SOME NOTES ABOUT THE STACY/MEGA STE INTERNAL SCSI HOST ADAPTER

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The Stacy and Mega STE has internal ACSI ports and optionally an ACSI->SCSI host adapter. This host adapter can also be used with other ST computers. I have successfully used this with both the ordinary ST DMA/ACSI port and the Mega ST internal ACSI port.

LIMITATIONS OF THE SCSI ADAPTER

This SCSI adapter is not the most advanced – it has several restrictions compared to more recent and advanced adapters like the ICD Link 2.

1. Does not work with drives that requires parity.
2. Only supports one single drive.
3. The attached drive must **not** be terminated. Be very careful to remove any termination resistor packs, and do **not** enable termination power.
4. Use a short SCSI cable, not more than around 20cm.
5. The attached drive must have SCSI ID 0 (zero).
6. Only supports up to 1Gb. You can use bigger drives, but only the first Gb can be accessed.
7. Does not support "newer" SCSI features like SCSI arbitration and initiator ID identification. I think – I know very little about SCSI.

1 and 7 are the biggest problems when using modern SCSI drives. You can use a (relatively) modern SCSI-3 drive with a cheap 50-pin adapter from eBay, but chances are that it won't work because it requires parity.

Problem 1 can be solved by adding a parity generator to the host adapter.

Problem 7 – I really don't know exactly what's going on. The drive will be recognised and you can use it (atleast with HD-Driver) without any problems **except** that you can't boot from it.

Problem 2 can be worked around, with a little modification the host adapter can access two SCSI drives with standard hd drivers. I have not tested this.

Problem 6 can also be worked around with a small modification but needs a special hd driver by Pera Putnik. I have not tested this.

ACSI PINOUT

By looking up this table you can easily make cables to connect the host adapter to the internal (in case of Mega ST) or external ACSI connector. It is a very simple pin-to-pin cable. The only exception is the power supply to the host adapter – only the Mega STE and Stacy has power supply on the internal ACSI port. So in addition to the ACSI cable you will have to connect the host adapter's pins 25, 27 and 29 to the power supply ground, and pins 26, 28 and 30 to the power supply 5V.

Table 1. ACSI pinouts.

Signal	Mega STE (30 pin internal)	ACSI (DB19 male)	Mega ST (24 pin internal)
D0	2	1	2
D1	4	2	4
D2	6	3	6
D3	8	4	8
D4	10	5	10
D5	12	6	12
D6	14	7	14
D7	16	8	16
/RESET	17	12	3
ACK	18	14	11
/CS	19	9	18
A1	20	16	19
RW	21	18	22
DRQ	22	19	23
IRQ	23	10	24
GND	25	11	1
GND	25	11	3
GND	25	13	5
5V	26		
GND	27	13	9
GND	27	15	13
GND	27	15	15
5V	28		
GND	29	17	17
GND	29	17	20
GND	29	17	21
5V	30		

EXTERNAL ACSI CONNECTOR

The external ACSI connector you find on the back of all variants of the ST and also the TT.

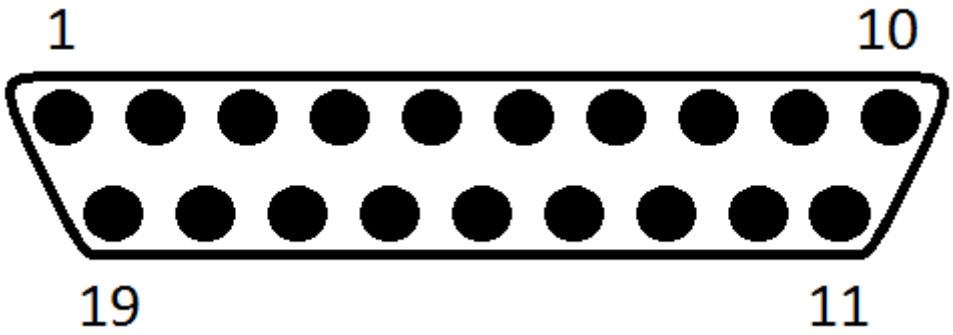

Figure 1. External ACSI connector.

If you take a close look at the connector you will see that the pins are actually numbered on the connector itself.

MEGA ST INTERNAL ACSI CONNECTOR

This is the layout of the Mega ST internal ACSI connector. It's located on the motherboard right next to the external ACSI connector. The location of pin 1 is labelled on the motherboard.

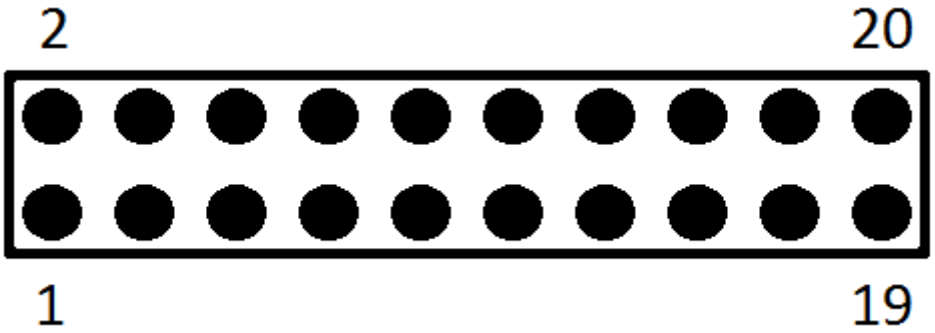

Figure 2. Mega ST internal ACSI connector.

STACY/MEGA STE INTERNAL ACSI CONNECTOR

This is the layout of the ACSI connector on the host adapter itself. It has two rows with 15 pins each, the pins at the end are labelled. You can either solder the cable directly to the host adapter itself or a 15x2 1/10” pin header.

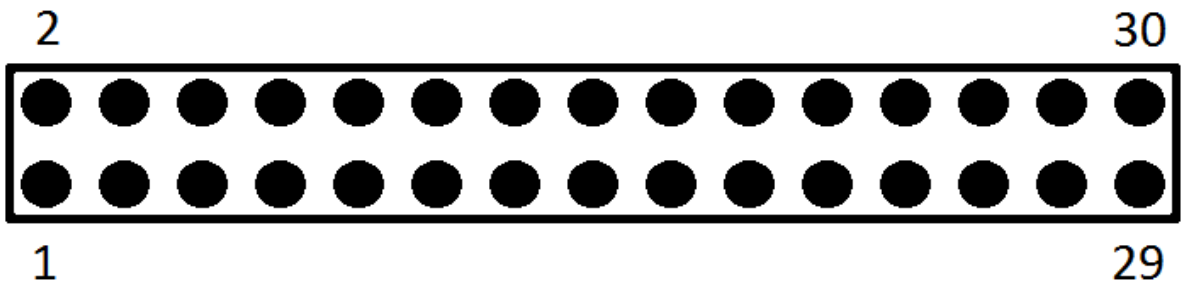

Figure 3. Mega STE/Stacy host adapter ACSI connector.

ADDING A PARITY GENERATOR TO THE HOST ADAPTER

This is a text I found on usenet 20 years ago or so. I have applied this modification to two Stacy host adapters with success.

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SCSI Parity Generator

This is the Parity generation logic that solves the problem for those Atari users
that use SCSI adaptors without parity. As you can see it consists of one single
74HC280 chip. The easiest place to get to the SCSI signals is the harddisk itself.
You can use the four pin connector's red pin for +5V and the black for GROUND.

This parity generator has been tested with the following adaptors:

   -  ICD Link 1 (the first type)

   -  Megafile 44 SCSI adaptor

   -  Mega STE SCSI adaptor

   -  Protar SCSI adaptor

Pinout of the 74HC280

         74HC280


       +---\_/---+

    D6 |1      14| +5V

    D7 |2      13| D5

    NC |3      12| D4
```

```
 INPUT |4      11| D3
  EVEN |5      10| D2
   ODD |6       9| D1
   GND |7       8| D0
       +---------+
```

The logical schematic for added parity generation

```
  74HC280                    SCSI-bus
 +--------+                  +-------+
 |     P8 | D0------------D0 | P2    |
 |     P9 | D1------------D1 | P4    |
 |    P10 | D2------------D2 | P6    |
 |    P11 | D3------------D3 | P8    |
 |    P12 | D4------------D4 | P10   |
 |    P13 | D5------------D5 | P12   |
 |     P1 | D6------------D6 | P14   |
 |     P2 | D7------------D7 | P16   |
 |     P6 | ODD------ PARITY | P18   |
 |        |                  +-------+
 |    P14 | +5V
 |        |
 |     P3 | NO CONNECTION
 |     P5 | NO CONNECTION
 |        |
 |     P4 | INPUT--+
 |     P7 | GND----|
 +--------+        |
                  GND
```


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I did not modify the harddisk itself as suggested by Martin Graiter. Instead I soldered the parity generator directly to the SCSI connector on the backside of the host adapter. If you bend out the pins on the 74HC280, D0 to D5 will line up perfectly to D0 and D5 on the SCSI connector. See figure 4.

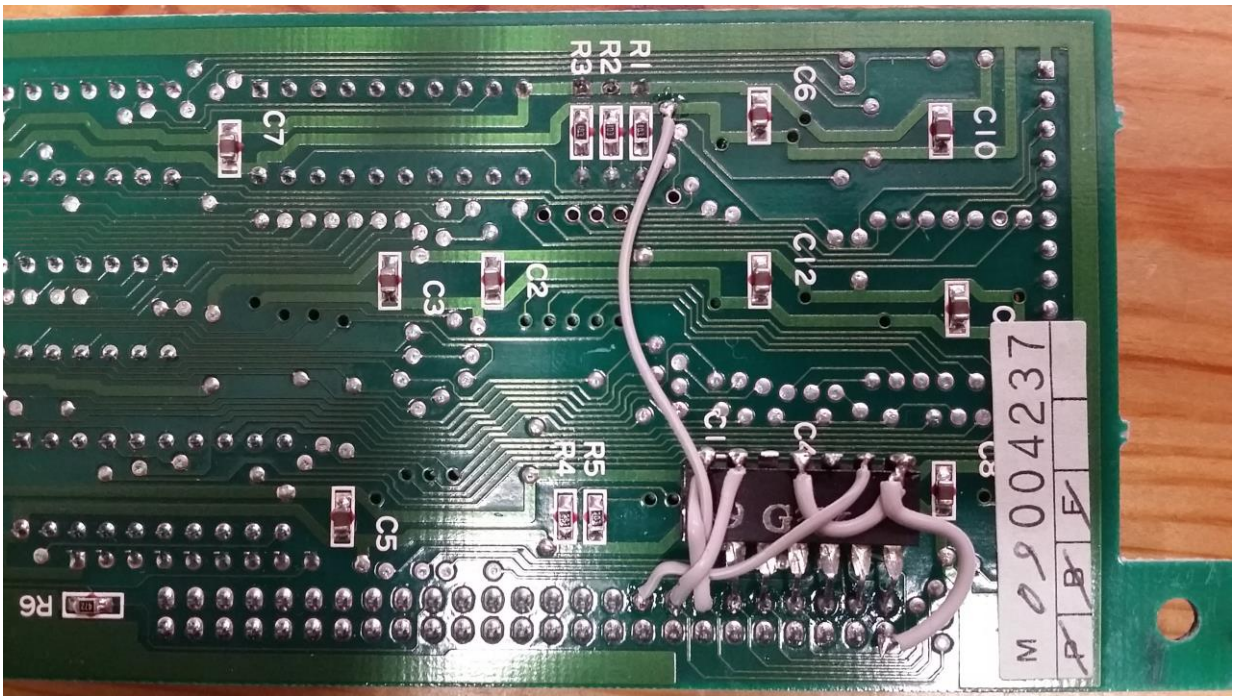

Figure 4. Backside of host adapter.

CONNECTING TWO SCSI DEVICES TO THE STACY/MSTE HOST ADAPTER