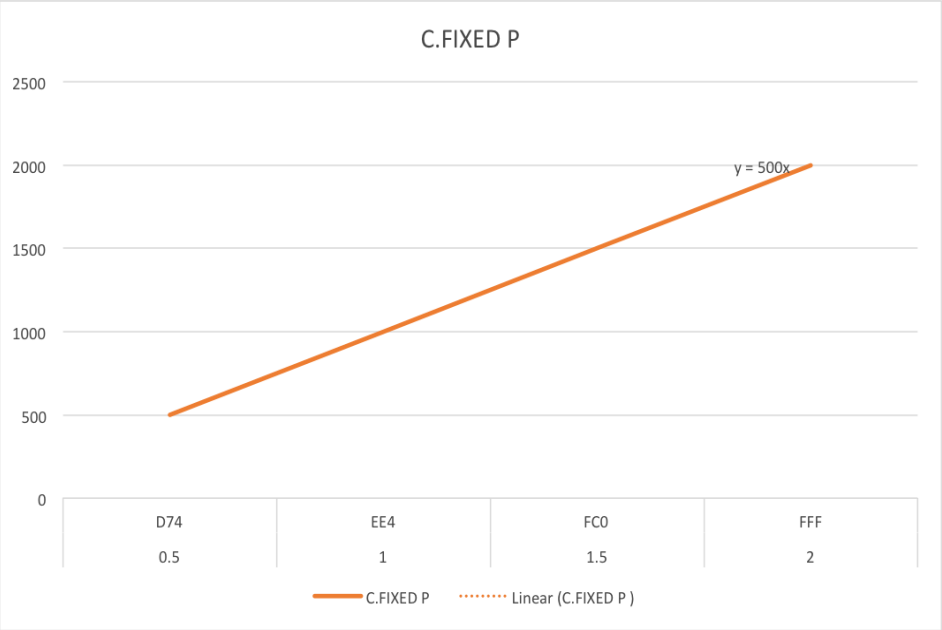
1. The calibration data and the results:

Position in (cm)	Analog Input (V)	ADC sample in (Hex)	ADC sample in (Dec)	Correct Fixed Point Output	Measured Fixed Point Output
0.5	2.775	0x0D74	3444	500	1722
1.0	3.072	0x0EE4	3812	1000	1906
1.5	3.243	0x0FC0	4032	1500	2016
2.0	3.3	0x0FFF	4095	2000	2048



From above Graph we have got the formulae to find Fixed Point Number:

- Position= 500* (int) input/ 1000
  Here we are using Delta value as 1000

2. The accuracy data.

True Poaition (Xti) in cm	Measured Position (Xmi) in cm	Error (Xti - Xmi)
0.5	0.425	0.075
1	0.804	0.196
1.2	0.901	0.299
1.5	1.425	0.075
1.8	1.537	0.263
2	2.046	-0.046

3. Average accuracy = $\frac{1}{n}\sum_{i=1}^{n} | x_{ti} - x_{mi} |$

= 0.143667