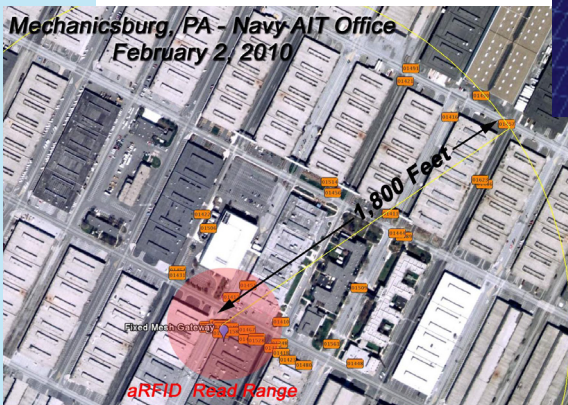


SECURE, REAL-TIME ASSET TRACKING & MONITORING



(above) RSAE Labs' MAT is demonstrated at Mechanicsburg, PA for the Navy AIT Office showing how the range is only limited by the distance between the tags unlike active RFID.

MESH ASSET TAG (RSU-3 SERIES)

NEXT GENERATION WIRELESS MESH TECHNOLOGY

Track and Monitor Your Assets Without Fixed Infrastructure

To meet the challenges of increasingly complex global supply chains, defense and commercial organizations require smarter technologies to effectively track and manage cargo on land or at sea. RSAE Labs offers an innovative, affordable solution to deliver immediate worldwide reporting on the location, condition and security status of any asset.

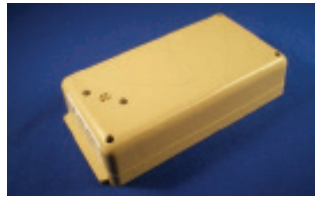
Developed by RSAE Labs for the U.S. DoD, the Mesh Asset Tag (MAT) employs mist® wireless mesh network for logistics applications. The solution is a combination of technologies, devices and services using a mist® mesh network protocol optimized for ad hoc configuration, security and ultra-low power.

RSAE Labs mist® mesh uses a network topology in which the tags talk to each other. This allows for continuous connections and dynamic reconfiguration around broken or blocked paths by "hopping" from tag to tag until the information reaches a Fixed Mesh Gateway (FMG) or a Mobile Mesh Gateway (MMG).

All data is sent encrypted to the RSAE Labs Device Management Center (DMC™), where it is authenticated, decrypted and processed. Events and customized reports are made available to authorized customers via secure web applications, API, XML data feed, SMS text message and e-mail.



Choke Point Transponder mist® Mesh Device RSU-3 Series



Physical Characteristics

- Dimensions 148 x 76 x 33 mm
5.8" x 3.0" x 1.3"
- Weight 0.26 kg (9.5 oz)
- Color Beige
- Connector None

Environmental

- Temperature -40 C to +85 C
- Humidity 100% @ 40 C
- Vibration SAE J1455 2006
6 G RMS all axis
- Shock (survival) 1 meter drop 6-sided
- Ingress Protection Rating IP65/67 (Lite, Ultra-Lite)
IP67 (w/humidity)(Full)
IP65/67 (w/o humidity)(Full)

Mesh Radio

- Radio Standard 802.15.4 Phy only
- Transmit 2405 MHz – 2480 MHz
- Receive 2405 MHz – 2480 MHz
- EIRP 1.27 mW
- Sensitivity -98 dBm
- Modulation DSSS
- DSSS Chip Rate 2 Mchips/sec
- Data Rate 250 Kbps
- Channels 16
- Channel Bandwidth 3 MHz
- Range
 - Device-Device 200 m (90° to mount)
 - Device-Device 100 m (±70°)
 - Device-Device 20 m (long axis)

GPS (available on Full & Lite models only)

- Receive 1575.42 MHz
- Channels 50
- Sensitivity -138 dBm (cold start)
- Time to First Fix (typical)
 - Cold Start 36 sec
 - Warm Start 36 sec
 - Aided Start 4 sec
- Accuracy (SA Off)
 - Position (CEP, 2D) <5.0 m (unobstructed)

Power (Internal Battery Only)

- Average Current @3.5V 160uA
- Battery Type Lithium-thionyl Chloride
LS-17500 or equivalent
- Battery Quantity 4 ea
- Battery Life 4yr @ slow mesh

Sensors

Specifications	Ultra Lite	Lite	Full
Temperature +/-10C	X	X	
Temperature +/-2.5C			X
GPS		Optional	X
Motion		X	X
Shock		X	X
Acceleration		X	X
Humidity			X
Light			X
Door			X
Magnet	X	X	X

Indicators

- LED Red/Green/Orange
- Buzzer 2.3 KHz

Functional

- mist® Mesh Network Full routing node
4 network speeds
- Encryption AES-128/CCM
- Data Storage 1 Mbyte
- Reporting Timed, events, network
join, motion start/stop
- Position Timed or event driven
- Upgrade Over the air updates

Certifications

- FCC Part 15B and 15C ID: YVDRSU3
- IC: 9336A-RSU3
- CE
 - ETSI EN 300 328 (Emissions)
 - ETSI EN 301 489-1 (Immunity)
- SAE J1455 2006
- IP-67/NEMA-4
- HERO
- HERF
- HERP