



ECR Shelf System Installation Guide

Centralized Rack Mount Call Recording



Hardware & Installation Guide

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1 ECR Shelf System Overview

This document covers the hardware installation of the Enterprise Call Recorder (ECR) Shelf System.

The ECR Shelf System works with Algo's ECR Software and a Server PC to provide a reliable and cost effective call recording solution. The ECR Software and PC must be purchased separately from the ECR Shelf System and its components. Please contact Algo for more information.

Algo's ECR Shelf System is comprised of 4 components. Together they form a powerful recording system that is robust and easy to install. A description of each component follows.

1.1 4102R – Digital Line Card

The 4102R connects to a single digital line. Features include voice recording, call display capture, and relay control. The following Nortel Networks TDM phones are supported:

Norstar/BCM:

M7100, M7208, M7310, M7324;
T7100, T7208, T7316, T7316E

Meridian 1:

M2006, M2008, M2216, M2616;
M3901, M3902, M3903, M3904, M3905

Contact Algo for current support information for the M2250 console and other Nortel Networks telephones.

1.2 4102RB – Slot Blank

4102RB is a cover for slots not populated by 4102Rs. Each free slot position should have a 4102RB installed to prevent dust from entering the 4210 Shelf.

1.3 4210 – Shelf

The 4210 Shelf is the physical rack and backplane, which supports up to 16 4102R's.

1.4 4211 – Hub Card

The 4211 is an internal USB Hub that concentrates all shelf traffic into a single USB output.

2 Back Panel Wiring

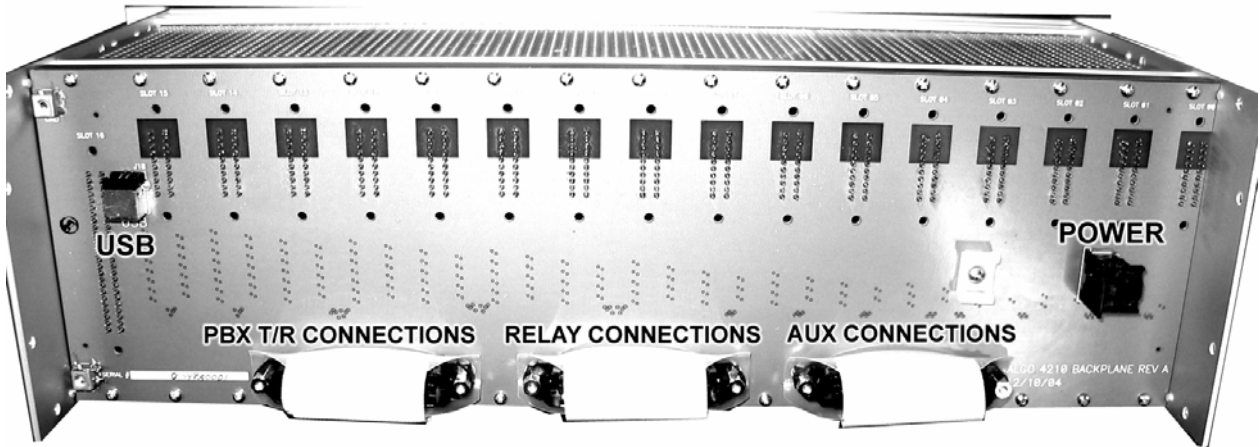


Figure 1 – 4210 shelf back panel

The back panel of the 4210 Shelf has five (5) connection ports:

- Power
- USB
- PBX T/R Connections
- Relay Connections
- Aux Connections

Note: Ensure that nothing comes in contact with the exposed pins on the back panel as this may damage the unit. Algo recommends that the 4210 Shelf be mounted in an enclosed rack protecting the unit for accidental shorts and physical damage.

2.1 USB

This connection should be run to an available USB port on the PC designated as the ECR Server using the supplied USB cable. USB version 1.1 or above is supported. Please refer to the ECR Installation Guide for software installation instructions.

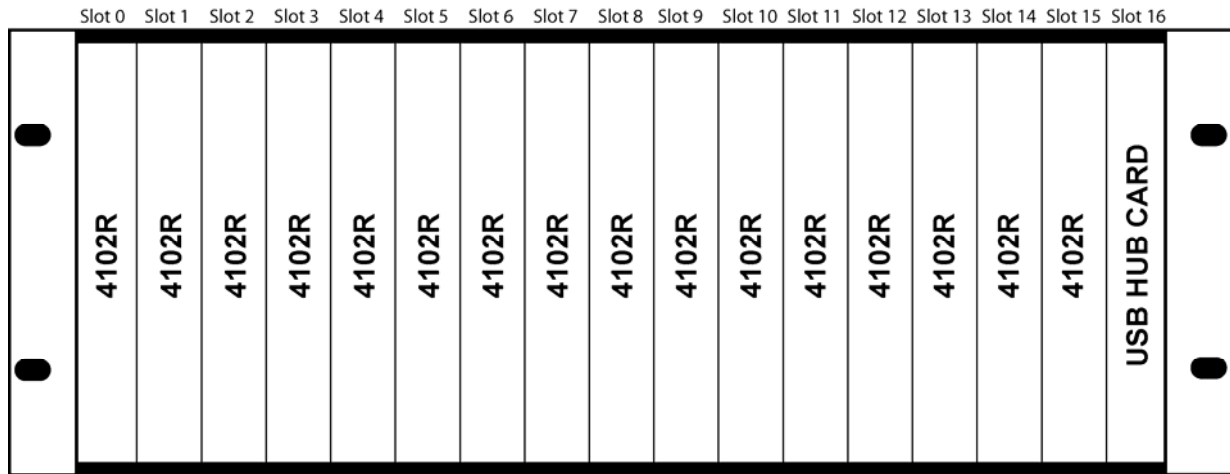
2.2 Power

Connect the power supply provided with the 4210 Shelf. This power supply is universal, accepting North American or European line voltage (120V/60Hz or 230V/50Hz). Input to the shelf is 5VDC 3A.

Note: Plug power supply into shelf before connecting to AC mains to prevent inadvertent power contact with backplane pins during installation.

2.3 Telephone Digital Wire (PBX T/R) Pair Connections

This Amphenol type connector provides the connection to the digital wire pairs between the digital telephone and telephone system. Each wire pair corresponds to a card slot position.



PBX T/R Connections			
Slot Number	Amphenol (Pin)	Solid Colour	Stripe Colour
0	1	Blue	White
	26	White	Blue
1	2	Orange	White
	27	White	Orange
2	3	Green	White
	28	White	Green
3	4	Brown	White
	29	White	Brown
4	5	Slate	White
	30	White	Slate
5	6	Blue	Red
	31	Red	Blue
6	7	Orange	Red
	32	Red	Orange
7	8	Green	Red
	33	Red	Green
8	9	Brown	Red
	34	Red	Brown
9	10	Slate	Red
	35	Red	Slate
10	11	Blue	Black
	36	Black	Blue
11	12	Orange	Black
	37	Black	Orange
12	13	Green	Black
	38	Black	Green
13	14	Brown	Black
	39	Black	Brown
14	15	Slate	Black
	40	Black	Slate
15	16	Blue	Yellow
	41	Yellow	Blue
16	Hub Card – USB Port on Backplane		

2.4 Relay Connections

This Amphenol type connector provides connections for the dry contact relays. Each wire pair corresponds to a card slot position, equivalent to the digital line connections for each card.

4102R relay control will be programmable from the ECR Software in future versions. Please consult the ECR software user guide for more information.

The Hub Card relay activates on either USB disconnection or power disconnection.

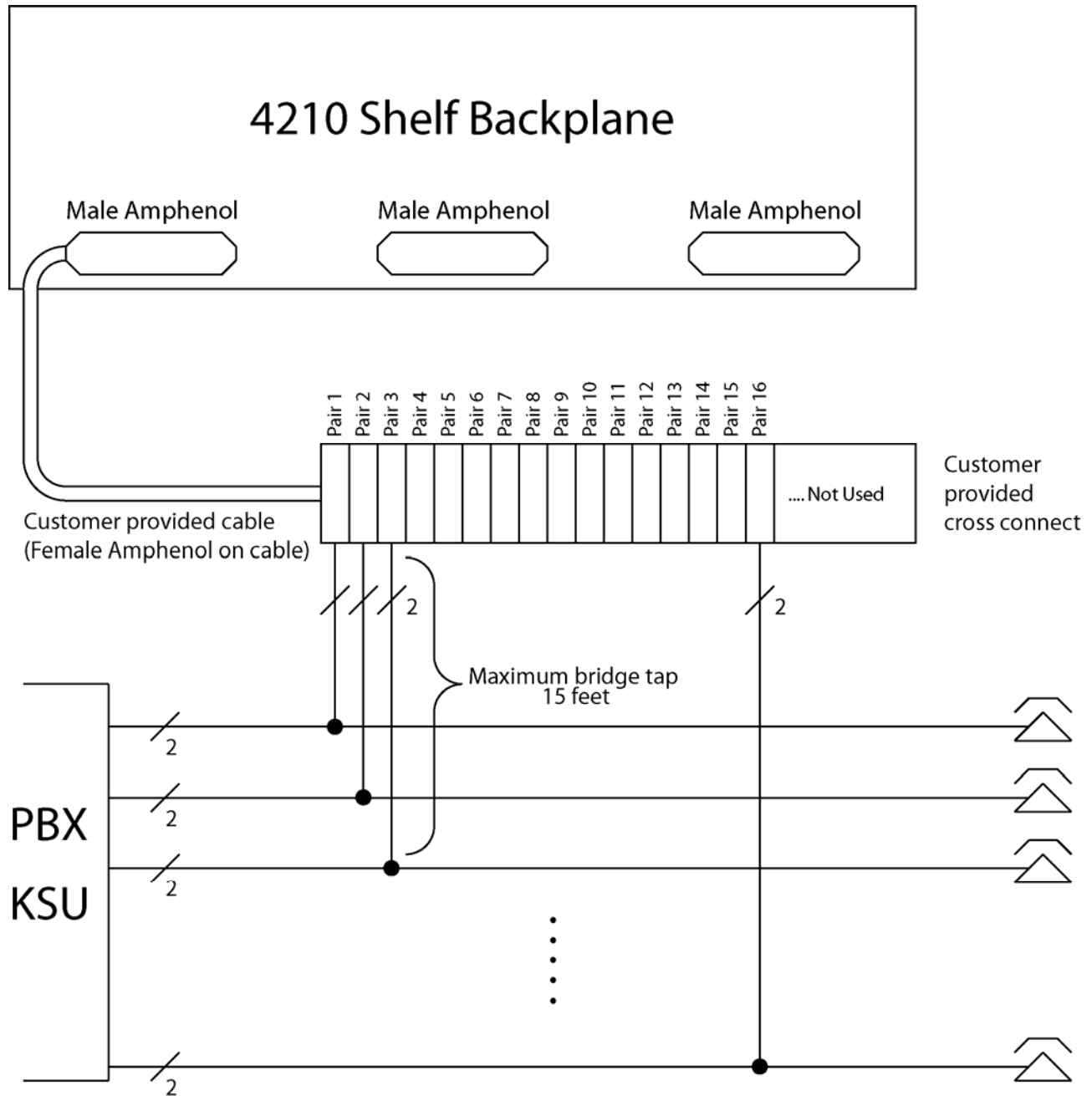
Relay Connections			
Slot Number	Amphenol (Pin)	Solid Colour	Stripe Colour
0	1	Blue	White
	26	White	Blue
1	2	Orange	White
	27	White	Orange
2	3	Green	White
	28	White	Green
3	4	Brown	White
	29	White	Brown
4	5	Slate	White
	30	White	Slate
5	6	Blue	Red
	31	Red	Blue
6	7	Orange	Red
	32	Red	Orange
7	8	Green	Red
	33	Red	Green
8	9	Brown	Red
	34	Red	Brown
9	10	Slate	Red
	35	Red	Slate
10	11	Blue	Black
	36	Black	Blue
11	12	Orange	Black
	37	Black	Orange
12	13	Green	Black
	38	Black	Green
13	14	Brown	Black
	39	Black	Brown
14	15	Slate	Black
	40	Black	Slate
15	16	Blue	Yellow
	41	Yellow	Blue
16 (Alarm Relay)	17	Orange	Yellow
	42	Yellow	Orange

2.5 Aux Connections

This connector is for future functionality.

2.6 General Wiring Example

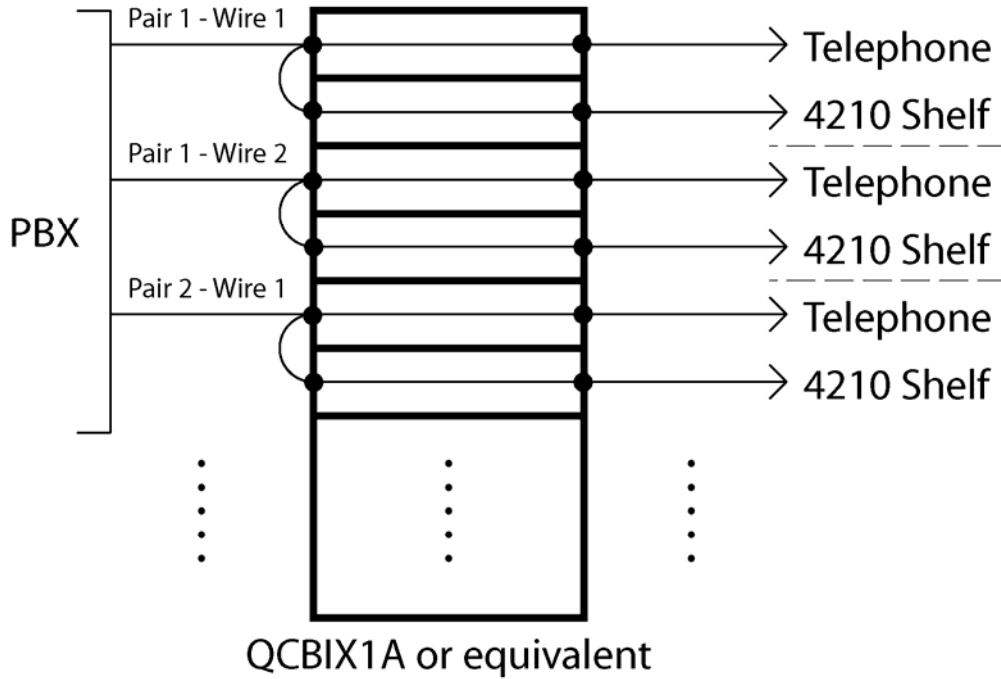
The following diagram illustrates how to cross connect the shelf in general.



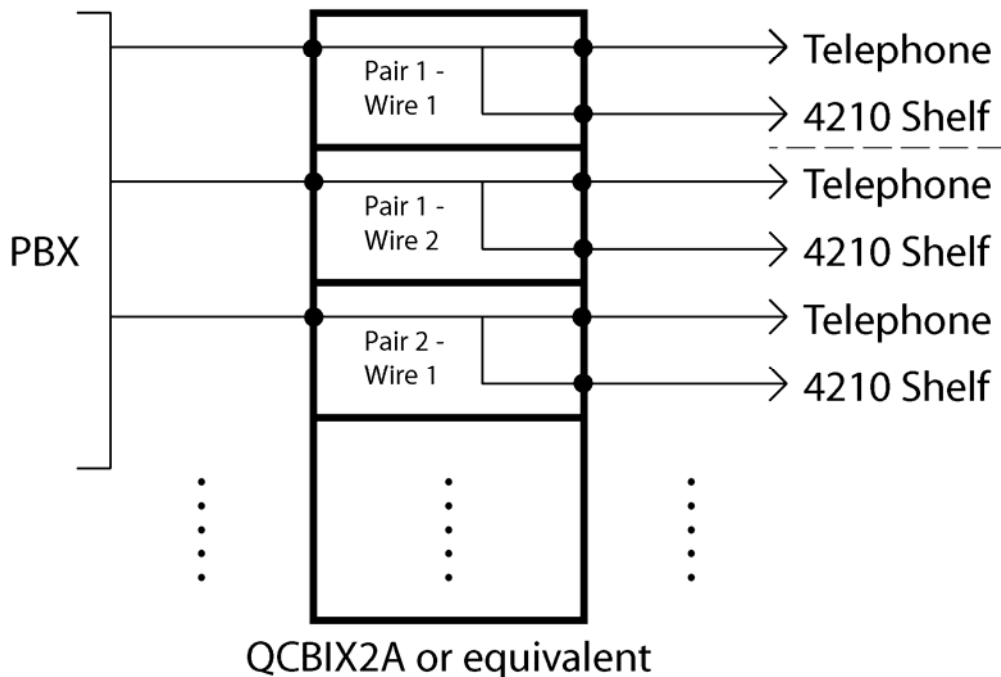
2.7 BIX Type Wiring Example

The following illustrates how to cross connect the shelf using BIX type connectors.

Option 1



Option 2



3 Front Panel Card Installation

The ECR Shelf System has 16 slots that can accept 4102R Line Cards, and a single slot (Slot 16, right most slot) for the Hub Card. Other than the Hub Card, which must be plugged into Slot 16, 4102R's can be plugged into any slot on the shelf in any order. Slot position is important only in that it corresponds to wiring pairs on the back panel and maps to a specific digital telephone.

3.1 4102R Digital Line Card Installation

Apply pressure to the line card when removing or inserting the card. Once inserted, secure card in place by screwing in the top and bottom card screws. The 4102R can be hot swapped allowing for cards to be replaced without the need to power down the shelf.

Note: Adding or removing a card will disrupt call recording in the ECR software while it redetects all connections. Replacing with a different card will require reconfiguration of the ECR to restore recording.

3.2 4102RB Slot Blank Installation

Any slot not populated by a 4102R should have a 4102RB cover secured over the slot. This will help prevent dust from getting into the shelf.

Installation requires only the top and bottom screws to be secured in place. No other steps are required.

3.3 4211 Hub Card Installation

The 4211 must be installed in Slot 16, on the far right side of the shelf. Install the Hub card by pressing firmly on the card. Once installed, secure the card in place using the top and bottom card screws.

The 4211 can be hot swapped. Note that doing so will break USB communications between the shelf and attached PC. Communication will automatically resume when the card is replaced.

Note: Adding or removing the Hub Card will disrupt call recording in the ECR software. No call recording will take place as long as the Hub Card is removed.

4 ECR Shelf System Specifications

Dimensions

- 3U 19" shelf

Weight

- 10 KG (20 lbs.) fully populated.

Relay Output Rating

- Maximum 50mA at 30 Volts

Power Supply

- Switching Mode power supply
- Input: 95-265 Volts @ 47-63Hz
- Output: 5V at 3A
- Regulatory: UL (Canada & US), CE

Connections

- USB
- Power
- 3 x 25pr Male Amphenol type (PBX T/R Connections, Relay Connections, Aux. Connections)
- PBX Tip & Ring maximum recommended Bridge Tap length: 15 feet

Regulatory

- FCC Class A
- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference, and
 - (2) This device must accept any interference received, including interference that may cause undesired operation.

Warranty

The 4210 Shelf, 4102R AuxCard, and 4211 Hub Card are warranted to be free of defects in material and workmanship for a period of 18 months from the date of manufacture. A label on the unit identifies the manufacturing date beginning with year and week (i.e. 0123 for week 23 of 2001).

Please contact Algo at the contact information below for technical support and RMA instructions.

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ECR Shelf System Quick Reference

Please use the following table to list the Station Names assigned to each 4102R AuxCard in the ECR Software. During Station configuration in the ECR software, fill out this table for future reference. See the ECR Software User Guide for more information.

Slot Number	Station Name	Serial Number
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		