



Noise Reduction Module

Model A125

Installation Instructions

Description

The 3M A125 Noise Reduction board (3M part number 78-9236-6453-2) improves the inbound intelligibility of an intercom system by reducing environmental background noise from vehicles, airplanes, noisy intersections, wind, etc.

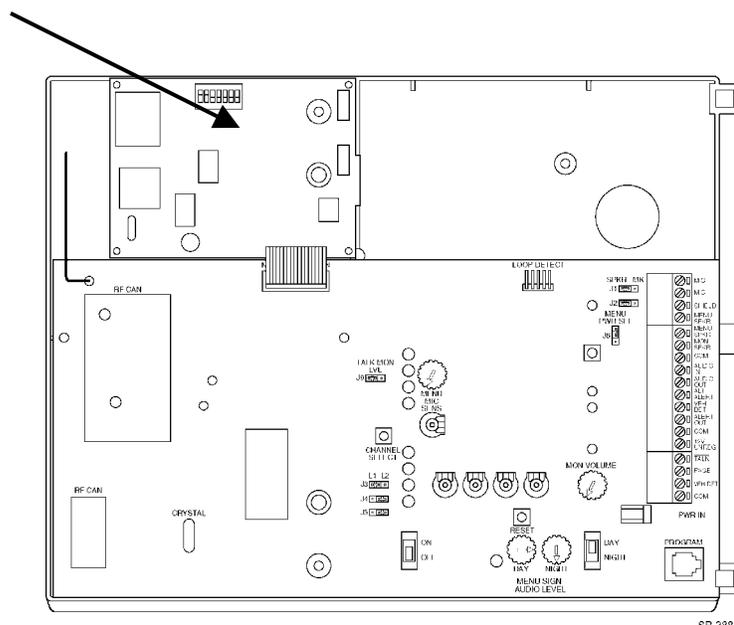
System Requirements

The 3M A125 Noise Reduction Module requires a 3M model C921BA or C922AA Base Station.

Installing the Noise Reduction board into the 3M Base Station

1. Remove the right-hand and left-hand top covers from the 3M base station. Be careful that the main circuit board does not fall out of the plastic base.
2. See *****Important installation notice***** on next page before performing this step. Plug the A125 ribbon cable onto connector J8, located at the top of the left side of the circuit board. Be careful to support the rear side of the base station circuit board when plugging in the A125 ribbon cable.
3. Position the holes near the edge of the A125 circuit board over the plastic standoffs on the base station.
4. Attach the left-hand base station cover after configuring the A125 board, and performing the Final Checkout Procedure.

Install the A125 board here



Important installation notice

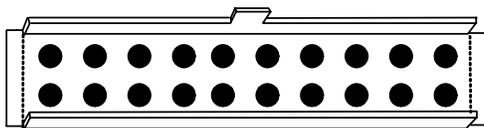
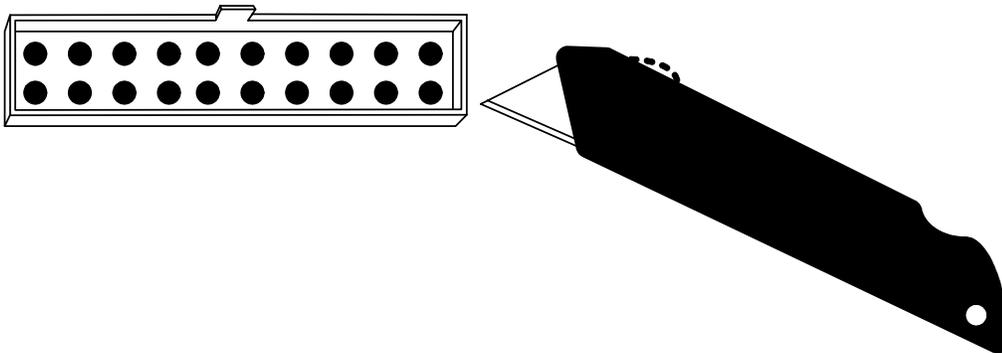
Starting with serial number 125002477, the **A125 Noise Reduction Module, Internal** has a wider ribbon cable plug. A limited number of these Noise Reduction Modules have two individual ribbon cable plugs. The wider ribbon cable plug(s) are too wide to fit into the blue 20-pin base station receptacle. The receptacle on the wireless base station board must be trimmed and the ends opened. Use a sharp razor knife and make four vertical cuts. Fold the ends of the blue receptacle down as shown below.

Caution - Be careful to not cut any components or circuit traces on the base station circuit board.

Caution - Be careful to pull only on the ribbon connector plug. Pulling on the ribbon cable itself may cause it to separate from the plug.

Instructions for trimming and opening the base station receptacle:

1. Make a vertical cut at each corner of the blue 20-pin receptacle on the base station circuit board.
2. Fold the short end sides down as shown
3. Carefully insert the ribbon cable plug(s) into the blue receptacle. The locking tab will not engage and should not be a problem.



System Configuration

The A125 Noise Reduction board is configured by two jumper switches, (JMP1 and JMP2), shown in Table 1.

Jumper Position	Position A	Position B
JMP1	* Separate microphone & speaker at menu sign/post	OSM (speaker used as both a speaker and a microphone at the menu sign/post)
JMP2	* C960 Intercom	C5000 Intercom

Note: * Indicates factory default settings

Table 1. A125 Jumper Settings

Mode Configuration

The A125 Noise Reduction board can be configured in several different modes by using DIP switch, SW1. Following is a brief description of each mode and a DIP switch setting table.

Noise Reduction: When DIP Switch number 1 ON the inbound microphone voice signal is digitized. On digitized, the noise is digitally removed from the voice by the digital signal processor and converted back to an analog voice signal. The analog voice signal is then sent to the microphone input of the intercom. When DIP Switch number 1 is OFF the inbound microphone voice signal is digitized and converted back to an analog voice signal without removing any noise. The analog voice signal is then sent to the microphone input of the intercom.

Echo Reduction: Used to reduce echo for full-duplex intercom configurations. Turn Echo Reduction OFF for half-duplex intercom configuration.

Restaurant / Truck Stop Noise Reduction Level: When DIP Switch number 3 is OFF, the board is set for restaurant noise reduction level. When DIP Switch number 3 is ON, the board is set for truck stop noise reduction level. This provides approximately 6dB more noise reduction with slightly more voice degradation.

Hi Frequency Equalization: When DIP Switch number 4 is ON, the higher end frequencies are increased by 3dB. This should be set to the customer's preference.

DIP Switch Number	ON Position	OFF Position
1	* Noise Reduction ON	Noise Reduction OFF
2	* Echo Reduction ON	Echo Reduction OFF
3	Truck Stop Noise Reduction Level	* Restaurant Noise Reduction Level
4	Hi Frequency Equalization ON	* High Frequency Equalization OFF
5	Spare	Spare
6	Test Mode (FACTORY USE ONLY; DO NOT CHANGE)	* Normal Operating Mode

Note: * Indicates Factory Default Settings

Table 2. A125 DIP Switch Settings

Status Indication

The condition of the red LED on the 3M C960 base station indicates the current status of the unit. The LED can be off, blink at defined intervals, or be constantly lit. Table 3 illustrates the status indicated by the LEDs.

Status	LED
Power OFF	LED Off
Normal Mode	LED blinks once per every two seconds
Test Mode	LED blinks three times per second
Fault Condition	LED is solid red (constantly lit)

Table 3. A125 Status Indication

Final Checkout Procedure

1. On the C921BA Base Station, turn the NRM ON/OFF switch ON. The red LED should blink slowly. Listen for a reduction in the background noise.
2. If the A125 is in a half-duplex system, set SW2 number 2 OFF and proceed to step 3. If the A125 is in a full-duplex system set SW2 number 2 OFF. Speak into the headset microphone. The echo should increase. Turn SW2 number 2 back ON. The echo should decrease.
3. Set SW2 number 3 for appropriate level of noise reduction. Set SW2 number 3 OFF for restaurant mode. Set SW2 number 3 ON for truck stop mode.
4. Set SW2 number 4 (Hi Frequency Equalization) to customer's preference.
5. Check the inbound audio level of headset if TALK LOCK feature is used. Attempt to adjust the inbound level when background noise in restaurant is at a high level.

Troubleshooting

Problem	Possible Cause	Correction
1. Status fault indicated.	Inbound audio exceeded maximum level.	Switch A125 OFF for one second.
2. No inbound audio.	Mode setting is incorrect.	Check mode configuration. Check wiring from post to base station. Reinstall A125 module.
3. Loud audio in 3M headset when headset user talks.	Inbound audio on 3M base station too low.	Increase MENU MIC SENS potentiometer. Headset user should then reduce the headset audio volume.
4. Excessive echo	Excessive feedback from menu speaker to menu mic.	Add extra acoustic insulation to menu mic chamber.
5. Low inbound audio when using C960/C860 TALK LOCK feature.	Background noise inside restaurant may cause inbound audio to be reduced.	Increase MENU MIC SENS potentiometer.

Table 4. A125 Noise Reduction Module Troubleshooting