editTablesInit” function saving active cell.
4. SFP; Added left double click to “editTablesEvent” function.
5. SFP; Added right click to “editSeqEvent” function.
6. SFP; Added “Edit” and modified “Delete” code to “seqMenuEvent” function.

### **New Features**

None.

## **Compatibility**

Full compatibility with revision 1.09

## **1.11 Released 04/09/02**

### **Code fixes**

1. Modified BIT timing.
2. Modified "executeBit" function to adjust mask bit.

### **New Features**

None.

## **Compatibility**

Full compatibility with revision 1.10

## **1.12 Released 04/23/02**

### **Code fixes**

1. SFP; reversed rising/falling sequence jump codes.
2. Modified "programTimingCells" function for MAI.
3. Modified "executeBit" function to run 10MHz instead of 25MHz for differential.
4. Modified "timinit" function last cell.

### **New Features**

None.

## **Compatibility**

Full compatibility with revision 1.11

## **1.13 Released 04/24/02**

### **Code fixes**

1. Modified "programTimingCells" function for MAI.
2. Modified "updateModuleGroups" function code seven mask and bits.
3. Modified "timinit" function for MAI.

### **New Features**

None.

## **Compatibility**

Full compatibility with revision 1.12

## **1.14 Released 05/01/02**

### **Code fixes**

1. SFP; swapped RTZ/RTO setting.

2. Modified “executeBit” function, set timing module configuration TSA and TSB installed.
3. Modified “executeBit” function to run at 10MHz TTL.

## **New Features**

None.

## **Compatibility**

Full compatibility with revision 1.13

## **1.15 Released 05/13/02**

### **Code fixes**

None.

## **New Features**

1. SFP; Added SR126A module id.

## **Compatibility**

Full compatibility with revision 1.14

## **1.16 Released 06/05/02**

### **Code fixes**

1. SFP; Modified “configTimInit” to get all control settings.
2. SFP; Modified “configTimChange” function.
3. Modified “loadConfig” function.
4. Modified “updateModuleGroups” function.
5. Modified “uutReset” function, SCPI command error.
6. Modified “initModule” function to solve PON/RST error.
7. Modified the “setModule” function.
8. Modified “setControl” to program the CG for external clock errors.

## **New Features**

1. SFP; Added SR126A module id.

## **Compatibility**

Full compatibility with revision 1.15

## **1.17 Released 06/07/02**

### **Code fixes**

1. Modified “programTimingCells” function, checking MAI on last cell bug.
2. Modified “defineTable” function, checking FMA error.

## **New Features**

None.

## Compatibility

Full compatibility with revision 1.16.

## 1.18 Released 07/15/02

### Code fixes

None.

### New Features

1. Added Static support to the instrument driver, new functions.
  - a. tasr192a\_configStaticModule
  - b. tasr192a\_queryStaticModule
  - c. tasr192a\_defineStaticGroup
  - d. tasr192a\_queryStaticGroup
  - e. tasr192a\_deleteStaticGroup
  - f. tasr192a\_queryStaticGroupDirectory
  - g. tasr192a\_setStaticGroupData
  - h. tasr192a\_queryStaticGroupData

## Compatibility

Full compatibility with revision 1.17.

## 1.19 Released 07/24/02

### Code fixes

1. Serendipity found a bug that causes multiple SR192As to report each others global data. The cause was that some functions were not calling the "tasr192a\_getModule" function which reloads the system data and resets the sync flag.

### New Features

None.

## Compatibility

Full compatibility with revision 1.18.

## 1.20 Released 09/16/02

### Code fixes

None.

### New Features

1. Added SR214A support.
2. Added "queryChannelVoltage" function.
3. Added "setGroupRefLevels" function.
4. Added "queryGroupRefLevels" function.

5. Modified "Config Group" panel.
6. Added "Reference Edit" panel.
7. Added "Channel Voltage" panel. Modified Command:

## **Compatibility**

Full compatibility with revision 1.19.

## **1.21 Released 09/30/02**

### **Code fixes**

1. Modified "setChannelType" function.
2. Modified "setChannelTrigger" function.
3. Fixed increment mode bug.
4. Fixed serial mode bug.
5. Fixed "updateModuleGroups" bug.
6. Fixed bug in "executeReset"
7. SFP Timing Set Edit.
8. SFP Table Edit Data.
9. SFP Sequence display.

### **New Features**

1. Added I/O trigger support.
2. Added I/O type to load/save configuration.
3. Modified "start\_tm" for SR214A and sync.
4. Added "queryTableFromAddress" function.
5. Added SFP version query/display.
6. Added voh > vol and vih > vil check.
7. Modified Channel Voltage panel.
8. Modified I/O results panel.
9. Modified Execute panel.
10. Modified BIT for new modules.

## **Compatibility**

Full compatibility with revision 1.20.

## **1.22 Released 10/18/02**

### **Code fixes**

1. Fixed bug in BIT test for SR126A I/O modules.

### **New Features**

None.

## **Compatibility**

Full compatibility with revision 1.21.

## 1.23 Released 11/25/02

### Code fixes

1. Modified BIT test procedure for differential I/O to bypass tristate test in I.D.
2. Corrected sync pulse bug in I.D.
3. Removed/replaced “//” comments in source code.
4. executeStop bug causes driver lockup fixed in I.D.
5. TSB not looking at CHTB signals when set to independent in I.D.
6. Timeout and delay A/B counters not programmed correctly in I.D.
7. executeStatus bug not returning TSB status correctly in I.D.
8. Timing set waveform display bug in SFP.

### New Features

1. Added sync pulse to the SFP execute menu.
2. Dim the “I/O Results and “Sync” buttons when running in SFP.
3. Added message and wait cursor when “Full Ram Test” is executed.

### Compatibility

Full compatibility with revision 1.22.

## 1.24 Released 12/06/02

### Code fixes

1. Modified “executeStop” function to preserve ALW and also set clear wait if the timing module fails to stop.

### New Features

None.

### Compatibility

Full compatibility with revision 1.23.

## 1.25 Released 02/21/03

### Code fixes

1. RTO and RTZ defined constants reversed.
2. Corrected parameter order in “tasr192a\_executeFmaWordCount” function panel.

### New Features

None.

### Compatibility

Users who use either the tasr192a.h or the tasr192a.fp file to create panels may have to recreate the panels with the new files.

## **1.26 Released 02/28/03**

### **Code fixes**

1. Fixed bug in “executeBit” function.

### **New Features**

None.

### **Compatibility**

Full compatibility with revision 1.25.

## **1.27 Released 03/03/03**

### **Code fixes**

1. Fixed bug in “setControl” function if no timing modules installed.

### **New Features**

None.

### **Compatibility**

Full compatibility with revision 1.26.

## **1.28 Released 07/14/03**

### **Code fixes**

1. SFP; Moved call to “queryInstalledMod” to execute before RAM self test.
2. Modified “saveConfigFile” function to correct bug loading group data (config file version changed to 1.2).
3. Corrected bug in “setGroupControl” that was causing increment and serial mode errors.
4. “tasr192a\_queryErrorAddress” function “fp” has the error number defined as a 16 bit integer, s/b 32 bits.

### **New Features**

None.

### **Compatibility**

Users who use either the tasr192a.h or the tasr192a.fp file to create panels may have to recreate the panels with the new files.

## **1.29 Released 07/23/03**

### **Code fixes**

1. Deleted variables not referenced and typecast signed/unsigned variables passed to functions. (HP is converting the source code to a UNIX library and their compiler was having problems.)

### **New Features**

None.

## Compatibility

Full compatibility with revision 1.28.

## 1.30 Released 09/03/03

### Code fixes

1. The header file was using the wrong declaration for output strings, was "ViString <name>", should be "ViChar \_VI\_FAR <name>[]". Agilent VEE reads the header file to build the Plug and Play panels.

### New Features

None.

## Compatibility

Users who use either the tasr192a.h or the tasr192a.fp file to create panels may have to recreate the panels with the new files.

## 1.31 Released 03/04/04

### Code fixes

1. The "queryProbeMemory" function "buffer" variable was declared as ViString, changed to ViAInt16.
2. Removed the following functions:
  - a. "queryStatusRegister"
  - b. "queryEventRegister"
  - c. "eventEnable"
  - d. "queryEventEnable"
3. Changed the following header declarations:
  - a. ViChar VI\_FAR [] to ViString (inputs), ViPString (outputs).
  - b. ViInt32 VI\_FAR [] to ViAInt32
  - c. ViInt16 VI\_FAR [] to ViAInt16

The header changes were checked out with HP VEE to verify operation.

### New Features

None.

## Compatibility

Users who use either the tasr192a.h or the tasr192a.fp file to create panels may have to recreate the panels with the new files.

Deleted functions were not implemented.

## 1.32 Released 04/19/04

### Code fixes

1. Modified the "Auto" power mode to correct inconsistency with timing power and DRB power settings.

## **New Features**

1. Added standby code where the standby register will be programmed to the contents of the first phase of cell 1 of the “Idle” timing set.

## **Compatibility**

Full compatibility with revision 1.31.

## **1.33 Released 04/28/04**

### **Code fixes**

None.

### **New Features**

1. Added new function “tasr192a\_executeClearTest” that clears a timing cell test. Modified the SFP to include a “Clear Wait” button that calls this function.

### **Compatibility**

Full compatibility with revision 1.32.

## **1.34 Released 06/03/04**

### **Code fixes**

1. The “tasr192a\_executeStop” function was always setting the clear wait bit causing undesired functionality. The stop function has been modified to add up to a 1s delay in 10ms steps to wait for the timing set to stop normally before setting the clear wait bit.

### **New Features**

1. Modified the “tasr192a\_setClockOutput” function to include TSOUT1-5 and STIM\_LOAD signals as the clock output source (inverted selection as well). The query function and Soft Front Panel are modified as well. SR101A firmware v3.2 required for this modification.

### **Compatibility**

Full compatibility with revision 1.33.

## **1.35 Released 07/23/04**

### **Code fixes**

None.

### **New Features**

1. Added the following static mode functions for the “A” version I/O modules:
  - a. tasr192a\_setStaticMode.
  - b. tasr192a\_queryStaticMode
  - c. tasr192a\_setStaticOutput
  - d. tasr192a\_queryStaticInput

### **Compatibility**

Full compatibility with revision 1.34.

## 1.36 Released 09/15/04

### Code fixes

1. Modified the "tasr192a\_write\_ws" function to call viPrintf instead of viWrite. This modification was made to correct an error with the Bustec USB slot zero.

### New Features

None.

### Compatibility

Full compatibility with revision 1.35.

## 1.37 Released 04/21/05

### Code fixes

1. SFP Modified the tasr192a\_init calls to not reset.
2. SFP Displaying the SR192 help file instead of the SR192A.
3. ID added code to ignore VI\_ERROR\_NSUP\_OFFSET errors in tasr192a\_dumpModuleId function for GPIB support.
4. Fixed bug in tasr192a\_setOutputEnableState function. Passing the wrong timing module number.

### New Features

None.

### Compatibility

Full compatibility with revision 1.36.

## 1.38 Released 09/06/05

### Code fixes

None

### New Features

1. Removed global structure and replaced with allocated structure pointer that is saved/recalled using viGetAttribute->VI\_ATTR\_USER\_DATA space.
2. Added a warning code to the following functions:
  - a. tasr192a\_executeFmaWordCount
  - b. tasr192a\_executeTable
  - c. tasr192a\_executeSequenceWarning is returned when the driver detects the SR214A voltage/temperature fault bit was tripped but is no longer set.

### Compatibility

Full compatibility with revision 1.37.

## **1.39 Released 04/11/06**

### **Code fixes**

None

### **New Features**

1. Updated manuals and soft front panel for EADS.

### **Compatibility**

Full compatibility with revision 1.38.

## **1.40 Released 09/21/06**

### **Code fixes**

None

### **New Features**

1. Added SR127A support.

### **Compatibility**

Full compatibility with revision 1.39.