DATAPAK DESCRIPTION

Poseidon Scientific Instruments

MWA Receiver Node Prototype

VERSION: 1.0 REVISION DATE: 02/02/11

Approver Name	Title	Signature	Date
Ian Moore	Technical Manager		
Derek Carroll	Production Engineer		

Contents

Section 1. Introduction

1.1 Purpose

This document describes the PSI Datapak for the repackaged receiver node. It contains a collation of all the current information and documentation as produced during the repackaged receiver node development, through production and testing to delivery at the Curtin Site. The document is structured in a tree-type format realised from PSI's SALEM system ("SALEM" is PSI's Stock, Assembly, Logistics and Engineering Manager System.). Items have been supplied in various formats depending on their function. Most text based documents are in PDF format with Parts Lists (BOM) as Excel spread sheets (XLS) and PCB files in the relevant Altium format as recognized by the receiver designers.

1.2 Scope

This datapak includes all the documentation produced by PSI in the course of the receive node project and is broken down into following levels of complexity:

a) PSI's SALEM system structure will be the basis of the manufacturing drawings and associated details.

b) Detailed PCB design files including Altium schematic and PCB files provided in raw format. These will allow the PCBs to be manufactured and modified if required.

c) Detailed mechanical drawings provided in PDF format.

d) Assembly drawings and instructions, where appropriate to indicate the system build process provided in PDF format.

e) Cable drawings are provided in PDF format.

f) Tests and Test Results are provided in PDF format.

g) Any other documents that don't fit into the categories given above have been place under the miscellaneous section (MISC).

Section 2. Datapak Structure

2.1 Datapak Approach

The datapak has been assembled has an hierarchical tree structure that is compatible with PSI's SALEM for product manufacture.

The hierarchical structure is number-based such that sub-units numbered [3] will be "part of" sub-units numbered [2] which in turn will be "part of" top level unit numbered [1].

2.2 Salem Architecture

1	MST-0432 (v0.072) {MWA Receiver Node Enclosure} Counter†: _MWAA009A
2	MST-0448 (v0.009) {MWA Internal Rack} Counter: MWAA010A
3	MST-0423 (v0.050) {MWA Digital Rack} Counter: MWAA003A
4	MST-0425 (v0.002) {MWA Clock Receiver PCB (External Supplier)} Counter: MWAP009A
4	MST-0497 (v0.003) {ADFB Analogue & Digital Filter Module (External Supplier)} Counter: MWAA012A
4	MST-0497 (v0.003) {ADFB Analogue & Digital Filter Module (External Supplier)} Counter: MWAA012A
4	MST-0498 (v0.003) {AgFo Aggregation & Transmission Module (External Supplier)} Counter: MWAA013A
3	MST-0422 (v0.030) {MWA Analogue Signal Conditioning Module} Counter: MWAA002A
4	MST-0421 (v0.331) {MWA Analogue Signal Conditioning PCB (ASC)} Counter: PCB MWAP005A
3	MST-0422 (v0.030) {MWA Analogue Signal Conditioning Module} Counter: MWAA002A
4	MST-0421 (v0.331) {MWA Analogue Signal Conditioning PCB (ASC)} Counter: PCB MWAP005A
3	MST-0429 (v0.037) {MWA Power Supply Module} Counter: MWAA007A
4	MST-0419 (v0.001) {MWA Power Distribution PCB} Counter: PCB MWAP004A
3	MST-0426 (v0.008) {Single Board Computer Module} Counter: MWAA006A
4	MST-0417 (v0.007) {MWA ATIM Interface & Control Logic PCB} Counter: PCB MWAP002A
4	MST-0431 (v0.014) {MWA Dual Octal Temperature Sensor ADC PCB Assembly} Counter: MWAA008A
5	MST-0430 (v0.034) {MWA Octal Temperature Sensor ADC PCB 90%} Counter: PCB MWAP008A
5	MST-0430 (v0.034) {MWA Octal Temperature Sensor ADC PCB 90%} Counter: PCB MWAP008A
4	MST-0431 (v0.014) {MWA Dual Octal Temperature Sensor ADC PCB Assembly} Counter: MWAA008A
5	MST-0430 (v0.034) {MWA Octal Temperature Sensor ADC PCB 90%} Counter: PCB MWAP008A
5	MST-0430 (v0.034) {MWA Octal Temperature Sensor ADC PCB 90%} Counter: PCB MWAP008A
2	MST-0418 (v0.002) {MWA ATIM Transition PCB} Counter: PCB MWAP003A
2	MST-0418 (v0.002) {MWA ATIM Transition PCB} Counter: PCB MWAP003A
2	MST-0424 (v0.001) {MWA Air Conditioner Unit} Counter: MWAA004A
2	MST-0420 (v0.003) {MWA Air Conditioner Control Box} Counter: MWAA001A
2	MST-0491 (v0.000) {MWA DoC (Data over Coax) Receiver PCB (External Supplier)} Counter: PCB MWAP010A
2	MST-0491 (v0.000) {MWA DoC (Data over Coax) Receiver PCB (External Supplier)} Counter: PCB MWAP010A
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2	MST-0491 (v0.000) {MWA DoC (Data over Coax) Receiver PCB (External Supplier)} Counter: PCB MWAP010A

† Named "Counters" are used in SALEM to uniquely assign serial numbers to assemblies.

Section 3. Altium Files

Information is provided here in summary format, additional information is delivered in electronic format as indicated in Section 13 of this document.

3.1 MST-0419 820_Pwr_Dis_PCB

A complete set of the latest Altium files is provided for MWA Engineering to approve, plus an “as built” markup of the schematics for completeness.

3.2 MST-0417 550_ATIM-C_PCB

A complete set of the latest Altium files is provided for MWA Engineering to approve, plus an “as built” markup of the schematics for completeness.

3.3 MST-0421 100_ASC_PCB

A complete set of the latest Altium files is provided for MWA Engineering to approve, plus an “as built” markup of the schematics for completeness.

3.4 MST-0430 TempMon_PCB

A complete set of the latest Altium files is provided for MWA Engineering to approve, plus an “as built” markup of the schematics for completeness.

3.5 MST-0418 540_ATIM-T_PCB

A complete set of the latest Altium files is provided for MWA Engineering to approve, plus an “as built” markup of the schematics for completeness.

Section 4. Assembly & Build Instructions

4.1 General

The section covers the current list of assembly and/or build instructions used in the production of the prototype receiver.

4.2 Assembly List:

- AC Unit Mods and Build Instructions.pdf
- AC_ControlBox_Mains_Wiring-3v3.pdf
- AirCon_TempMon_Wiring_V2.pdf
- ASC Build Instructions.pdf
- Digital Crate Build Instructions.pdf
- Digital Crate Modules BI_tdb.pdf
- Digital Rack Photos.pdf
- Drain Plug Assembly.pdf
- Enclosure Foam Installation Order.pdf
- Mech_Prob_ClkRx_Mounting.pdf
- MST-0420 AC Control Build Instructions.pd
- MST-0432 Enclosure Build Instructions.pdf
- MST-0448 Internal Rack Build Instructions.pdf
- Proposed Layout.pdf
- PSU Module Build Instructions.pdf
- PSU_Module_Assy&Wiring.pdf
- SBC Module Build Instruction Prototype.pd
- Tempmon System Wiring.pdf
- Tempmon Views.pdf

Section 5. Bills of Materials (BOM)

5.1 General

The section covers the parts lists (BOM) used in the production of the prototype receiver, they are provided in an excel spread sheet format (.XLS).

5.2 BOM List:

- Extras Order List V-SOP.xls
- mst-0417 550_atim-c bom v-sop.xls
- mst-0418 540_atim_transition bom salem order.xls
- mst-0419 820_pwrdisv2_bom v-sopp.xls
- mst-0420 ac_control_box v-sop.xls
- mst-0421 100_asc_bom v-sopp.xls
- mst-0422 asc_module_bom.xls
- mst-0423 digital_rack_bom.xls
- mst-0426 sbc_module_bom v-sop.xls
- mst-0429 psu_module_bom.xls
- mst-0430 tempmon90_bom.xls
- mst-0431 tempmon_dual_bom.xls
- mst-0432 enclosure_bom v-sopp.xls
- mst-0448 internal_rack_bom.xls
- mst-0497 adfb_module_bom v-sop.xls
- mst-0498 agfo_module_bom v-sop.xls

Section 6. Cables

6.1 General

The section covers the cables used in the production of the prototype receiver, they are provided in pdf format with data sheets attached.

6.2 Cables List:

- MWA-3001-plusDS.pdf
- MWA-3002-plusDS.pdf
- MWA-3003-plusDS.pdf
- MWA-3004-plusDS.pdf
- MWA-3007-plusDS.pdf
- MWA-3008-plusDS.pdf
- MWA-3009-plusDS.pdf
- MWA-3010-plusDS.pdf
- MWA-3011-plusDS.pdf
- MWA-3013-plusDS.pdf
- MWA-3014-plusDS.pdf
- MWA-3016-plusDS.pdf
- MWA-3017-plusDS.pdf
- MWA-3019-plusDS.pdf
- MWA-3021-plusDS.pdf
- MWA-3022-plusDS.pdf
- MWA-3023-plusDS.pdf
- MWA-3024-plusDS.pdf
- MWA-3025-plusDS.pdf
- MWA-3026-plusDS.pdf
- MWA-3027-plusDS.pdf
- MWA-3028-plusDS.pdf
- MWA-3031-plusDS.pdf
- MWA-3032-plusDS.pdf
- MWA-3033-plusDS.pdf
- MWA-3034-plusDS.pdf
- MWA-3035-plusDS.pdf
- MWA-3036-plusDS.pdf
- MWA-3037-plusDS.pdf
- MWA-3038-plusDS.pdf
- MWA-3039-plusDS.pdf
- MWA-3040-plusDS.pdf
- MWA-3041-plusDS.pdf
- MWA-3050-plusDS.pdf
- MWA-3051-plusDS.pdf
- MWA-3052-plusDS.pdf
- MWA-3053-plusDS.pdf
- MWA-3054-plusDS.pdf

Section 7. Mechanical Drawings

7.1 General

The section covers the mechanical drawings used in the production of the prototype receiver, they are provided in pdf format.

7.2 Drawing List:

- MWAM001 Main enclosure.PDF
- MWAM001 Sheet metal.PDF
- MWAM002 AC Enclosure Sheet metal.PDF
- MWAM004 Air Conditioner Cover Sheet Metal.PDF
- MWAM005 AC enclosure foam bottom.PDF
- MWAM006 AC enclosure foam side.PDF
- MWAM007 AC enclosure foam back.PDF
- MWAM008 Main enclosure foam side.PDF
- MWAM009 Main enclosure foam at cable end.PDF
- MWAM010 Main enclosure foam at AC end.PDF
- MWAM011_1 Main enclosure foam floor.PDF
- MWAM011_2 Main enclosure foam floor.PDF
- MWAM013 Flow splitter.PDF
- MWAM014 ATIF Connector panel.PDF
- MWAM015 Main enclosure foam above duct.PDF
- MWAM016 Main enclosure foam at side top.PDF
- MWAM017 Main enclosure foam lid.PDF
- MWAM018 Ac enclosure foam top side.PDF
- MWAM019 AC enclosure foam top back.PDF
- MWAM020 AC enclosure foam top front.PDF
- MWAM021 Main enclosure tie down bar.PDF
- MWAM028 ASC housing.pdf
- MWAM029 ASC rack front.PDF
- MWAM032 PSU front panel.PDF
- MWAM037 Digital rack.pdf
- MWAM038 Electronics Case.PDF
- MWAM039 SBC Enclosure.PDF
- MWAM040 Insulation Protection Sheet.PDF
- MWAM041 Mounting Bar.PDF
- MWAM042 Lid Stiffening.PDF
- MWAM044 Blank Connector panel.PDF
- MWAM045 Corner Insulation Segment.PDF
- MWAM046 Cable Insulation Section.PDF
- MWAM047 Flat Connector panel.PDF
- MWAM051 PSU Mains Cover.PDF
- MWAM052 Caster Bracket.PDF

Section 8. Miscellaneous Information

8.1 General

The section covers any extra or miscellaneous information relevant to the production of the prototype receiver, they are provided in various formats.

8.2 MISC List:

- Electronics Rack_GreyX.pdf
- Enclosure AC wiring.pdf
- Enclosure_Control_Interconxs_V3.pdf
- Enclosure_DC_Power_Interconxs V2.pdf
- Enclosure_RF_Interconxs_V3.pdf
- Enclosure_Sys_Diagram V4.pdf
- F-Type Mounting V2.pdf
- i2c addresses(revised).xls
- Mech_Prob_ClkRx_mounting.pdf
- ReceiverNode_Prototype_Build.pdf
- MWA_Prototype_Outstanding_Issues_020211.pdf

Section 9. Software

9.1 General

The section covers the software and software documentation used in the production of the prototype receiver, it is provided in various formats.

9.2 Software List

- ASC Code
- PSU I2C Monitor
- API Documentation
  - dsc-python
  - receiver-tests
- Debian Packages
  - Various in .deb format
- Documents
  - Testing & Training
- Source Code
  - Various in tar.gz format

Section 10. Testing Documentation and Results

10.1 General

The section covers the test documentation, jigs and the test results for the prototype receiver, they are provided in various formats.

10.2 Test List

- MST-0417 01. Initial Photographs.doc
- MST-0417 02. Resistance Check.doc
- MST-0417 03. Electrical.doc
- MST-0417 04. I2C Verification.doc
- MST-0417 05. CPLD.doc
- MST-0418 01. Continuity and shorts.doc
- MST-0418 02. Photographs.doc
- MST-0419 01. Resistance.doc
- MST-0420 01. Electrical Safety.doc
- MST-0421 01. Initial Photographs.doc
- MST-0421 02. Resistance Check.doc
- MST-0421 03. Electrical.doc
- MST-0421 04. RF Gain and Frequency Response.doc
- MST-0421 05. I2C Verification.doc
- MST-0421 06. Final Photographs.doc
- MST-0422 01. Current Draw.doc
- MST-0422 02. Temperature Run.doc
- MST-0422 03. I2C Test.doc
- MST-0422 04. Characterisation test.doc
- MST-0423 01. Photographs.doc
- MST-0423 02. No shorts.doc
- MST-0424 01. Operational Test.doc
- MST-0425 01. Photographs.doc
- MST-0425 02. Shorts.doc
- MST-0426 01. Mains Testing.doc
- MST-0426 02. Power Test.doc
- MST-0426 03. Temperature Run.doc
- MST-0429 01. Mains Testing.doc
- MST-0429 02. Voltage Test.doc
- MST-0429 03. Load test - 1 Hour Special.doc
- MST-0429 03. Load test.doc
- MST-0429 04. ADC Load Test.doc
- MST-0429 05. Photographs.doc
- MST-0431 01. Initial Photographs.doc
- MST-0431 02. Voltage and current draw.doc
- MST-0431 03. I2C2PC.doc
- MST-0431 04. Final Photographs.doc
- MST-0432 01. MWA Air Conditioner Performance.doc
- MST-0432 02. MWA Air Conditioner Performance - Extended Range1.doc
- MST-0432 03. MWA Air Conditioner Performance - Extended Range2.doc
- MST-0448 01. SBC Control Alarms.doc

- MST-0448 02. SBC ASC Control.doc
- MST-0448 03. SBC Digital Crate Clock.doc
- MST-0448 04. SBC Antennae.doc
- MST-0497 01. Photographs.doc
- MST-0497 02. Shorts.doc
- MST-0498 01. Photographs.doc
- MST-0498 02. Shorts.doc

10.3 Jigs List:

- MWA JIG-001 - MWA Air Conditioner Control Box
- MWA JIG-002 - MWA PSU
- MWA JIG-003 - Megger Tester
- MWA JIG-004 - I2C to USB Adapter
- MWA JIG-005 - PSU Switching Board
- MWA JIG-006 - MWA PSU Loading Jig
- MWA JIG-007 - Voltage and Current Draw
- MWA JIG-008 - Conttinuity and Short Test Jig
- MWA JIG-009 - Appliance Tester
- MWA-JIG-010 – ASC Conntrol
- MWA-JIG-011 _ MWA ATIM-C Test Connectors
- MWA-JIG-012 – I2C to ASC Adaptor

10.4 Results List:

- adc load test_04_mst-0429_v0.037_sn001_20101117_12.pdf
- digital rack photos.pdf
- load testing - 1 hour special_03_mst-0429_v0.037_sn001_20101117_12.pdf
- load testing_03_mst-0429_v0.037_sn001_20101117_12.pdf
- mains testing_01_mst-0429_v0.037_sn001_20101117_12.pdf
- mst-0421_sn001_photographs.zip
- mst-0497 sn001 noshorts results.pdf
- mst-0497 sn001 photo results1.pdf
- mst-0497 sn002 noshorts results.pdf
- mst-0497 sn002 photos1.pdf
- mwa ac control box electrical safety_01_mst-0420_v0.003_sn001_20101207_11.pdf
- mwa air conditioner performance_01_mst-0432_v0.072_sn001_20101220_16.pdf
- mwa asc module characterisation test_04_mst-0422_v0.030_sn001_20101217_10.pdf
- mwa asc module characterisation test_04_mst-0422_v0.030_sn002_20101221_11.pdf
- mwa asc module current draw_01_mst-0422_v0.030_sn001_20101217_12.pdf
- mwa asc module current draw_01_mst-0422_v0.030_sn002_20101220_15.pdf
- mwa asc module i2c test_03_mst-0422_v0.030_sn001_20101220_15.pdf
- mwa asc module i2c test_03_mst-0422_v0.030_sn002_20101220_15.pdf
- mwa asc pcb electrical_03_mst-0421_v0.331_sn001_20101213_13.pdf.pdf
- mwa asc pcb electrical_03_mst-0421_v0.331_sn002_20101215_15.pdf
- mwa asc pcb final photographs_06_mst-0421_v0.331_sn001_20101214_10.zip
- mwa asc pcb final photographs_06_mst-0421_v0.331_sn002_20101216_16.zip
- mwa asc pcb i2c verification_05_mst-0421_v0.331_sn001_20101213_17.pdf
- mwa asc pcb i2c verification_05_mst-0421_v0.331_sn002_20101216_11.pdf
- mwa asc pcb initial photographs_01_mst-0421_v0.331_sn002_20101214_14.zip
- mwa asc pcb resistance check_02_mst-0421_v0.331_sn001_20101213_13.pdf
- mwa asc pcb resistance check_02_mst-0421_v0.331_sn002_20101214_15.pdf

- mwa asc pcb rf gain and frequency response_04_mst-0421_v0.331_sn001_20101213_12.pdf
- mwa asc pcb rf gain and frequency response_04_mst-0421_v0.331_sn002_20101515_16.pdf
- mwa atim-c pcb cpld.doc
- mwa atim-c pcb cpld_05_mst-0417_v0.007_sn001_20101207_15.pdf
- mwa atim-c pcb electrical_02_mst-0417_v0.007_sn001_20101210_10.pdf
- mwa atim-c pcb i2c verification.doc
- mwa atim-c pcb i2c verification_04_mst-0417_v0.007_sn001_20101207_11.pdf
- mwa atim-c pcb initial photos_01_mst-0417_v0.007_sn001_20101210_10.zip
- mwa atim-c pcb resistance check_02_mst-0417_v0.007_sn001_20101210_10.pdf
- mwa atim-t continuity tests_01_mst-0418_v0.002_sn001_20101210_10.pdf
- mwa atim-t continuity tests_01_mst-0418_v0.002_sn002_20101210_10.pdf
- mwa atim-t photographs_02_mst-0418_v0.002_sn001_20101209_09.zip
- mwa atim-t photographs_02_mst-0418_v0.002_sn002_20101209_09.zip
- mwa clock unit no shorts_02_mst-0425_v0.002_sn003_20101210_11.pdf
- mwa clock unit photographs_01_mst-0425_v0.002_sn003_20101210_11.zip
- mwa digital rack no shorts mst-0423_v0.050_sn001_20110120.pdf
- mwa digital rack photos mst-0423-v0.050_sn001_20110120.pdf
- mwa enclosure ac performance ext1_2_mst-0432_v0.072_sn001_20101221_16.txt
- mwa enclosure ac performance ext1_2_mst-0432_v0.072_sn001_20101221_16.xls
- mwa enclosure ac performance ext2_03_mst-0432_v0.072_sn001_20110131_12.doc
- mwa enclosure ac performance ext2_03_mst-0432_v0.072_sn001_20110131_12.xls
- mwa internal rack clock unit tests_03_mst-0448_v0.009_sn001_20110120_10.txt
- mwa internal rack sbc control alarms_01_mst-0448_v0.009_sn001_20110120_10.pdf
- mwa internal rack sbc doc controls_04_mst-0448_v0.009_sn001_20110120_10.pdf
- mwa intrack asc control mst-0448_v0.009_sn001_20110120.pdf
- mwa psu module photographs_05_mst-0429_v0.037_sn001_20101207_09.zip
- mwa sbc mains testing mst-0426_v0.008_sn001_20110120.pdf
- mwa tempmon final photos_04_mst-0431_v0.014_sn001_20101207_10.zip
- mwa tempmon final photos_04_mst-0431_v0.014_sn002_20101207_10.zip
- mwa tempmon i2c2pc test_03_mst-0431_v0.014_sn001_20101207_12.pdf
- mwa tempmon i2c2pc test_03_mst-0431_v0.014_sn002_20101208_14.pdf
- mwa tempmon initial photos_01_mst-0431_v0.014_sn001_20101207_10.zip
- mwa tempmon initial photos_01_mst-0431_v0.014_sn002_20101207_10.zip
- mwa tempmon voltage-current test_02_mst-0431_v0.014_sn001_20101207_10.pdf
- mwa tempmon voltage-current test_02_mst-0431_v0.014_sn002_20101208_14.pdf
- operational tests_01_mst-0424_v0.001_sn001_20110120_10.pdf
- power test_2_mst-0426_v0.008_sn001_20101222_09.pdf
- resistance_test_01_mst-0419_v0.001_sn001_20101207_10.pdf
- temperature run_02_mst-0422_v0.030_sn001_20101216_10.pdf
- temperature run_02_mst-0422_v0.030_sn002_20101220_14.pdf
- temperature run_03_mst-0426_v0.008_sn001_20101222_13.pdf
- voltage testing_02_mst-0429_v0.037_sn001_20101117_12.pdf

Section 11. Glossary

The following is a list of terms and acronyms used within this datapak document:

Acronym	Meaning	Explanation
AC	Air Conditioner	The air conditioner and associated metalwork and cables
ADFB	ADC Filter Bank	2 boards each containing 4 2-channel digitizer and polyphase filter banks.
AGFO	Aggregation Formatting & Transmission	Combines the selected bands from the 16 digitized input streams, reformats, and sends data out in 3 fibres. Also receives and regenerates the system clock(s).
ASC	Analogue Signal Conditioning PCB or Module	Input protection, filter and gain stage of the RF signals from the Beamformers.
ATIM-T	Antenna Tile Interface Transition PCB	Supplies control, phase switching, and power to each of the 8 tiles.
ATIM-C	Antenna Tile Interface Control PCB	Supplies control between the SBC and the ATIM-T PCB
Backplane	Digital Backplane	Host for ADFB and AGFO, multiple series interconnects and power distribution
SBC	Single Board Computer	Local intelligence to control receiver, using Ethernet over fibre to central node. Includes the SBC (Single Board Computer).
MWA	Murchison Widefield Array	Site location of the Receiver Nodes.
PSU	Power Supply Unit	Mains power in, all local power out under MCC control.
Receiver	Receiver Enclosure	The enclosure, environmental protection, and thermal management.
SALEM	Stock, Assembly, Logistics and Engineering Manager	SALEM is the Poseidon Scientific Instruments production assembly management system.

Section 12. Revision History

Version	Date	Name	Description
1.0	02/02/11	Derek Carroll	Release Version

Section 13. Appendices

Links to electronic supplied information, PDF's, XLS's, photo's drawings, etc.

13.1 Electronic Files

The following is a list of the electronic files provided on the prototype receiver enclosure:

MWA_Rx_Prototype_Deliverables
- README.txt
- **Altuim_Files**
  - **MST-0417 550_ATIM-C_PCB**
    - 550_ATIMv2.pcb
    - 550_ATIMv2.pcbPreview
    - 550_ATIMv2.SchDoc
    - 550_ATIMv2.SchDocPreview
    - 550_ATIMv2_I2C.SchDoc
    - 550_ATIMv2_PsCtrl.SchDoc
    - 550_ATIMv2_PsCtrl.SchDocPreview
    - 550_ATIM_v02a_issues.txt
    - 550_ATIM_v2.Dat
    - 550_ATIM_v2.IntLib
    - 550_ATIM_v2.OutJob
    - 550_ATIM_v2.pdf
    - 550_ATIM_v2.PrjPCB
    - 550_ATIM_v2.PrjPCBStructure
    - 550_ATIM_v2R2c.OutJob
    - 550_ATIM_v2R2c.pdf
    - asccprj.scc
    - ASC_sch.IntLib
    - ATIM_v02_issues.txt
    - Changes done to the original SCH.pdf
    - Changes done to the original SCH.xls
    - i2c addresses.xls
    - **asbuilt**
      - ATIM-C_SCH asbuilt.pdf
  - **MST-0418 540_ATIM-T_PCB**
    - 540_ATIM_trans1.PcbLib
    - 540_ATIM_transition.IntLib
    - 540_ATIM_transition.LIBPKG
    - 540_ATIM_transition.OutJob
    - 540_ATIM_transition.PcbDoc
    - 540_ATIM_transition.PDF
    - 540_ATIM_transition.PrjPCB
    - 540_ATIM_transition.SchDoc
    - 540_ATIM_transition.SCHLIB
    - Changes done to the original SCH.xls
    - **asbuilt**
      - ATIM-T_SCH asbuilt.pdf
  - **MST-0419 820_Pwr_Dis_PCB**
    - 820 _PwrDistMon.OutJob
    - 820_issues_24Novmfw.Txt
    - 820_pdm_working.PcbLib
    - 820_pdm_working.PcbLib.htm
    - 820_PwrDisMon.PcbDoc
    - 820_PwrDisMon.PcbDocPreview
    - 820_PwrDisMon.PcbLib
    - 820_PwrDistMon.IntLib
    - 820_PwrDistMon.LIBPKG
    - 820_PwrDistMon.PDF
    - 820_PwrDistMon.PrjPCB
    - 820_PwrDistMon.PrjPCBStructure

- 820_PwrDistMon.SchDoc
- 820_PwrDistMon.SchDocPreview
- 820_PwrDistMon.SCHLIB
- 820_pwrdistmon_working.SchLib
- Chip_Resistor_N.PcbLib
- pwrdisV2.txt
- **asbuilt**
  - PwrDis_SCH asbuilt.pdf
- **MST-0421 100_ASC_PCB**
  - 100_ASC.SchDoc
  - 100_ASC_Issues_8Dec09.Txt
  - 100_ASC_PCB1_1.PcbDoc
  - 110_ASC_RFchnl.SchDoc
  - asccprj.scc
  - ASCv2_32Tvariant.OutJob
  - ASCv2_sch.OutJob
  - ASC_sch.IntLib
  - ASC_sch.pdf
  - ASC_sch.PrjPcb
  - ASC_sch.PrjPcbStructure
  - MWAI001.IntLib
  - MWAI001.LIBPKG
  - MWAI001.PcbLib
  - MWAI001.SchLib
  - Report changes made from version 811 to 812.XLS
  - **asbuilt**
    - ASCv2_SCH asbuilt.pdf
- **MST-0430 TempMon_PCB**
  - TempMonitor.PRJPCB
  - TempMonitor.PRJPCBStructure
  - TSSOP_40P_M.PcbLib
  - **asbuilt**
    - TempMon_SCH asbuilt.pdf
  - **TempMonitor**
    - A3 Template.SchDot
    - Job1.OutJob
    - ltseries.SchLib
    - rc_network.SchDoc
    - Status Report.Txt
    - TempMonitorConfigNotes.Txt
    - temp_sensor.PcbDoc
    - temp_sensor.PcbDoc.htm
    - temp_sensor.PcbDocPreview
    - temp_sensor.pcbdoc_viewstate
    - temp_sensor.SchLib
    - temp_sensor_multi.SchDoc
    - temp_sensor_multi.SchDocPreview
    - TSSOP_40P_M.PcbLib
    - VoltReg.SchDoc
- **Assy_Instructions**
  - ac unit mods and build instructions.pdf
  - AC_ControlBox_Mains_Wiring-3v3.pdf
  - AirCon_TempMon_Wiring_V2.pdf
  - ASC Build Instructions.pdf
  - digital crate build instructions.pdf
  - digital crate modules bi_tdb.pdf
  - Digital Rack Photos.pdf
  - Drain Plug Assembly.pdf
  - Enclosure Foam Installation Order.pdf
  - Mech_Prob_ClkRx_mounting.pdf
  - mst-0420 ac control build instructions.pdf
  - mst-0432 enclosure build instructions.pdf
  - mst-0448 internal rack build instructions.pdf

Proposed Layout.pdf
psu module build instructions.pdf
PSU_Module_Assy&Wiring.pdf
sbc module build instruction prototype.pdf
tempmon system wiring.pdf
tempmon views.pdf

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Extras Order List V-SOP.xls
mst-0417 550_atim-c bom v-sop.xls
mst-0418 540_atim_transition bom salem order.xls
mst-0419 820_pwrdisv2_bom v-sopp.xls
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mst-0423 digital_rack_bom.xls
mst-0426 sbc_module_bom v-sop.xls
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mst-0430 tempmon90_bom.xls
mst-0431 tempmon_dual_bom.xls
mst-0432 enclosure_bom v-sopp.xls
mst-0448 internal_rack_bom.xls
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mst-0498 agfo_module_bom v-sop.xls

Cables
_MWA-3001-plusDS.pdf
_MWA-3002-plusDS.pdf
_MWA-3003-plusDS.pdf
_MWA-3004-plusDS.pdf
_MWA-3007-plusDS.pdf
_MWA-3008-plusDS.pdf
_MWA-3009-plusDS.pdf
_MWA-3010-plusDS.pdf
_MWA-3011-plusDS.pdf
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_MWA-3039-plusDS.pdf
_MWA-3040-plusDS.pdf
_MWA-3041-plusDS.pdf
_MWA-3050-plusDS.pdf
_MWA-3051-plusDS.pdf
_MWA-3052-plusDS.pdf
_MWA-3053-plusDS.pdf
_MWA-3054-plusDS.pdf

General
Receiver_Prototype_Datapak.pdf

Mech_Drawings
MWAM001 Main enclosure.PDF

- MWAM001 Sheet metal.PDF
- MWAM002 AC Enclosure Sheet metal.PDF
- MWAM004 Air Conditioner Cover Sheet Metal.PDF
- MWAM005 AC enclosure foam bottom.PDF
- MWAM006 AC enclosure foam side.PDF
- MWAM007 AC enclosure foam back.PDF
- MWAM008 Main enclosure foam side.PDF
- MWAM009 Main enclosure foam at cable end.PDF
- MWAM010 Main enclosure foam at AC end.PDF
- MWAM011_1 Main enclosure foam floor.PDF
- MWAM011_2 Main enclosure foam floor.PDF
- MWAM013 Flow splitter.PDF
- MWAM014 ATIF Connector panel.PDF
- MWAM015 Main enclosure foam above duct.PDF
- MWAM016 Main enclosure foam at side top.PDF
- MWAM017 Main enclosure foam lid.PDF
- MWAM018 Ac enclosure foam top side.PDF
- MWAM019 AC enclosure foam top back.PDF
- MWAM020 AC enclosure foam top front.PDF
- MWAM021 Main enclosure tie down bar.PDF
- MWAM028 ASC housing.pdf
- MWAM029 ASC rack front.PDF
- MWAM032 PSU front panel.PDF
- MWAM037 Digital rack.pdf
- MWAM038 Electronics Case.PDF
- MWAM039 SBC Enclosure.PDF
- MWAM040 Insulation Protection Sheet.PDF
- MWAM041 Mounting Bar.PDF
- MWAM042 Lid Stiffening.PDF
- MWAM044 Blank Connector panel.PDF
- MWAM045 Corner Insulation Segment.PDF
- MWAM046 Cable Insulation Section.PDF
- MWAM047 Flat Connector panel.PDF
- MWAM051 PSU Mains Cover.PDF
- MWAM052 Caster Bracket.PDF

- **Misc**
  - Electronics Rack_GreyX.pdf
  - Enclosure AC wiring.pdf
  - Enclosure_Control_Interconxs_V3.pdf
  - Enclosure_DC_Power_Interconxs V2.pdf
  - Enclosure_RF_Interconxs_V3.pdf
  - Enclosure_Sys_Diagram V4.pdf
  - F-Type Mounting V2.pdf
  - i2c addresses(revised).xls
  - Mech_Prob_ClkRx_mounting.pdf
  - ReceiverNode_Prototype_Build.pdf
  - MWA_Prototype_Outstanding_Issues_020211.pdf

- **Software**
  - **ASC Code**
    - functions.c
    - functions.h
    - main.c
  - **PSU I2C Monitor**
    - I2C.py
    - output.csv
    - scan_serial_ports.py
  - **Receiver Libraries**
    - **API Documentation**
      - **dsc-python**
        - dscext.html
        - dscwrap.html
        - genindex.html
        - index.html
        - pydsc.html
        - py-modindex.html
        - search.html
        - search.js
        - **static**

basic.css
default.css
doctools.js
file.png
jquery.js
minus.png
plus.png
pygments.css
searchtools.js
sidebar.js
underscore.js

receiver-tests

.buildinfo
genindex.html
index.html
search.html
searchindex.js

static

basic.css
default.css
doctools.js
file.png
jquery.js
minus.png
plus.png
pygments.css
searchtools.js
sidebar.js
underscore.js

Debian Packages

dsc-python_0.1-1_I386.deb
dscud-dev_6.02-1_all.deb
dsc-wrap_0.1-1_I386.deb

Documents

Testing.pdf
Training.pdf

Source Code

dsc-python-0.1.tar.gz
dscud-dev-pkg-6.02-1.tar.gz
dsc-wrap-0.1.tar.gz
receiver-scripts-0.1.tar.gz
receiver-tests-0.1.tar.gz

Testing

MST-0417 01. Initial Photographs.doc
MST-0417 02. Resistance Check.doc
MST-0417 03. Electrical.doc
MST-0417 04. I2C Verification.doc
MST-0417 05. CPLD.doc
MST-0418 01. Continuity and shorts.doc
MST-0418 02. Photographs.doc
MST-0419 01. Resistance.doc
MST-0420 01. Electrical Safety.doc
MST-0421 01. Initial Photographs.doc
MST-0421 02. Resistance Check.doc
MST-0421 03. Electrical.doc
MST-0421 04. RF Gain and Frequency Response.doc
MST-0421 05. I2C Verification.doc
MST-0421 06. Final Photographs.doc
MST-0422 01. Current Draw.doc
MST-0422 02. Temperature Run.doc
MST-0422 03. I2C Test.doc
MST-0422 04. Characterisation test.doc
MST-0423 01. Photographs.doc
MST-0423 02. No shorts.doc
MST-0424 01. Operational Test.doc
MST-0425 01. Photographs.doc
MST-0425 02. Shorts.doc
MST-0426 01. Mains Testing.doc
MST-0426 02. Power Test.doc
MST-0426 03. Temperature Run.doc

MST-0429 01. Mains Testing.doc
MST-0429 02. Voltage Test.doc
MST-0429 03. Load test - 1 Hour Special.doc
MST-0429 03. Load test.doc
MST-0429 04. ADC Load Test.doc
MST-0429 05. Photographs.doc
MST-0431 01. Initial Photographs.doc
MST-0431 02. Voltage and current draw.doc
MST-0431 03. I2C2PC.doc
MST-0431 04. Final Photographs.doc
MST-0432 01. MWA Air Conditioner Performance.doc
MST-0432 02. MWA Air Conditioner Performance - Extended Range1.doc
MST-0432 03. MWA Air Conditioner Performance - Extended Range2.doc
MST-0448 01. SBC Control Alarms.doc
MST-0448 02. SBC ASC Control.doc
MST-0448 03. SBC Digital Crate Clock.doc
MST-0448 04. SBC Antennae.doc
MST-0497 01. Photographs.doc
MST-0497 02. Shorts.doc
MST-0498 01. Photographs.doc
MST-0498 02. Shorts.doc

MWA Jig Photos

Jig Photos

DSC_9844.JPG
DSC_9848.JPG
DSC_9854.JPG
DSC_9858.JPG
DSC_9861.JPG
DSC_9865.JPG
DSC_9870.JPG
DSC_9876.JPG
DSC_9908.JPG
DSC_9942.JPG
JIG-005 - PSU Switching Jig #1.jpg
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JIG-005 - PSU Switching Jig #3.jpg
JIG-005 - PSU Switching Jig Original #1.jpg
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JIG-006 - 48V Original.jpg
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JIG-006 - 5V & 12V Original.jpg
JIG-006 - 5V & 12V.jpg.jpg
JIG-007 - Voltage and Current Draw Jig #1.jpg
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JIG-008 - Continuity and Short Jig #3.jpg
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JIG-008 - Continuity and Short Jig Original #2.jpg
JIG-008 - Continuity and Short Jig Original #3.jpg
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MWA Jig Documents

MWA JIG-001 - MWA Air Conditioner Control Box.pdf
MWA JIG-002 - MWA PSU.pdf
MWA JIG-003 - Megger Tester.pdf
MWA JIG-004 - I2C to USB Adapter.pdf
MWA JIG-005 - PSU Switching Jig.pdf
MWA JIG-006 - MWA PSU Loading Jig.pdf
MWA JIG-007 - MWA Voltage and Current Draw Jig.pdf
MWA JIG-008 - MWA Continuity and Short Test Jig.pdf
MWA JIG-009 - Appliance Tester.pdf
MWA-JIG-010 - ASC Control.pdf
MWA-JIG-011 - MWA ATIM-C test connectors.pdf
MWA-JIG-012 - I2C to ASC adaptor.pdf

- **MWA JIG-001 - MWA Air Conditioner Control Box**
  - MWA Control Box #1.JPG
  - MWA Control Box #2.JPG
  - MWA Control Box #3.JPG
  - MWA Control Box Complete Jig.JPG
  - MWA Control Box Internal #1.JPG
  - MWA Control Box Internal #2.JPG
  - wiring diagram.bmp
  - wiring diagram.JPG
  - **Original Photos**
    - MWA Control Box #1.JPG
    - MWA Control Box #2.JPG
    - MWA Control Box #3.JPG
    - MWA Control Box Complete Jig.JPG
    - MWA Control Box Internal #2.JPG
    - MWA Control Box Internal.JPG
- **MWA JIG-002 - MWA PSU**
  - IEC Connector #1.jpg
  - IEC Connector #2.jpg
  - MWA PSU Internal #1.JPG
  - MWA PSU Internal #2.JPG
  - MWA PSU Wiring.bmp
  - MWA PSU Wiring.JPG
  - MWA PSU.JPG
  - **Original Photos**
    - MWA PSU Internal #1.JPG
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    - MWA PSU.JPG
- **MWA JIG-003 - Megger Tester**
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- **MWA JIG-004 - I2C to USB Adapter**
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- **MWA JIG-005 - PSU Switching Board**
  - led.bmp
  - Toggle Switch #1.jpg
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  - Toggle Switch - Original.jpg
  - Wiring Diagram.bmp
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- **MWA JIG-006 - MWA PSU Loading Jig**
  - HS 10-50.bmp
  - HS 10-50.jpg
  - HS 75-150.bmp
  - HS 75-150.jpg
  - resistors.pdf
  - switch.bmp
  - switch.jpg
  - Wiring Diagram #2.bmp
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  - Wiring Diagram.JPG
- **MWA JIG-007 - Voltage and Current Draw**
  - Wiring Diagram Original.bmp
  - Wiring Diagram.bmp
  - Wiring Diagram.jpg
  - Wiring Diagram.psd
- **MWA JIG-008 - Conttinuity and Short Test Jig**
  - wiring diagram Part 1.bmp

wiring diagram Part 1.JPG
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wiring diagram.bmp

MWA JIG-009 - Appliance Tester
Appliance Tester External Original.jpg
Appliance Tester External.jpg
Appliance Tester Internal Original.jpg
Appliance Tester Internal.jpg

Results
adc load test_04_mst-0429_v0.037_sn001_20101117_12.pdf
digital rack photos.pdf
load testing - 1 hour special_03_mst-0429_v0.037_sn001_20101117_12.pdf
load testing_03_mst-0429_v0.037_sn001_20101117_12.pdf
mains testing_01_mst-0429_v0.037_sn001_20101117_12.pdf
mst-0421_sn001_photographs.zip
mst-0497 sn001 noshorts results.pdf
mst-0497 sn001 photo results1.pdf
mst-0497 sn002 noshorts results.pdf
mst-0497 sn002 photos1.pdf
mwa ac control box electrical safety_01_mst-0420_v0.003_sn001_20101207_11.pdf
mwa air conditioner performance_01_mst-0432_v0.072_sn001_20101220_16.pdf
mwa asc module characterisation test_04_mst-0422_v0.030_sn001_20101217_10.pdf
mwa asc module characterisation test_04_mst-0422_v0.030_sn002_20101221_11.pdf
mwa asc module current draw_01_mst-0422_v0.030_sn001_20101217_12.pdf
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mwa internal rack sbc control alarms_01_mst-0448_v0.009_sn001_20110120_10.pdf
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mwa intrack asc control mst-0448_v0.009_sn001_20110120.pdf
mwa psu module photographs_05_mst-0429_v0.037_sn001_20101207_09.zip
mwa sbc mains testing mst-0426_v0.008_sn001_20110120.pdf
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mwa tempmon voltage-current test_02_mst-0431_v0.014_sn001_20101207_10.pdf
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operational tests_01_mst-0424_v0.001_sn001_20110120_10.pdf
power test_2_mst-0426_v0.008_sn001_20101222_09.pdf
resistance_test_01_mst-0419_v0.001_sn001_20101207_10.pdf
temperature run_02_mst-0422_v0.030_sn001_20101216_10.pdf
temperature run_02_mst-0422_v0.030_sn002_20101220_14.pdf
temperature run_03_mst-0426_v0.008_sn001_20101222_13.pdf
voltage testing_02_mst-0429_v0.037_sn001_20101117_12.pdf