CAN Bridge Setup and Configuration

I. Wireless CAN Bridge Connector Diagram

Pin 1 – DRAIN
Pin 2 – CAN_H
Pin 3 – Common
Pin 4 – +24Vdc (~130mA @24Vdc)
Pin 5 – CAN_L

Male Micro Connector Pinout

WARNING:

For Prototype units only. This is not the DeviceNet Standard Pinout. Verify proper wiring before applying power.

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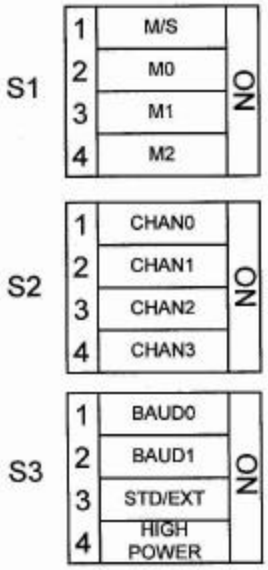
II. Wireless CAN Bridge Configuration Switches



Wireless CAN Bridge Configuration Switch Layout

The Wireless CAN Bridge has 12 configuration switches arranged in 3 banks S1,S2, and S3. Each bank, contains 4 switches. These switches allow the user to easily customize the Wireless CAN Bridge to fit the desired application. The following paragraphs describe each switch setting in more detail. The format Sb – s, where b is the bank number and s is the switch number within that bank, will be used. The "as shipped" settings are shown with an asterisk "*".

Switch S1 – 1 Selects Node Communication Type. A Master is the initiator of the **Master/Slave pair.**

Node Communication Type	**M/S** (S1-1)
~~SLAVE~~* MASTER	OFF*
~~MASTER~~ SLAVE	ON

Note: A Radio System must consist of only one master and only one slave per channel. See switches S2 – 1,2,3,4 for channel settings.

Switches S1 – 2,3, and 4 **Selects the Mode (number of retries). The radio will retransmit a "crashed" packet the selected number of retries before discarding the packet.**

Number of Retries	**M2** (S1-4)	**M1** (S1-3)	**M0** (S1-2)
1	ON	ON	ON
2*	ON*	ON*	OFF*
3	ON	OFF	ON
4	ON	OFF	OFF
5	OFF	ON	ON
6	OFF	ON	OFF
7	OFF	OFF	ON
8	OFF	OFF	OFF

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Switches S2 – 1,2,3, and 4 **Selects the operating channel. A master/slave pair must be set to the same channel to operate. See switch S1 – 1 for selecting Master/Slave operation.**

Channel	CH3 (S2-4)	CH2 (S2-3)	CH1 (S2-2)	CH0 (S2-1)
0*	ON*	ON*	ON*	ON*
1	ON	ON	ON	OFF
2	ON	ON	OFF	ON
3	ON	ON	OFF	OFF
4	ON	OFF	ON	ON
5	ON	OFF	ON	OFF
6	ON	OFF	OFF	ON
7	ON	OFF	OFF	OFF
8	OFF	ON	ON	ON
9	OFF	ON	ON	OFF
10	OFF	ON	OFF	ON
11	OFF	ON	OFF	OFF
12	OFF	OFF	ON	ON
13	OFF	OFF	ON	OFF
14	OFF	OFF	OFF	ON
15	OFF	OFF	OFF	OFF

Switches S3 – 1and 2 **Selects the CAN Bit Rate.**

Bit Rate (Bits/Sec.)	BAUD1 (S3-2)	BAUD0 (S3-1)
125K*	ON*	ON*
250K	ON	OFF
500K	OFF	ON
125K	OFF	OFF

Switch S3 – 3 **Selects Standard or Extended CAN framing.**

CAN Type	STD/EXT (S3-3)
11 bit (Standard CAN)*	ON*
29 bit (Extended CAN)	OFF

Switch S3 – 4 **Enables RF High Output Power.**

High RF Power	HIGH POWER (S3-4)
Enabled*	ON*
Disabled	OFF

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III. Wireless CAN Bridge Diagnostic Indicators

General Description –

The Wireless CAN Bridge provides three separate groups of diagnostic L.E.D. indicators. The groups are labeled "Signal", "Loading", and "Data Loss Cause." In addition to these groups, a power indication L.E.D. is also provided. The L.E.D. groups are updated once per second and have an "on-time" of not less than one second. The power indicator is directly connected to the power supply and will illuminate when power is applied to the unit.

Signal Indicators –

The signal indicators provide information about the integrity and robustness of the RF Signal. Three levels are indicated, *strong, poor* and *weak*. The three levels may be described as a function of data throughput.

Strong	Indicates a good signal throughput. Best Data Rate
Poor	Many Packet Errors. Reduced Data Rate
Weak	Very few data packets are getting through. Data rate almost zero.
No Indicators	Data rate is zero. No RF link established.

Loading Indicators –

The loading indicators provide information about the number of CAN packets that are being transferred across the RF link. Four levels are indicated, *heavy, moderate, normal, and light*. The four levels may be described as a function of bandwidth usage by CAN packets.

Heavy	50 % - 100 % of the available bandwidth is being utilized for CAN messages.
Moderate	35 % - <50 % of the available bandwidth is being utilized for CAN messages.
Normal	10 % - <35 % of the available bandwidth is being utilized for CAN messages.
Light	0* % - <10 % of the available bandwidth is being utilized for CAN messages.
No Indicators	No CAN messages transferred.

Data Loss Cause Indicators –

The data loss cause indicators provide information about failed or "crashed" packets. Two indications are provided, *Buffer Overrun* and *Retry Exhausted*.

Buffer Overrun	CAN packets have overrun the capability of the RF link. One or more CAN message(s) is(are) discarded.
Retry Exhausted	The configured number of link retries has been reached. One or more RF data packet(s) is(are) discarded. Note: RF data packets may contain CAN messages.
No Indicators	No Data Errors.

Power Indicator –

The power indicator provides information about the presence of electrical power.

Power LED On	DC Power is On.
No Illumination	DC Power is Off.

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IV. Direct Sequence Spread Spectrum (DSSS) Near / Far Problems.

The problems generated in DSSS systems by transmitters located close to receivers of other systems are known as Near / Far problems.

The interfering signals described above may be generated for example by the transmitter of one system (System A) located close to the receiver of a different system (system B). If receiver B is a DSSS one, the interference generated by transmitter A could totally block its activity. It may be necessary to relocate transmitters/receivers of different systems to avoid this issue.