

## Signal Splitter Boards for CPI2-Gx Device Programmers

CPI2-Gx device programmers have two 150-pin DIN connectors for outputting ISP signals to target boards. These connectors, marked as Channel A and Channel B, are located on long sides of the programmer unit. To simplify connection to the target by means of simple, easy-to-buy, 20-wire ribbon cables, Phyton offers signal splitter boards which can be docked either directly to CPI2-Gx device programmers or through [CPI2-GTRB](#) and [CPI2-GDMR](#) relay modules.



Two splitter boards connected to the CPI2-Gx channels A & B



A splitter board connected to the CPI2-Gx demultiplexed channel A through a CPI2-GDMR relay demultiplexer

The following types of the signal splitter boards are available:

Item part number	Description
CPI2-GASB-7/20	Splits ISP signals to seven 20-pin male-type connectors. It docks either to a CPI2-Gx programmer's channel <b>A</b> 150-pin connector or to the CPI2-GTRB relay barrier unit connected to the <b>A</b> channel.
CPI2-GBSB-7/20	Splits ISP signals to seven 20-pin male-type connectors. It docks either to a CPI2-Gx programmer's channel <b>B</b> 150-pin connector or to the CPI2-GTRB relay barrier unit connected to the <b>B</b> channel.
CPI2-GASB-14/20	Splits ISP signals to fourteen 20-pin male-type connectors. It docks to a pair of Target1/Target 2 150-pin connectors of the CPI2-GDMR relay demultiplexer docked to the CPI2-Gx <b>A</b> channel.
CPI2-GBSB-14/20	Splits ISP signals to fourteen 20-pin male-type connectors. It docks to a pair of Target1/Target 2 150-pin connectors of the CPI2-GDMR relay demultiplexer docked to the CPI2-Gx <b>B</b> channel.
CPI2-GCSB-7/10	Splits control signals to seven 10-pin male-type connectors. It docks to the front panel of a CPI2-Gx programmer through the 48-pin connector CONTROL.

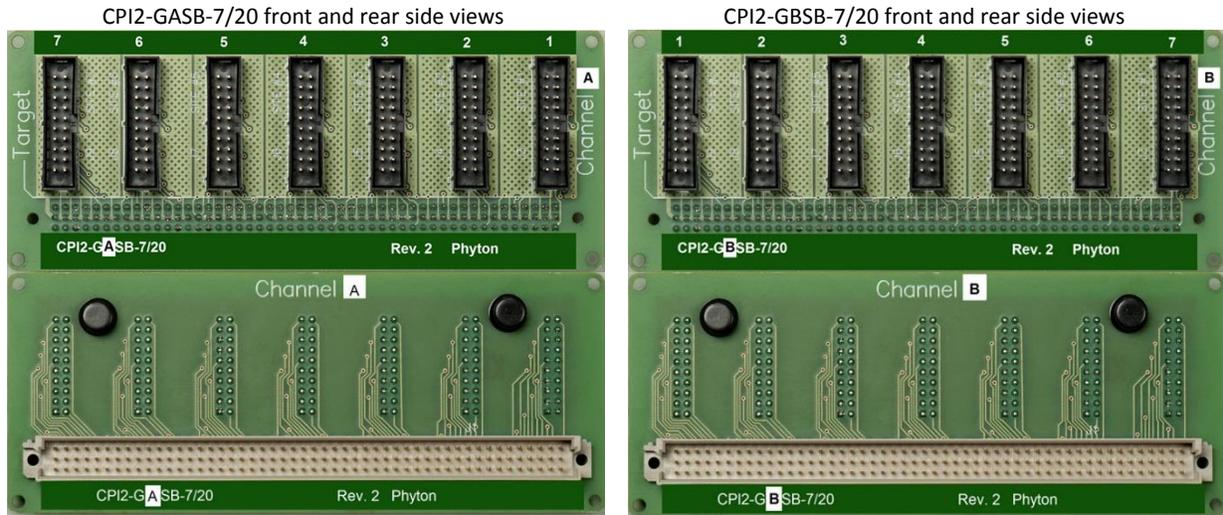
### CPI2-GASB-7/20 and CPI2-GBSB-7/20 signal splitter boards.

The CPI2-GASB-7/20 board splits ISP signals outputted to the channel A of a seven-site CPI2-G07/14V1 gang device programmer to seven 20-pin male-type connectors. It can be used with any other CPI2-Gx gang programmer having a smaller number of programming sites (4, 6, etc.). On the rear side the board has a 150-pin male-type DIN connector which docks either to a CPI2-Gx programmer's channel **A** or to the CPI2-GTRB relay barrier unit connected to the **A** channel of the programmer. On a front side it has

seven male-type connector headers. These headers are intended for plugging 20-wire ribbon cables allowing convenient connection inside of the test fixtures and other ATE.

The CPI2-SBSB-7/20 board is the same as one above, but it is intended for splitting ISP signals on the channel **B** of the CPI2-Gx device programmers if the programmer works with an activated CPI2-DEMUX license and the **A** and **B** channels work sequentially, in turn.

Both CPI2-GASB-7/20 and CPI2-GBSB-7/20 signal splitter boards have the same schematic and design and differ in the 20-pin connector labeling on the front side, only. See the pictures below.



The CPI2-GASB-7/20 and CPI2-GBSB-7/20 signal splitter boards can dock directly to the channel A and B of the device programmer, respectively, or to the TARGET connectors of the CPI2-GTRB relay barrier units, if they are docked to the programmer.

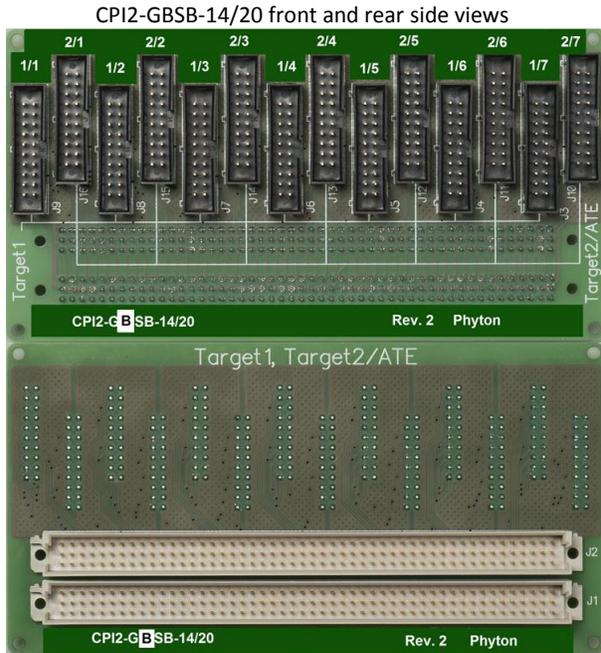
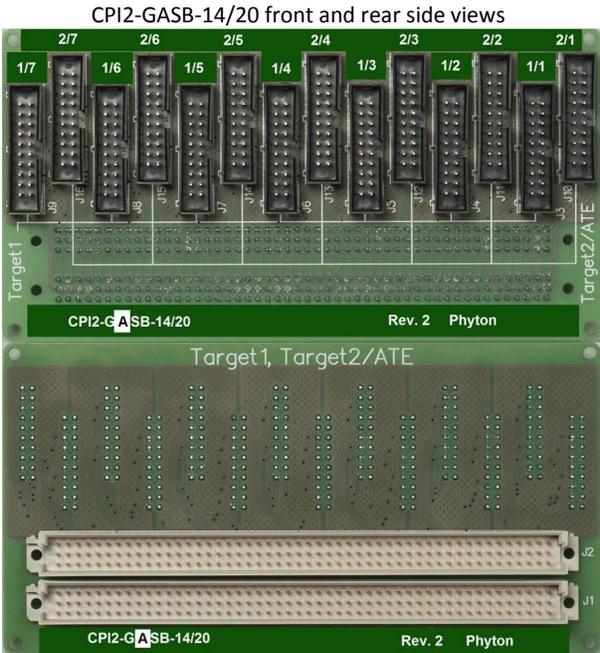
#### **CPI2-GASB-14/20 and CPI2-GBSB-14/20 signal splitter boards.**

These boards are used only in a combination with CPI2-GDMR relay demultiplexers. These units have a pair of output 150-pin female-type DIN connectors: TARGET 1 and TARGET 2 toggling by the ATE signal. So, the ISP signals split in two groups of 20-pin connectors – seven connectors in each group: 1 and 2. Both CPI2-GASB-14/20 and CPI2-GBSB-14/20 signal splitter boards have the same schematic and design and differ in the 20-pin connector labeling on the front side, only. See the pictures below.

The CPI2-GASB-14/20 board splits ISP signals coming from the connectors TARGET 1 and TARGET 2 of a CPI2-GDMR relay demultiplexer connected to the channel A of a CPI2-Gx device programmer – the TARGET 1 signals to 20-pin connectors labeled as 1/1 to 1/7, the TARGET 2 signals to 20-pin connectors labeled as 2/1 to 2/7. On the rear side it has two 150-pin male-type DIN connectors that docks to the demultiplexer, on the front side it has fourteen 20-pin male-type connector headers with notches. These headers are intended for plugging 20-wire ribbon cables allowing convenient connection inside of the test fixtures and other ATE.

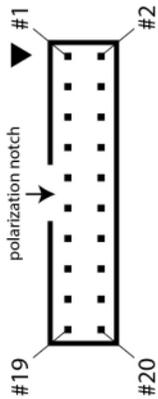
The CPI2-GBSB-14/20 board is the same as one above, but it is intended for splitting ISP signals on the channel B of the CPI2-Gx device programmers if the programmer has an activated CPI2-DEMUX license and the A and B channels work sequentially, in turn.

Both CPI2-GASB-14/20 and CPI2-GBSB-14/20 signal splitter boards have the same schematic and design and differ in the 20-pin connector labeling on the front side, only. See the pictures below.



## 20-pin Target Connectors.

CPI2-GASB-7/20 and CPI2-GBSB-7/20 signal splitter boards have seven black 20-pin headers allowing to connect 20-wire ribbon cables for target connection, CPI2-GASB-14/20 and CPI2-GBSB-14/20 - 14 headers. All 20-pin black connectors have the same pinout displayed in the matrix below.



Pin#	Signal, where 'x' (1 to 7) means the channel number	Signal description, (all Px signals are bidirectional)
1	Px1	Log 0/1, Vcc or GND
2	Px11	Log 0/1, Vcc, Vpp or GND
3	Px2	Log 0/1, Vcc or GND
4	GND	Ground ⊥
5	Px3	Log 0/1, Vcc or GND
6	GND	Ground ⊥
7	Px4	Log 0/1, Vcc or GND
8	GND	Ground ⊥
9	Px5	Log 0/1, Vcc or GND
10	GND	Ground ⊥
11	Px6	Log 0/1, Vcc or GND
12	GND	Ground ⊥
13	Px7	Log 0/1, Vcc or GND
14	GND	Ground ⊥
15	Px8	Log 0/1, Vcc or GND
16	GND	Ground ⊥
17	Px9	Log 0/1, Vcc or GND
18	GND	Ground ⊥
19	Px10	Log 0/1, Vcc or GND
20	Px12	Log 0/1, Vcc, Vpp or GND

**P1 to P10** - logical signals formed by high-speed buffers that can output target-specific logic 0 or 1, Vcc or GND levels, according to the chosen target device type. These lines can output Vcc with levels from 1.2 to 5.5V @ up to 350mA. The buffers are bidirectional, also serving as inputs when the CPI2-Gx programmer reads data.

**P11, P12** – signals formed by high speed mixed-signal circuits that can also output target-specific logic 0 or 1, Vcc or GND levels according to the type of the chosen target device. These lines can output Vcc with levels from 1.2 to 5.5V @ up to 350mA. The mixed-signal buffers are bidirectional, also serving as inputs when the CPI2-B1 programmer reads data. In addition, these two signals can output Vpp voltage with levels from 1.5V to 15V @ up to 100mA.

In between of the programming operations the CPI2-Gx programmer leaves the Px1...Px12 signals on all its channels in high impedance state.

**GND** - Each connector has as many as 8 ground pins. All even wires in the ribbon cable – from 4 to 18 – intersperse with ISP signal wires. This is made on the purpose to minimize signal glitches and to enable use of long cables connecting the splitter boards with the target devices (DUT). To ensure the operation

stability at a highest possible programming speed all eight GND lines should be connected to the ground point on the target side.

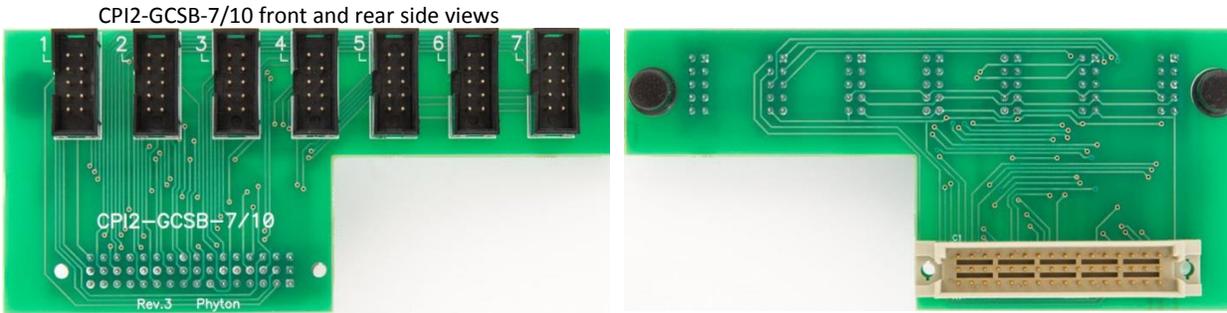
The **P1...P12** signals are target specific. The user must ensure that the target device (DUT) is properly connected, according to the target specific wiring diagram. There are two ways to find the connection diagram for a certain device in the GUI mode:

1) Open the <https://phyton.com/device-search> webpage, specify the device mask, select the **In-system only...** and click the **Search** button. If the device is supported and listed in the **Target Device** column in the matrix on the next web page, click on the part number to get the connection diagram.

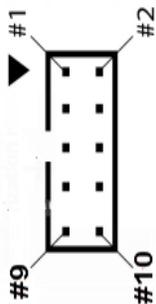
2) In the **Device Information** window click the **Connection to the target device** link to open the connection diagram.

## CPI2-GCSB-7/10 control signal splitter board.

The CPI2-GCSB-7/10 board splits control signals outputted to the connector CONTROL situated on the front panel of the programmer to seven 10-pin male-type connectors. It can be used with any other CPI2-Gx gang programmer having a smaller number of programming sites (4, 6, etc.). On the rear side the board has a 48-pin male-type DIN connector which docks to the connector CONTROL. These headers are intended for plugging 10-wire ribbon cables allowing convenient connection inside of the test fixtures and other ATE. See the pictures below.



All 10-pin black connectors have the same pinout displayed in the matrix below.



Pin#	Signal,	Signal description, (all Px signals are bidirectional)
1	JOBSELO	Log 0/1
2	JOBSEL1	Log 0/1
3	ST_GOOD	Status 'Good' – log 0 ↓
4	ST_ERR	Status 'Error' – log 0 ↓
5	BUSY	Status 'Busy' – log 0 ↓
6	START	Start – log 0 ↓
7	SA_MODE	Switch to Standalone mode ↑
8	ST_SAMODE	Status Standalone or Computer control mode ↓
9	MUX_B/A	Channel status: A (log 0↓) or B (log 1↑)
10	GND	Ground ⊥

- **JOBSELO** and **JOBSEL1** – two-bit selector for choosing one of 4 preloaded standalone jobs;
- **ST\_GOOD** and **ST\_ERROR** - programmer status lines; active status: log 0;
- **ST\_BUSY** - programmer status lines; active status: log 0;
- **SA\_MODE** - Input control signal - log. 1 on this input at the moment of powering the device programmer switches all its programming modules (sites) to the standalone mode;
- **ST\_SAMODE** - Standalone mode status - if either one of the device programmer works in standalone mode the status is active (log 0 level).
- **MUX\_B/A** - External signal switching the channel demultiplexer.
- **GND\_ISO** – Ground.