NIMbox NDA8 - 8 channel DAC 100 MHz

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This single slot wide NIM module is a pre-configured NIMbox version with 4 x SU710 sub-modules. NDA8 is a 8 channel DAC 100 MHz.

Programming the internal FPGA allows to set-up the ADC channels and their data read out but also to define logic functions for the I/O ports. This includes AND/OR coincidences and majorities fan in / fan out etc. but also includes more complex features as timer, counter, and even multi-hit dead-time less Time-to digital converter. All logic functions are programmed into the FPGA via the high speed USB-2 interface.

Using the provided LabView VI library "Toolbox" easy and fast programming of all configurations settings and functions is possible.

Main Features

- 8 channel DAC 100 MHz
- USB-2 interface for programming, control and read-out
- Pre-configured firmware with standard functions for logic and built-in hardware (I/O and ADC's)
- "Logic box" tool set for virtual wiring, configuring and read-out within National Instruments LabView

- Single width NIM module
- 8 channel DAC, 14-bit, maximum 100MHz with programmable frequency divider
- 2 outputs per channel, one is amplified, the other is inverted
- On board memory for 1024 values
- Programmable logic functions as AND / OR / XOR / NOT, Fan In / Fan Out, complex multi-level logic conditions possible, configurable FPGA embedded functions as 32-bit scaler / counter, clock, pulse / delay and gate generator, synchronizer
- EEPROM to save programmed configuration
- High-speed USB-2 interface for programming, read-out and firmware upgrades
- Power consumption: 6V x 800mA (2A fuse)

Standard configurations

Items	Description
NDA8	8 channel DAC 100MHz

NEMbox/NIMbox Submodules

NIMBox/NEMbox submodules are to be used in the slots on the main FPGA carrier board. Submodule programming is done through the FPGA using the USB 2 link. Different submodules can be combined. I/O connectors: LEMO^{T} (except SU701 and SU705).

- **SU703: 4 channel leading edge discriminator with 1 channel TTL Input / Output**
  - Programmable threshold (-2.5 … +2.5V, 12 bit)
  - Programmable hysteresis (0 to 60 mV, 12 bit)
  - 5 programmable LED/s
- **SU704: 5 channel NIM or TTL Input / Output**
  - 50 Ohm, Lemo connectors
  - NIM or TTL for each channel jumper selectable
  - Output -16 mA (NIM) or 0 – 3.3V (TTL)
  - Delay 4-5 ns
- **SU706: 1 channel sampling ADC with 2 channel TTL Input / Output**
  - 14 bit resolution, 100 MHz maximum sampling rate
  - pre and post trigger sampling
  - FIFO 1024 values
  - AC coupled and DC coupled versions
- **SU707: 8 channel LVDS I/O**
  - RJ45 connectors
- **SU709: 8 temperature sensors**

- Digital, duty cycle output
- Calibrated on chip
- Range: -45 to 130 °C
- Absolute accuracy +/- 0.7 °C, chip resolution 0.005 °C

- **SU710: 2 channel DAC**
  - 100 MHz / 14 bit, +/-1V range (at 50Ohm)
  - Memory for 1024 values
- **SU711: 5 channel delay**
  - 0.5 to 128 ns (other ranges on request)
  - ground delay < 20ns

Standard VHDL modules included in all firmwares:

- Discriminator (only if SU703 is present)
- Digital I/O (for all NIM / TTL I/Os)
- ADCH (ADC and histogrammer, only if SU706 is present)
- DAC (only if SU710 is present)

Standard VHDL modules included in specific firmwares:

- L – Logic (AND, OR, XOR, Flip Flops…)
- C – Counter, Clock, Timer, Gate Generator (32 bit)
- G – Counter, Clock, Timer, Gate Generator
- B – Time to Digital Converter

Item	Description
SU 703	4 channel discriminator with 1 x TTL I/O and LED's, Lemo^T
SU 704	5 channel NIM or TTL I/O, jumper selectable, Lemo^T
SU 706	100MHz 14 bit F-ADC with 2 x TTL I/O, Lemo^T
SU 707	8 channel LVDS I/O with RJ45 connectors
SU 709	8 channel temperature sensors
SU 710	2 channel 100MHz 14 bit DAC, Lemo^T
SU 711	5 channel delay 0.5 to 128 ns

Product Data Sheet	
NIMbox NDA8 - 8 channel DAC 100 MHz:	Print Product Data Sheet

Documentation	
Manual and Tech-Notes :	NIMbox-NEMbox
Introduction:	WIENER_NIM_CAMAC_introduction

Downloads

CD:	NEMbox_NIMbox