

# PICCOLO STX IoT

## OVERVIEW

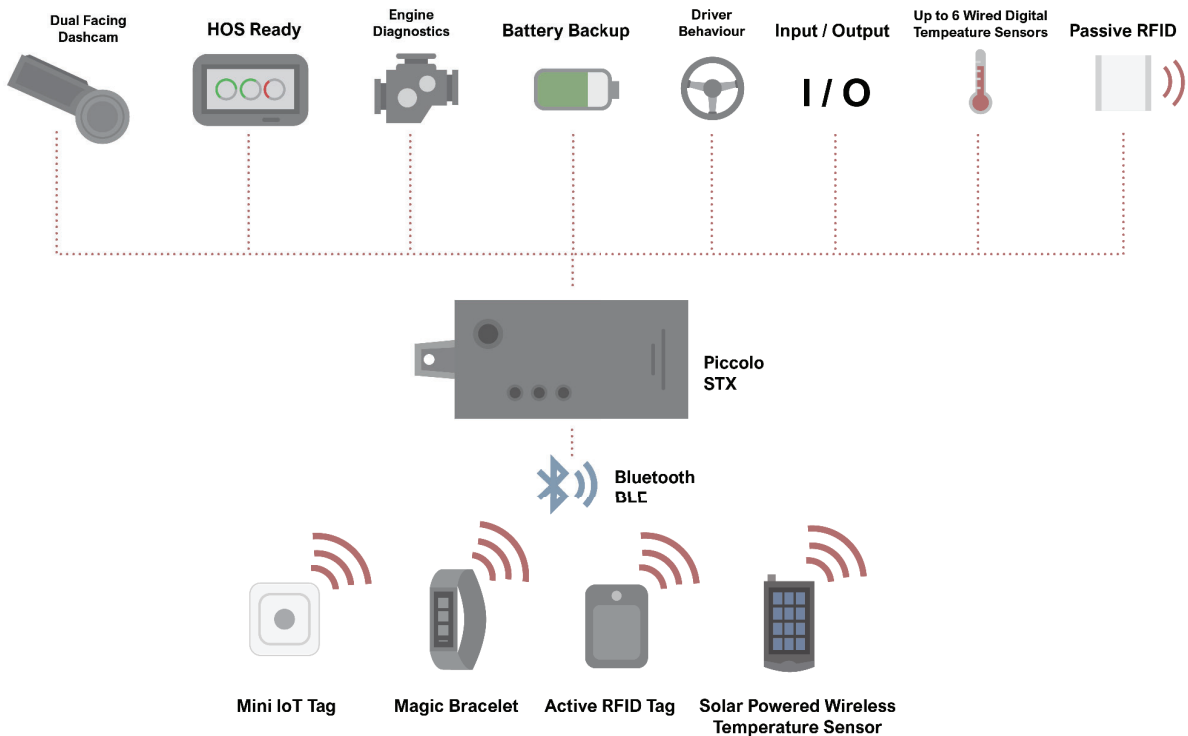
The Revolutionary Piccolo STX IoT is a modular plug & play telematics device with advanced fleet management functionalities for all in one integrated telematics and IoT solution



## KEY FEATURES

- CATM1/NB1 Modem with 2G Fallback.
- Real Time GPS
- OTA Configurable and FOTA
- DashCam support
- Driver Behavior (optional)
- Jbus Interface- OBDII/J1939 or J1708 (optional)
- ELD Ready – sends ECM data via BLE to any iOS & Android devices
- IoT Solutions via integrated BLE Reader for wireless communication with WLI RF Beacons (optional)
- Wired High Accuracy Temp sensors (optional)
- Plug & Play Installation into any vehicle
- Plug & Play integration into any 3rd party application via API or TCP/IP integration

## MODULAR, EASY TO INTEGRATE AND INEXPENSIVE TO CUSTOMIZE TO YOUR NEEDS



## DIFFERENTIATE VIA INNOVATION

# TECHNICAL SPECIFICATIONS

## CONNECTIVITY

<b>Network</b>	4G CATM1/NB1 with 2G fallback. Supported bands Cat. M1 & NB1, LTE-FDD:B1/B2/B3/B4/B5/B8/B12/ B13/B18/B19/B20/B26/B28 LTE-TDD: B39 (for Cat.M1 only) GSM850/GSM900/
<b>GPS Technology</b>	GPS/GLONASS/BeiDou/Compass/Galileo, QZSS up to 1m (3ft) accuracy
<b>Wireless Sensors</b>	Compatible with WLI Family of RF Beacons
<b>Storage</b>	Store & Forward- Built-in flash storage for data logging up to 5000 messages when out of cellular connectivity
<b>Communication</b>	Highly compressed OTA, UDP communication packaged with MidLink Middleware or Direct TCP/IP communication (TCP/IP packaged with 'Plug & Play' API or DLL for quick integration into any 3rd party software.
<b>OTA Diagnostics</b>	Via Tisfleet proprietary apps and communication software
<b>Configuration</b>	USB port for FW download and local configuration. USB port powers unit during configuration. Remote OTA configuration and via SMS commands. FOTA available.
<b>Wireless Sensors</b>	Compatible with WLI Family of RF Beacons (optional, details below)

## BASE FEATURES

<b>IO's</b>	3 Digital Inputs, 2 Digital Outputs and 1 Analog Input, internal analog temperature sensor. May vary depending on other interfaces used.
<b>Digital Outputs</b>	Two open collectors 500mA to GND. Open collector 500mill to VCC for DashCam.
<b>Starter Killer</b>	Command can be sent OTA to kill vehicle starter in case of theft.
<b>Geofence mode of operation</b>	auto alarm with GPS location when the unit moves in and out of a predetermined zone

## RF COMMUNICATION

<b>Radio Frequency</b>	2.4GHz
<b>Range</b>	Around 150 ft / 50m line of sight. Actual range may vary depending on RF interference, building materials, and physical obstacles
<b>Bluetooth</b>	Bluetooth for ELD tablet communication
<b>RF Protocol</b>	Bluetooth for IoT Tags - iBeacon or Eddystone (TLM) or custom. Proprietary RFLink Tags

## FUNCTIONAL SPECIFICATIONS (Partial)

- Send GPS location every X seconds/mins and/or every Y miles/km or any combination between time and distance based on speed.
- Idle transmission - when the vehicle is idle (stopped) for a predetermined time period, the unit can switch to transmit in "idle mode," for example every 4 hours instead of every minute while moving
- Event logs - Events such as engine on/off, vibration alarm, door open/close are sent with a time stamp of the event and may be configured remotely and sent with or without the exact GPS location taken at the time of the event
- Driver identification - Authorized driver ID's for the specific vehicle are downloaded to the unit OTA and only the driver that has the matching Dallas key ID is authorized to start the vehicle, and the driver ID is sent to the control center database.
- Firmware download via USB or OTA (Over the Air)
- Configurable via USB or OTA
- OTA diagnostic tools

## POWER

<b>Power Source</b>	6DC-32VDC tethered to vehicle battery or portable with cigarette plug connector
<b>Transmit Mode</b>	200mA at 12VDC
<b>Running Mode</b>	70mA at 12VDC
<b>Standby Mode</b>	20mA at 12VDC (when waiting for external event with GPS on)
<b>Sleep Mode</b>	10uA
<b>Battery</b>	Back up 1000mAh battery for tamper detection

## ENCLOSURE

<b>Material</b>	Flame retardant ABS/PC Flame rating UL94V-0
<b>Dimensions</b>	3.36" x 2" x 1" LWD (85mm x 52mm x 25.4mm) Additional 0.4" (10mm) on each side for mounting brackets • Weight: 3.17 oz.(94gr) without batteries
<b>Operating Temperature</b>	-40° to 176° F (-40° to 80° C)
<b>Storage Temperature</b>	-40° to 221° F (-40° to 105° C)
<b>Shock / Vibration / Mechanical</b>	Meets or exceeds EIA standard RS-316B 3G (operating), 20G (non operating) XYZ 3-directions. Meets SAE J1455 (non operating) XYZ 3directions.
<b>Flame Rating</b>	UL94V-0

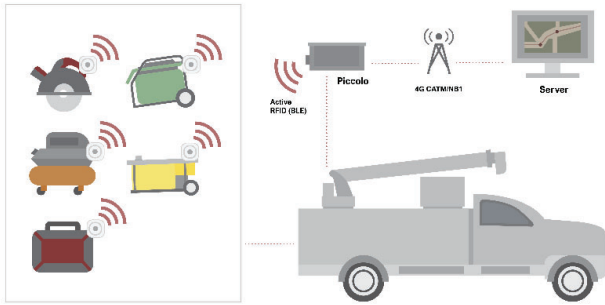
## OPTIONAL FEATURES

<b>CAN Bus Interface</b>	Supports OBDII, J1939 and J1708, RS232
<b>Wireless Sensors</b>	IoT solutions for temperature monitoring, asset tracking, etc
<b>3D Accelerometer</b>	For tilt detection and extreme driving reporting
<b>Driver ID</b>	Authorized list of Driver ID's may be downloaded to the unit OTA so only specific drivers can start the vehicle.
<b>Wired Digital Temperature Sensors</b>	Supports up to 6 wired digital sensors
<b>Back up battery</b>	1000mAh rechargeable lithium back up battery

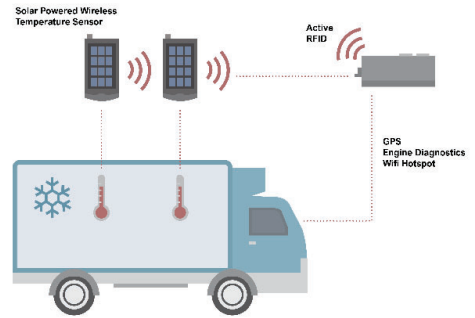
- Vibration sensor sensitivity OTA configurable
- Tilt detection and driver behavior violations sensitivity configurable OTA
- Store and Forward - The unit can store up to 5000 events when out of cellular coverage then send them automatically when back in cellular coverage
- Tow detection - The unit detects when the vehicle is moving while the ignition is off
- Battery power value is sent automatically OTA to the control center database with every GPS data
- Battery saving mode - auto switch to deep sleep mode when engine is turned off and auto wake up when engine is turned on or on vibration (this feature does not require back up battery)
- OTA programmable via SMS
- Sends cell based location in addition to GPS coordinates
- Accurate driven distance
- External accessible SIM card holder with security lock

# ENDLESS IOT APPLICATIONS

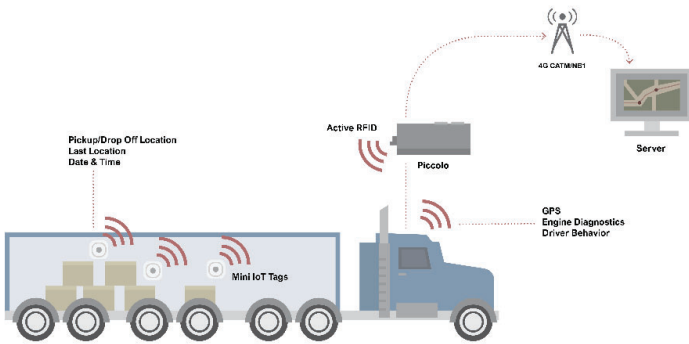
## INVENTORY, TOOL & ASSET MANAGEMENT



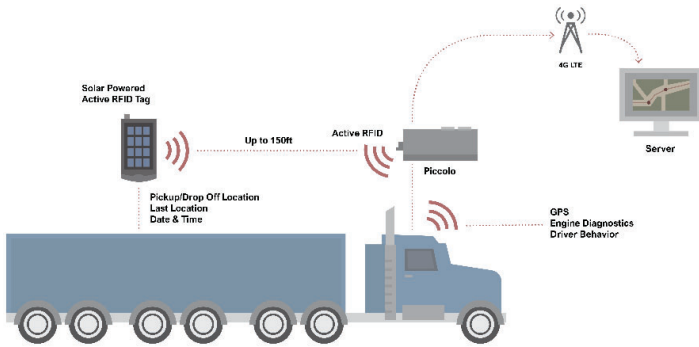
## COLD CHAIN



## SHIPMENT TRACKING



## TRAILER TRACKING



## STUDENT TRANSPORTATION AND CAMPUS MANAGEMENT

