

**ISA Connector 10MBit/s Ethernet Card RTL8019AS**

Component (TOP) Side

A: 8 Bit ISA Connector (right side of card)

1: First Pin from rear edge of card

ISA-Bus	RTL8019 Sig	RTL PIN	Atmel Sig	ATMega Pin	Signalname / Connect to
A1: *CHKCHK					--
A2: SD7	SD7	43	PA7	44	D7
A3: SD6	SD6	42	PA6	45	D6
A4: SD5	SD5	41	PA5	46	D5
A5: SD4	SD4	40	PA4	47	D4
A6: SD3	SD3	39	PA3	48	D3
A7: SD2	SD2	38	PA2	49	D2
A8: SD1	SD1	37	PA1	50	D1
A9: SD0	SD0	36	PA0	51	D0
A10: CHRDY	IOCHRDY	35			--
A11: AEN	AEN	34			GND
A12: SA19	SA19	27			GND
A13: SA18	SA18	26			GND
A14: SA17	SA17	25			GND
A15: SA16	SA16	24			GND
A16: SA15	SA15	23	->PC7	->42	Inverter3 OUT -> Inverter IN = PC7 = A15
A17: SA14	SA14	22	PC6	41	A14
A18: SA13	SA13	21	PC5	40	A13
A19: SA12	SA12	20	PC4	39	A12
A20: SA11	SA11	19	PC3	38	A11
A21: SA10	SA10	18	PC2	37	A10
A22: SA9	SA9	16	PC1	36	A9-
A23: SA8	SA8	15	PC0	35	A8
A24: SA7	SA7	13			A7-Latch (IN = D7)
A25: SA6	SA6	12			A6-Latch (IN = D6)
A26: SA5	SA5	11			A5-Latch (IN = D5)
A27: SA4	SA4	10			A4-Latch (IN = D4)
A28: SA3	SA3	9			A3-Latch (IN = D3)
A29: SA2	SA2	8			A2-Latch (IN = D2)
A30: SA1	SA1	7			A1-Latch (IN = D1)
A31: SA0	SA0	5			A0-Latch (IN = D0)

Solder (BOTTOM) Side

B: 8 Bit ISA Connector (right side of card)

1: First Pin from rear edge of card

ISA-Bus	RTL8019 Sig	RTL PIN	Atmel Sig	ATMega Pin	Signalname / Connect to
B1: GND	GND	14,28			GND
B2: RESDRV	RSTDRV	33	->/RESET	->20	Inverter1 OUT -> Inverter IN = /ATRESET = Reset Controller OUT
B3: +5	VDD	6,17			+5V
B4: IRQ2	INT0	4	->PE5	->7	Inverter2 IN -> Inverter OUT = PE5
B5: -5					--
B6: DRQ2					--
B7: -12					--
B8: *NOWS					--
B9: +12					--
B10: GND	GND	83,86			GND
B11: *SMWTC	SMEMWB	32			+5V
B12: *SMRDC	SMEMRB	31			+5V
B13: *IOWC	IOWB	30	/WR	33	/WR
B14: *IORC	IORB	29	/RD	34	/RD
B15: *DAK3					--
B16: DRQ3					--
B17: *DAK1					--
B18: DRQ1					--
B19: *REFRESH					--
B20: BCLK					--
B21: IRQ7					--
B22: IRQ6					--
B23: IRQ5	INT3	1			--
B24: IRQ4	INT2	2			--
B25: IRQ3	INT1	3			--
B26: *DAK2					--
B27: TC					--
B28: BALE					--
B29: +5	VDD	89			+5V
B30: OSC					--
B31: GND	GND	52			GND

Component (TOP) Side

C: Extension, 16-Bit AT Bus only.

1: First Pin after separator (second or rear ISA connector)

ISA-Bus	RTL8019 Sig	RTL PIN	Atmel Sig	ATMega Pin	Signalname / Connect to
C1: *SBHE					--
C2: LA23					--
C3: LA22					--
C4: LA21					--
C5: LA20					--
C6: LA19					--
C7: LA18					--
C8: LA17					--
C9: *MRDC					--
C10: *MWTC					--
C11: SD8	SD8	95			--
C12: SD9	SD9	94			--
C13: SD10	SD10	93			--
C14: SD11	SD11	92			--
C15: SD12	SD12	91			--
C16: SD13	SD13	90			--
C17: SD14	SD14	88			--
C18: SD15	SD15	87			--

Solder (BOTTOM) Side

D: Extension, 16-Bit AT Bus only.

1: First Pin after separator (second or rear ISA connector)

ISA-Bus	RTL8019 Sig	RTL PIN	Atmel Sig	ATMega Pin	Signalname / Connect to
D1: *M16					--
D2: *IO16	IOCS16B	96			GND (optional, if no PullDown on Ethercard)
D3: IRQ10	INT4	100			--
D4: IRQ11	INT5	99			--
D5: IRQ12	INT6	98			--
D6: IRQ15	INT7	97			--
D7: IRQ14					--
D8: *DAK0					--
D9: DRQ0					--
D10: *DAK5					--
D11: DRQ5					--
D12: *DAK6					--
D13: DRQ65					--
D14: *DAK7					--
D15: DRQ7					--
D16: +5	VDD	70			+5V (optional)
D17: *MASTER16					--
D18: GND	GND	52			GND (optional)

\* = Active Low

Other ATMega Signals needed:

- ALE (PG2) Pin 43 to ALE of Latch 74HCT573D

An external RESET CONTROLER like DS1811, ADM809 or MAX 809 or similar is needed. The ATMega /Reset Pin has no driver output capabilities !

Pinning of ISA-Bus Connector

PIN	ROW A (J1)	ROW B(J1)	ROW C (J2)	ROW D (J2)
0			GND	GND
1	*CHCHK	GND	*SBHE	*M16
2	SD7	RESDRV	LA23	*IO16
3	SD6	+5V	LA22	IRQ10
4	SD5	IRQ9	LA21	IRQ11
5	SD4	-5V	LA20	IRQ12
6	SD3	DRQ2	LA19	IRQ15
7	SD2	-12V	LA18	IRQ14
8	SD1	*ENDXFR	LA17	*DACK0
9	SD0	+12V	*MRDC	DRQ0
10	CHRDY	KEY	*MWTC	*DACK5
11	AEN	*SMWTC	SD8	DRQ5
12	SA19	*SMRDC	SD9	*DACK6
13	SA18	*IOWC	SD10	DRQ6
14	SA17	*IORC	SD11	*DACK7
15	SA16	*DACK3	SD12	DRQ7
16	SA15	DRQ3	SD13	+5V
17	SA14	*DACK1	SD14	*MASTER16
18	SA13	DRQ1	SD15	GND
19	SA12	*REFRESH	KEY	GND
20	SA11	CLK		
21	SA10	IRQ7		
22	SA9	IRQ6		
23	SA8	IRQ5		
24	SA7	IRQ4		
25	SA6	IRQ3		
26	SA5	*DACK2		
27	SA4	TC		
28	SA3	BALE		
29	SA2	+5V		
30	SA1	OSC		
31	SA0	GND		
32	GND	GND		

Rows C and D are used for 16 bit (AT) operation.  
 Keys are missing pins and holes are filled.