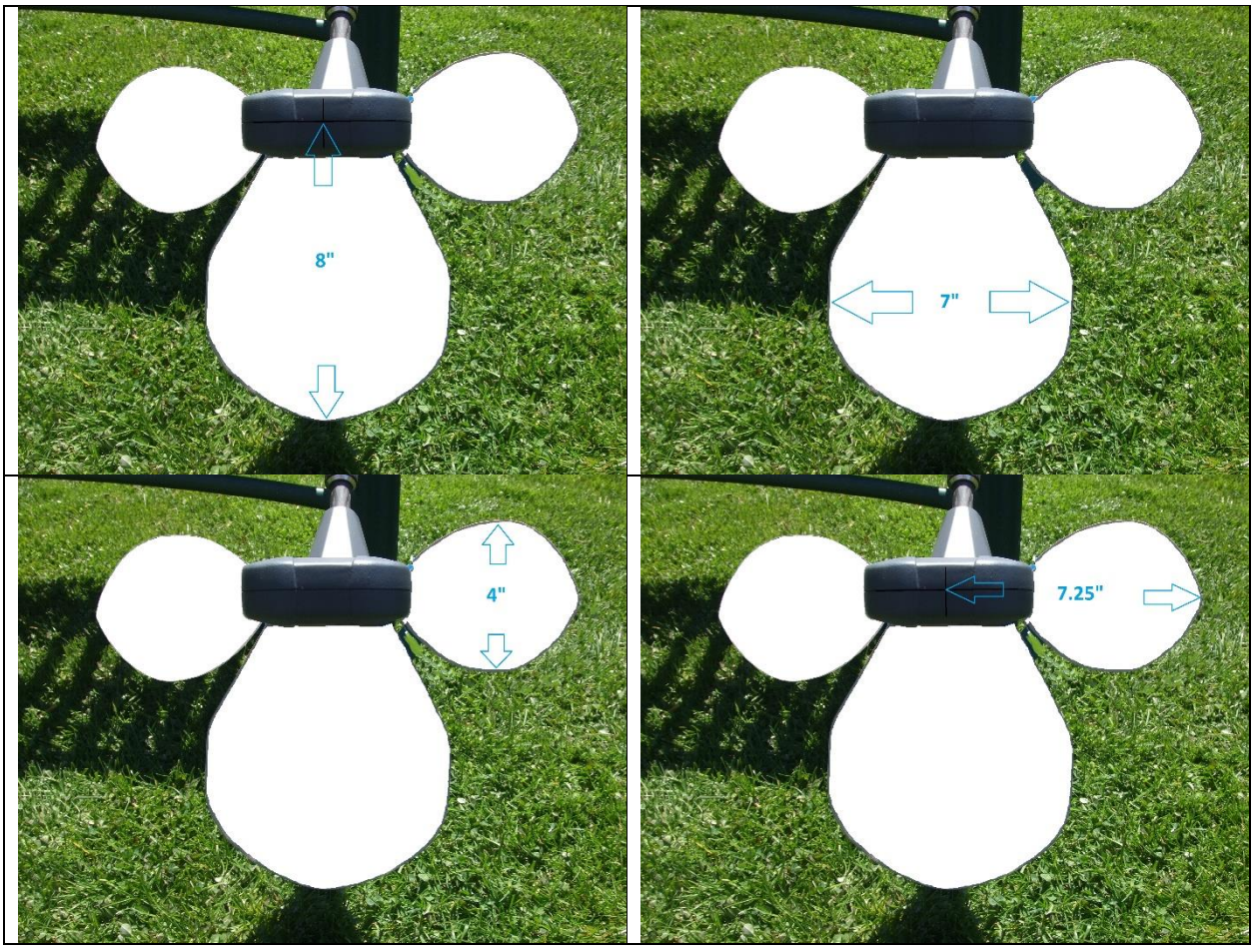
Scout RFID Tag Reader
User Manual

The Scout device operates as an RFID reader for in-ground RFID tags. The equipment is a transmitter operating at 125kHz. The equipment is a battery operated handheld unit with an armrest, handle, interface board with LCD and buttons and speaker, pole shaft, and transmitter board. The unit uses the LCD and speaker to convey information to the operator about the RFID tag. When a tag is found an audible alert is sounded. As the tag gets closer the audible tone increases in pitch and signal strength indication on the LCD also increases. As soon as the tag is fully read its information is displayed on the LCD and a successful read sound is annunciated.

The foot of the station detector is an antenna that receives RFID tag information from the caps of the stations. The antenna reception pattern has a shape like a large upside-down light bulb from the bottom of the antenna with leaves extending from each side. The detection region extends approximately 8” from the center of the antenna and reaches a width of about 7”. The side lobes extend approximately 7¼” from the center of the antenna and reaches a height of about 4”.

The following photos show a white cutout that represents the reception area of the antenna:



The antenna is intended to be held approximately 2” above the ground cover surface (soil, mulch, gravel) and is intended to detect tags that are buried up to 4” under the surface. The antenna should be kept parallel to ground surface to maximize the ability to detect the RFID tags that are buried parallel to the ground surface.

To set the antenna height, hold the unit as it would normally be used and adjust the pole extensions until the antenna face is flush against the ground, locking the pole extensions:

Unlock, decrease the length of a pole extension piece by 2” then re-lock:

To maximize coverage and speed the antenna should be swept from side to side in an arc while moving forward or back no more than 8” in each sweep. This allows for full detection of the area underneath the antenna.

Button Functions

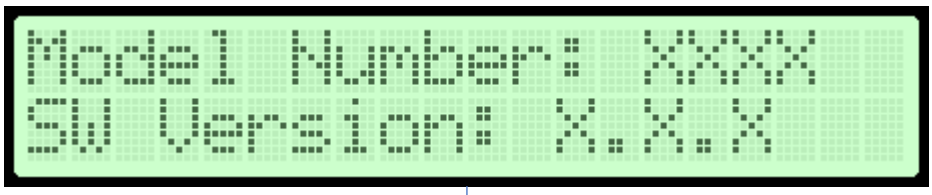
Back (short press) & Power Off (press for 3 seconds)

Up

Select/Enter

Down

Startup Screen



Device will attempt to connect to last device it was connected to during startup screens.

1 second before transition

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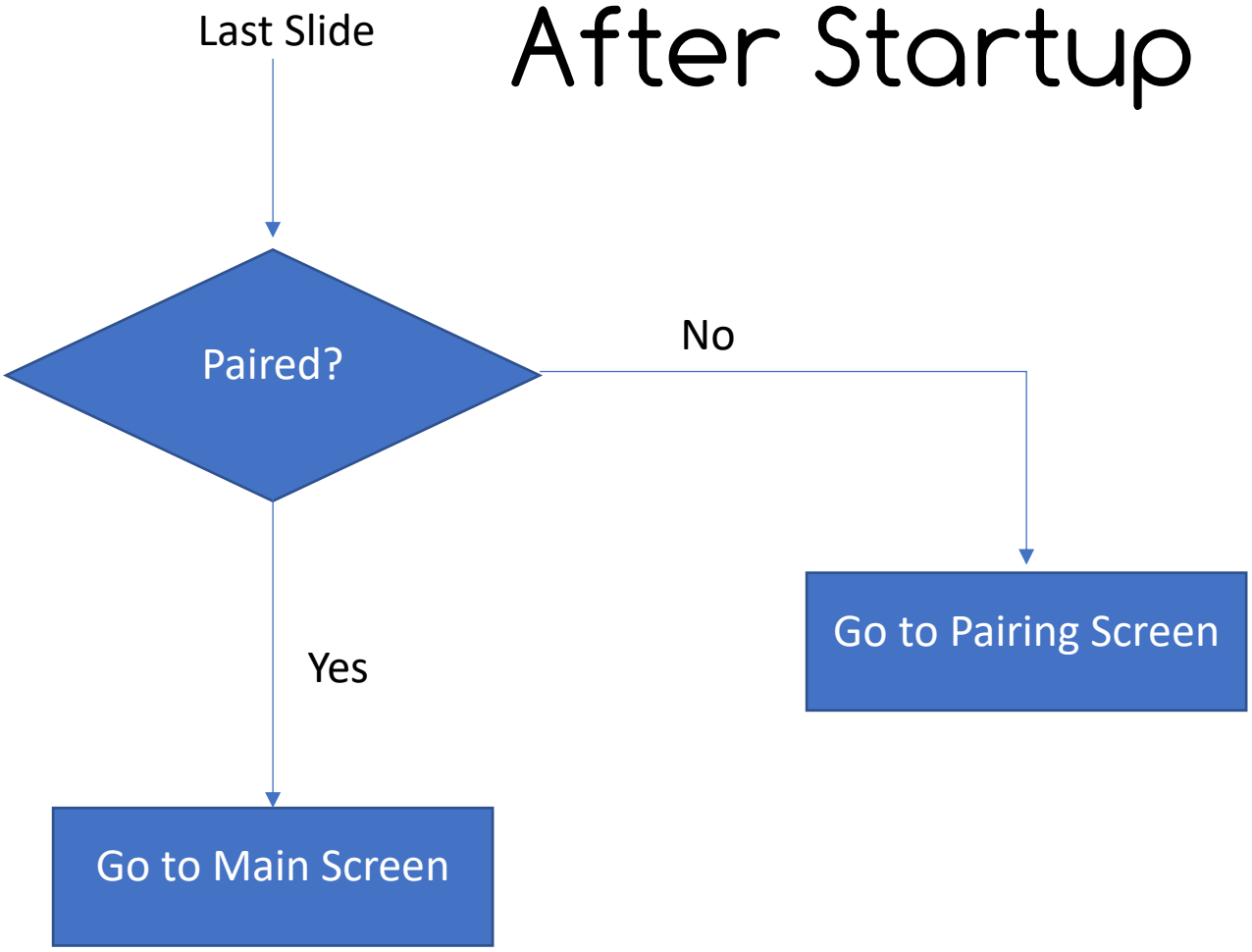
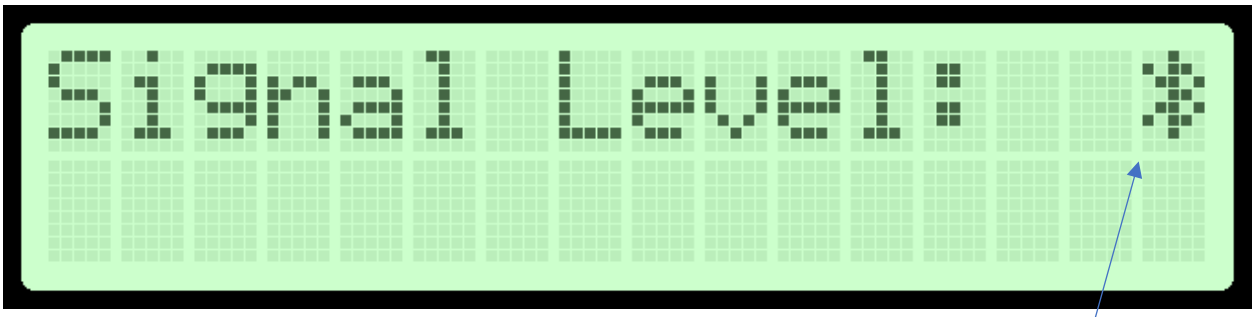
After Startup



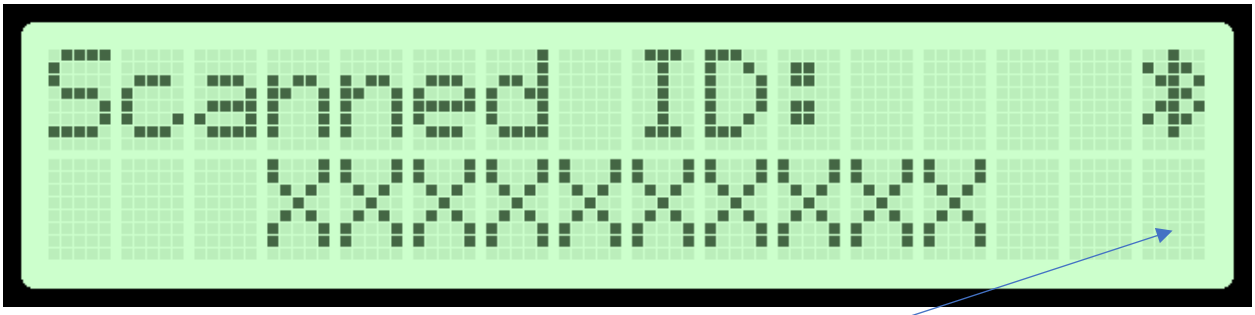
Main Screen



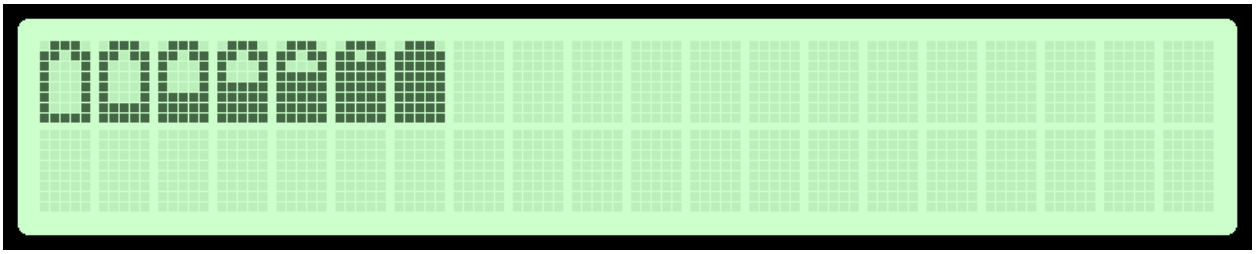
The main screen will show the real-time signal level of nearby RFID tags.

When a valid tag read has occurred, the display will show the scanned tag ID for three seconds:

Connection status shown by Bluetooth icon in upper right corner



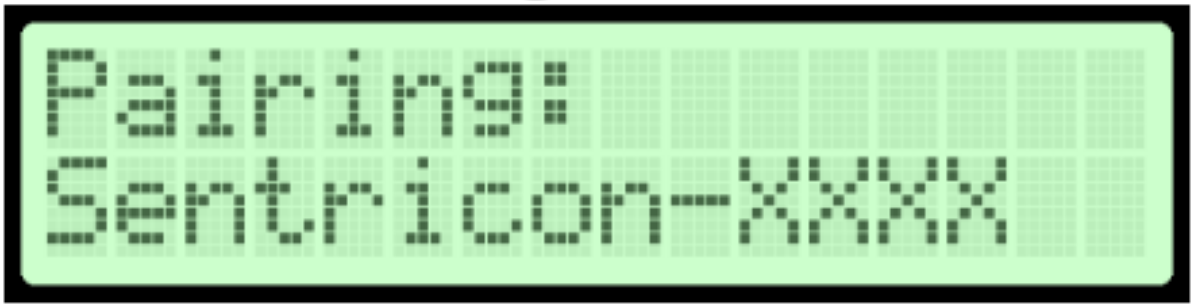
Approximate battery level will be displayed below the Bluetooth status icon with a corresponding battery symbol rendered below:



Critical battery level alerts will also be communicated to the user through a combination of auditory or flashing LED alerts.

A flashing, low battery symbol will indicate critically low battery level.

Pairing Screen



When ready to pair, the Bluetooth logo will blink in the upper right corner (view document in presentation mode to see animation)

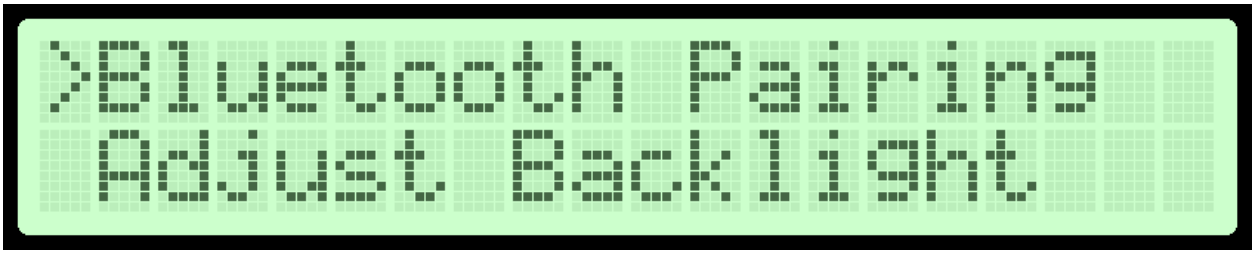
The “XXXX” in the image above will be replaced by the last 4 hexadecimal digits of the device’s BLE MAC address. This allows a specific device to be identified when pairing near other identical units.

The user may exit this screen to modify device settings. **The device will continue to be in pairing mode, as indicated by the flashing Bluetooth icon, until the device has been paired with.**

Settings Menu Screen

At any time from the Main Screen, the user may press the BACK button to enter the settings menu. The settings menu allows the user to:

- Enter pairing mode (if already connected. Pairing mode is automatically entered when device is disconnected)
- Adjust backlight intensity
- Adjust contrast of LCD
- Adjust volume of tone alerts
- Change the auto-off delay period
- Display system information (model number/sw version)

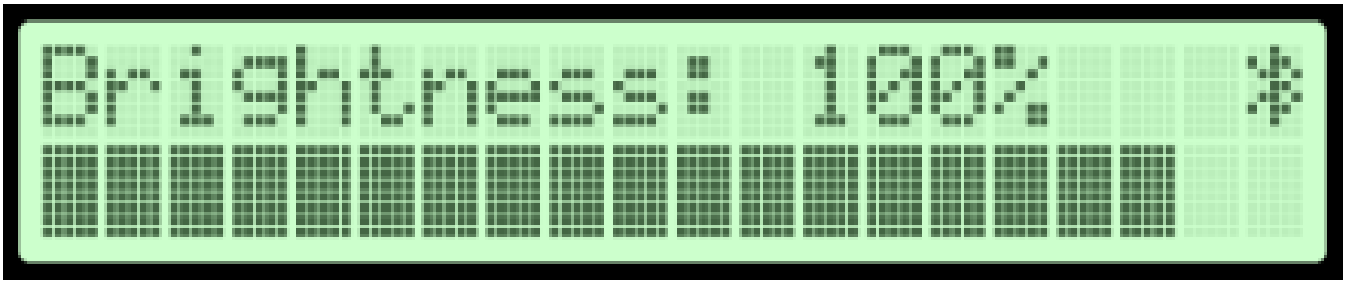


Adjust Backlight, Contrast, and Volume

The backlight brightness as well as the LCD contrast may be adjusted for different ambient lighting conditions.

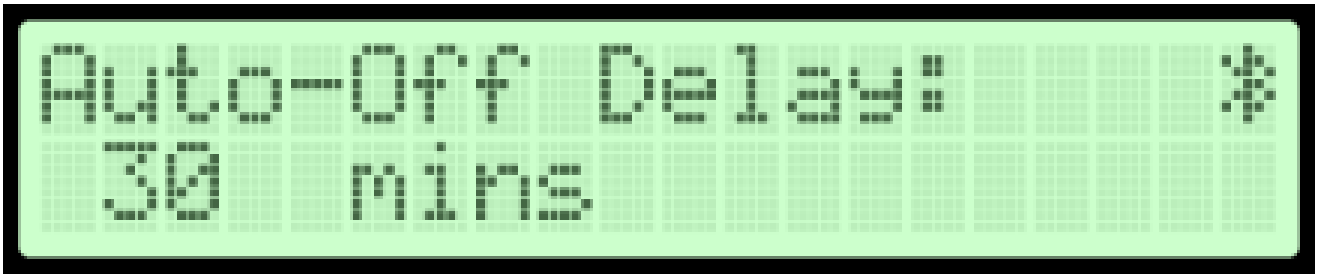
The backlight can have 10-20 preset brightness levels. The LCD contrast can have 10 preset adjustments. A percentage and a bar graph displays the level to the user during adjustment.

The audible tone volume is also adjusted in a similar way, with each adjustment sounding a tone at the new volume. There are 10-20 adjustment levels, ranging from loud to silent (no tone).



Change Auto-Off Delay

When a long period of inactivity is detected, the device will automatically power off to extend batter life between charges. The delay before powering off may be adjusted by the user to suit their pace of work.



FCC ID: QFG-SCOUT

Changes or modifications not expressly approved by Dow AgroSciences could void the user's authority to operate the equipment.

This device complies with Part 15 of 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.*

Note: 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 possible to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.