

## PDN – Product Discontinuance Notice

Product Affected	DN2.49x-xx Series DN6.49x-xx Series	Issue Date	1 <sup>st</sup> January 2019
Reasons for Discontinuance	The complete series are replaced by a newer and advanced product series. Some electronic parts used on the series are discontinued by the manufacturers.	Last Time Buy Date	There is no fixed last time buy date as the availability depends on the number or purchases issued. We estimate that the products will be available until 2020 or longer.

The DN2.59x-xx and DN6.59x-xx series are direct replacements for the DN2.49x-xx and the DN6.49x-xx series. It offers many more versions with higher bandwidth and a faster sampling rate while only being half of the board size. Besides the main differences there are many small improvements that allow easier interfacing with different application areas. Although the replacement series has an improved interface the API is still the same making a migration from existing software an easy step.

The full DN2.59x-xx and DN6.59xx-xx series offer 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

Please note that the legacy PCI version M2i.49xx has no direct replacement. Instead the PCIe version needs to be used.

Discontinued Product						Replacement Product					
Name	Resolution	Channels		Speed	Bandwidth	Name	Resolution	Channels		Speed	Bandwidth
		SE	Diff					SE	Diff		
DN2.491-04	16 Bit	4	2	10 MS/s	5 MHz	DN2.592-04	16 Bit	4	2	20 MS/s	10 MHz
DN2.491-08	16 Bit	8	4	10 MS/s	5 MHz	DN2.592-08	16 Bit	8	4	20 MS/s	10 MHz
DN2.491-16	16 Bit	16	8	10 MS/s	5 MHz	DN2.592-16	16 Bit	16	8	20 MS/s	10 MHz
DN6.491-24	16 Bit	24	12	10 MS/s	5 MHz	DN6.592-24	16 Bit	24	12	20 MS/s	10 MHz
DN6.491-32	16 Bit	32	16	10 MS/s	5 MHz	DN6.592-32	16 Bit	32	16	20 MS/s	10 MHz
DN6.491-40	16 Bit	40	20	10 MS/s	5 MHz	DN6.592-40	16 Bit	40	20	20 MS/s	10 MHz
DN6.491-48	16 Bit	48	24	10 MS/s	5 MHz	DN6.592-48	16 Bit	48	24	20 MS/s	10 MHz
DN2.496-04	16 Bit	4	2	30 MS/s 60 MS/s	30 MHz 30 MHz	DN2.596-04	16 Bit	4	2	125 MS/s	60 MHz
DN2.496-08	16 Bit	8	4	30 MS/s 60 MS/s	30 MHz 30 MHz	DN2.596-08	16 Bit	8	4	80 MS/s 125 MS/s	60 MHz 60 MHz
DN2.496-16	16 Bit	16	8	30 MS/s 60 MS/s	30 MHz 30 MHz	DN2.596-16	16 Bit	16	8	80 MS/s 125 MS/s	60 MHz 60 MHz
DN6.496-24	16 Bit	24	12	30 MS/s 60 MS/s	30 MHz 30 MHz	DN6.596-24	16 Bit	24	12	80 MS/s 125 MS/s	60 MHz 60 MHz
DN6.496-32	16 Bit	32	16	30 MS/s 60 MS/s	30 MHz 30 MHz	DN6.596-32	16 Bit	32	16	80 MS/s 125 MS/s	60 MHz 60 MHz
DN6.496-40	16 Bit	40	20	30 MS/s 60 MS/s	30 MHz 30 MHz	DN6.596-40	16 Bit	40	20	80 MS/s 125 MS/s	60 MHz 60 MHz
DN6.496-48	16 Bit	48	24	30 MS/s 60 MS/s	30 MHz 30 MHz	DN6.596-48	16 Bit	48	24	80 MS/s 125 MS/s	60 MHz 60 MHz

SE = Single-Ended Inputs  
Diff = Differential Inputs

## Feature Comparison

Feature	DN2.xxx based on M2i	DN6.xxx based on M2i	DN2.xxx DN6.xxx based on M2p	Remarks
Size	366 mm x 267 mm x 87 mm	464 mm x 431 mm x 131 mm	Same chassis size	
On-board memory	Standard 512 MByte, Option 2 GByte		Standard 1 GByte	Memory per internal Digitizer/AWG
Interface	Gbit Ethernet	Gbit Ethernet	Gbit Ethernet	
Data Transfer Speed	50 to 70 MByte/s	50 to 70 MByte/s	70 to 90 MByte/s	
FIFO Mode Buffering	Some data always stays in FIFO buffers, needs force trigger to read last acquired segments.		Complete FIFO buffer readable at any time.	In FIFO mode M2p series allows to read out all data that has been acquired, no data remains in buffers, no need for force trigger.

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Feature	DN2.xxx based on M2i	DN6.xxx based on M2i	DN2.xxx DN6.xxx based on M2p	Remarks
I/O lines	1 x Trigger I/O 1 x Clock 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 was an option for M2i series and is now standard
Clock Setup Granularity	1% of range: 1 MHz for range. 10 MHz to 100 MHz		1 Hz	Clock setup has far improved
External trigger	3.3V LVTTTL		Level comparator $\pm 5V$	
External trigger sources	2 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	Not available		Standard	Trigger source is automatically stored with timestamp and can be examined for each trigger event.
Data Ordering	Non linear for cards with two analog modules: ch0, ch2, ch1, ch3		Linear for all cards: ch0, ch1, ch2, ch3	Easier data access
API Interface	SPCM		SPCM	Same API Interface

## Feature Comparison – Analog Module

Feature	49xx	59xx	Remarks
Connectors (Card) Analog Trigger Clock Multi-Purpose	SMB SMB SMB not available	SMB SMB SMB MMCX	A different mounting method of the 59xx SMB connectors matches more vendors SMB cable connectors
Connectors (LXI/Ethernet) Analog Trigger Clock Multi-Purpose	BNC BNC BNC BNC	BNC BNC BNC BNC	59xx series DigitizerNETBOX has 4 Multi-Purpose I/O in contrast to 49xx series that only has two
Resolution	16 Bit	16 Bit	
Input Mode	Single-ended or differential	Single-ended or differential	Each two single-ended channels can be combined to one differential channel
Sampling Speed	10 MS/s to 60 MS/s	20 MS/s to 125 MS/s	
Bandwidth	5 MHz to 30 MHz	10 MHz to 60 MHz	
Input Ranges	$\pm 200$ mV to $\pm 10$ V	$\pm 200$ mV to $\pm 10$ V	
Input Offset	$\pm 100\%$ (single-ended)	$\pm 100\%$ (single-ended)	
Trigger Level Resolution	14 bit	16 bit	
Re-Arming Time	4 samples	24 samples	+ programmed pre-trigger + programmed hold-off
Digital Inputs	Option with up to 32 channels	3 channels as standard	Additional digital input option planned but not yet released.

## 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 M2i.49xx series products to the replacement M2p.59xx series please contact Spectrum directly at [request@spec.de](mailto: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](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](https://spectrum-instrumentation.com/sites/default/files/download/m2p_59xx_manual_english.pdf)

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- Manual of M2i.49xx series:  
[https://spectrum-instrumentation.com/sites/default/files/download/m2i49\\_manual\\_english.pdf](https://spectrum-instrumentation.com/sites/default/files/download/m2i49_manual_english.pdf)