SPECTRUM
INSTRUMENTATION

PDN – Product Discontinuance Notice

Product Affected	M4i.441x Series DN2.441-xx Series DN6.441-xx Series	Issue Date	1st January 2019
Reasons for Discontinuance	The 130 MS/s version of the M4i.44xx series is replaced by a newer and advanced product series.	Last Time Buy Date	There is no last time buy date. Availability depends on the number of intended purchases. Please check with Spectrum.

The M2p.596x-x4 and the digitizerNETBOX versions DN2.59x and DN6.59x is a replacement for the 130 MS/s versions M4i.441x-x8, DN2.441.xx and DN6.441.xx. It offers more versions while having a shorter board size. Being based of a different design there's a huge price advantage.

The full M2p.59xx-4 series offers 20 different models ranging from 1 channel to 8 channels and 20 MS/s to 125 MS/s. A full list of products is found on Spectrum's website: https://spectrum-instrumentation.com/en/m2p59xx-x4-pci-express-pcie-x4

Product Series Replacement Table

Discontinued Product						Replacement Product					
Name	Resolution	Channels		Speed	Bandwidth	Name	Resolution	Channels		Speed	Bandwidth
		SE	Diff					SE	Diff		
M3i.4410-x8	16 Bit	2	-	130 MS/s	65 MHz	M2p.5961-x4	16 Bit	2	2	125 MS/s	60 MHz
M3i.4411-x8	16 Bit	4	-	130 MS/s	65 MHz	M2p.5966-x4	16 Bit	4	4	125 MS/s	60 MHz
DN2.441-02	16 Bit	2	-	130 MS/s	65 MHz	DN2.596-04	16 Bit	4	2	125 MS/s	60 MHz
DN2.441-04	16 Bit	4	-	130 MS/s	65 MHz	DN2.596-04	16 Bit	4	2	125 MS/s	60 MHz
DN2.441-08	16 Bit	8	-	130 MS/s	65 MHz	DN2.596-08	16 Bit	8	4	125 MS/s	60 MHz
DN6.441-12	16 Bit	12	-	130 MS/s	65 MHz	DN2.596-16	16 Bit	16	8	125 MS/s	60 MHz
DN6.441-16	16 Bit	16	-	130 MS/s	65 MHz	DN2.596-16	16 Bit	16	8	125 MS/s	60 MHz
DN6.441-20	16 Bit	20	-	130 MS/s	65 MHz	DN6.596-24	16 Bit	24	12	125 MS/s	60 MHz
DN6.441-24	16 Bit	24	-	130 MS/s	65 MHz	DN6.596-24	16 Bit	24	12	125 MS/s	60 MHz

SE = Single-Ended Inputs
Diff = Differential Inputs

Feature Comparison

Feature	M4i.xxxx-x8 PCIe Card	M2p.xxxx-x4 PCIe Card	Remarks
Size	241 mm x 107 mm 3/4 length, full height	168 mm x 107 mm half length, full height	1/2 PCIe size fits into many more systems
Power Consumption	Max 27 Watts	Max 18 Watts	
On-board memory	Standard 4 GByte	Standard 1 GByte	
Interface	PCIe x8 Gen2	PCIe x4 Gen1	
Data Transfer Speed	3.4 GByte/s	700 MByte/s	The maximum 4 channels 130 MS/s doesn't utilize the fast 3.4 GB/s streaming speed.
FIFO Mode Buffering	Complete FIFO buffer readable at any time.	Complete FIFO buffer readable at any time.	
SCAPP GPU Interface	Available	Available	Data can be transferred directly to a CUDA-based GPU for fast data processing
I/O lines	1 x Trigger-In 1 x Trigger-Out 1 x Clock-In 1 x Clock-Out 3 x Multi-Purpose-I/O	1 x Trigger-In 1 x Clock-In 1 x Multi-Purpose-Out 3 x Multi-Purpose-I/O	4 additional I/O lines as standard can be used for easy interfacing with other equipment. The 3 x Multi-Purpose I/O can also be used for synchronous digital-in (digitizer) or synchronous marker outputs (AWG)
Clock Modes	Internal External Reference	Internal External Reference Direct External Clock	Direct external clock now allows variable clock between 1 MHz and max sampling rate, ideal for OCT applications
External Clock Ranges	User needs to know and program the clock range	Not needed	External clock now independent of clock range and channel config
Clock Accuracy	20 ppm	1 ppm	1 ppm is now standard

Feature	M4i.xxxx-x8 PCIe Card	M2p.xxxx-x4 PCIe Card	Remarks
Clock Setup Granularity	1 Hz with some frequency gaps	1 Hz	No more frequency gaps
External trigger	Window comparator ±5V	Level comparator ±5V	
External trigger sources	4 as standard	4 as standard	
Trigger hold-off	Not available	0 to 4 GSamples	New feature: programmable trigger hold-off for multi/gate/aba mode
Timestamp Ref Clock	Standard	Standard	
Trigger Source Mark	Standard	Standard	Trigger source is automatically stored with timestamp and can be examined for each trigger event.
API Interface	SPCM	SPCM	Same API Interface

Option Replacement Table

Option	M4i Card	M2p Card	Remarks
Synchronization Star-Hub Small	M4i.xxxx-SH8ex M4i.xxxx-SH8tm	M2p.xxxx-SH6ex M2p.xxxx-SH6tm	Two mounting options allow to match the system restrictions. Ex = extension, card is extended to 3/4 PCIe length but still only 1 slot width Tm = top-mount, star-hub is mounted on top, card length stays at 1/2 PCIe length but occupies two slots
Synchronization Star-Hub Large	n.a.	M2p.xxxx-SH16ex M2p.xxxx-SH16tm	

Feature Comparison – Analog Module

Feature	441x	596x	Remarks
Connectors Analog Trigger Clock Multi-Purpose	SMA SMA SMA MMCX	SMB SMB SMB MMCX	
Resolution	16 Bit	16 Bit	
Input Mode	Single-ended	Single-ended or Differential	
Sampling Speed	130 MS/s	5 MS/s to 125 MS/s	
Bandwidth	65 MHz	2.5 MHz to 60 MHz	
Input Ranges	±200 mV to ±10 V	±200 mV to ±10 V	
Input Offset	-100% tp 0%	±100%	
Trigger Level Resolution	14 bit	16 bit	
Re-Arming Time	40 samples	24 samples	+ programmed pre-trigger + programmed hold-off
Digital Inputs	3 channels as standard	3 channels as standard	Digital inputs are synchronously with the analog inputs sampled and stored in the memory.

Obsolescence Policy

With release of the PDN the complete product series is no longer available for new projects. The complete stock is reserved for existing projects and for customers who are not able to change to the new series due to certification, hardware or software limitations.

In case that the only limitation that prevents you from ordering the new product series is the missing legacy PCI interface we strongly recommend switching to the newer PCI Express interface. The legacy PCI has been obsolete for years now and you will most likely face problems in the future when you need to replace the PC system.

More detailed information on the obsolescence policy is found online: https://spectrum-instrumentation.com/en/obsolescence-policy

If you have any questions or concerns about switching from the obsolete M4.441x series products to the replacement M2p.596x series please contact Spectrum directly at request@spec.de

Please find additional information on our website:

- Data sheet of M2p.59xx series:
  https://spectrum-instrumentation.com/sites/default/files/download/m2p59_datasheet_english.pdf

- Manual of M2p.59xx series:
  https://spectrum-instrumentation.com/sites/default/files/download/m2p_59xx_manual_english.pdf

- Manual of M4i.44xx series:
  https://spectrum-instrumentation.com/sites/default/files/download/m4i_m4x_44xx_manual_english.pdf