Compulab WILD is the 1st AP supporting Android Wi-Fi RTT Indoor Location

Yokneam, Israel 4-Sep-2018 – Compulab is introducing Wi-Fi Indoor Location Device (WILD), the first Wi-Fi RTT access-point that enables Wi-Fi indoor location for Android 9 Pie smartphones. Wi-Fi RTT provides unprecedented location accuracy of 1-2 meters for Android smartphones or under 0.5m for WILD IoT.

About Wi-Fi RTT

Wi-Fi RTT enables real-time accurate indoor location which has countless uses in retail, health care, transportation, logistics, manufacturing, smart buildings, entertainment and many more segments.

A user can benefit from services like finding a product in a department store, navigating to a booth in a tradeshow, be directed back to a parked car and many others.

Wi-Fi RTT is designed with privacy in mind. The user has full control of whether, where and when to enable it, and does not have to associate with a Wi-Fi network or identify. In many cases anonymous indoor location can replace intrusive video-based tracking.

Property owners can utilize Wi-Fi RTT for location-based interaction with visitors to provide services like notifications and directions, suggesting a nearby product, offering assistance etc. Location data can prove valuable for generating accurate heatmaps and understanding patterns of visitor behavior on premises.

Wi-Fi RTT technology is included in Android 9 Pie and can be used commercially today. Owners of Android 9 Pie smartphones can start today using Wi-Fi RTT indoor location services in buildings having WILD access-points installed.

"Apparently, Wi-Fi RTT accurate indoor location is a killer application waiting to happen" said Irad Stavi, Chief Product Officer at Compulab. "Over a dozen well-known tech companies are currently developing using WILD, and many small companies find WILD affordable and easy to work with for their own development. When it's time for large scale deployment, the field-proven WILD hardware will work reliably in sites of up to thousands of access-points."

About WILD

Compulab Wi-Fi Indoor Location Device (WILD) is the 1st Wi-Fi RTT enabled access-point. WILD is based on fitlet2 miniature fanless IoT gateway (the same platform used for the popular MintBox Mini 2) which provides remarkable functionality.

WILD networking

- WILD includes Intel®Wireless-AC 8260 that provides Wi-Fi RTT functionality in co-existance with Wi-Fi SoftAP

- WILD has dual Gigabit Ethernet for traffic backhauling, remote management and routing. Optional 3rd GbE with PoE can also be used to power WILD

- 4G modem or a second Wi-Fi module can be installed inside WILD

WILD hardware

- WILD is a full-feature PC based on Quad-core Intel®Atom®x7-E3950 with up to 16 GB RAM, capable of running full-fledged Linux distributions

- Internal storage is 2.5" SSD / HDD, M.2 SATA SSD or eMMC

- Standard I/O includes dual-head display, 4 USB ports, audio and a serial port

- WILD accepts Compulab's Function and Connectivity Extension T-Card (FACET-Card). Several variants of FACET-Cards are available providing PoE, optical LAN, CANbus, extra USB ports, GPIOs and more

WILD software

- WILD runs the latest GNU/Linux Debian including KDE and standard package management

- Compulab provides utilities for remote management of WILD access-points

- WILD drivers and utilities are open-source

- Indoor location can be calculated by a WILD gateway, by the mobile device itself, by an on-premises server or by a cloud-service

WILD evaluation and development

- WILD works out-of-the-box. Once powered, WILD boots automatically and starts responding to ranging requests

- Evaluation normally starts with ranging from a WILD mobile device to a WILD access-point. WILD can change role from an access-point to a mobile device using a single command

- Compulab provides an open source Android application implementing ranging to WILD using Wi-Fi RTT API

WILD deployment

- WILD is robust with an all-metal die-cast housing, requires no maintenance thanks to fanless design, withstands wide temperature range and is diminutive at 11 x 8.5 x 3.5 cm. WILD is UL listed and ships with 5 year warranty

- WILD is low-power and has multiple power options - 9V - 36V DC input, optional mini-UPS or power-over-Ethernet

- Wi-Fi RTT access-points can be installed sparsely, as far as 30 meter apart. WILD can be mounted with a VESA bracket or onto a DIN Rail

- A key challenge in deploying Wi-Fi RTT access-points is obtaining their accurate positions which are required for location calculation by multilateration. Compulab is developing utilities for automated acquisition of WILD positions using Wi-Fi RTT. This can greatly reduce deployment cost and time

- Thanks to having standard PC connectivity and running full operating system, deployed WILD access-points can run additional tasks in parallel like digital signage, surveillance, access control, building automation and telemetrics

- For large scale projects Compulab can offer hardware and software adaptation, customization and design services

WILD IoT provides sub-meter accuracy

Accurate real-time indoor location is beneficial to many IoT applications, including mobile robots, autonomous vehicles, mobile assets and computerized hand-held devices. WILD IoT makes a capable Wi-Fi RTT ready platform that can be easily integrated into such systems, making them location-aware.

WILD IoT provides exceptional real-time location accuracy below 0.5m in three dimensions.

WILD IoT incorporates the same hardware of a WILD access-point and is using the same software, making the devices interchangeable.

WILD Specifications

CPU: Quad-core Intel®Atom®x7-E3950 | Quad-core Intel®Celeron®Processor J3455 | Dual-core Intel®Atom®x5-E3930
RAM: Up to 16 GB, 1x SO-DIMM 204-pin DDR3L Non-ECC DDR3L-1866 (1.35V)
Storage: SATA M.2 M-key 2260 (SATA3 6 Gbps) | 2.5" SSD / HDD (SATA3 6 Gbps) | eMMC
- micro SD socket is also available (bootable)
- External USB storage is supported (bootable)

Wireless LAN: Intel 8260AC 802.11ac (802.11mc FTM enabled) + Bluetooth 4.2 (2x RP-SMA antennas)
LAN: 2x Gbit Ethernet Intel i211
Display: Dual head mini DP 1.2 4K @ 60 Hz + HDMI 1.4 4K @ 30 Hz
USB: 2x USB 3.0 + 2x USB 2.0
Serial port: RS232
Audio: Stereo line-out | Stereo line-in / mic | HDMI & DP audio
Additional features: Auto-on | Indicator LEDs | Removable RTC battery | Kensington lock | Power plug twist lock | optional TPM
Extensions: Compulab Function And Connectivity Extension T-Card (FACET Card)
- PoE device
- 4G modem
- 2nd Wi-Fi module
- CANbus + RS485 + GPIO
- GbE optical LAN

BIOS: AMI Aptio V
- Supports PXE boot | Wake-on-LAN | Wake-on-timer

Operating system: Debian GNU/Linux
Power: Input voltage range 7V − 20V (9V - 36V optional), power consumption 5W − 15W
Temperature & humidity: Up to -40℃ to 85℃, Relative humidity 5% − 95% non-condensing
Dimensions & weight: 112 mm X 84 mm X 34 mm, 350 gram
Housing & cooling: All metal housing
- Aluminium | zinc die cast parts
- Fanless convection cooling through the housing, no vents
- User serviceable

Price and availability

WILD is available now built-to-order with price starting from $175 for a barebone unit ordered in volume.

For evaluation and development Compulab recommends ordering five or more WILD with Celeron J3455, 4 GB RAM and 16 GB eMMC, available off-the-shelf for $238 each.

For more information

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