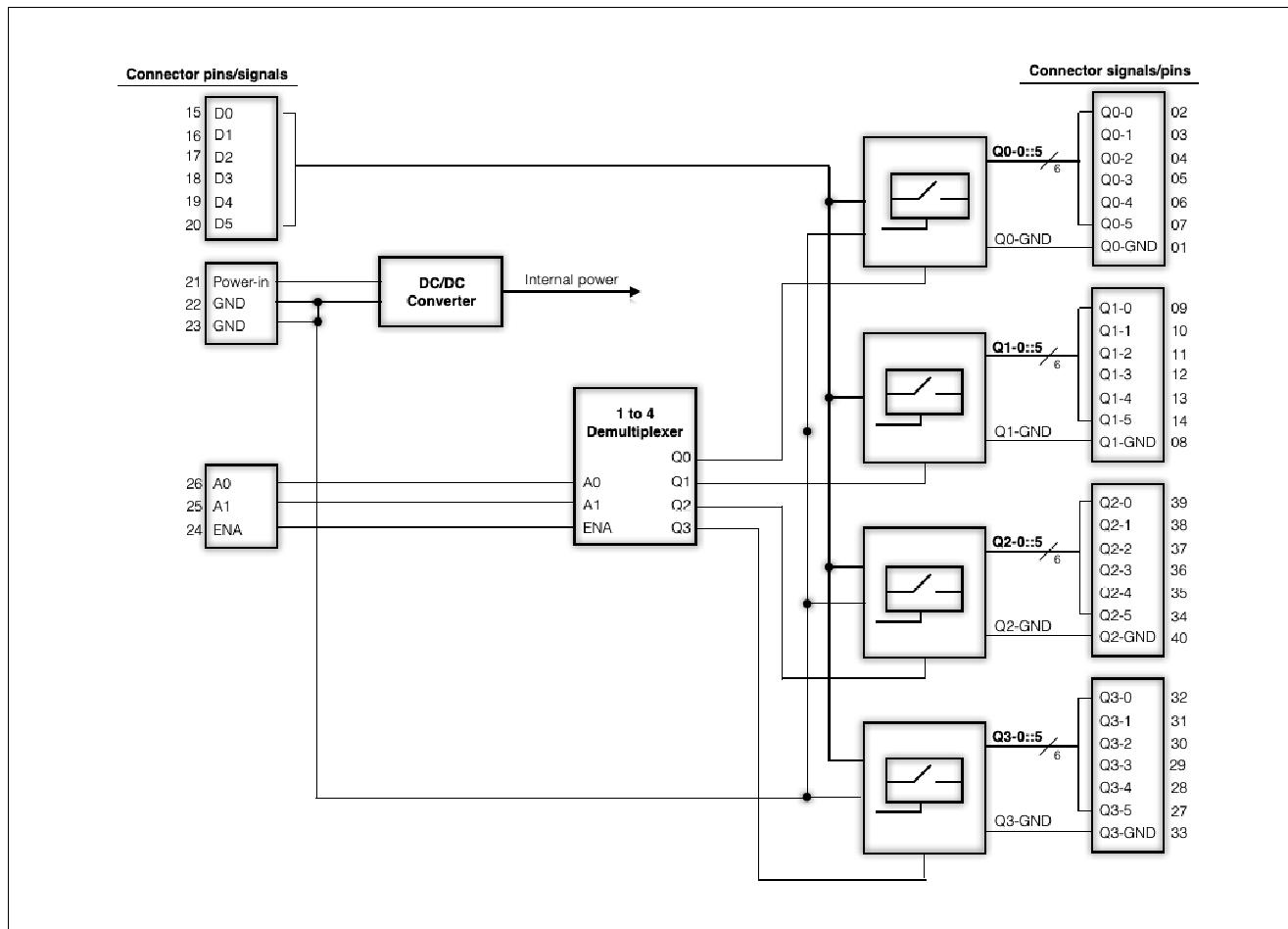


Product general description

NanoPlex NPS-06-01-04A Universal Relay ISP-Channel Multiplier allows the expansion of the number of Channels of ISP-Programming tools, while also offering galvanic isolation. The total number of switched signals is 24. NanoPlex is used on PCBAs production lines, in ATE-controlled ISP programming. Thanks to its ultra-small size (only 51.0x66.5 mm), NanoPlex takes easily place in Test Fixtures. Designed for piggyback mounting, NanoPlex is universal and compatible with all types of ISP Programming tools.



Block Diagram



NPS-06-01-04A Operating Modes

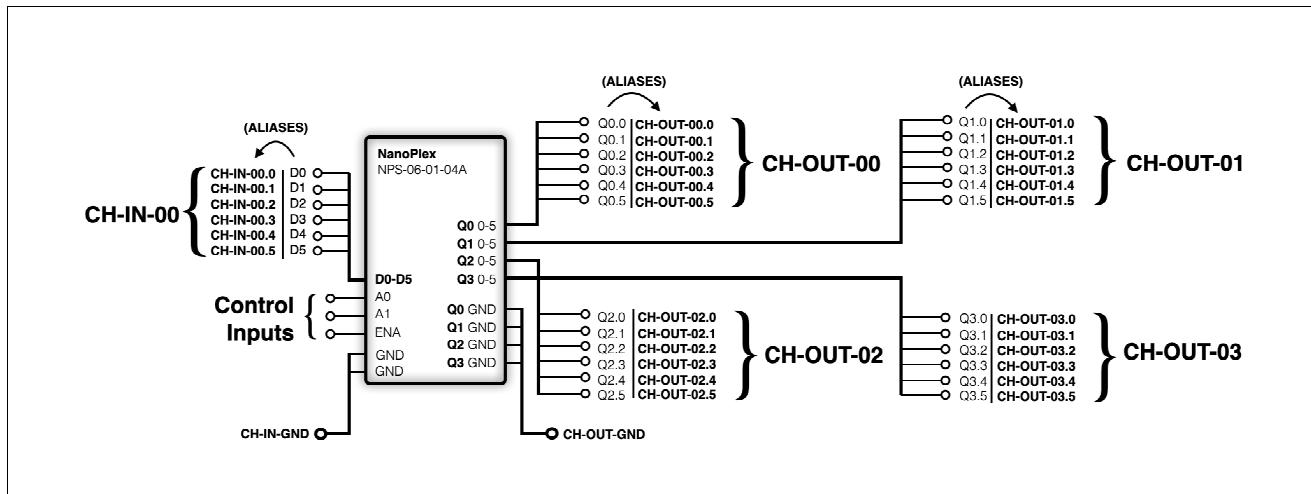
Depending on the required number of Signals per every Channel, four operating modes are possible. On the following mode examples diagrams, for a better explanation of all the possible operating modes, signal names are assigned with aliases (texts are in **bold**).

Mode 1x4

6 Signals per Channel

1 Input Channels

4 Output Channels



Truth table

(the symbol ► stands for “connected to”)

ENA	A1	A0	CH-IN...	...00.0 ►	...00.1 ►	...00.2 ►	...00.3 ►	...00.4 ►	...00.5 ►
1	0	0	CH-OUT...	...00.0	...00.1	...00.2	...00.3	...00.4	...00.5
1	0	1	CH-OUT...	...01.0	...01.1	...01.2	...01.3	...01.4	...01.5
1	1	0	CH-OUT...	...02.0	...02.1	...02.2	...02.3	...02.4	...02.5
1	1	1	CH-OUT...	...03.0	...03.1	...03.2	...03.3	...03.4	...03.5
0	X	X	CH-OUT	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z

Operating sequence

ENA = 1;

A1-A0 = “00”

(CN-IN-00.0 ► CH-OUT-00.0) - (CN-IN-00.1 ► CH-OUT-00.1) - (CN-IN-00.2 ► CH-OUT-00.2)
 (CN-IN-00.3 ► CH-OUT-00.3) - (CN-IN-00.4 ► CH-OUT-00.4) - (CN-IN-00.5 ► CH-OUT-00.5)

A1-A0 = “01”

(CN-IN-00.0 ► CH-OUT-01.0) - (CN-IN-00.1 ► CH-OUT-01.1) - (CN-IN-00.2 ► CH-OUT-01.2)
 (CN-IN-00.3 ► CH-OUT-01.3) - (CN-IN-00.4 ► CH-OUT-01.4) - (CN-IN-00.5 ► CH-OUT-01.5)

A1-A0 = “10”

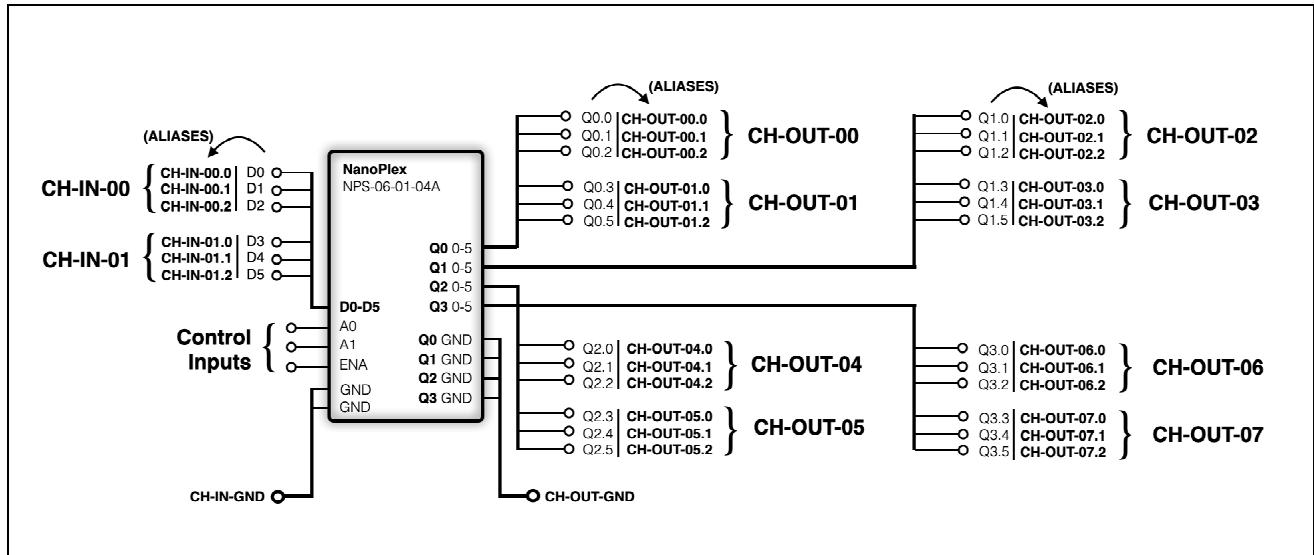
(CN-IN-00.0 ► CH-OUT-02.0) - (CN-IN-00.1 ► CH-OUT-02.1) - (CN-IN-00.2 ► CH-OUT-02.2)
 (CN-IN-00.3 ► CH-OUT-02.3) - (CN-IN-00.4 ► CH-OUT-02.4) - (CN-IN-00.5 ► CH-OUT-02.5)

A1-A0 = “11”

(CN-IN-00.0 ► CH-OUT-03.0) - (CN-IN-00.1 ► CH-OUT-03.1) - (CN-IN-00.2 ► CH-OUT-03.2)
 (CN-IN-00.3 ► CH-OUT-03.3) - (CN-IN-00.4 ► CH-OUT-03.4) - (CN-IN-00.5 ► CH-OUT-03.5)

Mode 2x8

3 Signals per Channel
2 Input Channels
8 Output Channels



Truth table

(the symbol ► stands for “connected to”)

ENA	A1	A0	CH-IN...	...00.0 ►	...00.1 ►	...00.2 ►	...01.0 ►	...01.1 ►	...01.2 ►
1	0	0	CH-OUT...	...00.0	...00.1	...00.2	...01.0	...01.1	...01.2
1	0	1	CH-OUT...	...02.0	...02.1	...02.2	...03.0	...03.1	...03.2
1	1	0	CH-OUT...	...04.0	...04.1	...04.2	...05.0	...05.1	...05.2
1	1	1	CH-OUT...	...06.0	...06.1	...06.2	...07.0	...07.1	...07.2
0	X	X	CH-OUT	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z

Operating sequence

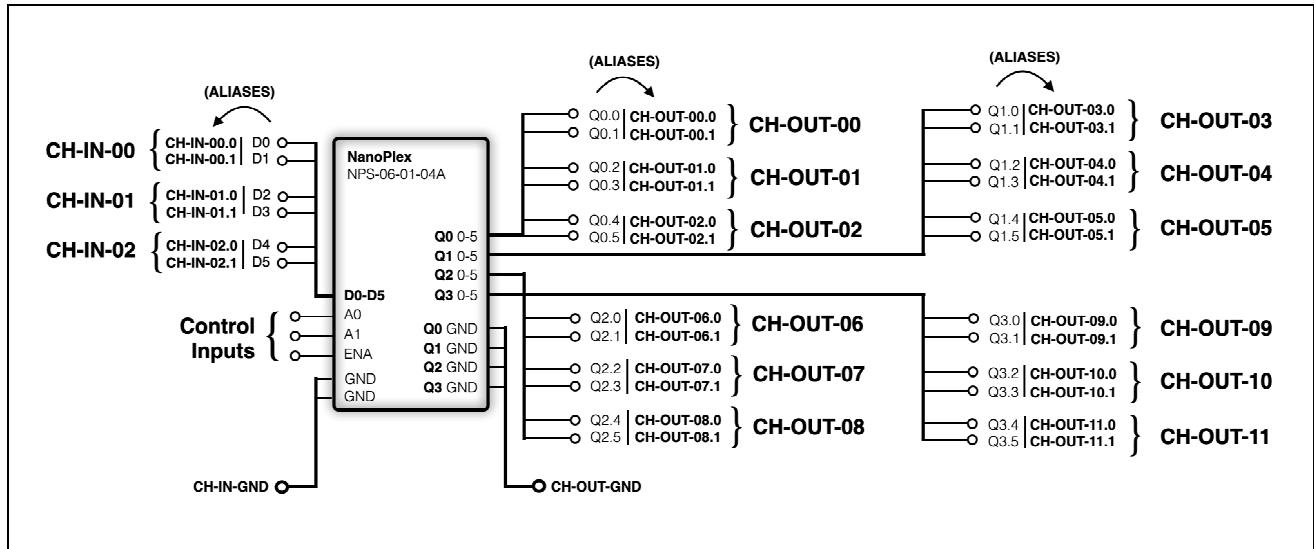
ENA = 1;
 A1-A0 = "00"
 $(CN-IN-00.0 \blacktriangleright CH-OUT-00.0) - (CN-IN-00.1 \blacktriangleright CH-OUT-00.1) - (CN-IN-00.2 \blacktriangleright CH-OUT-00.2)$
 $(CN-IN-01.0 \blacktriangleright CH-OUT-01.0) - (CN-IN-01.1 \blacktriangleright CH-OUT-01.1) - (CN-IN-01.2 \blacktriangleright CH-OUT-01.2)$
 A1-A0 = "01"
 $(CN-IN-00.0 \blacktriangleright CH-OUT-02.0) - (CN-IN-00.1 \blacktriangleright CH-OUT-02.1) - (CN-IN-00.2 \blacktriangleright CH-OUT-02.2)$
 $(CN-IN-01.0 \blacktriangleright CH-OUT-03.0) - (CN-IN-01.1 \blacktriangleright CH-OUT-03.1) - (CN-IN-01.2 \blacktriangleright CH-OUT-03.2)$
 A1-A0 = "10"
 $(CN-IN-00.0 \blacktriangleright CH-OUT-04.0) - (CN-IN-00.1 \blacktriangleright CH-OUT-04.1) - (CN-IN-00.2 \blacktriangleright CH-OUT-04.2)$
 $(CN-IN-01.0 \blacktriangleright CH-OUT-05.0) - (CN-IN-01.1 \blacktriangleright CH-OUT-05.1) - (CN-IN-01.2 \blacktriangleright CH-OUT-05.2)$
 A1-A0 = "11"
 $(CN-IN-00.0 \blacktriangleright CH-OUT-06.0) - (CN-IN-00.1 \blacktriangleright CH-OUT-06.1) - (CN-IN-00.2 \blacktriangleright CH-OUT-06.2)$
 $(CN-IN-01.0 \blacktriangleright CH-OUT-07.0) - (CN-IN-01.1 \blacktriangleright CH-OUT-07.1) - (CN-IN-01.2 \blacktriangleright CH-OUT-07.2)$

Mode 3x12

2 Signals per Channel

3 Input Channels

12 Output Channels



Truth table

(the symbol ► stands for "connected to")

ENA	A1	A0	CH-IN...	...00.0 ►	...00.1 ►	...01.0 ►	...01.1 ►	...02.0 ►	...02.1 ►
1	0	0	CH-OUT...	...00.0	...00.1	...01.0	...01.1	...02.0	...02.1
1	0	1	CH-OUT...	...03.0	...03.1	...04.0	...04.1	...05.0	...05.1
1	1	0	CH-OUT...	...06.0	...06.1	...07.0	...07.1	...08.0	...08.1
1	1	1	CH-OUT...	...09.0	...09.1	...10.0	...10.1	...11.0	...11.1
0	X	X	CH-OUT	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z

Operating sequence

ENA = 1;

A1-A0 = "00"

(CN-IN-00.0 ► CH-OUT-00.0) - (CN-IN-00.1 ► CH-OUT-00.1)
 (CN-IN-01.0 ► CH-OUT-01.0) - (CN-IN-01.1 ► CH-OUT-01.1)
 (CN-IN-02.0 ► CH-OUT-02.0) - (CN-IN-02.1 ► CH-OUT-02.1)

A1-A0 = "01"

(CN-IN-00.0 ► CH-OUT-03.0) - (CN-IN-00.1 ► CH-OUT-03.1)
 (CN-IN-01.0 ► CH-OUT-04.0) - (CN-IN-01.1 ► CH-OUT-04.1)
 (CN-IN-02.0 ► CH-OUT-05.0) - (CN-IN-02.1 ► CH-OUT-05.1)

A1-A0 = "10"

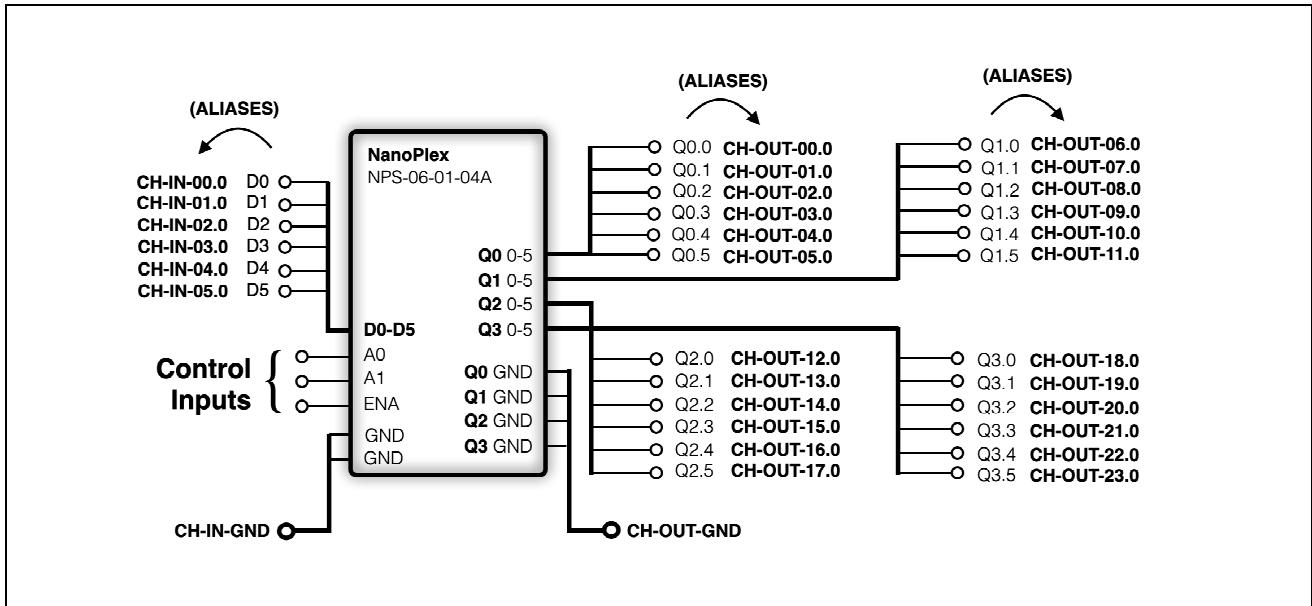
(CN-IN-00.0 ► CH-OUT-06.0) - (CN-IN-00.1 ► CH-OUT-06.1)
 (CN-IN-01.0 ► CH-OUT-07.0) - (CN-IN-01.1 ► CH-OUT-07.1)
 (CN-IN-02.0 ► CH-OUT-08.0) - (CN-IN-02.1 ► CH-OUT-08.1)

A1-A0 = "11"

(CN-IN-00.0 ► CH-OUT-09.0) - (CN-IN-00.1 ► CH-OUT-09.1)
 (CN-IN-01.0 ► CH-OUT-10.0) - (CN-IN-01.1 ► CH-OUT-10.1)
 (CN-IN-02.0 ► CH-OUT-11.0) - (CN-IN-02.1 ► CH-OUT-11.1)

Mode 6x24

1 Signals per Channel
6 Input Channels
24 Output Channels



Truth table

(the symbol ► stands for "connected to")

ENA	A1	A0	CH-IN...	...00.0 ►	...01.0 ►	...02.0 ►	...03.0 ►	...04.0 ►	...05.0 ►
1	0	0	CH-OUT...	...00.0	...01.0	...02.0	...03.0	...04.0	...05.0
1	0	1	CH-OUT...	...06.0	...07.0	...08.0	...09.0	...10.0	...11.0
1	1	0	CH-OUT...	...12.0	...13.0	...14.0	...15.0	...16.0	...17.0
1	1	1	CH-OUT...	...18.0	...19.0	...20.0	...21.0	...22.0	...23.0
0	X	X	CH-OUT	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z	HI-Z

Operating sequence

ENA = 1;

A1-A0 = "00"

(CN-IN-00.0 ► CH-OUT-00.0) - (CN-IN-01.0 ► CH-OUT-01.0)
(CN-IN-02.0 ► CH-OUT-02.0) - (CN-IN-03.0 ► CH-OUT-03.0)
(CN-IN-04.0 ► CH-OUT-04.0) - (CN-IN-05.0 ► CH-OUT-05.0)

A1-A0 = "01"

(CN-IN-00.0 ► CH-OUT-06.0) - (CN-IN-01.0 ► CH-OUT-07.0)
(CN-IN-02.0 ► CH-OUT-08.0) - (CN-IN-03.0 ► CH-OUT-09.0)
(CN-IN-04.0 ► CH-OUT-10.0) - (CN-IN-05.0 ► CH-OUT-11.0)

A1-A0 = "10"

(CN-IN-00.0 ► CH-OUT-12.0) - (CN-IN-01.0 ► CH-OUT-13.0)
(CN-IN-02.0 ► CH-OUT-14.0) - (CN-IN-03.0 ► CH-OUT-15.0)
(CN-IN-04.0 ► CH-OUT-16.0) - (CN-IN-05.0 ► CH-OUT-17.0)

A1-A0 = "11"

(CN-IN-00.0 ► CH-OUT-18.0) - (CN-IN-01.0 ► CH-OUT-19.0)
(CN-IN-02.0 ► CH-OUT-20.0) - (CN-IN-03.0 ► CH-OUT-21.0)
(CN-IN-04.0 ► CH-OUT-22.0) - (CN-IN-05.0 ► CH-OUT-23.0)

About Manta Systems

Manta Systems is a hi-tech company, global leader in hi-density signal switching for In-System Programming (ISP) and Testing Systems. The company targets the electronic boards assembly market, where a high number of connections is required.

Manta Systems flagship product is NanoPlex™, a series of Channels Multipliers for In-System Programming (ISP) and Testing instruments. NanoPlex™ is the **world's first universal tool** providing end-user with the possibility of having compact, easy-to-use, professional, reliable In-System Programming (ISP) and Testing Channel Multiplication functionality.

Orders

All NanoPlex™ Series products are generally off-the-shelf.
Shipping within 24 hours from order reception.
Free shipping & 30-day money back guarantee.

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