

Configuring the FFT Parameters in DS1104Z

Mode: Memory (16 k FFT points, FFT sampling rate = oscilloscope sampling rate).

Number of useful frequency bins: 8192. Make sure there are at least 16 k points in the acquisition memory.

Step = (FFT frequency scale) / 50.

Table 1.

FFT sampling rate, Sa/s	FFT frequency scale, Hz/div	Center frequency setting, Hz		Max. frequency span, Hz	FFT resolution, for 16 k points, Hz
		Step	Range		
1 G	1 M	20 k	0 - 500 M	12 M	61.035 k
	2.5 M	50 k		30 M	
	5 M	100 k		60 M	
	10 M	200 k		120 M	
	25 M	500 k		300 M	
	50 M	1 M		500 M	
500 M	500 k	10 k	0 - 250 M	6 M	30.517 k
	1.25 M	25 k		15 M	
	2.5 M	50 k		30 M	
	5 M	100 k		60 M	
	12.5 M	250 k		150 M	
	25 M	500 k		250 M	
250 M	250 k	5 k	0 - 125 M	3 M	15.258 k
	625 k	12.5 k		7.5 M	
	1.25 M	25 k		15 M	
	2.5 M	50 k		30 M	
	6.25 M	125 k		75 M	
	12.5 M	250 k		125 M	
125 M	125 k	2.5 k	0 - 62.5 M	1.5 M	7.629 k
	312 k	6.25 k		3.744 M	
	625 k	12.5 k		7.5 M	
	1.25 M	25 k		15 M	
	3.12 M	62.5 k		3.744 M	
	6.25 M	125 k		62.5 M	

FFT sampling rate, Sa/s	FFT frequency scale, Hz/div	Center frequency setting, Hz		Max. frequency span, Hz	FFT resolution, for 16 k points, Hz
		Step	Range		
50 M	50 k	1 k	0 - 25 M	600 k	3.052 k
	125 k	2.5 k		1.5 M	
	250 k	5 k		3 M	
	500 k	10 k		6 M	
	1.25 M	25 k		15 M	
	2.5 M	50 k		25 M	
25 M	25 k	500	0 - 12.5 M	300 k	1.526 k
	62.5 k	1.25 k		750 k	
	125 k	2.5 k		1.5 M	
	250 k	5 k		3 M	
	625 k	12.5 k		7.5 M	
	1.25 M	25 k		12.5 M	
10 M	10 k	200	0 - 5 M	120 k	610.3
	25 k	500		300 k	
	50 k	1 k		600 k	
	100 k	2 k		1.2 M	
	250 k	5 k		3 M	
	500 k	10 k		5 M	
5 M	5 k	100	0 - 2.5 M	60 k	305.2
	12.5 k	250		150 k	
	25 k	500		300 k	
	50 k	1 k		600 k	
	125 k	2.5 k		1.5 M	
	250 k	5 k		2.5 M	
2 M	2 k	40	0 - 1 M	24 k	122.1
	5 k	100		60 k	
	10 k	200		120 k	
	20 k	400		240 k	
	50 k	1 k		600 k	
	100 k	2 k		1 M	

FFT sampling rate, Sa/s	FFT frequency scale, Hz/div	Center frequency setting, Hz		Max. frequency span, Hz	FFT resolution, for 16 k points, Hz
		Step	Range		
1 M	1 k	20	0 - 500 k	12 k	61.0
	2.5 k	50		30 k	
	5 k	100		60 k	
	10 k	200		120 k	
	25 k	500		300 k	
	50 k	1 k		500 k	
500 k	500	10	0 - 250 k	6 k	30.5
	1.25 k	25		15 k	
	2.5 k	50		30 k	
	5 k	100		60 k	
	12.5 k	250		150 k	
	25 k	500		250 k	
200 k	200	4	0 - 100 k	2.4 k	12.2
	500	10		6 k	
	1 k	20		12 k	
	2 k	40		24 k	
	5 k	100		60 k	
	10 k	200		100 k	
100 k	100	2	0 - 50 k	1.2 k	6.1
	250	5		3 k	
	500	10		6 k	
	1 k	20		12 k	
	2.5 k	50		30 k	
	5 k	100		50 k	

FFT sampling rate, Sa/s	FFT frequency scale, Hz/div	Center frequency setting, Hz		Max. frequency span, Hz	FFT resolution, for 16 k points, Hz
		Step	Range		
50 k	50	1	0 - 25 k	600	3.05
	125	2.5		1.5 k	
	250	5		3 k	
	500	10		6 k	
	1.25 k	25		15 k	
	2.5 k	50		25 k	
25 k	25	0.5	0 - 12.5 k	300	1.52
	62.5	1.25		750	
	125	2.5		1.5 k	
	250	5		3 k	
	625	12.5		7.5 k	
	1.25 k	25		12.5 k	