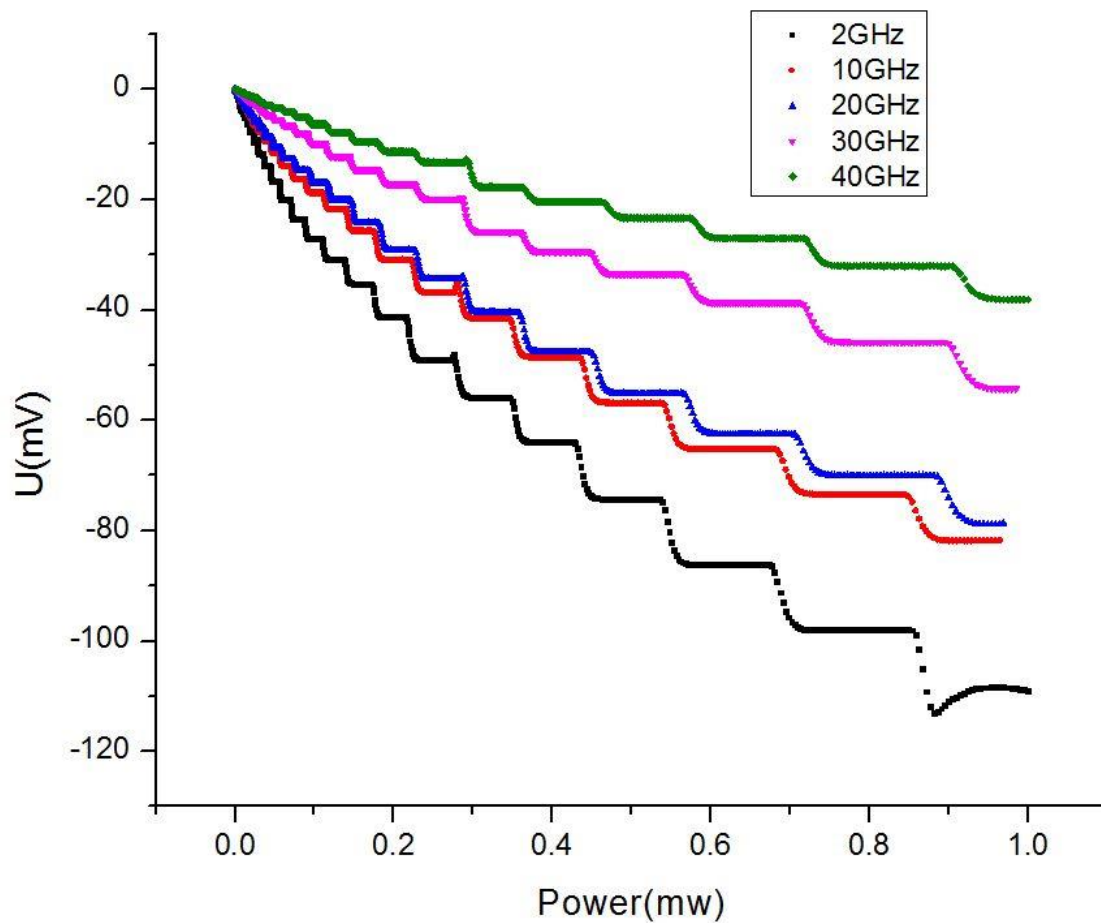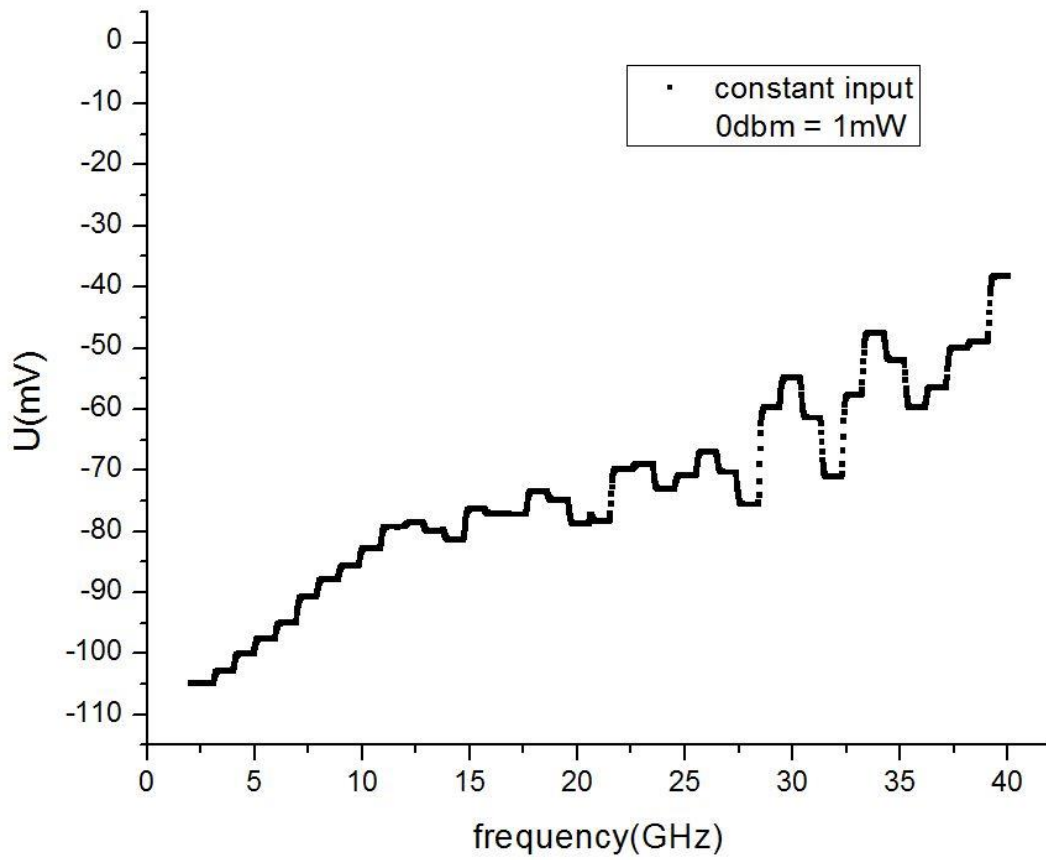# Report on the calibration of Detector 560-7K50

I Picked several frequencies and measured the negative voltage with lockin amplifier.

The traces looked quite normal (small power corresponds to small negative voltage and larger frequency corresponds to larger decay). Sampling interval is every 1dbm.
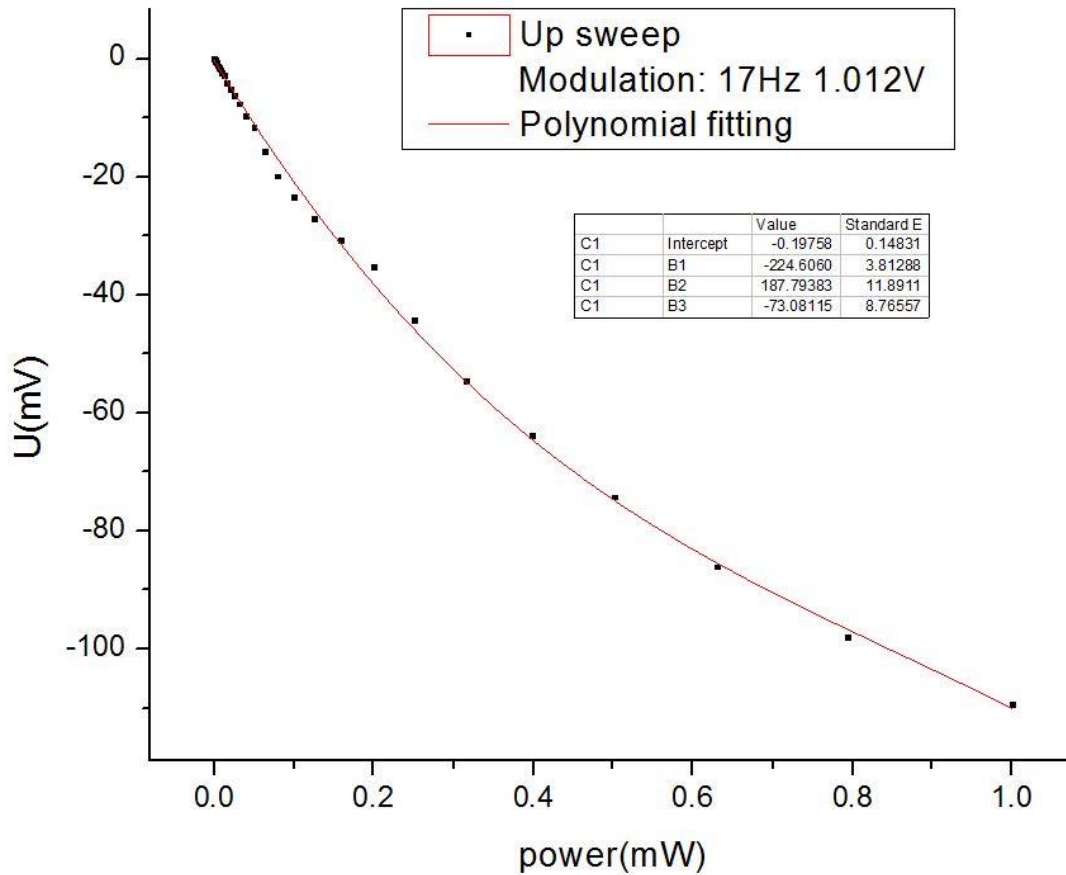
But it is not exactly the case.

At large frequency, there are fluctuations.

At 2GHz, when fitted with polynomial, it becomes quite satisfactory on order 3 or more.

		Value	Standard E
C1	Intercept	-0.19758	0.14831
C1	B1	-224.6060	3.81288
C1	B2	187.79383	11.8911
C1	B3	-73.08115	8.76557

All the power shown above has been converted to mW instead of dbm with formula:

$$mW = 10^{(dbm/10)}$$

So it is quite convincing that the negative voltage measured between pin 1 and 2 of the detector has a polynomial dependence with the power it detects (including the loss on the coaxial cable).