Marconi

Installation

TRIND™ MULTI 1
Transmitter/Receiver in Dispenser
Retrofit Kits C00012-002-XX

Introduction

Purpose of this Manual

This manual provides instruction for installing TRIND™ Multi 1 system for use in Marconi products.

Important Notice

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Required Reading

If installing the equipment TRIND Multi 1 on gasoline dispensing equipment, the installer must read, understand, and follow:

- this manual
- NFPA 30A, The Automotive and Marine Service Station Code
- NFPA 70, The National Electric Code
- applicable federal, state and local codes and regulations

Failure to do so may adversely effect the safe use and operation of the equipment.

Note: This kit must be installed by a Marconi ASC (Authorized Service Contractor) to insure warranty.

Required Tools

The following equipment may be needed to install all TRIND™ Multi 1 kits:

- Allen wrench set, American standard
- clean cloth or rag
- chip extraction tool, e.g., IC extraction, Digikey Part No. K158-ND or equivalent
- isopropyl alcohol (part# END-1082)
- needle nose pliers
- nut driver, 1/4", 3/8"
- pocket knife
- Q12534 CRIND diagnostic card
- ratchet set, standard
- screwdrivers, flat and Phillips head
- static guard wrist strap

Parts List

C00012-002 Kit

TRIND Multi 1 kits may be installed on a variety of Host Electronics (HE) systems. All kits contain the parts detailed in table below. However, depending upon type of HE and equipment receiving installation, additional parts or quantities of listed parts may be added to kits as installation specific order entry items.

Description	Part Number	Quantity
cable group (see table “Q13781-01 Cable Group” on page 2)	Q13781-01	1
card cage assembly	T20538-G2	1
antenna/light assembly .	T20582-G1 (see note 1) T20609-G1 (see note 2) M01296A001 (see note 3)	(see note 4)
jump jack	Q11011-01	10
label plate, FCC	N23936-01	1
manual, installation instructions	MDE-3801	1

Notes:

1. For wide frame The Advantage Pumps and Dispensers only. Assembly includes T20545-G2 Light Board and R20718-G1 Antenna Cable
2. For narrow frame The Advantage Pumps and Dispensers only. Assembly includes T20545-G2 Light Board and R20718-G1 Antenna Cable
3. For Marconi Encore Series units only. Assembly includes M001058 Antenna Assembly and M001055 Light Board.
4. Quantities determined at order entry.

Q13781-01 Cable Group

Cable group Q13781-01 for all kits contains the following cables:

Cables	Part Number	Quantity per kit
Gateway to CRIND logic	R20437-G01	1
AC power	R20580-G2	1
Light/Multi-protocol Reader	R20665-GX (see note 5)	(see note 6)
Gateway to Light/MPR/Power Boards	R20724-G1	1

Notes:

5. Cable lengths (-GX) determined at order entry.
6. Quantity determined at order entry.

Safety Information

Alert Symbol and Signal Words

Alert Symbol:
This is a standard ANSI* approved alert symbol. When you see this symbol, be alert to the potential for a personal injury.
* Reference American National Standard Bulletins ANSI Z535.

Signal Words:
These signal words alert you to important safety hazards.

WARNING	CAUTION	DANGER
The hazard or unsafe practice may result in severe injury or death.	The hazard or unsafe practice could result in minor injury.	The hazard or unsafe practice will result in severe injury or death.

Safety Symbols:

The following safety symbols are used throughout this manual to alert you to personal safety hazards and precautions.

Explosive

Flammable

Electrical hazard

Use safety barricades

No people in area

No vehicles in area

Use emergency power disconnect

No open flames

No smoking

No power tools

Wear eye protection

Read all related manuals

Clean up spills

Turn power off

Use Electrostatic Discharge Precautions

Place yourself at a neutral static-free potential by doing the following:

1. Touch an unpainted metal surface.
2. Use a wrist strap connected to a grounded metal frame or chassis.

Note: Failure to use electrostatic discharge precautions may damage electronic components and void warranty.

Make sure all power has been removed from unit and CRIND.

Follow OSHA Lock-Out and Tag-Out Requirements

OSHA Standard 29 CFR 1910-147 Control of Hazardous Energy Sources (Lock-Out/Tag-Out) covers ways to avoid personal injury if power is turned on or fuel pressure is applied unexpectedly while servicing equipment. The rule requires that equipment power and fuel under pressure be turned off and the device (breaker, valve, etc.) locked or labeled with a warning tag.

Read OSHA Standard 29 CFR 1910-147 Control of Hazardous Energy Sources (Lock-Out/Tag-Out). Station employees and service contractors need to understand and comply with this program completely to ensure safety while the equipment is down.

Tag-Out and Lock-Out Procedure

Use plastic warning tags with signature/date blanks for Tag-Out. Sign and date them at shut down. Attach tags with plastic connectors.

Use metal screw-down lock clamps or plastic single or multi-pole devices for Lock-Out of breakers and switches. Always use a lock-out device whenever possible.

When working on electronics and electrical connections:

- Turn off unit power.
- Install lock-out device and tag on breaker(s).

Installation

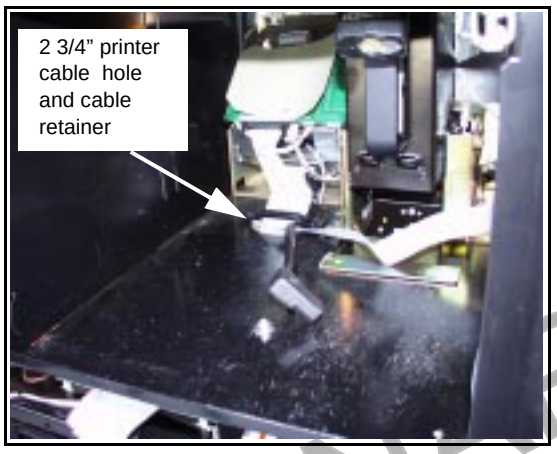
Installing Cables

Note: Typical installation only (The Advantage Series).

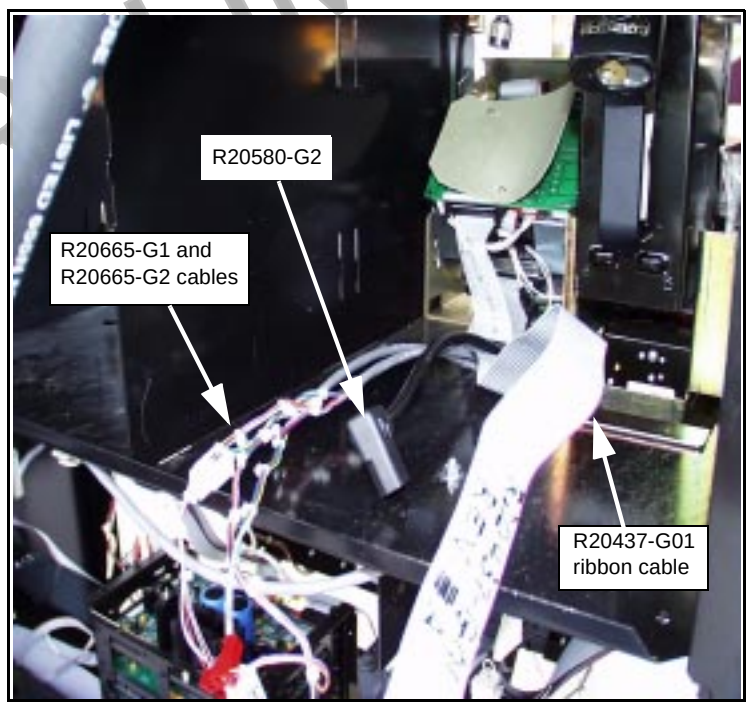
Position kit cables according to the following steps:

1 Carefully pry out printer cable retainer from underside of printer shelf.

2 Disconnect printer cable and pull cable out of 2 3/4" round hole from bottom.



3 Feed three-prong end of power cable R20580-G2, J250 end of R20437-G01 ribbon cable and multiple connector ends of cables R20665-G1 and R20665-G2 up through hole and lay cable ends toward A side.

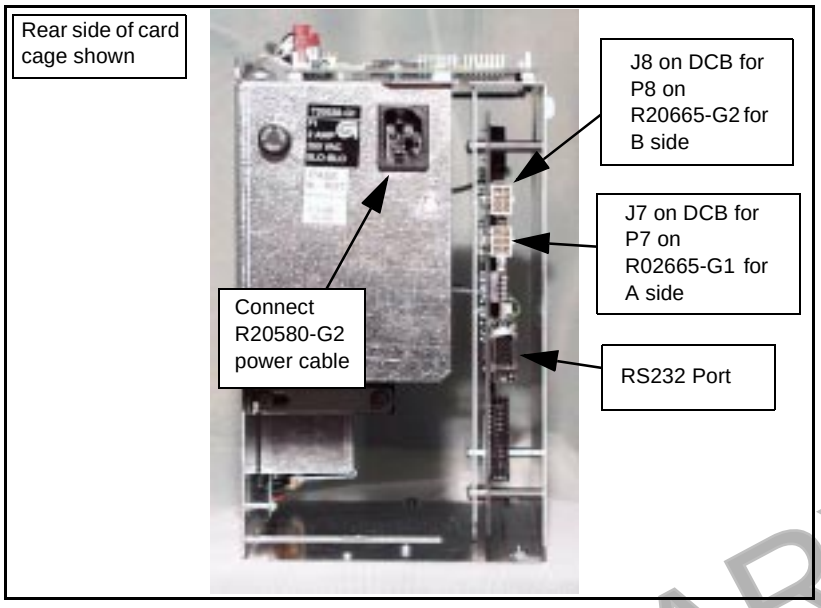


4 Reinstall printer cable and retainer disconnected and removed in step 2.

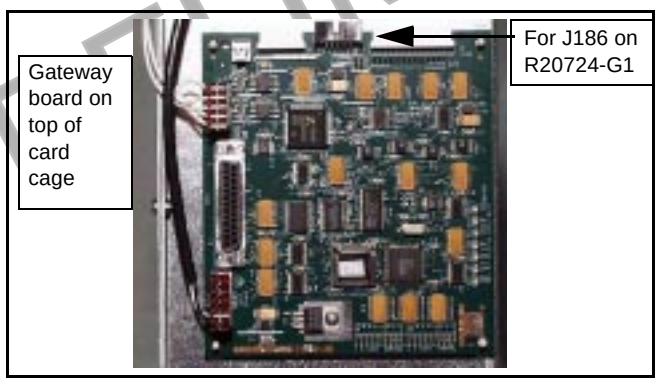
T20538-G2 Card Cage

Connection points on T20538-G2 card cage.

Note: For more cable connection detail see "Cable Block Diagram (Typical)" on page 12.



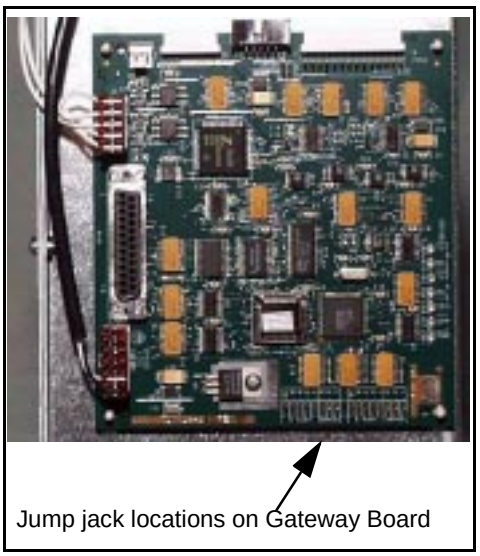
1. Connect three prong female end of power cable R20580-G2 to card cage at location shown.
2. Connect P7 on R20665-G1 to J7 and P8 on R20665-G2 to J8 on DCB at location shown.
3. Connect J186 on R20724-G1 cable to P186 on Gateway Board on top of card cage.



Address Gateway Board Before Installing Card Cage

Address on HE must and Gateway Board must be set to match.

MOC and Generic CRIND Addresses.

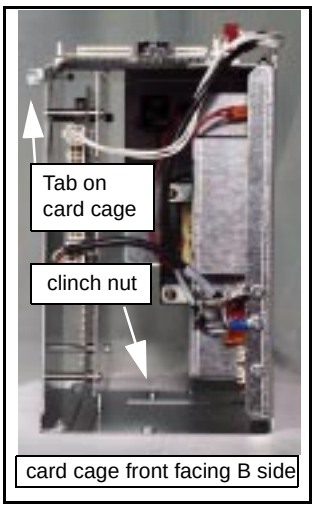


Jump jack locations on Gateway Board

Address On CRIND Logic Board T17764-XX	JP8	JP7	JP6	JP5	JP4
= Address on Gateway Board T20128 'A' Side	JP6	JP7	JP8	JP9	JP10
= Address on Gateway Board T20128 'B' Side	JP14	JP15	JP16	JP17	JP18
1	IN	OUT	OUT	OUT	OUT
2	OUT	IN	OUT	OUT	OUT
3	IN	IN	OUT	OUT	OUT
4	OUT	OUT	IN	OUT	OUT
5	IN	OUT	IN	OUT	OUT
6	OUT	IN	IN	OUT	OUT
7	IN	IN	IN	OUT	OUT
8	OUT	OUT	OUT	IN	OUT
9	IN	OUT	OUT	IN	OUT
10	OUT	IN	OUT	IN	OUT
11	IN	IN	OUT	IN	OUT
12	OUT	OUT	IN	IN	OUT
13	IN	OUT	IN	IN	OUT
14	OUT	IN	IN	IN	OUT
15	IN	IN	IN	IN	OUT
16	OUT	OUT	OUT	OUT	IN
17	IN	OUT	OUT	OUT	IN
18	OUT	IN	OUT	OUT	IN
19	IN	IN	OUT	OUT	IN
20	OUT	OUT	IN	OUT	IN
21	IN	OUT	IN	OUT	IN
22	OUT	IN	IN	OUT	IN
23	IN	IN	IN	OUT	IN
24	OUT	OUT	OUT	IN	IN
25	IN	OUT	OUT	IN	IN
26	OUT	IN	OUT	IN	IN
27	IN	IN	OUT	IN	IN
28	OUT	OUT	IN	IN	IN
29	IN	OUT	IN	IN	IN
30	OUT	IN	IN	IN	IN
31	IN	IN	IN	IN	IN
32	OUT	OUT	OUT	OUT	OUT

Install card cage assembly (typical).

Note: Typical installation (The Advantage Series Dispensers) procedure showing mounting and securing points on card cage.

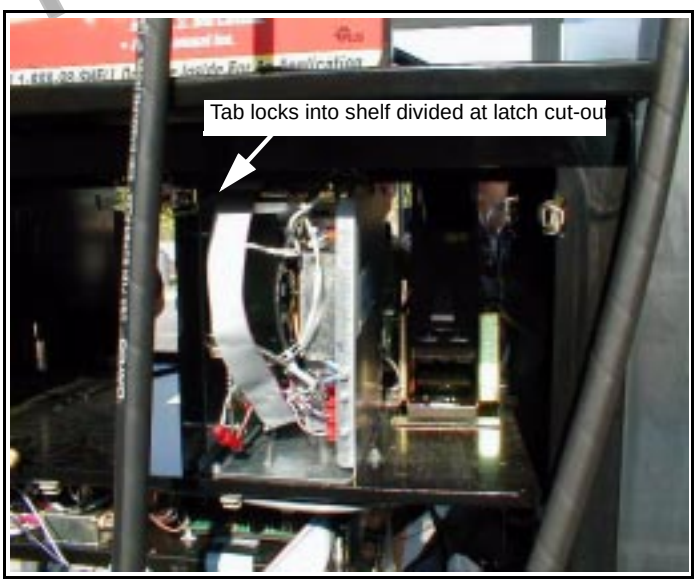


1 Locate tab at left front top of card cage.

2 From B side, turn card cage sideways to unit, feed top and rear of card cage up and into shelf.
Note: Front of card cage will face B side.

3 Position card cage so that tab fits over latch cutout for main door latch, securing card cage to shelf divider.

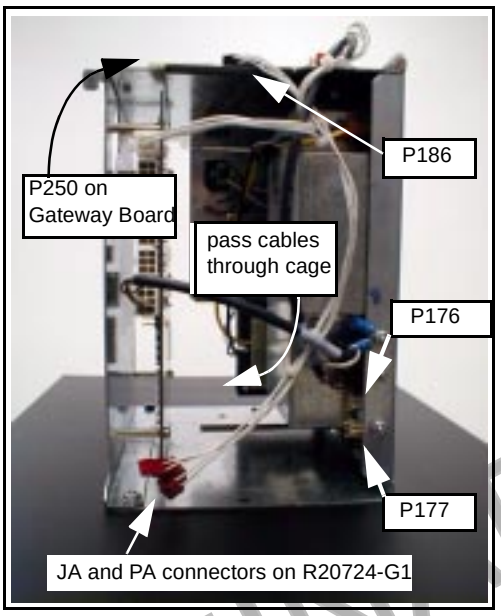
- If two screws on card cage pass through shelf secure from underside of shelf with two nuts provided in kit.
- If screws were removed, secure card cage from underside of shelf by installing one screw removed in section “Connection points on T20538-G2 card cage.” on page 6 up through hole in shelf to clinch nut on card cage (see illustration above). Dispose of second screw and two nuts.



Connecting Remaining Cables

Note: Typical for The Advantage Series Dispensers. Connection points and cables are universal.

1 From A side, pass J250 end of cable R20437-G01, J176 and JA ends of cable R20665-G1 and J177 and PA ends of cable R20665-G2 through card cage to B side.



2 From B side, connect J176 on cable R20665-G1 to P176 on Power Supply PCB.
Note: Detailed information provided on "Cable Block Diagram (Typical)" on page 12.

3 Connect J177 on cable R20665-G2 to P177.

4 Connect JA on R20665-G1 to PA on R20724-G1 cable.

5 Connect PA on R20665-G2 cable to JA on R20724-G1 cable.

6 Connect J250 on ribbon cable R20437-G01 to P250 on Gateway board on top of card cage.

From A side of unit make the following connections:

On ribbon cable R20437-G01, connect J258A/B to P258 on HE (Host Electronics) as specified in HE documentation.

Connect R20580-G2 power cable according to the following:

Note: Connections are unit specific. Use appropriate connectors to intercept power by installing R20590-G1 inline.

For units with:	Do the following:
System cable W02468	Install inline using 15 pin P601 and J601 connectors
System cable T19612	Install inline using 3 pin connectors J601/J708 and P601/P708

Card Cage Set-Up

Addressing

Each operating unit (e.g., dispenser) on the HE controller must be addressed differently; no two operating units may have the same address. Address is at discretion of the installer. Follow these steps:

1 Locate dip switches on power supply board (PCB) T20314-G1 in card cage.

2 Using switches 2, 3, 4 and 5 address each operating unit according to the following table:
Note: Switch one in down position is standalone mode selected, used for service only.

Testing TRIND™ Multi 1

1. Restore power to HE unit.

2. Present test tag at antenna from a distance of 6" or less. Light board should light and flash sequentially.
   Note: If light does not function properly, for multi-antenna HE units check to see if opposite side of unit was activated, indicating a crossed cable.

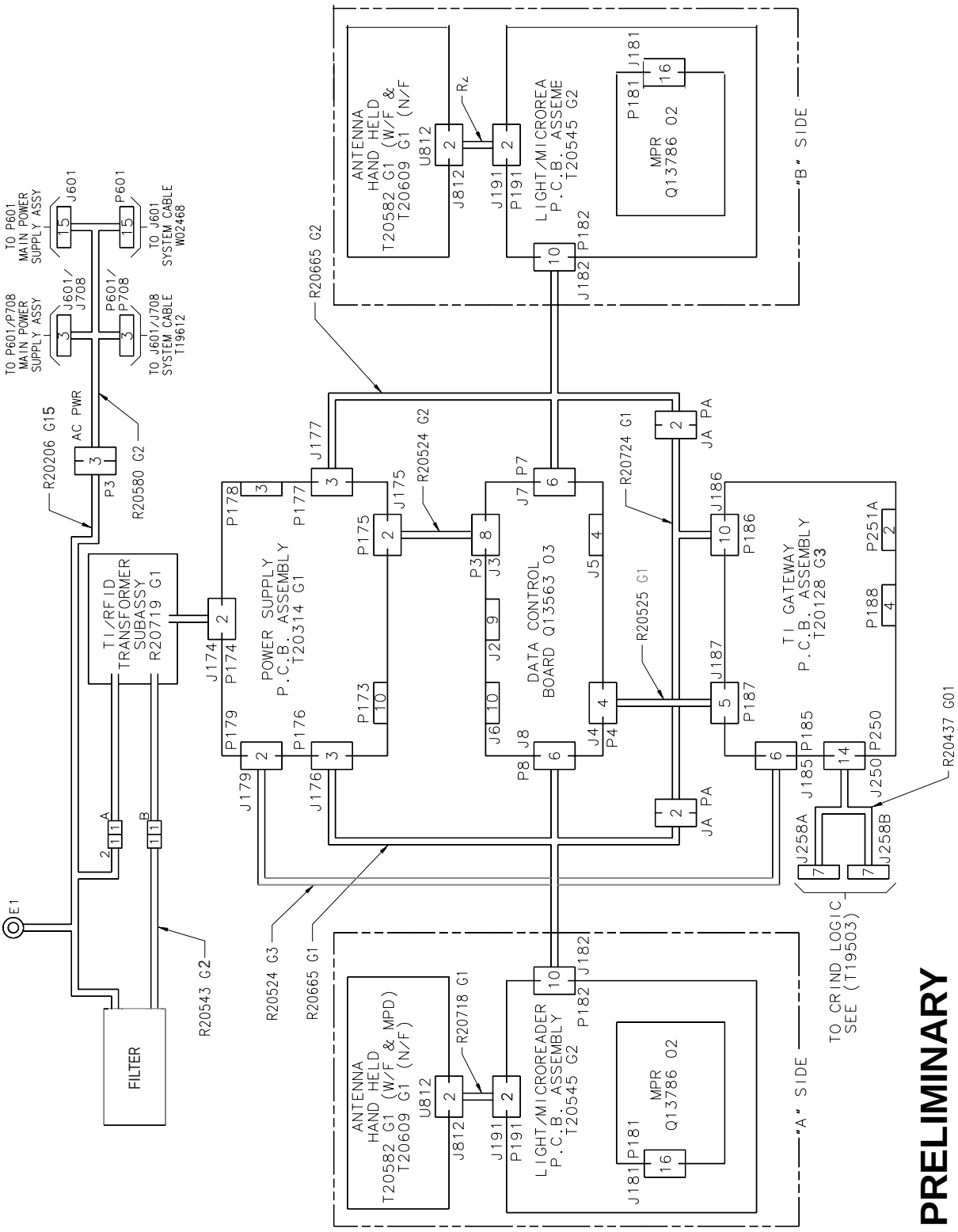
Completing Installation

1. Replace, close and/or secure all HE unit covers and/or doors.

2. Affix FCC label plate under existing FCC label.

3. Restore power to unit.

Cable Block Diagram (Typical)



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