



PIAB – Service Delivery

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Service Delivery Key Milestones

Stage 1 – Install Prep

Start: Order Received

- Customer LCON Coordination
 - Identify Alarm Vendor Contact Info
- Obtain CSR
 - Identify TNs and other CSR details
 - Procure pair & binding post info
- Porting
 - Submit porting requests
- Confirm WAN Readiness
 - Customer firewall preparation
 - Identify custom WAN/LTE configurations
- Staging & Kitting
 - SIM Activation
 - SIP Accounts & VoIP Provisioning
 - Device Firmware & Configuration

End: Tech Visit Planned Arrival Time

Stage 2 – Install TTU

Start: Tech Visit Planned Arrival Time

- Prep
 - Tech Arrival
 - LCON Meetup
 - Obtain CPE shipped to site
 - Obtain access to facility & workspace
 - Request alarm account to test mode
- Tag & Trace
 - Inventory POTS DIDs
 - Confirm analog equipment operation
 - Identify lines at DMARC
 - Select install location
- Install PIAB
 - Assemble & Power up PIAB
 - Perform connectivity test
 - Perform line tests

End: Ready to Cross Connect

Stage 3 – Cross-Connect

Start: Ready to Cross-Connect

- Voice Line Cross-Connect
 - Disconnect POTS – Connect PIAB
 - Test voice calls both directions
- FAX Line Cross-Connect
 - Disconnect POTS – Connect PIAB
 - Test FAX calls both directions
- Alarm Line Cross-Connect
 - Disconnect POTS – wait 60s
 - Connect PIAB
 - Allow Alarm Panel to place training call
 - Confirm “normal” mode after next call
 - Request alarm account to normal mode
- Modem Line Cross-Connect
 - Disconnect POTS – Connect PIAB
 - Test modem equipment

End: Install Complete

High Level Best Practices

1. Project Coordination Lead

- a. Each site should have a PM
- b. PM should ensure that they have local point of contact and “hand-hold” the process to ensure simple items like whether a device was delivered and store hours/access.
- c. PM should assist in the sales questionnaire/remote site survey
- d. PM can ask what circuits exist at site to decide if device should be primary WAN or LTE.

2. Bifurcate installs into Easy (1 visit) and Complex (1-2 visits)

- a. This can be by line type or number of lines or physical site.
- b. Others have done it by number of lines, if complex then usually two visits
- c. If you do two visits, use the first for survey and install and the second for porting/cross connect and close out of site

3. Provide techs with Device Management and/or local UI access

- a. This can cut down install times from 4hr+ to 1 hr as they don't have to call tech support or 3rd party teams to change line types/modes
- b. Can troubleshoot on the fly

4. Port lines – eliminated need for third-party alarm vendor on site

- a. By porting the number ahead of time, no programming is required by the alarm tech.
- b. Saves truck roll costs which are usually passed onto an already aggravated customer

5. Completing Install (on visit 1 or 2):

- a. Check signal strength
- b. Check line registration
- c. Complete cross connects
- d. Commence Post-Port Line Testing Procedures
- e. If applicable, Test Outbound on Alarms after Cross Connect but prior to porting



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Project Initiation

- Designate PM – Each Site should have an install project manager
- Identify Local Contact – Determine Local Contact Name, Email, Phone
- Identify Availability - Determine local site business hours/availability for work
- Determine Porting - Identify lines / telephone numbers to be ported
- Identify NPA - Determine area code new TNs need to have (if applicable)
- Verify shipping address - Ensure we know where to ship device for installation
- Alarm Waiver – Obtain waiver for work to be performed with the alarm system
- Technical Assessment
 - WAN Uplink Capability (firewall considerations) - determine firewall/DNS requirements at the site
 - Cellular Signal Assessment - determine expectation of cellular signal at the site
 - Analog Devices on Site - determine what analog devices will need a POTS replacement connection

Project Logistics

- Enter porting order - Submit port order to bring over the phone number(s)
- Establish VoIP Lines - Provision VoIP platform with SIP user accounts
- Confirm E911 and CNAM - Populate call info on the SIP accounts
- Activate SIM Card – Ensure cellular account is enabled
- Provision device – Apply
- Ship device to site
- Confirm receipt of device on site

Tools For The Technician

- Sufficient quantity of dual RJ-45 port surface mount boxes (aka Biscuit Jack)
- Sufficient quantity of RJ-11 or RJ-45 keystone plugs
- Power strip (as a precaution in case there are not sufficient outlets in the room)
- Extra RJ-11 cable and RJ-11 male adapters, in the event additional or longer runs are required
- Cordless drill/driver with bits to install mounting hardware to wallboard
- All hand tools required to make Cat5 cable runs (glow-stick, wire tape, etc.)
- Butt Set (or analog test telephone if Butt Set doesn't have an RJ-11 plug/jack interface)
- Camera with 3.0 megapixels or higher photo resolution (Modern cellphone will suffice)
- All termination tools and line/tone testers
- Zip Ties / Velcro for wire management
- Cat5e patch cables of varying lengths
- Label maker (to label biscuit jacks)
- CAT5E cable – minimum 150 feet
- 6" torpedo level
- Voltmeter
- Flashlight

Technician Skillset

Recommended Skillset for PIAB Installations

1. Basic familiarity with analog appliances, such as Fire Panel, Burglar Panels, Call Boxes, FAX machines, and modems.
2. Extensive experience with the connection of analog devices to POTS/Voice lines.
3. Extensive experience using a cable toner to identify twisted pair copper lines in a facility.
4. Extensive experience using a buttset and banjo for POTS line testing.
5. Experience installing and using telephone biscuit jacks as a termination point for phone line connections.
6. Basic networking experience for RJ-45 connections to a local area network and validating connectivity with a laptop.
7. Ability to locate DEMARC for existing POTS lines that provide dial tone to analog appliances, familiarity with 66-block/110-block terminations, and use of a punch-down tool to make cross connections.
8. Familiarity with DataRemote installation best practices for PIAB installations. Most notably, testing procedures for analog call validation, foreign voltage detection, and basic troubleshooting.
9. Experience with the physical mounting of networking equipment.
10. Experience using a multi-meter to check DC voltage and continuity.
11. Familiarity with troubleshooting techniques for local network issues (firewall, DNS, etc.).

On-Site – Device Setup

- Plug in PIAB Device
- Connect WAN Uplink
 - Confirm WAN Uplink link status
 - Ping to 8.8.8.8 working
 - DNS resolution working
- Confirm Cellular Internet Connectivity
 - SIM Activated
 - APN Details – if needed
 - Signal Strength Good

Common Issue: Firewall blocking traffic

Potential Issue: DNS resolution issues

Potential Issue: SIM not activated

Potential Issue: Cell signal not ideal

On-Site – Inside Wiring

- Identify Analog Lines at the Panel
- Perform test call from panel end with banjo/butt set – confirm existing POTS line & trace to DMARC
- Install Biscuit Jack next to PIAB Device
- Check line for voltage on biscuit jack before plugging into DataRemote
- Note – Cross-connect direct to 66/110-block is an option if technician has experience with punch-down and telephony connections. If not, then biscuit jack is recommended for simplicity and reducing risk of incorrect cross-connect.
- Perform Alarm Test Call - Once the call has begun, dial tone should be heard, and then DTMF dialing tones should be heard. Shortly after, more tones will be heard corresponding to the alarm messages being sent via the configured protocol. When Alarm line is placed in AUTO detect mode, the first call will be a failed call. This is expected because the device is working with the panel to identify the protocol so that the configuration can be automatically updated. The second call is expected to be successful.
- Perform FAX Line Test Call – It is important to note that a line configured for FAX mode does not carry voice audio. You can still use a buttset to perform a test call, but you will only be able to hear FAX handshake audio tones on the line. This is expected, and this test call allows you to confirm that the line can successfully make a phone call. Performing a real FAX call with a FAX machine is needed to confirm that the FAX can communicate successfully.

Tier 2 – Considerations for Alarm Line Installs

- A customer-signed Alarm Waiver is recommended
- Use care when plugging a buttset into a port configured as Alarm-AUTO because the first call is used to automatically detect the alarm protocol. A detailed task plan for alarm line testing & validation is essential for high alarm install success rate.
- Invoke a Fire Alarm Panel “trouble condition” by removing the telephone line connections for the alarm panel for at least 3 minutes. When plugging back in, the alarm panel will make a call home.
- If the alarm mode has been changed from AUTO mode before successfully completing the setup, configure the line mode back to AUTO and perform an alarm test call.
- Another method for triggering an alarm call is to disconnect the battery.

Tier 2 – Considerations for FAX Line Installs

- Ensure that FAX lines are configured in FAX Mode.
- To increase the chance of FAX success we recommend configuring the fax machine to the following settings:
 - Baud rate – 9600
 - ECM - Off
- NOTE: The printing duration per page can range from 25 seconds to 1 minute, contingent upon factors such as the BAUD rate, line quality, and signal quality.
- When a phone line is configured in FAX mode, the line cannot be used to make voice calls. This is particularly important to understand when testing the line because if a technician connects a buttset to a FAX-configured line and makes a call, they will only hear FAX tones on both ends. No voice traffic will be carried in either direction. This is normal and expected.