

MWAX Modes

- MWAX 128T
 - Voltage Capture (VCS)
 - Correlator

MWAX 128T

The following are all the modes possible with MWAX configured with:

- 128T (16 RRI receivers)
- 24 x 1.28 MHz non-oversampled coarse channels
- No fringe-stopping enabled

Voltage Capture (VCS)

Modes	GB/s	TB/hr
Voltage Capture (VCS) @ 0.781 s critically sampled	15.9	57.24

Correlator

Legend:

The value in each cell is the total of all data from all coarse channels, in gigabytes, generated in 1 second (GB/s). Multiply by the duration of your observation to get total size of your observation in the mode chosen.

Blue cells	Supported	Modes identical to the legacy correlator
Green cells	Supported	Modes which are new to MWA and which are supported
Orange cells	Unsupported	Modes which take much more than 8 seconds to process 8 seconds of input data, or which generate more than 100 Gbp/s (thus not sustainable), and thus not selectable normally
Yellow cells	Limited support	Modes which take more than 8 seconds to process 8 seconds of input data but can be sustained for a limited duration



Note: when in extended / long baseline configuration, most science cases will require the 10 kHz, 0.5 sec mode at a minimum until the fringe stopping feature is enabled

Modes:			Time Resolution (s)						
cell values = Total data size (GB/s)									
fscrunch	fine chans per coarse	fine chan width kHz	0.25	0.5	1.0	2.0	4.0	8.0	
1	6400	0.2	161.69	80.85	40.42	20.21	10.11	5.05	
2	3200	0.4	80.85	40.42	20.21	10.11	5.05	2.53	
4	1600	0.8	40.42	20.21	10.11	5.05	2.53	1.26	
5	1280	1.0	32.34	16.17	8.08	4.04	2.02	1.01	
8	800	1.6	20.21	10.11	5.05	2.53	1.26	0.63	
10	640	2.0	16.17	8.08	4.04	2.02	1.01	0.51	
16	400	3.2	10.11	5.05	2.53	1.26	0.63	0.32	
20	320	4.0	8.08	4.04	2.02	1.01	0.51	0.25	

25	256	5.0	6.47	3.23	1.62	0.81	0.40	0.20
32	200	6.4	5.05	2.53	1.26	0.63	0.32	0.16
40	160	8.0	4.04	2.02	1.01	0.51	0.25	0.13
50	128	10.0	3.23	1.62	0.81	0.40	0.20	0.10
64	100	12.8	2.53	1.26	0.63	0.32	0.16	0.08
80	80	16.0	2.02	1.01	0.51	0.25	0.13	0.06
100	64	20.0	1.62	0.81	0.40	0.20	0.10	0.05
128	50	25.6	1.26	0.63	0.32	0.16	0.08	0.04
160	40	32.0	1.01	0.51	0.25	0.13	0.06	0.03
200	32	40.0	0.81	0.40	0.20	0.10	0.05	0.03
256	25	51.2	0.63	0.32	0.16	0.08	0.04	0.02
320	20	64.0	0.51	0.25	0.13	0.06	0.03	0.02
400	16	80.0	0.40	0.20	0.10	0.05	0.03	0.01
640	10	128.0	0.25	0.13	0.06	0.03	0.02	0.01
800	8	160.0	0.20	0.10	0.05	0.03	0.01	0.01
1280	5	256.0	0.13	0.06	0.03	0.02	0.01	0.01
1600	4	320.0	0.10	0.05	0.03	0.01	0.01	0.01
3200	2	640.0	0.05	0.03	0.01	0.01	0.01	0.01
6400	1	1,280.0	0.03	0.01	0.01	0.01	0.01	0.01