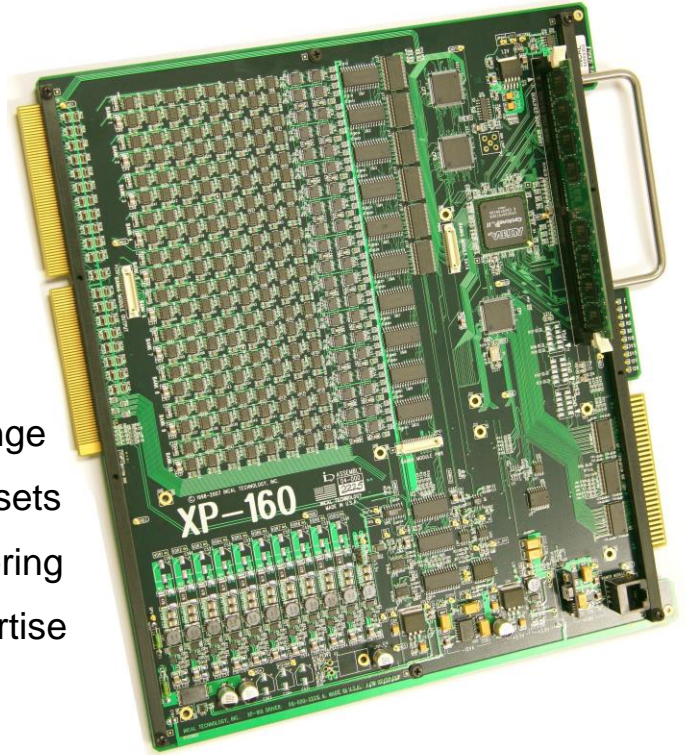# XP-160 Driver

160 digital channels Drive or Monitor

Option module with 16 analog channels

10 independent VDR groups + Expanded range

RZ format on all channels & multi-point time sets

4 slot bipolar PS voltages and current monitoring

Built on 18+ years of system and driver expertise

FEATURES:
- ✓ Fully Compatible with the existing i160 BIB's
- ✓ 160 Channels Drive or Monitor
- ✓ Voltage, Frequency, Vector Compare, Sign of Life , Current
- ✓ 16 Meg Pattern Depth per channel standard
- ✓ Compatible with Infinity160 Driver features

    ++ PLUS ++
    - ➢ **up to 3x faster download times**
    - ➢ **Speed up to 25 MHz at 16Meg Depth**
    - ➢ **4 point clock shape definition (Normal , RZ , NRZ)**
    - ➢ **Any channel can be assigned to clock format**
    - ➢ **Expanded range VDR (VIH) Voltage drive (0.5V to 5.5V)**
    - ➢ **10 independent VDR (VIH) groups**
    - ➢ **Bi-polar Power Supply Voltage measurements**
    - ➢ **Improved Mechanical design**
    - ➢ **(Optional Module) 16 independent sine wave**
    - ➢ **Runs with "INSPIRE" software**

    (Future Capabilities)
    32, 64, or 128 Meg Depth per channel
    Support integrated thermal socket solutions
   APG Memory Testing

Power requirements:

Voltage	12VDC	+/- 500mV
Current	2A Typical	4A Max

Accessories:

OMA1 Option Module Analog 1 (04-000-2233)

Specifications AC/DC:

Driving: XP-160 Driver can drive out data from pattern memory or clocks on every channel. Each bank consisting of 16 channels have its own programmable VOH. Following are the static specification for the 160 drive channels:

Simplified Pin Electronics Block
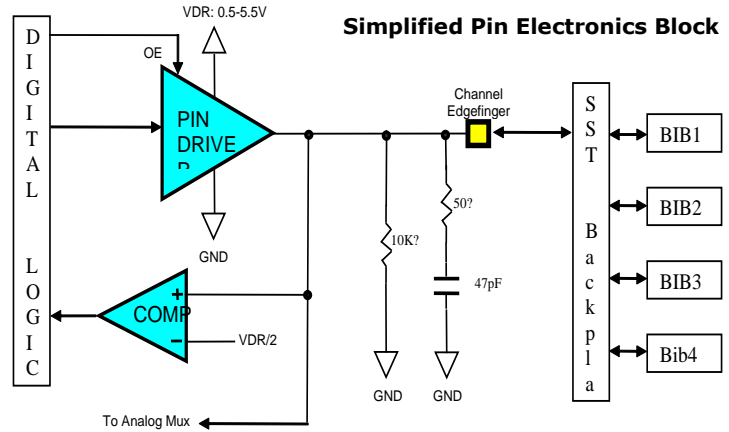
Drive Static Specification	Min	Typ	Max	Notes
VOH Range	0.5V	-	5.5V	Programmable by a 10-bit DAC
VOL Range	-	0V	-	Fixed at GND
VOH accuracy	-	±100mV	±250mV	Resolution is 5.61mV/bit
Under/Over voltage Shutdown	-	±350mV	-	Automatic driver shutdown, if VOH crossed ±350mV than set value
Drive Current	-	±100mA	-	Sink/source
Drive Peak Current	-	±500mA	-	1Ω source impedance
Total Static Current per 16 channels (bank)	-	62.5mA	93.75mA	1A/1.5A VDR switching regulator
Capacitive Load	-	-	1000pF	1Ω source impedance

Drive Dynamic Specification	Min	Typ	Max	Notes
Pattern Frequency Range	1Khz	-	25Mhz	Supported by PLL
Pattern Frequency Resolution	±1Hz	-	±10Khz	
Pattern Frequency Error	0%	-	0.1%	As defined by the PLL
Rise/Fall time (unloaded)	-	-	5ns	3.3V, 10%-90%, 10PF load
Rise/Fall time (loaded)	-	-	15ns	3.3V, 10%-90%, 1000PF load
Skew: data-data, data-clock, clock-clock	-	-	5ns	

Monitoring:

PS Monitoring Characteristics	Min	Typ	Max	Notes
Voltage Meas. Range with Series Resistor	-150V	-	150V	See Resistor table
Voltage Meas. Range without Series Resistor	-10V	-	+10V	ADC subsystem max range is ±10V
Voltage Meas. Accuracy without Series Resistor	-	±100mV	±250mV	For PS voltages less than ±10V
Voltage Meas. Accuracy with Series Resistor	-	1% FS	5% FS	For PS Voltages greater than ±10V upto 150V
Under/Over voltage Accuracy		±500mV		Incal recommended values

Following are the specifications for Monitor Channel Voltage measurement

Voltage Measure Characteristics	Gain 1	Gain 10	Gain 10	Gain 1000
Input Impedance	10KΩ			
Voltage Measurement Range	5V	1V	100mV	10mV
12-bit ADC resolution (per bit)	5.42mV	0.542mV	54.2µV	5.42µV
Voltage Measurement Accuracy	±200mV	±100mV	±20mV	±5mV
Under/Over Voltage Accuracy	±500mV	±200mV	±40mV	±5mV
Gain kicks-in at Over voltage	>=0.9V	<0.9V	<90mV	<9mV

Following are the specifications for Monitor Channel frequency measurement

Frequency Monitoring	Min	Typ	Max	Notes
Bandwidth	-	-	12.5Mhz	Pattern Frequency/2 or 12.5Mhz
Threshold Range	0.25V	-	2.75V	VDR/2, by using two 500 Ω divider
Threshold accuracy	-	±150mV	±300mV	Resolution is half of VDR= 2.8mV/step
Range	1Hz	-	8Mhz	Accumulation register is 12-bit.
Accuracy (40ns)	-	-	±40ns	
Accuracy (1us)	-	-	±1us	TICKS can only be ± 1 tick off
Accuracy (1ms)	-	-	±1ms	