

# Observation of noise in production VPTs at 1.8T

## VPTs with bar-codes 6901-7900

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### 1. Introduction

This note gives details of noise observations in recent batches of VPTs, covering devices with bar-codes from 6901 to 7900. The observations are preliminary, because these VPTs have only been measured once in the RAL 1.8T test rig. A final assessment of these VPTs will be made when they have all been remeasured to confirm the initial observation of noise.

### 2. VPTs displaying discharges

A preliminary list of VPTs showing spikes is given in Table 1. This list covers all tubes with bar-codes in the range 6901-7900.

Bar-code range	Noisy	Bar-codes of noisy VPTs
6901-7000	3	6915 6923 6968
7001-7100	9	7002 7004 7031 7039 7051 7067 7086 7091 7099
7101-7200	6	7104 7112 7120 7121 7160 7182
7201-7300	3	7205 7249 7260
7301-7400	6	7310 7333 7345 7350 7352 7386
7401-7500	6	7402 7423 7464 7471 7480 7496
7501-7600	10	7510 7521 7542 7551 7554 7566 7568 7580 7586 7594
7601-7700	5	7613 7621 7629 7637 7647
7701-7800	8	7702 7717 7741 7742 7756 7780 7788 7798
7801-7900	11	7805 7807 7824 7841 7842 7845 7847 7848 7862 7863 7868

Table 1. Bar codes of VPTs displaying discharges in a 1.8T magnetic field

A total of 67 noisy VPTs are listed here, or 6.7% of the devices with bar-codes in the range 6901-7900.

Table 2 gives more detailed information on these VPTs, including the angle at which the discharges were first observed. In this table the VPTs are ordered by the RIE production number rather than the bar code. The angle can be positive or negative, according to the alignment of the VPT in the 1.8T test rig.

RIE Production number	Bar code	Angle to 1.8T field (deg)
3371	7091	17
6442	7031	-23
7911	7260	-25
7959	7182	-35
9434	7067	-35
9507	7099	-35
10910	7471	-35
10920	7039	-35
10933	7551	15
11357	7717	-35
11367	7554	-35
11396	7121	-35
11398	6915	-35
11414	7120	-35
11618	7104	-35
12229	6923	17
12325	7112	-35
12359	6968	-35
12457	7002	-35
12496	7004	-30
12536	7051	-30
12681	7249	-35
12698	7310	-35
12712	7205	-35
12735	7086	-27
12755	7160	-35
12823	7333	-35
12848	7386	17
12953	7345	11
12976	7350	-30
12993	7352	-35
13054	7521	11
13062	7402	11
13063	7480	21
13094	7423	25
13206	7629	17
13348	7566	21
13354	7430	-35
13359	7464	9
13371	7496	-35
13373	7510	7
13375	7568	9
13396	7580	30
13441	7542	19
13459	7594	-27
13470	7586	-35
13492	7613	-35
13519	7637	-35
13546	7647	-30
13548	7621	-9

RIE Production number	Bar code	Angle to 1.8T field (deg)
13608	7702	-35
13611	7756	19
13613	7741	-35
13655	7780	-27
13662	7742	-35
13695	7788	-30
13702	7798	-27
13712	7805	-35
13715	7862	-35
13718	7863	-35
13728	7807	27
13767	7841	-35
13768	7868	-35
13772	7842	-35
13780	7845	9
13782	7824	15
13791	7847	30
13792	7848	-35

**Table 2. Details of VPTs displaying discharges, ordered by RIE production number**

### **3. Summary and conclusions**

This note has presented preliminary data on the bar-codes and production numbers of all VPTs with bar-codes in the range 6901-7900 which have displayed discharges when measured in the RAL 1.8T test rig. 6.7% of these VPTs appear to be noisy, and will be remeasured at RAL to confirm this observation.

### **4. References**

- [1] 'Analysis of noise in production VPTs at 1.8T: I. VPTs with bar-codes 3501-5000', B W Kennedy, 14 October 2003
- [2] 'Observation of noise in production VPTs at 1.8T', B W Kennedy, 10 February 2003