

# iPULL 700 Setup Manual

<b>OVERVIEW</b>	<b>2</b>
<b>HARDWARE INSTALLATION</b>	<b>2</b>
<b>Station configuration</b>	<b>2</b>
<b>Installing batteries in iPull</b>	<b>3</b>
<b>IPULL SETUP PROGRAMMING</b>	<b>3</b>
<b>Accessing Admin Mode</b>	<b>3</b>
<b>Turning iPull OFF and getting total targets released</b>	<b>4</b>
<b>Targets Setup</b>	<b>5</b>
Targets Setup Programming	5
<b>Device Setup</b>	<b>8</b>
Device Setup Programming	8
Setting Addresses	9
Setting Menu Levels Control	10
Setting Following Report Delay	11
Setting the Display Parameters	11
Setting the Wasted Targets Threshold	11
Saving Device Setup	11
<b>Sound Setup</b>	<b>12</b>
Voice/Shot Setup Programming	12
Setting the Shot Parameters	13
Setting the Gunshot Timeout Delay	14
Setting the Voice Parameters	14
<b>ADMIN RELEASE MODES</b>	<b>15</b>
<b>RSU - REMOTE CONTROL (RC) SETUP</b>	<b>16</b>

---

---

## Overview

This manual is intended for gun club personnel responsible for setting up Sporting Clays courses with iPULL target release controllers.

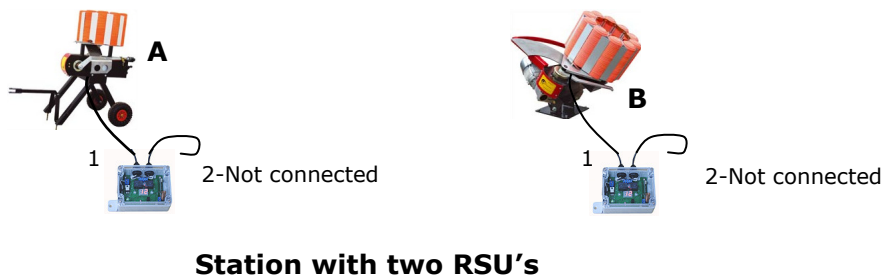
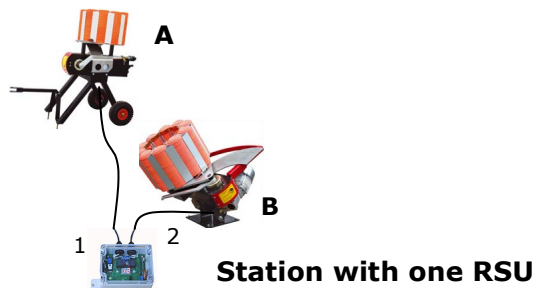
**iPull** controller version 700 is placed at each shooting station on the course, wirelessly controlling one or multiple Remote Base Units (RSU) connected to up to eight target throwers. For installation, setup and use of the iPULL system components, consult the following documentation:

- For iPULL Controller use, see document 'iPULL\_UM\_Ver4.pdf'
- For iPULL Controller setup, use this Setup Manual.
- For Remote Switching Unit (RSU) Hardware/wiring configuration, see document 'RSU\_DC-V2\_ConfigManual.pdf'.
- For the *iPull Manager* software and RFID Desktop Reader installation, see document 'iPull Manager User Guide.pdf'.

## Hardware Installation

### Station configuration

You can use multiple Remote Switching Units (RSU) on each station. See section RSU RC Setup below and 'RSU\_DC-V2\_ConfigManual.pdf' for details.



**⚠ Incorrect wiring can damage the RSU or the trap machine!**

## ***Installing batteries in iPull***

There is no special hardware installation associated with the iPull controller. To start using iPull, remove the protective rubber boot and open the battery door. Following the battery polarity marking on the bottom of the compartment, install 2 x AA batteries in the battery compartment and replace the battery door and rubber boot.

Turn **iPull** On: Press and hold the [Ⓞ] key for 0.5 – 1.0 second and then release the key. The startup sequence will display on the LCD.

## **iPull Setup Programming**

First, review your course plan and determine how many stations and how many RSU's you will need. Each RSU can control two throwers. One RSU is sufficient for Following Pair or for two adjacent throwers. When the throwers are placed far from each other, instead of using long extension cables, a separate RSU can be attached to each thrower. You will need to make some decision regarding the course as well as for each shooting station:

- How many throwers? Can be up to eight traps: A, B, C, ...H
- How many RSU's? there is no limit on the number of RSUs
- How many targets? iPull 700 can throw up to 16 targets per menu level
- What will be the shooting sequence (targets menu)?
- Will you need several menu levels? The RFID Tag may be set to automatically select the target menu level of the shooter or iPull can be set for manual selection of the menu level:
  - Example A: Level 1 the standard menu, Level 2 beginner and Level 3 expert menu.
  - Example B: Level 1 is 100 targets course, Level 2 only 50 targets and Level 3 a special training menu with singles.
  - Example C: Level 1 is for 12GA, Level 2 for 28GA and 410.
- Will one of the menus feature *Multiple targets on Timer Release*? iPull 700 can automatically release a series of targets (up to 16 targets) on a single key press with adjustable time delay between targets.
- What is the switch hold (latch) time for the trap machine?
- If using a Following-Pair, what is the target reload delay of the trap machine?

## ***Accessing Admin Mode***

To access programming and setup functions on the iPull, you will need a special "Administrator" RFID card. "Admin" Mode functions include:

- Targets Setup - Programming the shooting sequence.
- Voice/Shot Setup – programming parameters associated with the detection of voice and gunshots.
- Device Setup – Programming the Station number and other device parameters
- Wireless Remote Control (RC) setup of the RSU.
- Unlimited target release (for testing).
- Shutting down the iPull (clients cannot shut down the device).
- Obtaining the total targets released since the last power up.

### To start programming in Admin mode:

1. Turn **iPull On**: Press and hold the [⊙] key for 0.5 – 1.0 second and then release the key.
2. The version number and other information may be displayed. Wait for display to show the station information.
3. Momentarily hold the "Admin" Tag not more than 1" above the gray area on the iPull keypad. The display will show ADMIN MODE on line 1 and scrolling information on line 2. Table 1 lists the options at this stage:

Keys	ADMIN MODE MAIN MENU
[▶]	Access Targets Setup Programming
[\$]	Access Remote control (RC) of the Remote Base unit (RSU)
[b]	Access fully Manual target release mode
[?] + [\$]	Access Device Setup Programming
[?] + [b]	Access Sound (Voice/Shot) Setup Programming
[?] + [▶]	Exit Admin mode
[⊙]	Turn <b>iPull OFF</b> (press and hold for 3 seconds) Shows total number of targets released since last power up

### **Turning iPull OFF and getting total targets released**

iPull can be turned OFF only from the Admin Main Menu or the Admin Release modes. Press and hold the [⊙] key and wait for the count down on the display to complete. While the [⊙] key is pressed, the second line of the display shows the total number of targets released since last power up. This number is reset to 0 when the iPull is shut down. If the [⊙] key is released before a complete count down the iPull returns to the last mode without turning off.

You can use the Target counter to determine when to reload the traps. Log as Admin, press and hold the [⊙] key, get the Total targets and release the key before the count down ends. The iPull will remain On. If the number is close to the combined capacity of the Traps, reload the Traps and then shut down and power up the iPull to reset the target counter to 0.

## Targets Setup

In this mode you can program up to three targets menu levels. Each menu level contains a shooting sequence that can be programmed with up to eight steps, in any combination of targets from up to eight throwers A through H, for a total of up to 16 targets. For example, a station can be programmed for three steps each activated by the call "pull" or by pressing the [b] key:

- Step 1 – "REPORT A>B": The first "pull" will release the first target of a Report Pair from thrower A and the first gunshot will release the second target from thrower B .
- Step 2 – "REPORT B>A": The second "pull" will release the first target of a Report Pair from thrower B and the first gunshot will release the second target from thrower A.
- Step 3 – "TRUE A+B": The third "pull" will simultaneously release targets from throwers A and B.

## Targets Setup Programming

1. From the Admin main menu, press and release the [▶] key.
2. Press and release the [▶] key again to start programming or the [?] key to exit.
3. The display will show you a reminder of the key functions for 2 seconds. Key functions at this stage:

Keys	SETUP PROGRAMMING MENU
[▶]	Save step and move to next step
[?]	Select Setup parameter
[b/+]	Increase setup value
[\$/-]	Decrease setup value
[?] + [▶]	Exit Targets Setup

4. After the function reminder, the first line of the targets data table is shown starting at Menu Level #1 Step #1.

L	S	1	2	M	D	QTY
		1	A	B	R	08

5. The first line of the display shows the table's header. The second line shows the selected Level (L) and Step (S), the target setup for the step and the total number of targets for the menu level. A blinking arrow is positioned left of the parameter that will be adjusted with the +/- keys. Use the [?] to move the arrow to the next parameter.
6. **Change Step:** To see the next Step of the current level, place the arrow left of the number under the letter "S" (move the arrow with [?] key) and press the [b/+ ] key or the [\$/-] key to change step.
7. **Change Level:** To change the menu level, press and release the [?] key to move the arrow until it is placed left of the number under the letter "L" and press the [b/+ ] key to change.
8. **Trap1:** To select the value of Trap1, place the arrow left of the number under "1" (move the arrow with [?] key) and press the [b/+ ] key or the [\$/-] key to change letters A through H.

9. **End the sequence:** If the symbol "@" is selected for Trap1, the step is disabled and all the following steps on the current level will also become disabled.
10. **Trap2:** To select the value of Trap2, place the arrow left of the number under "2" (move the arrow with [?] key) and press the [b/+ ] key or the [\$/-] key to change letters A through H.
11. **Single Target:** If the symbol "@" is selected for Trap2, the step will become a "Single" with the trap selected on Trap1. You will see the letter **S** under the title M (Mode).
12. **Following pair:** If Trap2 has the same value as Trap1, the step will become a "Following" pair. You will see the letter **F** under the title M (Mode). The same trap will throw two targets with the RSU *Reload Delay* after the first target to allow the trap to reload the second target.
13. **Report or True Pair:** To select A *True* or *Report* pair, place the arrow left of the letter under "M" (move the arrow with [?] key) and press the [b/+ ] key to change letters **R** (report) or **T** (True).
14. **Automatic Timer Release:** to set "*Multiple targets on Timer Release*", place the arrow left of the number under "D" (move the arrow with [?] key) and press the [b/+ ] key or the [\$/-] key to change the release delay in seconds. This step will be released automatically after timer the delay. A timer value of "0" disable the automatic release.
  - 14.1. The first step on a "*Multiple targets on Timer Release*" sequence must also have a "D" (delay) value greater then 0.
  - 14.2. Voice is deactivated for "*Multiple targets on Timer Release*". Only the Auto [b] Key can release targets in this mode.
  - 14.3. There is no gunshot detection in "*Multiple targets on Timer Release*". The second target in a Report Pair is release after a "Following Report Delay" (FRD). Each target released is considered "*Target Used*".
15. **Save Step settings:** Each step is saved individually. To save a step and move to the next step, press the [▶] key.

**Notice:** if you only need to review the sequence, change Level or step without saving

16. While you can only see one line at a time, the actual table is three levels deep with 8 steps in each level for a total of 24 lines. The total number of targets for the current level is displayed on the right side under QTY.
17. Examples: (Hidden/disabled Steps are marked Gray)
  - 17.1. Example of a table for Level 1 with a total of 6 steps and 8 targets. The sequence comprises: A *Single A*, A *Single B*, *Report A > B*, *Report B > A* and a *True-Pair A+B*.

L	S	1	2	M	D	QTY
(Level)	(Step)	(Trap1)	(Trap2)	(Mode)	(Delay)	(Total Targets)
1	1	A	@	S	0	8
	1	B	@	S	0	
	2	A	B	R	0	
	3	B	A	R	0	
	4	A	B	T	0	
	5	@	@	@	0	
	7					
	8					
2	Level 2 starts here...					

17.2. Example of a table for Level 3 with a total of 4 steps and 8 targets. The sequence comprises *Report A > B* then standard *True-Pair A+*, each requiring to call "Pull" or press the Auto [b] Key. The third Auto [b] Key will release the same sequence automatically a *Report A > B* 1 sec. timer to automatically release another *True-Pair A+B* after 6 seconds.

<b>L</b>	<b>S</b>	<b>1</b>	<b>2</b>	<b>M</b>	<b>D</b>	<b>QTY</b>
(Level)	(Step)	(Trap1)	(Trap2)	(Mode)	(Delay)	(Total Targets)
<b>3</b>	1	A	B	R	0	<b>8</b>
	2	A	B	T	0	
	3	A	B	R	1	
	4	A	B	T	6	
	5	@	@	@	0	
	6					
	7					
	8					
1	Level 1 starts here...					

17.3. Example of a Station where Level 1 setup for 100 targets course and level 2 for 50 targets course.

<b>L</b>	<b>S</b>	<b>1</b>	<b>2</b>	<b>M</b>	<b>D</b>	<b>QTY</b>
(Level)	(Step)	(Trap1)	(Trap2)	(Mode)	(Delay)	(Total Targets)
<b>1</b>	1	A	B	R	0	<b>8</b>
	2	B	A	R	0	
	3	A	B	T	0	
	4	A	B	T	0	
	5	@	@	@	0	
	6					
	7					
	8					
<b>2</b>	1	A	B	R	0	<b>4</b>
	2	A	B	T	0	
	3	@	@	@	0	
	4					
	5					
	6					
	7					
	8					
3	Level 3 starts here...(may not be used)					

## Device Setup

The Device Setup is used to program the iPULLs parameters such as the station address, display contrast and more.

### Device Setup Programming

1. From the Admin main menu, press and hold the [?] key then Press and hold the [\$]. Release both keys. You will see "Device Setup".
2. Press and release the [▶] key again to start programming or the [?] key to exit.
3. The display will show you a reminder of the key functions for 2 seconds. Key functions at this stage:

Keys	SETUP PROGRAMMING MENU
[▶]	Save and exit
[?]	Select Setup parameter
[b/+]	Increase setup value
[\$/-]	Decrease setup value
[?] + [▶]	Exit without save

4. After the reminder, you will see the first setup screen. The first line of the display shows the setup header. The second line shows the setup values. A blinking arrow is positioned left of the parameter that will be adjusted with the +/- keys. Press and release the [?] key to move the arrow to the next parameter.

FLD	STN	LVL	FRD
003	011	001	003

5. After the last parameter is selected, you will see the next setup screen.

BLD	SCD	CON	WST
003	014	010	002

## 6. Device setup parameters and their function


Parameter	Default	Value range	What it does
<b>FLD</b>	-	001 - 015	The Field address – use the same FLD for the entire course.
<b>STN</b>	-	001 - 099	The Station Address – use a unique address for each station on the course
<b>LVL</b>	000	000 - 002	Menu Level control: 000 – disable multiple menus – only Level #1 001 – use menus level from card 002 – select level manually with [▶] key in Payment mode
<b>FRD</b>	003	002 - 005	Following Report Delay – Delay in seconds. Used only in Automatic Timer Release, when second target of a report is not released on gunshot
<b>BLD</b>	003	001 - 010	Blank Scroll delay – tenth of Sec delay between messages
<b>SCD</b>	015	010 - 022	Text Scroll time - tenth of Sec showing each message
<b>CON</b>	010	000 - 015	Display contrast – decrease if too dark, increase if too light.
<b>WST</b>	002	002 - 004	Wasted targets threshold

### Setting Addresses

**Field Address** (Number). Think of it as your street name. The Field number is a common radio address for all the RSU's on the same course.

If you have only one course, do not change the Field Address.

If you have more than one course, assign a different Filed Address to each course.

 **All stations on the same course should have the same field address**

To change the Field number, place the arrow left of the number under "FLD" (move the arrow with [?] key) and press the [b/+] key or the [\$/-] key. You can set to any number in the range 1-15.

**Station Address** (number) Think of it as your home street number. The station number is the radio address for communicating with any RSU's having the same field and station address. To change the station number, place the arrow left of the number under "STN" (move the arrow with [?] key) and press the [b/+] key or the [\$/-] key. You can set to any number in the range 1-99. For simplicity, it is recommended to select the number corresponding with the actual station number.

 **Each station on the same Field address/Course must have a unique number**

## Setting Menu Levels Control

iPull version 700 has the possibility to preprogram three target menus called *Levels*.

There are several possible uses for multiple target menus on the same station:

- **Mixed Skill Levels:** Gun club owners are often conflicted between the need to keep the course easy enough to keep most customers happy or keep the experts challenged. Now, you can accommodate different skill levels so no one gets board or frustrated:
  - Level 1 - an intermediate skill level menu
  - Level 2 – easy beginner menu
  - Level 3 – a challenging expert menu.
- **Multiple Price Breaks:** Some customers want 100 targets, others want only 50 targets, etc. Solution, program a different number of targets to each level:
  - Level 1 is 100 targets course,
  - Level 2 only 50 targets on the same course.
- **Multiple Gauge course:** Now you can have 12GA and a sub-gauge on the same course. Use multiple traps (up to 8 traps). Program a separate menu to present closer easier targets for the sub-gauge shooters.
- **Affect on Manual/Practice Mode:** When using a Voice or Auto card, the user can access a fully Manual mode. When using a Practice card, the user has access only to Practice mode which is fully manual. The level marked on the card and the value of Solo-Delay on the card, affect the target options in these modes as follows:

Card/Mode	Level	SoloDelay	Key Trap Release			
			[▶]	[?]	[\$]	[b/]
<b>Voice/Auto in Manual mode</b>	#1	N/A	A	B	A + B	nothing
	#2	N/A	A	B	A + B	C
	#3	N/A	A	B	D	C
<b>Practice Card</b>	#1	0	A	B	A + B	nothing
		>0	A	B	A + B	Report A > B
	#2	N/A	A	B	A + B	C
	#3	N/A	A	B	D	C
<b>Admin</b>	N/A	N/A	A	B	D	C

To change Level control value, place the arrow left of the number under "LVL" (move the arrow with [?] key) and press the [b/+] key or the [\$/-] key.

1. Select 000 to completely disable multiple menus. Only Level #1 will be used.
2. Select 001 to read and assign a menus level from card. Using iPULL Manager PC software, you can select a menu level (1-3). The shooter will get the targets menu programmed in the iPULL in accordance with the level marked on the card.
3. Select 002 to allow any user to select level manually using the [▶] key in Payment Mode. The Level on the card is ignored.

## Setting Following Report Delay

Normally, in Auto or Voice modes iPULL automatically release the second report target upon detecting the first gunshot (Report). However, when using the fully automatic timer release, things may get "wild" and there is no point in counting and detecting gunshots. Therefore, Report pairs in timer release mode are simply released after some fixed delay. You can adjust this delay between 1 and 5 seconds.

To change Following Report Delay, place the arrow left of the number under "FRD" (move the arrow with [?] key) and press the [↵/+] key or the [\$/-] key.

When done, press and release the [▶] key to save the settings and exit.

## Setting the Display Parameters

LCD displays are affected by extreme weather conditions. In very cold weather, the display loses contrast (looks faded) and has a slower response. In very warm weather, the display becomes very dark which causes it to further absorb more heat.

In temperatures below 0°C/32°F, it may be necessary to increase the following parameters: BLD, SCD and CON. Below is a typical setup for cold weather (-12°C/10°F):

BLD	SCD	CON	WST
008	020	012	002

In temperatures above 35°C/95°F, it may be necessary to decrease the display contrast (CON) so that the display background is not too dark.

If the scrolling information in "Payment Mode" changes too fast or too slow adjust the Text Scroll time parameter SCD.

## Setting the Wasted Targets Threshold

The WST parameter determines how many targets can be released without being shot at, before the "WASTED TARGETS" message appears and the customer is required to "pay" for wasted targets. The recommended value is two targets.

## Saving Device Setup

When done changing Device Setup parameters, press and release the [▶] key to save the settings and exit.

## Sound Setup

In some situation it may be necessary to access certain parameters that determine the voice or gunshot detection.

## Voice/Shot Setup Programming

1. From the Admin main menu, press and hold the [?] key then Press and hold the [b] key. Release both keys. You will see "Voice/Shot Setup".
2. Press and release the [▶] key again to start programming or the [?] key to exit.

The display will show you a reminder of the key functions for 2 seconds. Key functions at this stage:

Keys	SETUP PROGRAMMING MENU
[▶]	Enter or Save Setup and exit
[?]	Select Setup parameter
[b/+]	Increase setup value
[\$/-]	Decrease setup value
[?] + [▶]	Exit setup without save

After the reminder screen, you will see the Shot parameters screen:

TRG	STH	WIN	DCY
▶176	086	001	060

A blinking arrow indicates which value is selected. The number to the right of the blinking arrow can be increased or decreased using the [b]/(+) or [\$/-] keys.

Press and release the [?] key to move the arrow to the next parameter.

After the last parameter is selected you will see the next screen:

TOD	SEN	FRM	MAR
▶006	004	004	010

Voice/Shot parameters and their function

Parameter	Default value	recommended range	What it does
TRG	176		DO NOT CHANGE!
STH	086	076 - 092	Gun shot sensitivity – lower is more sensitive
WIN	001	001 - 002	Decay factor
DCY	060	See below	Decay threshold
TOD	006	003 - 009	Target Time out delay in seconds
SEN	004	003 - 005	Voice detection sensitivity
FRM	004	004 - 005	Voice duration factor
MAR	010	000 - 040	Prevents load noise from detecting as Gunshot

## Setting the Shot Parameters

Depending on proximity to other stations and the topography, (trees, water, slope, etc.), each station may require individual settings for optimal shot detection. The purpose of the shot setup is to insure the following:

- A gun shot from the station (within 2-3 yards from the shooter) is reliably detected by the iPULL controller.
- Gunshots from adjacent stations are not detected by the iPULL controller.

1. Set the iPULL to release three steps each with a Report A > B (see setup section above).
2. Setup a preliminary shot detector parameters based on the station's terrain description as shown in table 9 below:

Station Terrain Description	STH	WIN	DCY	MAR
Open field, no trees, structures or water surface within 40 yards	80	001	040	010
High grounds position, shooting towards low grounds, no water surface, no trees	85	001	035	010
Trees, structures or water surface near the station (less than 20 yards)	90	002	020	004

3. You will need the following:
  - 3.1. Note pad and pencil
  - 3.2. Another person to help with adjacent station testing
  - 3.3. Sub gage shotgun (28 GA), or very soft shells.
  - 3.4. A 12 GA with "hot" loads (1290 fps or faster)
4. At the station, log as ADMIN and access Voice release mode: from ADMIN main menu, press the [b] key to access MANUAL mode, then press and hold the [b] key to access the Voice mode. DO NOT talk! You will be releasing targets with the [b] key.

### Station test - Verify consistent gunshot detection on the station

1. Use the sub-gage gun or a soft load (under 1100 fps). With the gun pointed at the direction normally used to shoot the target, release a target and shoot one shot.
2. Quickly look at the iPULL screen. For a few seconds, you should see four numbers on the bottom line. See examples below. Write the numbers down.

Open filed example

**WAITING SHOT**  
**095 062 022 012**

Wooded area example

**WAITING SHOT**  
**103 095 089 065**

3. If a target is released - GOOD:
  - 3.1. If the first number is more than 10 points larger than STH, increase STH by 8 points (make it less sensitive) and try a few more times to ensure consistent release.
4. If a target is NOT released - BAD:
  - 4.1. No numbers displayed on the bottom line, try again. If still no numbers, access the VOICE/SHOT setup menu and reduce STH by 8 points (i.e., make it more sensitive). Try again.
  - 4.2. If numbers are shown on the bottom line but target is not released, or release is inconsistent, you need to calculate the decay. See below
  - 4.3. If the result is larger than the value set for DCY, increase DCY by the difference + 8 points. For example: DCY = 020 and result was 21, increase DCY to 27. Try again.
  - 4.4. When setup is complete, press and release the [▶] key to save the settings and exit.

**Setting the Gunshot Timeout Delay**

You can adjust the duration in which iPULL is waiting for a gunshot. Adjust TOD value between 3 and 9 seconds. The timer starts upon releasing target(s). If during the set time a gunshot for each target is not detected, iPULL will determine there was no gunshot and the step will be repeated (wasted targets may be charged). You should set the time so that the target with the longest flight time will still fall out of range before the Timeout period.

**Setting the Voice Parameters**

You can adjust iPULL for higher or lower sensitivity to voice activation:

To decrease the sensitivity, decrease the value of SEN to 3 and increase the value of FRM to 5

To increase the sensitivity, increase the value of SEN to 5 and increase the value of FRM to 4

## Admin Release Modes

Admin Mode allows unlimited target release in fully Manual or Auto Sequence Modes. The fully manual mode is useful when setting up and testing the target throwers. There is a Solo delay of 2 Sec. on the Auto Sequence Mode.

1. On iPULL in ADMIN MODE main menu, press and quickly release the [b] key to access fully Manual mode. Key functions at this stage:

Keys	ADMIN Full MANUAL/VOICE MODE
[b]	Press and quickly let go, release target C if available on auto sequence
	Press, hold and release before complete count down - Exit Manual Mode
	Press and hold for complete count down - Enter Auto Sequence release Mode
[▶]	Manual Mode - Trap A
	Auto Mode - see User Guide
[?]	Manual Mode - Trap B
	Auto Mode - see User Guide
[\$]	Manual Mode - Trap D
	Auto Mode - change Menu Level (only for ADMIN)
[⊙]	Turn iPULL OFF (press and hold for 3 seconds)
	Shows total number of targets released since last power up

2. Use [▶], [?],[b] , [\$]keys to release targets A, B, C and D respectively.
3. Press the [b] key and release before end of count down to return to ADMIN MODE main menu.
4. Press and hold the [b] key until end of count down to access Auto Mode.
  - 4.1. In Auto mode, use the [b] key to release targets according to the target setup programmed into the iPULL. There is a Solo delay of 2 Sec.
  - 4.2. Press and Release the [\$] key to change menu level.  
Note: If an entire menu level has "Multiple targets on Timer Release" (i.e., all the steps have "D" > 0), the sequence will continue to throw targets because an ADMIN does not have a target limit. To Stop such sequence, press and hold the [b] key and then change level or exit the Auto mode.
  - 4.3. Press and release the [?] key to Exit Auto Mode to Pause Mode.
  - 4.4. From Auto Mode or Pause Mode Press and hold the [?] key and the [▶]key, then release both keys to return to ADMIN MODE main menu

## RSU - Remote Control (RC) Setup

To avoid external controls where water and dirt can penetrate the enclosure, the RSU's parameters are wirelessly programmable from any iPULL (in Admin mode). The data is displayed on a numeric LED display visible through the clear cover. To setup the RSU, follow the steps below:

1. The RSU must be turned ON just a few seconds before starting the setup process.

<b>Notice:</b> Setup must begin within the first 2 minutes after the RSU was powered up
---

2. On iPULL in ADMIN MODE main menu, press and release the [**\$**] key to access BASE RC mode.
3. Table 4 lists the key functions at this stage:

Keys	INITIATE BASE RC
[▶]	Start Remote control
[b/+]	Increase Station number
[\$/-]	Decrease Station number
[?] + [▶]	Abort Remote control mode

4. Enter RC Mode:
  - 4.1. Verify the RSU is ON and the RSU's station number is steady (not flashing) on the dual LED display.
  - 4.2. Stand close to the RSU so you can observe changes on the display, but hold the iPULL at least 4' away from the RSU.
  - 4.3. Use the [b]/(+) or [\$]/(-) keys to match the BASE ADDRESS shown on line 1 of the iPULL display with the number currently displayed on the RSU.
  - 4.4. Press and release the [▶] key to start remote control. The RSU display will flash "**rc**" for a few seconds and then momentarily show "**Ad**" followed by the current station number.
5. Table 5 lists the key functions at this stage:

Keys	BASE RC
[?]	Select programming parameter
[b/+]	Increase current parameter value
[\$/-]	Decrease current parameter value
[▶]	Save changes to RSU memory
[?] + [▶]	Abort Remote control mode without change

6. Setting the RSU station number:
  - 6.1. Line 1 of the iPULL display shows "STATION #: +/-". Use the [b]/(+) or [\$]/(-) keys to change the station number on the RSU.

- 6.2. Observe the RSU's display (not the iPull!) to verify correct station number.
- 6.3. When done, press and release the [?] key for the next setup parameter which is *Target Reload Delay*. The RSU display momentarily shows "**Ld**" followed by the current target reload delay in seconds and tenths of second.
7. Setting the RSU Target Reload Delay:
  - 7.1. Line 1 of the iPull display shows "RELOAD Sec: +/-". Use the [b]/(+) or [\$/(-) keys to change the reload delay in steps of 0.1 Seconds.
  - 7.2. Observe the RSU's display to verify correct value.
  - 7.3. When complete, press and release the [?] key for the next setup parameter which is *Switch Hold Duration*. The RSU display momentarily shows "**Hd**" followed by the current hold duration in seconds and tenths of second.
8. Setting the RSU Switch Hold Duration:
  - 8.1. Line 1 of the iPull display shows "SWITCH Sec: +/-". Use the [b]/(+) or [\$/(-) keys to change the switch hold period in steps of 0.1 Seconds.
  - 8.2. Observe the RSU's display to verify correct value.
  - 8.3. When complete, press and release the [?] key for the next setup parameter which is *Power Routing*. The RSU display momentarily shows "**Po**" followed by the letter (A or B) of the trap machine currently set to provide power via terminal 1 of the RSU.
9. Setting the Power Routing and thrower selection: Changing the power routing is necessary in case an RSU is connected to throwers other than the standard A and B.
  - 9.1. Line 1 of the iPull display shows "POWER A/B: +/-". Use the [b/+ ] key to assign a letter A through H to Trap1 on the left digit of the RSU display. Use the [\$/- ] key to assign a letter A through H to Trap2 on the right digit of the RSU display.
  - 9.2. Observe the RSU's display to verify correct values.
  - 9.3. When complete, press and release the [?] key for the next setup parameter which is *Field Number*. The RSU display momentarily shows "**Fn**" followed by the current Field number of the RSU.
10. Setting the Field number: Changing the power routing is necessary in case an RSU is connected only to thrower B. In such case, thrower B will be connected to the cable designated for the powering trap (marked 1/A). See Hardware Installation section
  - 10.1. "FIELD #: +/-". Use the [b]/(+) or [\$/(-) keys to select the Field Number.
  - 10.2. Observe the RSU's display to verify correct value.
11. Saving RSU settings: When all changes are complete, press and release the [▶] key to save the new settings to the RSU's memory.
  - 11.1. If you want to abort without saving the changes, press and hold [?] key, then press the [▶] key release both keys.
  - 11.2. Upon exiting the RC mode, the RSU will momentarily display each setup parameter/value, and then the station number will flash a few times. When the station number is steadily displayed, the RSU is ready to receive data from an iPull set to the same Station and Field numbers.
12. Exit RC Mode on iPull: press and hold [?] key, then press the [▶] key release both keys to exit out of the RC mode and return to ADMIN Main menu.

**Notice:** in RC mode, a timeout occur after 20 seconds of inactivity and the RSU reverts to normal operating mode. Any changes made before returning to normal mode are retained. Should timeout occur before completing the setup, start over from section 4.4 above.