

AccessPlus VOICE and/or DATA CELLULAR SYSTEM

DoorKing Part Number
1800-081

The AccessPlus **Voice/Data** or **Data Only** Cellular System operates on DoorKing's cellular network that is hosted on the AT&T 4G LTE network where available. The system provides voice communication, data communication, or both, depending on the registration plan selected on DoorKing's Cellular Server website.

The AccessPlus **VOICE/DATA** or **DATA ONLY** Cellular System is designed to be used with:

- **1802 AccessPlus**, **1808 AccessPlus**, **1810 AccessPlus**, **1812 AccessPlus**, and **1838 AccessPlus** systems.

The **Voice/Data** cellular system **MUST** be wired to the AccessPlus system's **phone line** (voice) and **Cat5 Ethernet connection** (data). See page 3.

The **Data Only** cellular system is only wired to the AccessPlus system's **Cat5 Ethernet connection** (data). See page 3.

The **Voice/Data** or **Data Only** cellular system will work with **TWO** AccessPlus systems connected to it. These are designated as **System A** and "**Optional**" **System B**. See page 3 to wire up to 2 AccessPlus systems to the cellular system.

System Operating Temperature Range: -10F (-23C) to 125F (52C).

This cellular device cannot be used for 911 calls.

Prior to Installation:

An existing cellular phone will be needed to test the signal strength of DoorKing's cellular network in the desired installation location (a smart phone is preferred).

Analog modems (Dial-Up) DO NOT work on a cellular network.

BEFORE the cellular system can be installed, the installation location **MUST BE TESTED** for good cellular signal strength for reliable communication. **TEST** this location using an existing active cellular phone with **AT&T** phone service.

Note: Other cellular phone services use different networks and will not work for testing signal strength of the cellular system.

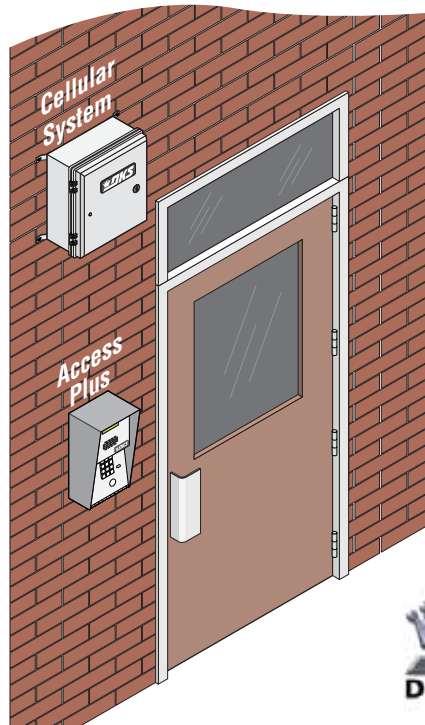
Activate the phone near the position where you want the plastic enclosure to be installed. 3-4 bars of signal strength should be indicated on the phone for a reliable signal. If 3-4 bars are not achievable in that specific location, then try moving the phone around and see if at least 3-4 bars can be achieved and maintained in a nearby location. If a smart phone is being used, try using the browser to connect to a website to verify good data transfer. **DO NOT install the enclosure in a WEAK or NO signal area.** DoorKing offers an exterior 4G LTE cellular antenna that can help in areas with weak cellular service (P/N 1514-014 Sold separately). Generally, the higher the enclosure is mounted, the better the reception. This also helps protect against vandalism. The enclosure should be located to minimize the wire runs to the AccessPlus system. Keep the wire run between the two devices as short as possible, maximum 100 feet. This allows less chance for lightning surges or other electrical interference to disrupt the cellular signal. **Keep the enclosure away from any metal.** This can also disrupt the signal. After the 3-4 bar signal strength has been confirmed (and the smart phone has good browser data transfer if used for signal testing), the installation can begin.



Installation Steps:

1. Install and wire cellular system to AccessPlus system(s) (page 2 & 3).
2. Power up cellular system (page 4).
3. Register cellular system (and AccessPlus(s)) online, this can be done before or after cellular system has been installed (page 4).
4. Test cellular system (page 4).
5. Program cellular system (page 5 & 6-remotely).
6. Troubleshoot cellular system if necessary (page 6).
7. Program AccessPlus system for cellular (pages 7 & 8).

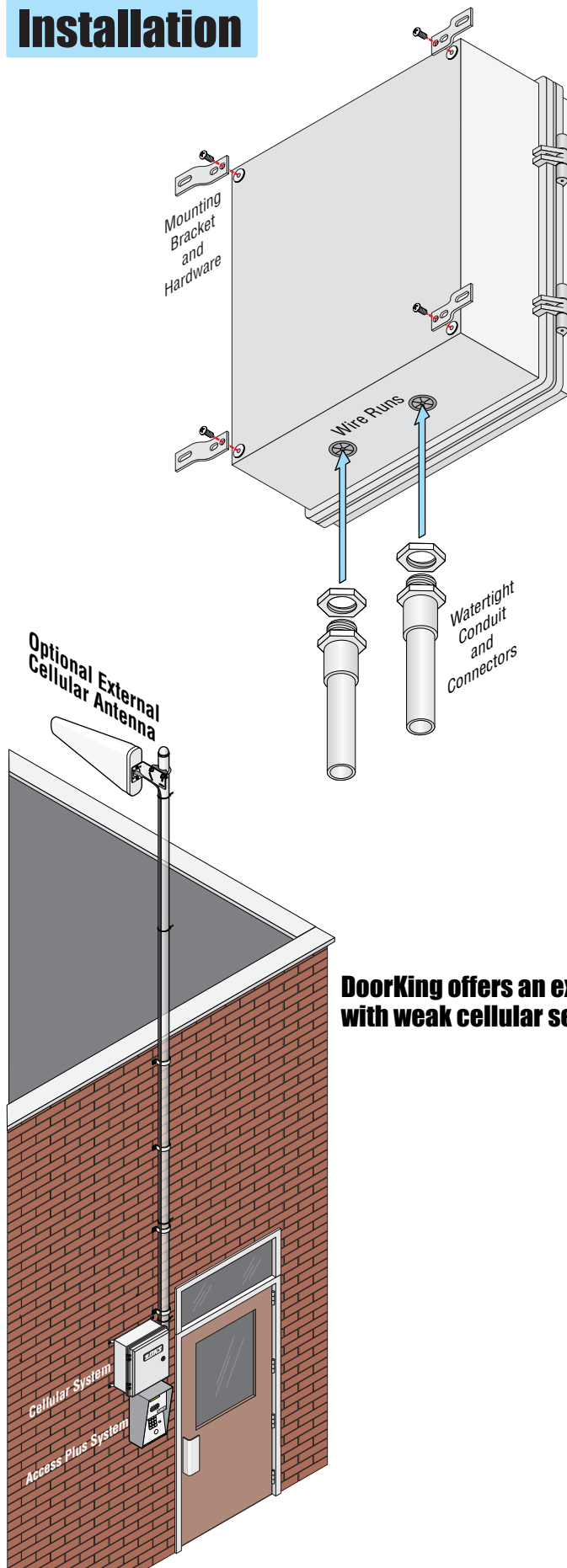
Note: Installation steps assume that a good cellular signal has been tested at installation location and the AccessPlus system(s) has already been setup and functioning including the master code and **multiple system programming** if 2 AccessPlus systems are being used.



120 S. Glasgow Avenue
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Installation



The plastic enclosure comes with mounting brackets and hardware to mount on enclosure.

Mount enclosure on surface using appropriate hardware (not included).

IT IS NOT RECOMMENDED DRILLING HOLES IN THE PLASTIC ENCLOSURE! If holes must be drilled, remove the circuit board before drilling and be sure that mounting bolts/screws **DO NOT** touch the back of the circuit board. **Holes must be sealed to prevent water intrusion.**

If the cellular control box is installed **OUTDOORS**, watertight conduit and connectors **MUST** be used for **ALL** field wiring connections.

Wiring methods used shall be in accordance with National Electrical Code, ANSI/NFPA 70.

Permissible wire sizes for the terminals (12-26 AWG).

Type of wiring to be used on ALL external devices:

A) Type CL2, CL2P, CL2R, or CL2X.

B) Other cable with **equivalent** or **better** electrical, mechanical, and flammability ratings.

DoorKing offers an exterior 4G LTE cellular antenna that can help in areas with weak cellular service (P/N 1514-014 Sold separately).

Wiring

LED on Enclosure Door
"AC power ON" indicator

DKS Cellular Server
hosted by AT&T cellular network
with DKS Online Registration Completed

Voice/Data Cellular System

Do Not Connect
Power To A
Receptacle
Controlled By
A ON/OFF Switch.

16.5VAC
40 VA

Supplied Power
Transformer

Power Wire
18 AWG Min.

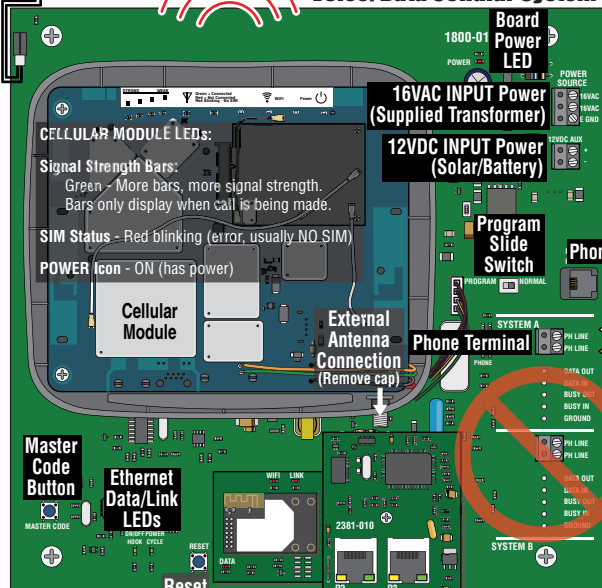
**Wiring methods used shall be in
accordance with National
Electrical Code, ANSI/NFPA 70.**

Permissible wire sizes for the terminals (12-26 AWG).

Type of wiring to be used on ALL external devices:
A) Type CL2, CL2P, CL2R, or CL2X.
B) Other cable with equivalent or better electrical,
mechanical, and flammability ratings.

System A

Cellular system should be as
close as possible to AccessPlus.



P2 Ethernet Connector:
To 1st AccessPlus ONLY

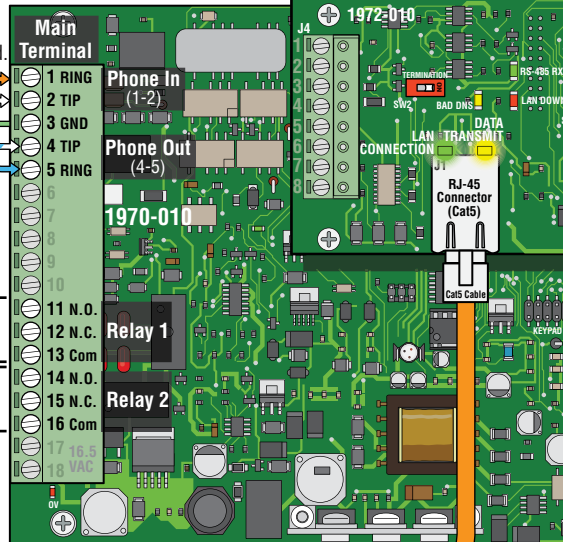
P3 Ethernet Connector:
To 2nd AccessPlus ONLY

Maximum distance
between the AccessPlus
and the cellular system
is 100 feet (30 meters).

Cat5e 330 ft MAX

Voice
Twisted Pair MUST be used.
Cat5e

EARTH GROUND
12 AWG Min.



Typical Access Control Devices

"Normally Open"
Vehicular
Gate Operator

Use minimum 18 AWG wire
for runs up to 100 feet.
16 AWG wire for runs up to
200 feet.
(Term. 11 and 13)

Relay 1 to Access Control Device, see below
Relay 2 to Access Control Device, see below

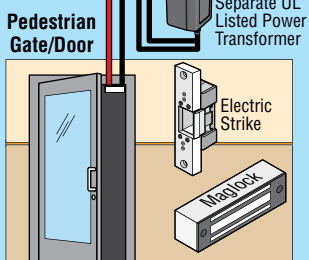
Maximum distance
between the
AccessPlus systems
is 100 feet
(30 meters).

The EARTH GROUND must be
connected to a proper
ground close by (ground rod, cold
water pipe in the ground, existing
electrical ground, etc.). 12 AWG Min.

Note: Older AccessPlus Circuit Boards can be updated for better
DTMF tone detection.

1812 AccessPlus/1838 AccessPlus 1970-010 board Rev S or higher.

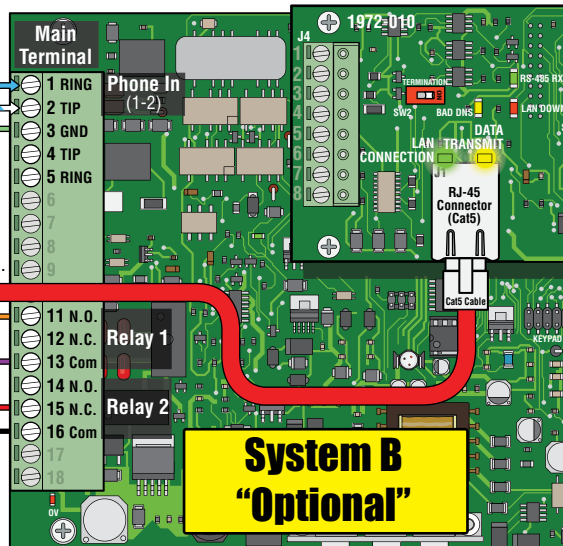
1802/1808/1810 AccessPlus 1862-010 board Rev P or higher.



"Normally Close" with Maglock
(Terminal 15 and 16)

"Normally Open" with Electric Strike
(Terminal 14 and 16)

Magnetic locks or electric strikes must be powered
from a separate UL Listed power transformer. DO
NOT power strikes or magnetic locks from the
Access plus power transformer. Use minimum 18
AWG wire for runs up to 100 feet; 16 AWG wire for
runs up to 200 feet. It is recommended to keep
power wire runs as short as possible.



System B "Optional"

Voice/Data Cellular System Needed Information

Powering Up System - The Voice/Data cellular system will **NOT** function until **online registration** has been successfully completed on DoorKing's Cellular website. Within 1 minute of powering up the cellular module, the lights should turn on. Signal strength Bars should be lit **GREEN** indicating good cell reception. **YELLOW** bars indicates poor reception but may still work. **RED** bars indicates no reception.

Using Two AccessPlus Systems - Each AccessPlus must be programmed for **MULTIPLE SYSTEMS**. see specific AccessPlus Installation/Owner's instruction manual for information to program each AccessPlus system.

TWO AccessPlus Systems Master Codes -Each AccessPlus system's Master Code must be **DIFFERENT**. The DKS cellular server identifies each AccessPlus by its unique master code. This allows separate programming for each AccessPlus system.

Voice/Data Cellular System Master Code - **IMPORTANT: Program the Voice/Data cellular system master code the SAME as System A's master code. See Programming for instructions on how to set the cellular system master code on page 5.**

The DKS cellular server may need to contact the Voice/Data cellular system and uses the **System A's** master code to do so.

Online Registration MUST be Completed

DKS Cellular requires a **SEPARATE** registration from the DKS IM Server. If a customer already has an IM Server account and wants to add a DKS Cellular system, this will require a **SEPARATE** User ID and Registration.

- DKS IM Server includes: **IM Server Modem** and **IM Server Client**.
- DKS Cellular includes: **Cellular Phone** and **Data Transfer**.

Before registering a cellular system on DoorKing's Cellular Server you will need:

- **SIM ID** number is located on the **Sim ID Card** (number is unique for each cellular module).
- Master Code of **1st AccessPlus**.
- Master Code of **2nd AccessPlus** if connected, **MUST** be a different master code than the 1st AccessPlus.

OPTION 1. Go to DKS cellular website: <https://dksdb.dksoftware.com/NewUserRegChoice.aspx> to register, follow instructions on website.

OPTION 2. Online registration is directly offered when installing the DoorKing Remote Management Software version 1.07A or later on YOUR internet connected PC.

Create an account and select whether the account will manage:

- **Voice and Data** (AccessPlus systems 1802,1808,1810 or 1812)
- **Data Only** (1838 AccessPlus)

Enter the **SIM ID** number to identify the **Cellular System** to the account created. After the SIM ID number is entered along with the local billing address, **a local cellular phone number will be assigned** to that cellular device.

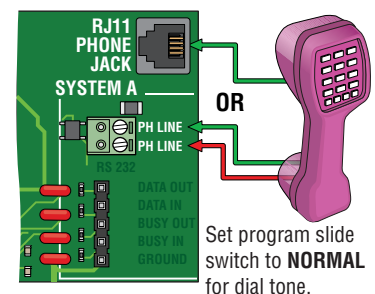
Register the AccessPlus systems (Master Codes) to the account. The **FIRST** AccessPlus master code entered will be identified as

System A. If a **second** AccessPlus master code is entered, it will be identified as **System B.**

Testing

Final Testing after the Cellular System has been Registered - The system should be tested and final adjustments done. Connect a telephone butt set to the cellular system circuit board **Phone Line** and make sure the line is active and that phone calls may be made and received.

If the phone line is not active, something went wrong during the registration which must be corrected. If still having problems, call DoorKing tech support. Attach a label to the inside of the cellular enclosure listing the local phone number that was assigned during registration. For **DATA ONLY** cellular systems skip the voice testing and proceed to remote program testing.



Voice Testing - Program a phone number into the memory of the AccessPlus using the AccessPlus keypad. Then call that programmed number on the AccessPlus. Have the call recipient press "9" on their phone to open the door. Verify the 9 tone is detected (door will open). The feedback on the AccessPlus **MUST** be adjusted as necessary for the cellular network. This adjustment is **VERY** important for DTMF detection. See specific AccessPlus Installation/Owner's instruction manual for programming and adjustment information. Note: The 1812 AccessPlus **automatically** adjusts feedback and needs no adjustment.

IMPORTANT Note: When using the cellular network, change TONE OPEN numbers to: **Relay 1;** 9-8-0-1 and **Relay 2;** 7-6-5-4.

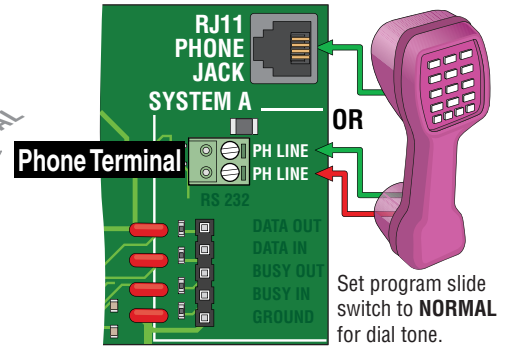
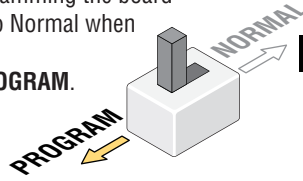
Remote Program Testing - Install DoorKing Remote Management Software version 1.07A or later on an internet connected PC that will be used for AccessPlus programming and management. Create an account and open the system Info screen. Enter **1st AccessPlus's** master code, phone number that has been assigned, and pick DKS Cellular for the service type. If a **second AccessPlus** is connected, create a second account with the same settings as above except 2nd AccessPlus's master code **MUST** be different. **Refer to the Remote account manager software manual for additional settings which MUST be made.**

Enter some test data into the resident screen and then attempt to send the data to the AccessPlus.

Programming Cellular Board

Program Slide Switch - Slide this switch to program when programming the board LOCALLY using a touch tone telephone. Be sure to switch back to Normal when finished programming.

Cellular voice will **NOT** work with program slide switch set to **PROGRAM**.



Setting the Master Code for Voice/Data Cellular System:

Slide switch to Program

Connect a touch tone phone to **Phone Terminal**. Press and release the Master Code

push button. Enter on the phone the new 4 digit Master Code and then press “*”. A tone should be heard in the phone ear piece.

The new master code is now programmed. Hang up the phone to end programming. Note: The cellular system’s master code **MUST** be the **SAME** as **1st AccessPlus master code**. This is how the DKS cellular server identifies the cellular system to contact it if needed.

Set the slide switch back to Normal if done, or leave in Program if more programming will be done.



Cycle Power to the Cellular Module:

This will cycle power to the cellular module if power is ON or it will turn ON the module if it is OFF. This allows the module to re-connect with the cellular network.

Slide Switch to Program:

87 Master Code(Beep) 01(Beep) 1*(Beep) to **cycle power** or 0*(Beep) to **NOT cycle power**.

Hang up Phone Slide switch back to Normal if done programming.

Cycle Power to Cellular Module Schedule:

This schedules the number of days between automatic power cycling of the cellular module. This allows the module to re-connect with the cellular network after periods of non-usage. The revision letter of YOUR specific circuit board will restrict programming to either “number of days-Rev A ONLY” OR “number of hours-Rev C or higher”.

“Rev C or higher” Circuit Boards, “00-99” number of hours:

Note: 00= no cycle. 01= every hour, 02= every two hours, 03= every three hours etc.

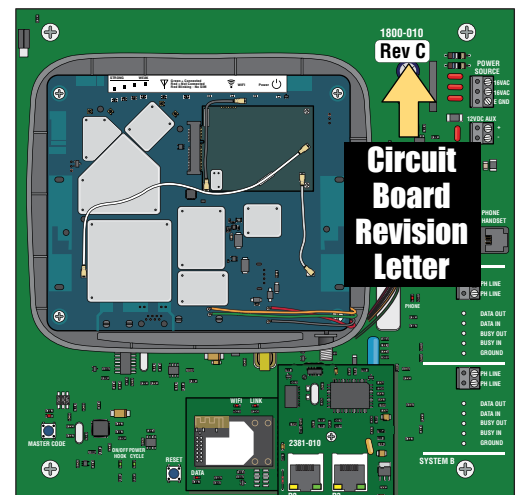
Up to every 99 hrs.

Factory default setting: every 12 hours.

Slide switch to Program

87 Master Code(Beep) 03(Beep) 00-99*(Beep) **number of hours** to cycle power.

Hang up phone. Slide switch back to Normal if done programming.



Number of Rings to Answer Call:

Sets the number of rings for an incoming call before the cellular system will answer. 2= two rings, 3= three rings, etc. Up to 9 rings. (2-9)

Normally the AccessPlus will answer on the second ring. In this case the cellular system will listen in for DTMF tones *87 Master code. If received, the cellular system will stay on the line for programming while the AccessPlus will hang up. If any other DTMF tones are received, the cellular system will ignore them. If the AccessPlus does not answer on the second ring, the cellular system will answer on the programmed number of rings.

Factory default setting: 5 rings.

Slide switch to Program

87 Master Code(Beep) 04(Beep) 2-9*(Beep) **number of rings** before answering call.

Hang up Phone. Slide switch back to Normal if done programming.

Remotely Programming Cellular

The Voice/Data Cellular System can also be programmed remotely from a **cellular phone or LAN line phone**.

Call the telephone number of the cellular system. After a couple of rings the system will answer and respond with an answer tone.

Programming may now proceed on previous page. To end programming press “#” and then hang up.

Note: An older AccessPlus entry system may need to have the circuit board upgraded to be able to program remotely because of distorted DTMF tones from the cellular network.

Update older **1812 AccessPlus/1838 AccessPlus** 1970-010 board to Rev S or higher for better DTMF tone detection.

Update older **1802/1808/1810 AccessPlus** 1862-010 board to Rev P or higher for better DTMF tone detection.

Troubleshooting Cellular

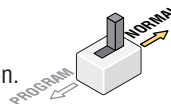
IMPORTANT: The cellular network distorts DTMF tones received by the entry system. Update older AccessPlus system board (see above) for better DTMF tone detection. The greatest distortion exists for keys 1-2-3-4-5-6. Keys 7-8-9-0-∗-# work better. Because of this, **ONLY** the latter keys should be used for TONE OPEN numbers and the MASTER CODE. The entry system will perform better if keys 7-8-9-0-∗-# are used **AND** the feedback adjustment on the AccessPlus entry system has been optimized for the cellular system (see “Voice Testing” on page 4).

Note: The Master Code can only be programmed using numbers and not the “∗” or “#” keys.

Voice Not working:

Are the lights on the cellular module ON? If not, look for circuit board power LED. If ON, program the board to **cycle power ON** to the cellular module. See “**Cycle Power to the Cellular Module**” programming on page 5. Power transformer **MUST NOT** be connected to a receptacle controlled by a switch.

Program/Normal slide switch is in left PROGRAM position. Slide back to NORMAL position.



Poor cellular reception. Look for cellular module “Signal Strength Bars” to be GREEN. If bars are YELLOW or RED, poor or no reception is occurring.

Registration is not complete OR DATA ONLY has been selected. Service suspended because of past due bill. Contact DoorKing for support.

Data Transfer Not Working:

Are the lights on the cellular module ON? Is the board power LED ON? If yes, program the board to **cycle power** to the cellular module.

See “**Cycle Power to the Cellular Module**” programming on page 5. Power transformer **MUST NOT** be connected to a receptacle controlled by a ON/OFF switch.

Poor cellular reception. Look for cellular module “Signal Strength Bars” to be GREEN. If bars are YELLOW or RED, poor or no reception is occurring.

Registration is not complete OR VOICE ONLY has been selected. Service suspended because of past due bill. Contact DoorKing for support.

Wiring error from the cellular system to the entry system. Check network cables.

Master code mismatch. Master code for the AccessPlus, PC software, and DKS cellular website **MUST** match each other.

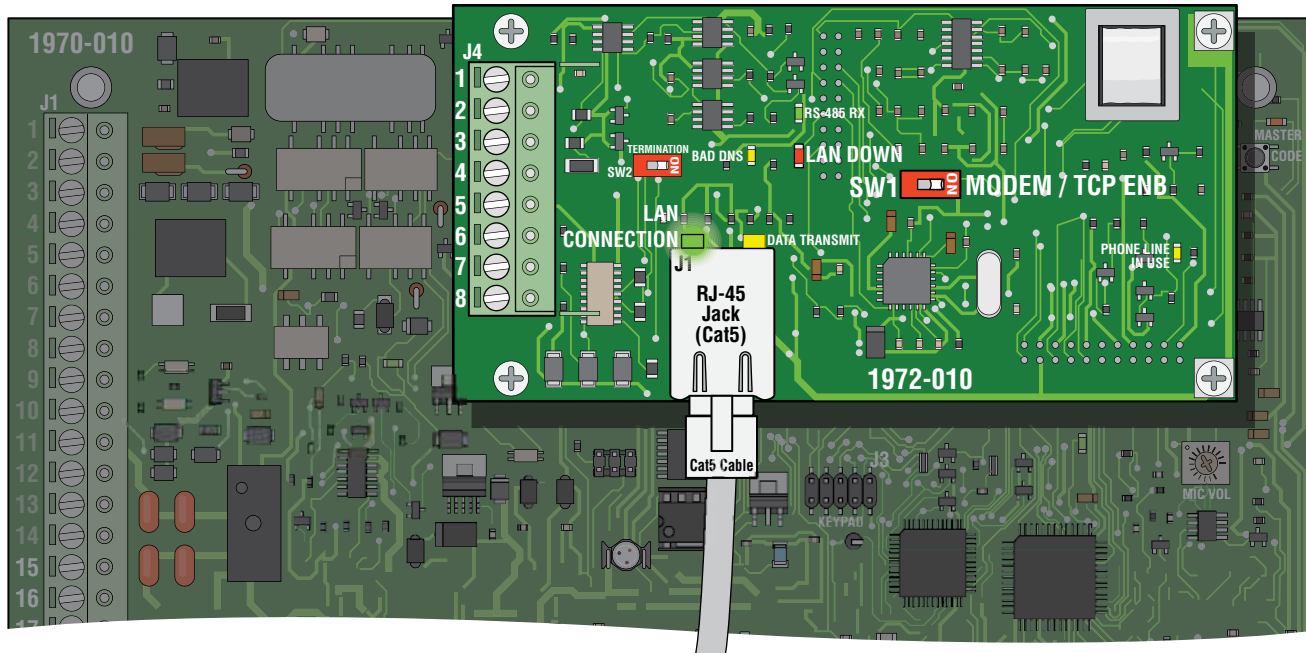
Check for remote account manager error messages for failure reasons such as memory size, anti passback mismatch, etc, and correct errors.

Check the LED lights on the Voice/Data cellular circuit board. During a data transfer the yellow Ethernet data LED should be flashing. The data LED near the RJ45 cable should be flashing.

Programming the AccessPlus for Cellular

Before proceeding with any of the programming steps on this page and the next page, **install the AccessPlus Management software on the computer (PC ONLY) that will be used** for this purpose. Once the software is installed and the unit is connected, refer to the software programming steps and help screen instructions to proceed with the programming steps on this page and the next page. Be sure to register the software - follow the on-line registration instructions when you download 1.07A.

Be sure that SW1 is in the ON position (MODEM/TCP ENB) on the AccessPlus Interface Board.



Reboot Note: If a programming step calls for a reboot, follow the programming steps in 2.3.5. If you are performing several programming steps that call for a reboot, complete **ALL** of those steps first, then perform the reboot sequence in 2.3.5.

Important Note: The unit will prompt you with short tones (**beep**) when each programming step has been correctly keyed in and with a long tone (**beeeeeep**) when all of the programming steps have been successfully completed in the sequence.

2.3.1 Set the AccessPlus System IP Address *(reboot required)*

Factory setting is: no factory default (required programming step)

A valid value for any of the three digit fields in this sequence is 000 to 255. All 3 digits **MUST** be entered in each field between dots, for example: 192.168.0.30 must be entered as 192.168.000.030

For **System A**, program IP address to: **192.168.000.030** For **System B** if installed, program IP address to: **192.168.000.031**



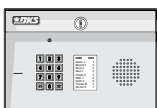
System Keypad

1. Press * 5 1 and enter the MASTER CODE. [*** 5 1** _ _ _ _ (beep)]
2. Enter the IP address. Use the * key to enter the "dot".
[_ _ _ * (beep) _ _ _ * (beep) _ _ _ * (beep) _ _ _ * (beep)]
3. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

2.3.2 Sub-Net Mask *(reboot required)*

Factory setting is: no factory default (required programming step)

All sub-net mask should be set to 255.255.255.000. This rarely needs to be changed, consult with your network expert first. Valid values for any of the three digit numbers is 000 to 255.



System Keypad

1. Press * 5 2 and enter the MASTER CODE. [*** 5 2** _ _ _ _ (beep)]
2. Enter the sub-net mask number. Use the * key to enter the "dot".
[_ _ _ * (beep) _ _ _ * (beep) _ _ _ * (beep) _ _ _ * (beep)]
3. Press 0 # TOGETHER to end. [**0 #** (beeeeeep)]

2.3.3 Set the Cellular Gateway IP Address *(reboot required)*

Factory setting is: no factory default (required programming step)

Valid value for any of the three digit numbers is 000 to 255. All 3 digits **MUST** be entered in each field between dots, for example: 192.168.0.1 must be entered as 192.168.000.001 Program **Gateway IP address** to: **192.168.000.001**

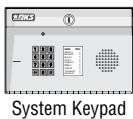


1. Press * 5 3 and enter the MASTER CODE. [*** 5 3 _ _ _ _ (beep)**]
2. Enter the gateway (router) IP address. Use the * key to enter the "dot".
[**1 9 2 *(beep) 1 6 8 *(beep) 0 0 0 *(beep) 0 0 1 *(beep)**]
3. Press 0 # TOGETHER to end. [**0 # (beeeeeeeep)**]

2.3.4 Set the Port Number *(reboot required)*

Factory setting is: no factory default (required programming step)

This must be the same port number that was programmed in the software. Valid values are 01024 to 65535. All 5 digits must be entered in the field, for example: 1030 must be entered as 01030

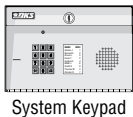


1. Press * 5 6 and enter the MASTER CODE. [*** 5 6 _ _ _ _ (beep)**]
2. Enter the 5-digit port number, then press *. [**_ _ _ _ _ * (beep)**]
3. Press 0 # TOGETHER to end. [**0 # (beeeeeeeep)**]

2.3.5 Enable / Disable TCP / IP Support - System Reboot

Factory setting is: no factory default (required programming step)

This programming sequence enables or disables the support for TCP / IP. It will also cause an automatic reboot of the AccessPlus two seconds after the programming sequence is completed. For this reason, perform this step after all other network setup programming sequences have been completed (sections 2.3.1 through 2.3.4) or whenever an individual network programming step is performed.



1. Press * 5 0 and enter the MASTER CODE. [*** 5 0 _ _ _ _ (beep)**]
2. Press 0 * to disable TCP / IP **OR** press 1 * to enable TCP / IP. [**_ * (beep)**]
3. **The system will reboot automatically.**

Once the unit is connected, the green LED on the RJ-45 jack on the interface board should light indicating that a good wire connection has been made (See illustration on previous page). The LAN DOWN LED should go off after a few seconds if all previous programming steps have been completed and programmed successfully.

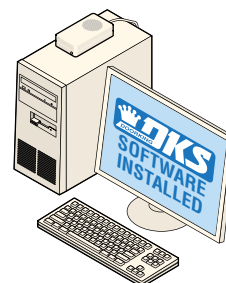
STOP! If you are **OR** are going to use a computer with the AccessPlus system, **NO other programming at the System Keypad is required.** All programming parameters beyond this point can be set in the Management software.

This software will show all the specific programming parameters that will exist in the memory of the AccessPlus system after it has been programmed. It can be easily recalled for future modification or re-programming.

Download **AccessPlus Account Manager** software at: <http://www.doorking.com/accessories/access-plus-software>



PC's only, NOT for use with MACs



Note: The system keypad **DOES NOT** have the capability to show any of the programming that will exist in the memory of the unit after being programmed. The only way to keep track of the specific parameters that have been programmed into the unit for future reference when **NOT** using the management software, is to physically write down all the information in a log (In back of your chosen AccessPlus manual).

FCC Regulations

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.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

RF Exposure Information

This device meets the government's requirements for exposure to radio waves.

This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment.

Glossary for UL 294 Compliance

ACCESS CONTROL SYSTEM: A collection of means, measures and specific practices that when combined, form or compose a systematic approach, which enables an authority to control access to areas and resources in a given physical facility. An access control system, within the field of physical security, is generally seen as the second layer in the security of a physical structure.

ALARM: A condition indicating a state of alert or tamper detection.

ALARM SIGNAL: A transmission of an alarm condition or alarm report.

CONTROLLED AREA: A room, office, building, facility, premises, or grounds to which access is monitored, limited, or controlled.

EQUIPMENT: Any part of an electronic access control system, such as access control units, reader interface modules, access point actuators, access point sensors, keypads, and the like.

PROTECTED AREA: A room, office, building, facility, premise or grounds to which access is monitored, and limited and/or controlled, whereby the authorized person of the Access Control System may grant access to non-authorized persons.

RESTRICTED AREA: A room, office, building, facility, premise or grounds to which access is monitored, and limited and strictly controlled, whereby only the administrator of the Access Control System shall issue credentials that will lead to access.

PERFORMANCE LEVELS:

Destructive Attack:	Level I
Line Security:	Level I
Endurance:	Level IV
Standby Power:	Level I
Single Point Locking Device:	Level I