



Purple Card



Purple Card Spec



- Two channels per printed circuit board
- Size ~20 sq. in. or best effort, but see proposal from Leflat below.
- Voltage regulation of SVX4 power and board power. SVX4 voltage(s) will be controlled by HDI enable/disable. Power could be supplied via an 8-pin header. **LEDs will indicate power status (on if LED is lit). Voltage regulator will be variable voltage version of ON regulator (part # CS5253B-1). Test points will be supplied to allow check of output voltages via well-shielded high impedance oscilloscope leads or DVM.**



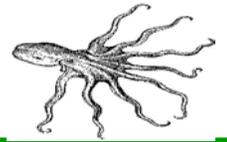
Purple Card Spec (2)



- Temperature monitor(4 pin header): DC voltage out covering range - 20 to 50 degrees centigrade. The target device is VMIC VMIVME3113 ADC, provides 8 bit digitization, and 64 inputs. Full range coverage is NOT mandatory. A temperature measurement of $\pm 2^{\circ}\text{C}$ is adequate. Assumed temperature measuring device is 1000Ω platinum RTD used in Run2a. Full range of V_{out} will be 0-1v, so that x10 gain mode of VMIC ADC will need to be used. $V_{out}=0$ will correspond to -20 degrees, $V_{out}=+1\text{V}$ to $+50$ degrees.
- \Rightarrow * 5) HV (silicon bias) supplied via a SHV connector, and controlled by HDI enable/disable from the SASEQ. HV is passed thru to the digital jumper cable. KSU will investigate how to control all silicon bias voltages up to 1000V, since the PVNs used in Run2a only work to 300v. KSU is investigating use of IGRTs for switching. The maximum HV current expected is 3.2mA.



Purple Card Spec (3)



- CAL-SR: **two** LEMO connectors
- \Rightarrow * fuses on SVX4 power, and board power. **KSU will investigate easily replaceable fuses (i.e. in fuseholder) and will continue to look for “fast” resettable fuses.**
- * Dvalid delay provision; SIP
- * clock conversion from TTL to low-voltage differential



Purple Card (cont.)



- one input 50-conductor connector from SASEQ or sequencer
- * two pairs of output connectors- digital jumper.
(twisted pair option removed)
- Two positive power supplies will be needed:
 - +4v, ~4-8A for board and SVX4
 - +5v, low current, for HV switches.



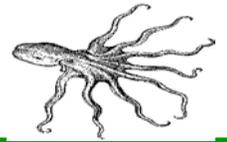
Questions?



- 1) Do we need to protect against scenarios where e.g the DVDD line has blown a fuse, but AVDD and the transceiver power are still enabled?
- 2) Layout- see comments from Leflat.



Leflat suggested layout



list of the front panel components (preliminary):

1. 50-pin connector from SASEQ;
 2. Two AVX connectors for “jumper” cables;
 3. Two SHV connectors for detector biasing;
 4. Two LEMO-00 connectors for CAL-SR;
 5. Board Power (& SVX4 Power) 8-pin header;
 6. Temperature monitor 4-pin header;
 7. 8 fuses [(AVDD,DVDD,+5V,+15V) x 2];
 8. 10 LEDS
- [(AVDD,DVDD,+5V,+15V,HDI_ENABLE) x 2];