Dear Mr. Kitamura:

Following your questionnaire as of Aug. 14 we answer as follows:

**Copper shield**

The first batch has been delivered with this shielding. The idea was to reduce influence of the noise coming from the DC/D converter to the output signal. Since we could not measure any improvement, let's say we could not measure any influence on the output signal. Furthermore, the shielding was a risk for short circuits to the pins of the DC/DC converter. Therefore, we decided not to use the shielding.

**Stacked surface-mount components**

The compensation of the control circuitry became more complicated due to splitting the ground. Therefore, additional components became necessary, which have been stacked mounted. In case of correct soldering, this is no reason for less reliability. At the series production, nothing will be stacked.

**Component Rating**

The existing space for the components schematics 5549C021 was not big enough for the old capacitors. Therefore, we took smaller and more expensive ones at the latest serie. The voltage withstand specification is absolutely good enough.

**Component Placement**

Without splitting ground, we have much less components on board. Anyway, we are able to increase the distance of the PMT pads.

**Copper trace spacing**

The distances of the copper traces are following the requirements of item 3.3.5 ERDv2.3. The covering with HumiSeal after soldering the PMT leads is very good, because all high voltage stressed components are protected then. At all places where soldering is not necessary, the PCB has been covered with solder resist which is temperature and voltage resistive. This does not allow any normal soldering.

**Output Kabel attachment**

The inner isolation of the bare centre conductor is Teflon (PTFE). The isolation will not be damaged through soldering.
The small radius could be made better if the cable will be mounted flatly on the PCP.
For this idea it should be decided how to mount the cable.

**First dynode voltage**

600V DC has been set.

**Voltage accuracy**

The buffer amplifier has a big offset which obviously is not compensated.

**Voltage stability**

The setting voltage is too low in order to let the control circuitry which is responsible for the stabilisation for the first dynode voltage find the correct working point.

Due to the coupling capacitors between the splitting ground we unfortunately get unstable conditions. An anode-cathode voltage > 1300V gives us stable condition also without a resistor.

**Noise induced by ADC reads**

During a read cycle the ADC takes remarkable more current and the clock slope is very fast. Better blocking capacitors and an improvement of the clock line lay out will give us a decrease of cross talk.

We hope that our answers are sufficient to continue the co-operation

Looking forward to hearing from you again

Dr. Frank Gleisberg
Managing director