The DesignaKnit Serial Brotherlink 1
For Brother electronic machines

What this link does

- Uploading and downloading patterns between DesignaKnit and the KH930, KH940, and KH950i knitting machines. Some users are able to connect to the KH965i, and KH970 knitting machines with this link, but it was not designed for that purpose.

- Uploading and downloading between DesignaKnit and the PPD with cartridge III in the mode for the KH900. It is also suitable for use with the PPD + CK35 cartridge.

- If used in conjunction with the DesignaKnit PPD Adapter, it is also suitable for use with the PPD in modes for KH270, KH930, KH940, KH950i, KH965, KH965i, and KH970, and for uploading from the Stitch Pattern Extras Cartridge. When the PPD Adapter is added, the Serial Brotherlink 1 cable effectively becomes converted to a Serial Brotherlink 3 cable, when the instructions for the Serial Brotherlink 3 should be referred to instead of this document. See https://softbyte.co.uk/cablelinksbrother.htm for the PPD Adaptor and https://softbyte.co.uk/cablelinkmanuals.htm for all our cable link manuals.

This cable may be used with a DesignaKnit USB to serial converter. Other converters might not work because the Brother machines were not designed to connect to computers. If using a converter, install it first, referring to its own manual.

Fitting the link to the knitting machine

This cable may be used with a DesignaKnit USB-to-serial converter. Other converters might not work because the Brother machines were not designed to connect to computers. If using a converter, install it first, referring to its own manual, which is available here:
https://softbyte.co.uk/cablelinkmanuals.htm

Connect the Brotherlink to a free serial port on your computer or to a USB-to-serial converter. If the BrotherLink has a 25 pin connector, use a 25 to 9 serial adapter.
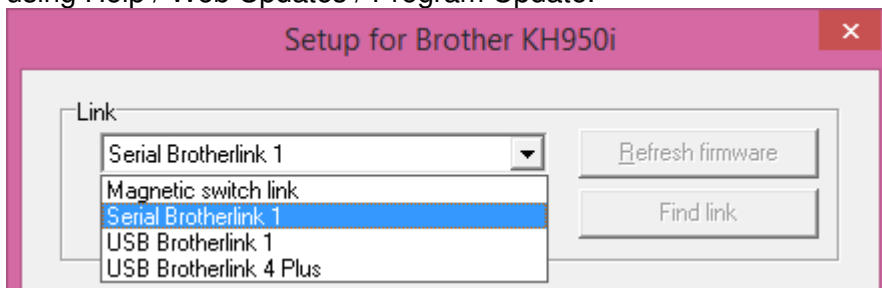
Connect the smaller 8-way end of the cable to the matching FB100 connector on the knitting machine or PPD.

Excess cable should not be tightly coiled as this can cause electromagnetic effects that can interfere with the operation of the link.

Telling DesignaKnit 8 or 9 which cable and port number to use

This applies whether you are using a true serial port or a USB to serial converter.

1. The automatic detection doesn't support this type of cable link. Please see https://softbyte.co.uk/usingdevicemanagertofindport.htm for instructions on how to find the port number using Device Manager. This applies whether using a USB to serial converter or a true serial port.

2. Open Stitch Designer and select Transfer / Upload.

3. Highlight the required knitting machine from the knitting equipment list by left clicking it, then click the Setup button.

4. For DesignaKnit 8 and later versions, under Link or Cable link, select "Serial Brotherlink 1". If this choice is not available, it may mean that you need to update your DesignaKnit using Help / Web Updates / Program Update.

5. At the top of the Knitting Machine Setup dialogue box there is a place to enter the port number. Enter the port number that was found in Device Manager and click OK.

6. When back at the list of knitting equipment, finish by clicking Cancel.

Upload, Extract, & Restore

These features are available from the Transfer menu in Stitch Designer.

In Stitch Designer, Transfer / Upload transfers all 900 series patterns from the knitting machine or PPD memory to DesignaKnit, in a single batch. After uploading the batch of patterns, DesignaKnit requests a filename for the batch, which is stored with the filename suffix .bro. If there are 900 series pattern numbers in the knitting machine that you want to keep and are not already in DesignaKnit, they can be uploaded and stored on the computer.

The **Extract** option on the Transfer menu can then be used to extract individual patterns from the stored .bro file and save them on your hard disk as DesignaKnit stitch pattern files.

The **Restore** option takes a previously uploaded .bro file and downloads it back to the machine, thereby restoring the 900 series pattern numbers that were in the memory of the machine or PPD at the point at which the batch was previously uploaded to the computer.

Downloading an Unintegrated Stitch Pattern

1. Select Transfer/Download.

2. At the list of knitting machines, make sure that the required knitting machine is highlighted and click OK.

3. The "Assemble Batch of Patterns" dialogue opens. Use the Help button if necessary to find out how to assemble the required batch of patterns. Note the 900 series pattern number that gets assigned to each stitch pattern in the batch - these numbers will be required later. When the required batch of patterns has been specified select OK.

4. Connect the cable link's 8-way connector to the FB100 connector on the knitting machine. Ensure the serial connector is attached to the USB to serial converter and that is in the computer USB port.

5. Click the Download button in the next dialogue and follow the on-screen instructions. A bar indicates the progress of the download.

Downloading an Integrated Stitch Pattern

An integrated stitch pattern is one which has been positioned on a garment piece, either by dragging the outline of the garment piece over the stitch pattern in Stitch Designer, or by dragging the stitch pattern over the garment piece in Original Pattern Drafting. The filename and position of a stitch pattern may be stored independently for each piece in a shape file.

Whichever way a garment piece is integrated with a stitch pattern, it is unlikely that row 1 of the garment piece will end up coinciding with row 1 of the repeating stitch pattern unit as shown on the Stitch Designer screen. It is also unlikely that the centre stitch of the garment piece will coincide with the centre stitch of the repeating pattern unit, though the interactive knitting instructions include centring each garment piece on the needle bed. DesignaKnit manages this situation by automatically shuffling the pattern vertically and horizontally by the required number of rows and stitches before downloading it. The end result is that the knitted piece exactly matches the display of the integrated piece on the Stitch Designer or Original Pattern Drafting screen.

In Stitch Designer, when Transfer / Integrated Download is selected, a garment piece is first chosen. The stitch pattern that has been integrated with that piece is then downloaded to the knitting machine memory, correctly positioned at the centre of the needle bed.

Even if the same stitch pattern has been integrated with more than one garment piece, the positioning of the pattern on each piece is likely to vary, so the automatic shuffling of the pattern will be different, and a separate download is required for each piece.

The garment shaping cannot be transferred to the console memory: only the stitch pattern can. The process is as follows.

1. In Stitch Designer, open the shape file that has been integrated and select Transfer / Integrated Download.

2. At the list of knitting machines, make sure that the required knitting machine is highlighted and click OK.

3. The Integrate window opens. In the left column, select the required garment pieces. The filename of the stitch pattern that has been integrated with the selected piece(s) should be shown in the middle column. For knitting machines other than the KH965i and KH970, note the 900 series pattern number that has been assigned to each integrated garment piece, starting at 901. These numbers will be required later. Click OK.

4. Connect the cable link's 8-way connector to the FB100 connector on the knitting machine. Connect the cable link's 8-way connector to the FB100 connector on the knitting machine. Ensure the serial connector is attached to the USB to serial converter and that is in the computer USB port.

5. Click the Download button in the next dialogue and follow the on-screen instructions. A bar indicates the progress of the download.

Large patterns

Different knitting machines have different memory sizes. The memory space required for a given pattern is roughly proportional to the total number of stitches.

For a given pattern or batch of patterns DesignaKnit is able to calculate whether the total memory required will fit into the knitting machine memory. If there is insufficient memory a message is shown, and some patterns will have to be removed from the batch.

It is also possible that one large pattern is too large for the machine memory - in which case DesignaKnit will give a message saying how many sections it must be divided into and asking which of those sections you want to download. Dividing into sections is done automatically - you do not have to decide how to divide the pattern. When a section number is chosen, a message shows how many rows must be knitted before the next section needs to be downloaded. Interactive Knitting will give a message reminding when the current section has been knitted and the next section must be downloaded.

Preparing for Interactive Knitting

The manual and help for interactive knitting are available from the Help menu in the Interactive Knitting section of DesignaKnit: please see those in order to find out about the general principles of interactive knitting. Only points that are specific to this type of cable link and knitting machine are included in the present document.

Whatever the model of Brother electronic knitting machine, it is necessary to select the pattern number on the knitting machine console. The downloaded pattern number will be in the range 901 to 998.
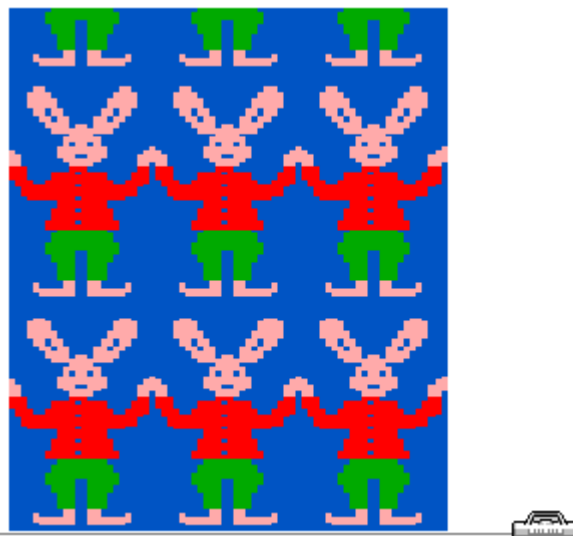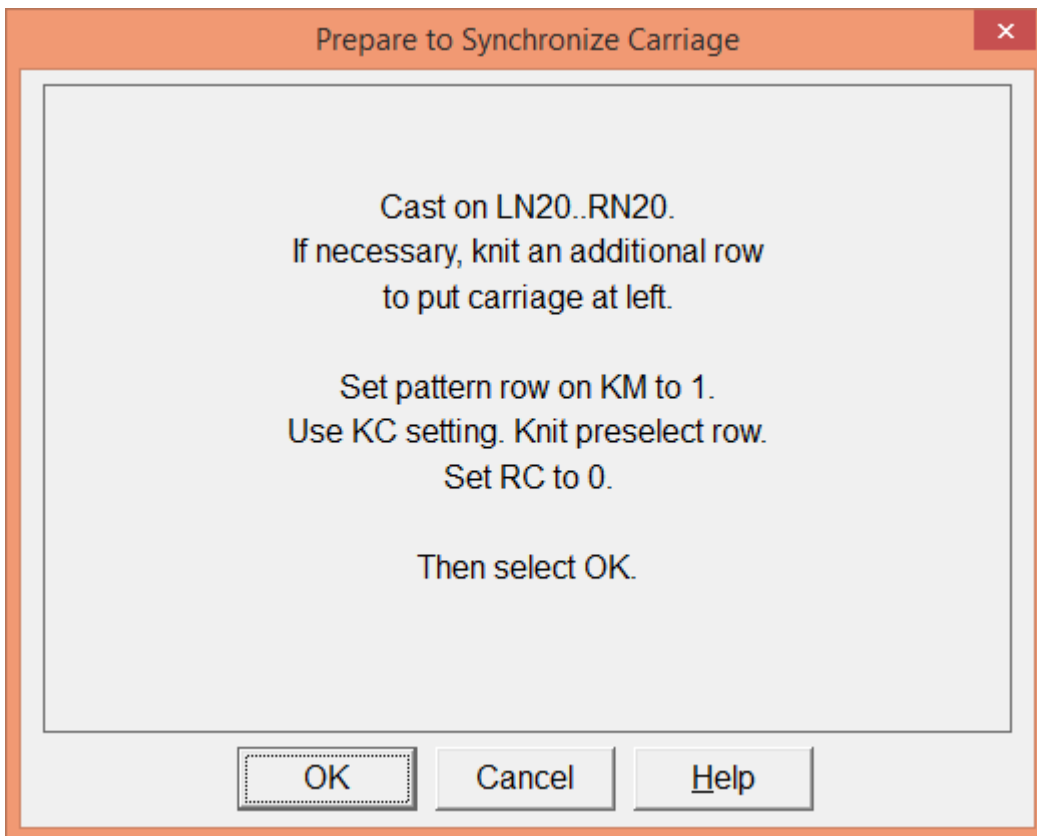
All existing 900 series patterns are automatically replaced by the new batch of downloaded patterns so there is no need to delete any patterns to clear memory.

Interactive knitting may be done using the USB Brotherlink 1 on some machines - see the section titled "Interactive Knitting with KH940 or KH950i" below.

When starting to work the first preselect row for a new stitch pattern, and the carriage is moved for the first time with the KC setting, it is necessary to move it past the further turn mark in order for the machine to start selecting needles and to start incrementing the electronic row count on the machine. This is not necessary for subsequent carriage passes.

Preselection

Except when using the garter carriage, Brother knitting machines preselect needles for the following pass of carriage. Each pass of the carriage knits the pattern that was defined by the previous pass, and also selects needles for the following pass. When the amber traffic light button is clicked to prepare to start knitting, the following dialogue appears:

Prepare to Synchronize Carriage

Cast on LN20..RN20.
If necessary, knit an additional row
to put carriage at left.

Set pattern row on KM to 1.
Use KC setting. Knit preselect row.
Set RC to 0.

Then select OK.

[OK]   [Cancel]   [Help]

Note that in this example, the Progress window at the top right of the Interactive Knitting screen shows the carriage at the right-hand side of the work. The instructions are saying to work the first preselect row starting with the carriage at the left - so that it will be at the right when starting to knit row 1. **The interactive knitting screen always shows the row that is about to be knitted, not the row that is about to be preselected.**

Interactive Knitting with KH940 or KH950i

Before knitting, ensure that the cable link is in the knitting machine's FB100 socket, but bent out of the way to make sure that the carriage cannot snag the cable and cause damage to either the socket or the cable.

The KH940 and KH950i machines are unique in that they generate a signal when the carriage changes direction. This signal can be detected by DesignaKnit which is then able to update the Interactive Knitting screen and provide knitting instructions for the next row.

These two machines produce the signal only if the KC setting is selected on the carriage. This setting is always necessary for patterned knitting as it engages the patterning belt, and it is also necessary when doing plain knitting interactively with this cable link. (The USB Brotherlink 5 does not required a KC setting to be used.)

Once knitting has begun (using the amber or green traffic light buttons), each time the carriage passes the KnitLink box, the screen should update itself and show the instructions for the next row.

This cable link does not support Interactive Knitting on other machines. If Interactive Knitting is required, the USB Brotherlink 5 or the USB Screenlink enables interactive knitting on almost any knitting machine. Interactive Knitting may also be followed without using a cable link, using the arrow keys to progress through the work.

Plain Knitting with KH940 or KH950i

There are some disadvantages to using the KC setting for plain knitting: engaging the patterning belt makes the carriage noisier and harder to push, and it is also necessary first to download a blank pattern to the machine.

If it is required to do much plain knitting on any Brother machine, it may therefore be preferable to purchase the USB Brotherlink 5. The signal to DesignaKnit is then provided by the KnitLink Arm and Box, instead of the patterning belt. With the USB Brotherlink 5, plain knitting is easier, quieter, and it is not necessary to download a blank pattern first.

Troubleshooting

For problems uploading or downloading, please see
https://softbyte.co.uk/uploading&downloadingwithbrotherlinks.htm

For problems with interactive knitting, please see
https://softbyte.co.uk/interactiveknittingwithbrotherpassapscreenlinks.htm

Updates to this manual

The document you are reading was updated in December 2021.

The most recent editions of cable link manuals may be found at
https://softbyte.co.uk/cablelinkmanuals.htm