

## MST-0422

*MWA analogue signal conditioning module*

### **Test: Characterisation test**

*Note: only for pre-production units or samples*

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Serial number: 002

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Tester: Julian Schneider

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Date: 21 Dec 2010

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### **Test the following properties**

1. Observe output on Spectrum Analyser 50MHz to 400MHz. Apply 10MHz to 1GHz noise source (use PSI's noise source – NC3208 Noise SRC, use Minicircuits ZFL-2500 AMP No Pads 1.2GHz filter) to input of each channel in turn. Use ~~50  $\Omega$  coaxial attenuators to set input power level to xx dBm.~~ Look for spurious signals on output while changing on-board attenuation.  
**- no spurious signals**
2. Noise floor with 75  $\Omega$  terminated input, minimum attenuation. Observe using spectrum analyzer between 50MHz and 400MHz on each channel. Record spot frequency values at 50MHz, 100MHz, 150MHz, 200MHz, 250MHz & 300MHz and note any atypical results over the span.  
**- see next page**
3. Channel isolation. Use VNA to measure adjacent channel isolation 50MHz to 400MHz and record plots.  
**> 130dB for each channel combination**
4. Use VNA to measure P1dB point on each channel at 150MHz.
  - **Channel 1: 23.6dB**
  - **Channel 2: 23.9dB**
  - **Channel 3: 23.8dB**
  - **Channel 4: 24.1dB**
  - **Channel 5: 23.7dB**
  - **Channel 6: 24.0dB**
  - **Channel 7: 24.1dB**
  - **Channel 8: 24.0dB**

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### **Comments**

This is a one-off test, not for production runs.

**MWA ASC Module****Test: Characterisation Test**

Serial number: 002  
Tester: Julian Schneider  
Date: 20 Dec 2010

		<b>Gain in dBm and Noise in dBm / Hertz @</b>					
<b>Channel</b>	<b>dB @ 230Mhz</b>	<b>80MHz</b>	<b>100MHz</b>	<b>150MHz</b>	<b>200MHz</b>	<b>250MHz</b>	<b>290MHz</b>
1	33.73	-84.94	-84.11	-84.12	-84.71	-85.07	-86.10
		5.33	6.16	6.15	5.56	5.20	4.17
2	34.15	-84.73	-84.75	-84.42	-83.74	-85.27	-85.69
		5.12	5.10	5.43	6.11	4.58	4.16
3	34.15	-85.95	-85.14	-85.47	-84.98	-85.31	-86.47
		3.90	4.71	4.38	4.87	4.54	3.38
4	34.05	-85.76	-85.50	-84.90	-84.49	-84.71	-85.39
		4.19	4.45	5.05	5.46	5.24	4.56
5	34.45	-84.22	-84.29	-84.11	-84.05	-84.51	-85.47
		5.33	5.26	5.44	5.50	5.04	4.08
6	33.83	-85.37	-84.48	-84.16	-85.09	-85.40	-84.16
		4.80	5.69	6.01	5.08	4.77	6.01
7	34.05	-83.49	-84.03	-83.70	-84.52	-84.03	-85.76
		6.46	5.92	6.25	5.43	5.92	4.19
8	33.95	-84.72	-84.92	-83.71	-84.49	-84.31	-85.13
		5.33	5.13	6.34	5.56	5.74	4.92