

# Industrial RFID/IoT Forklift Reader



## Rugged Steel Enclosure Resists Impacts

The Venture Research Forklift Reader solution combines the state of the art in communication, RFID hardware and sensors to provide a rugged tracking system for reading material and racking locations in front of the forklift. Flexible configuration allows the unit to be attached to standard ITA class 2 (16") or 3 (20") forklift carriages with minimal tools. The enclosure is gasketized providing an IP65 rating for outdoor use.

## Integrated unit with Reader and Antenna

By combining an RFID /BLE reader and dual antennas in a single compact (21" x 10.5") enclosure, the reader can read any RFID UHF passive tag and also BLE (Low Energy Bluetooth) active tags. Antenna expansion is available up to 8 antennas.

## Exclusive Sensors and Firmware for Automatic Pick/Drop and GPS

Venture Research pioneered the design of solutions that are built for the intended use case and the Forklift Reader is no exception. The reader autonomously can determine material pick up or drop (with integrated LIDAR sensors), stack height (with an additional floor facing LIDAR sensor), a lower antenna for pallet/rack/floor reading and an upper antenna for material reading. All these sensors are managed by powerful firmware that builds transactions that can be directly taken to the cloud without the need for intermediary middleware. GPS support is standard to allow the forklift to be tracked when outdoors for material management in a yard.

## Versatile Communication Options

The Venture Research Forklift reader supports Wi-Fi (802.11b/g), direct Ethernet, RS232 and optional Cellular communication. The exclusive built in store and forward feature allows material and location information to be read and queued for delivery when the network/cloud becomes available. This is especially important for cellular or spotty Wi-Fi configurations when the ability to deliver transactions may not be reliable.

## Additional Sensor Options

Along with the RFID/BLE and communications options, the Forklift Reader supports a built in front facing camera, CAN BUS stacklight interfacing, conditioned trigger input, GPIO and RF output to drive up to an additional 8 antennas. A USB-A connector is also provided to provide USB peripheral support.

## 24 x 7 x 365 Support

Venture Research maintains a world class support organization currently supporting over 240 distribution centers with 24x7x365 proactive support. Like all Venture Research products, the Forklift Reader is capable of "phoning home" using a secure VPN connection allowing real time monitoring and updates. For further information, contact Venture Research at 866-RFID-111

## Product Features

Features	Benefits
IP65 Rating and Steel Enclosure	Allows for outdoor usage and impact resistance
Integrated Reader and antennas in a single enclosure	Simplifies installation and maintenance
12V to 36V integrated power conditioning	Direct forklift power electric or propane
Store and Forward Capability	All reads and sensor transactions are queued regardless of network connectivity
Integral GPS including Glonass constellations	Provides Forklift and material location even in the yard
Swappable rechargeable Li-Ion batteries	Useful for lease forklifts where there is a need to bypass forklift power
Front facing distance sensor	Accurate pallet sensing to support pick and drop scenarios
Integrated height sensor	Provides accurate height for multi-stack pallets
Dual Band 802.11 a/b/g integrated	Robust Wi-Fi capability including Enterprise support
Low energy Bluetooth (BLE) built in	Provides forklift positional tracking and critical asset read support
Optional cellular via USB port	Direct Cloud Interfacing

# Specifications



## Electrical Specifications

Model	VFR1A2DCEV
RFID UHF Reader	1 Watt - GEN 2, ETSI Available
Front Facing Antenna	Integrated - 5dBic
Rack Facing Antenna	Integrated - 5dBic
External Mux GPIO connection for slave antennas	Allows up to 8 Antennas to be attached
LED Indicators	Red, Yellow and Green diffuse LEDs

## Power

Forklift Power	Propane or Electric
Swappable Rechargeable Battery Power	Standalone operation 9-12 hour usage

## Processor

Processor	ARM V7a - 1 Ghz, 512, Mb Ram, 512 Mb Flash
Storage of transactions	SD Card 8 Gig MLC
Console USB Connector	Direct Interfacing

## Sensors

Front Facing Distance Sensing	Material Pick/Drop Sense
Height Sensor	Used for untagged rack locations or floor stacking - 1'-36'
Battery Power Sense	Informs of low battery conditions
Input GPIO	Additional Conditioned Input
Hi Def Front Facing Camera	For Safety Monitoring
GPS	For Yard Management

## Communications

WiFi	Dual Band 802.11 a/b/g
WiFi Antennas	Stub Antennas
Ethernet	AGVs or Diagnostics
BLE (Low Energy Bluetooth)	Critical Asset Read and Location
CAN BUS	Peripheral expansion for Stacklights, Sensors

## Warranty

- 1 year parts and labor
- 1 year, post 1 year maintenance agreement available

## Fork Lift Reader Options



Floor Reader Antenna	FORK-FLR-RDR-ANT
Additional External Antenna	FORK-ADTL-EXTN-ANT
GPS/WiFi/Cellular External Antenna	FORK-GPS-WIFI-CELL-ANT
GPS only Antenna	FORK-GPS-ANT
Outrigger (Side) Antennas w/ Side Mount - 7 dBic.	FORK-EXT-SIDE-ANT
Unistrut Mast with one 5 dBic Antenna	FORK-MAST-ANT
Cellular (External USB Stick)	FORK-CELL
1 Year of cellular service	FORK-1YEAR-CELL-SRVC
1 Port Battery Charger	FORK-1PORT-BATT-CHRG
4 Port Battery Charger	FORK-4PORT-BATT-CHRG
SD Card 128 Gig MLC	FORK-SD-CARD-128GIG
50' Fused Power Cable - Neoprene	FORK-PWR-CBL
Wire Reel Kit with adapters and reader connections	FORK-WIRE-REEL-KIT
Serial connector and 25' cable	FORK-SERL-CNTR-CBL
Companion VMT - Touch Screen, WiFi, LED's, Annunciator	FORK-VMT-ANDROID
External replaceable Li-Ion Battery	FORK-BATT

## Software

HTTP Post with store and Forward	Integrated
Venture Research API 5.1.15	Integrated
TLS Security	Integrated

## Environmental

Steel Enclosure	Hardened for front impact
Adjustable for type 2 and 3 Fork Hangers	Fits most common forklifts