

AMIS-49200EVB

AMIS-492x0 Fieldbus MAU Evaluation Board User's Manual

Introduction

ON Semiconductor offers the AMIS-492x0 Fieldbus Media Access Unit (MAU) as part of an overall industrial network communication solution. Please refer to the AMIS-492x0 data sheet for more information on this integrated circuit. The scope of this user's manual focuses on a reference design and board that ON Semiconductor also offers its customers, and which satisfies the Foundation Fieldbus H1 or Profibus PA physical layer network requirement.

This user's manual helps the user design in the

Table 1. Components That May Be Modified on the Reference Board

Resistor	Used to Adjust
R12	Shunt regulator voltage
R13	Shunt regulator voltage
R8	Series regulator voltage
R23	Series regulator voltage
R22	Loop current

Shunt Regulator

See Section 4.2.1 and Figure 4 in the AMIS-492x0 data sheet.

As assembled the shunt regulator output will be 5.02 V at Pin 8 (SHUNT). This voltage is set by connecting Pin 7 (SHSET) to Pin 6 (SHSETin) via R11 (zero Ω). This connection connects the internal voltage divider to the shunt regulator amplifier non-inverting input.

To set the shunt regulator output to another voltage, remove R11 and install R12 and R13. The shunt regulator voltage can be set in the range of 4.75 V to 6.2 V. The formula for this is:

$$V_{SHUNT} = V_{ref} \left(1 + \frac{R12}{R13} \right)$$

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Appendix (A) Component Label Cross Reference

The component values in Figure 2 in this document and Figure 12 in the AMIS-492x0 data sheet are differently labeled. For convenience, a cross-reference list is found in Table 2.

Table 2. Component Cross-Reference List between Reference Design and Data Sheet

Reference Board	Data Sheet	Reference Board	Data Sheet	Reference Board	Data Sheet
C1	C5	D5	D3	R13	N/A
C2	C6	Q1	Q2	R14	R11
C3	C9	Q2	Q4	R15	R10
C4	C8	Q3	Q3	R16	R8
C5	C3	Q4	Q1	R17	R7
C6	C1	R1	N/A	R18	R4
C7	C2	R2	R1	R19	R6
C8	C4	R3	R2	R20	R5
C9	C11	R4	n/a	R21	R3
C10	N/A	R5	R12	R22	N/A
C11	C10	R6	R9	R23	N/A
C12	C7	R7	N/A	R24	N/A
C13	N/A	R8	N/A	R25	N/A
D1	N/A	R9	N/A	U2	D1
D2	N/A	R10	N/A	U2	D2
D3	N/A	R11	N/A	VAA	Vshunt
D4	N/A	R12	N/A		

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