MWA PRODUCTION JIG

NUMBER: MWA JIG-006 DATE CREATED: 29/7/2010

PRODUCT: MWA Receiver CREATED BY: C.Coleman

DESCRIPTION: MWA PSU Load Testing Jig.

IMAGE #1: 5V and 12V Test Load.

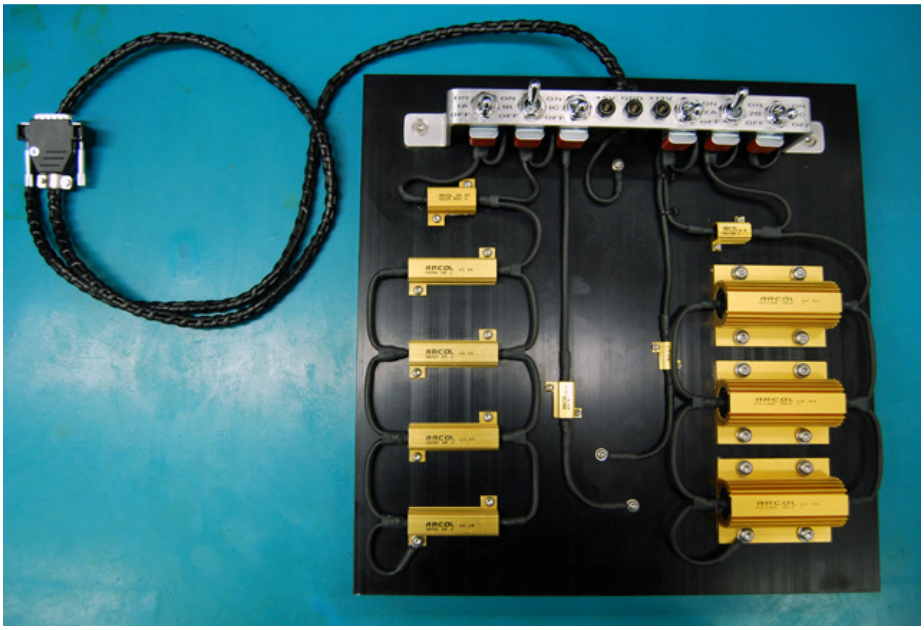
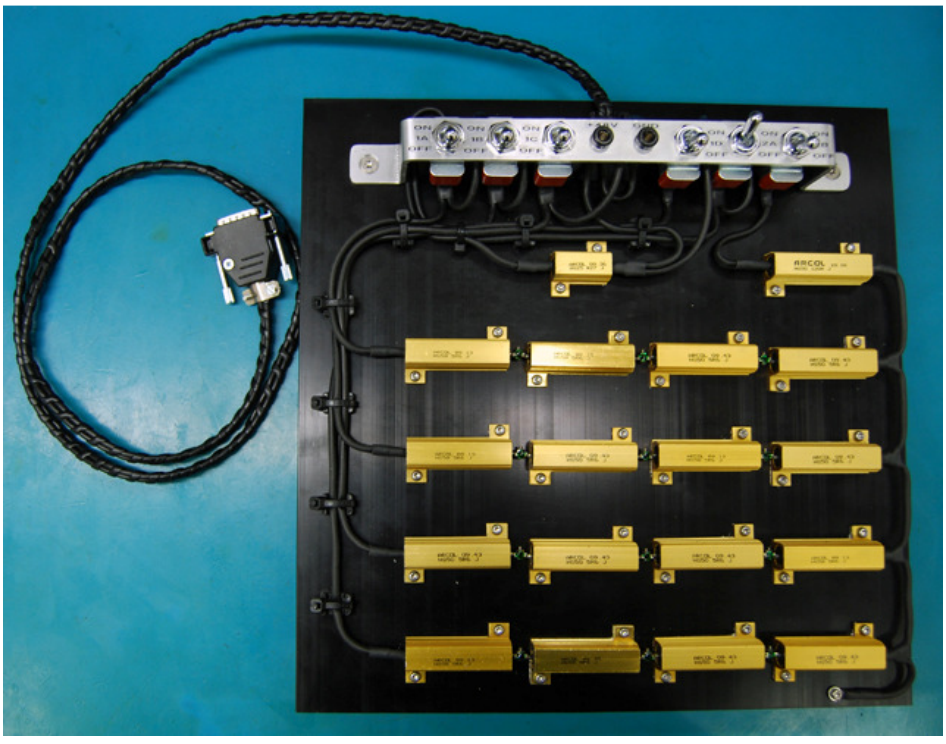
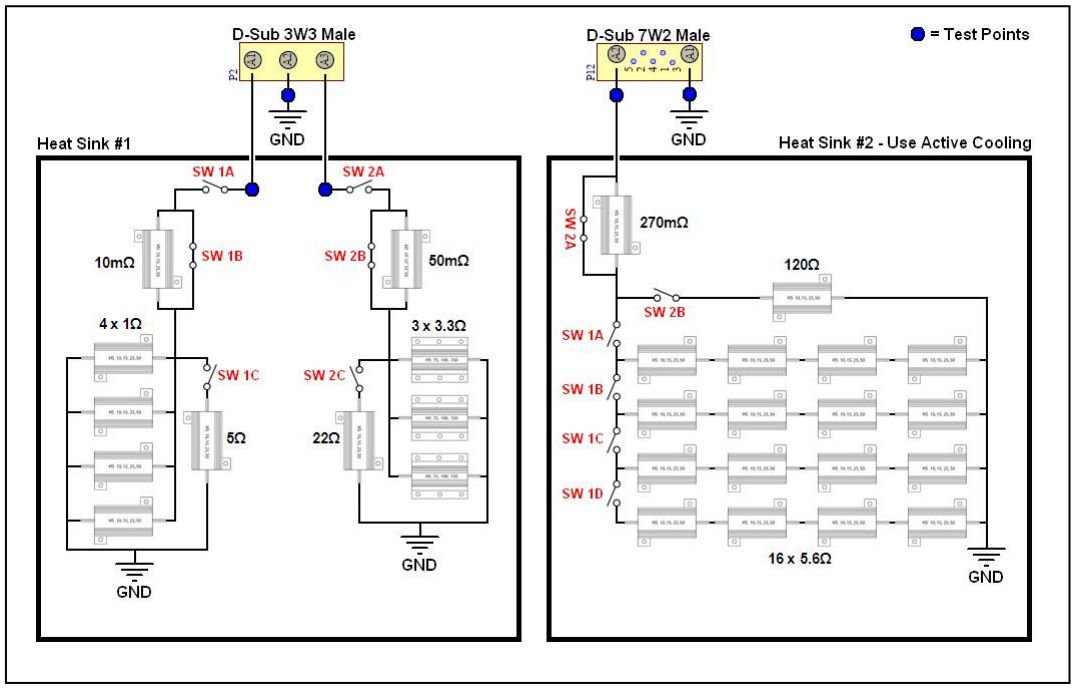


IMAGE #2: 48V Test Load.



WIRING DIAGRAM:



NOTES:

Original description for reference:

c. High power load resistors on heat sinks
d. Cables to mating plugs for P2 & P12
e. Banana sockets for test points to measure voltages across load resistors.
f. Power resistors are +/-5% and 1.05 x 644 = 676W is above Cosel capacity.
g. Add facility for trim resistors.
h. Allow for hardwiring in options such as:
    10. On 5V load:
        i. 10mΩ in series with 5V load -5% is 0.2475Ω, 20.2A, 101W
        ii. 10 mΩ will dissipate 4.1W RS 160-629 is 25W
        iii. 5Ω in parallel with 5V load +5% is 0.2494Ω, 20.05A, 100.2W
        iv. 5Ω will dissipate 5W RS 159-758 is 15W
    11. On 12V load:
        i. 50mΩ in series with 12V load -5% is 1.095Ω, 10.96A, 131.5W
        ii. 50mΩ will dissipate 6W RS 107-3481 is 10W
        iii. 22Ω in parallel with 12V load +5% is 1.097Ω, 10.94A, 131.3W
        iv. 22Ω will dissipate 6.5W RS 159-916 is 10W

NOTES Continued:

i. On 48V load:
    i. 270mΩ in series with 48V load -5% is 5.59Ω, 8.59A, 412W
    ii. 270mΩ will dissipate 20W RS 615-0381 is 25W
    iii. 120Ω in parallel with 48V load +5% is 5.605Ω, 8.56A, 411W
    iv. 120Ω will dissipate 19.2W RS 161-004 is 50W

10. Use 2 x RS 264-670 heat sinks, 1 for 48V load and one for both 5V & 12V load
11. These are 0.3C/W in free air, use fan forced cooling on at least the 48V heat sink

Extra Note on power calculations:

5V load = 4 x RS 158-301 1Ω 50W switched in parallel.
200W capacity, nom. 20A = 100W

12V load = 3 x RS 136-200 3.3Ω 100W switched in parallel.

300W capacity, nom. 10.9A = 131W

48V load = 16 x RS 107-4131 5.6Ω 50W 4 switched parallel ranks of 4 resistors in series.

800W capacity, nom. 8.6A = 413W

Total max power = 100 + 131 + 413 = 644W

CALIBRATION HISTORY:

No Calibration Required