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APPLICATION NOTE



VBAT Feature on NAI VPX Series Power Supplies

VBAT Description and Intent

The VBAT option is part of the VITA 62 power supply and VITA 46 VPX Baseline Standards. These standards state that the power supply may either be the source of the VBAT signal or an energy storage module (such as a battery) can be used in the power supply. NAI chose to use the power supply +3.3_Aux output to provide the VBAT; **NOT** a battery. The VBAT output is a bussed signal on the VITA 46 backplane and is intended for powering low power devices (up to 1Amp) such as a clock or a processor in sleep mode. The reason one would use the VBAT output vs. the +3.3V_Aux output (directly) is because the VBAT provides a separate line to dedicate to low power needs and it has its own, separate overcurrent protection. It would not be affected by any type of overcurrent situation that may occur on the +3.3_Aux output. The intention of this output is **NOT** to connect to a battery as it would apply a lot of leakage current onto the battery and quickly discharge it.

Advantage of Powering from +3.3Vdc_Aux output

The +3.3Vdc_Aux output can remain on when all other outputs are off (provided that the input power is still applied) when used in conjunction with the ENABLE*/INHIBIT* feature of VITA 62. Refer to the information below:

Pulling INHIBIT* Low turns off VS1, VS2, VS3 & ±12vdc Aux outputs. An input of <0.8vdc is regarded as a low and an input of >2.0vdc is regarded as a high. Regards a no-connect as a High. This signal along with the ENABLE* signal determines the output power status of the power supply. A Low applied to both ENABLE* & INHIBIT* will result in the +3.3V_Aux remaining on when all other outputs are off

Refer to the Power Status table below.

Control Input States		Power Output States	
ENABLE*	INHIBIT*	+3.3V_AUX	VS1, VS2, VS3, +12V_AUX & -12V_AUX
High	High	Off	Off
High	Low	Off	Off
Low	High	On	On
Low	Low	On	Off

The VBAT output can be ordered as an option on the NAI VPX series power supplies and it is on Pin A2 of the VITS 62 P1 connector.

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