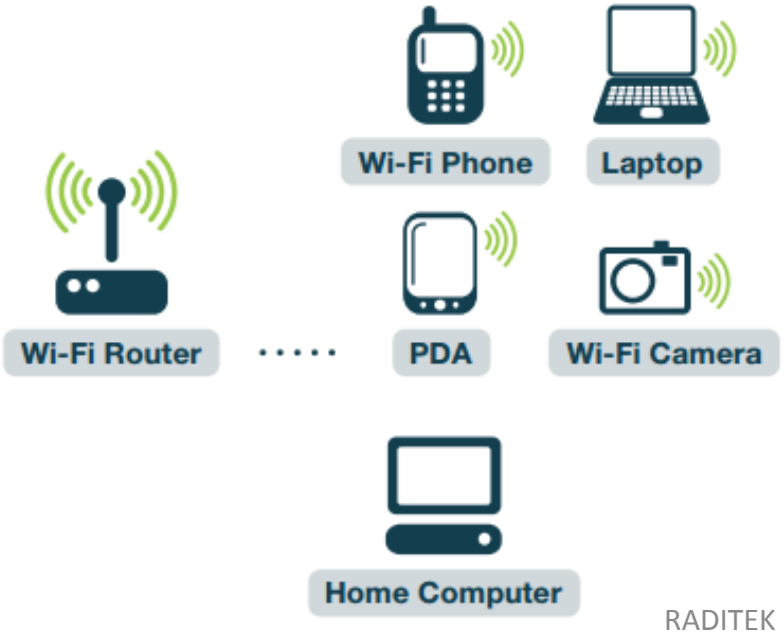
RADLINK 2000 Series

Terrestrial WIFI Communications Examples



Raditek Inc

Raditek ISM WIFI products

- **Raditek has the most advanced products for satellite, point to point (licensed and unlicensed) and Point to multi-point.**
- **RADLINK 2000 NLOS/MIMO based WIFI is the most advanced WIFI solution**
- **Allowing long “daisy chain” repeater paths with very low latency or reduction in data rate.**
- **NLOS (Non Line Of Sight) allows easy and reliable installation.**

Radlink 2000
IMS/Non licensed band

Features:

- **MIMO OFDM Outdoor Radio**
- **IP-68 rating, Water & Dust Resistant**
- **Operates in the 2.4GHz and 5GHz ISM Band**
- **802.11a/b/g/n Multi-Hop Repeater and MIMO OFDM Radio**
- **Integrated Multi-Radio Interface**
- **Fast Data Switching Technology**
- **Low Throughput data drop (100 Mbps @ 10 hops)**
- **Short Latency increased (15 ms @ 10 hops)**
- **High Efficiency in Multi-hops Repeating**
- **Real Aggregate TCP Throughput 320Mbps @ 4×4 & 6×6 MIMO**
- **IEC61000-4-5 Surge Protection**

RADLINK 2000

- The RADITEK, RADLINK 2000 series is an enterprise and carrier-grade 802.11N Outdoor Wireless radio, which offers customers a powerful MIMO-OFDM solution in both 2.4GHz and 5GHz ISM bands.
- The Multi-Hop RADLINK 2000 Series Repeater offers a great solution for PTP / PTMP/ Hot zone applications by integrated multi-radios interfaces (up to 3 x Radio modules) and Fast Data Switching technology
- This series is the most ideal solution for Service Providers to deliver carrier-grade wireless services for **campus, hospitality, healthcare, warehousing and wider metropolitan area deployments**.
- IN NLOS (Non Line of Sight) environments, shows incredible efficiency with multi-hop repeating, with a true throughput at 100Mbps and with only 15 ms total latency after 10 extended hops.
- It is much improved compared to the **traditional Wi-fi** that typically drops 50% of its throughput for each extended hop and is unable to get a reply from a remote device after 5 or 6 hops, having too high latency.

RADLINK 2000

Product Highlights

- Integrated Multi-radio interfaces on RADLINK 2000 Series radio interfaces are integrated by Fast Data Switching technology from RADITEK inc. Inside the platform, there are 3 optional models: RADLINK 2001 (1 radio) / RADLINK 2002 (2 radios) / RADLINK 2003 (3 radios) and each radio interface can be configured and ran independently
- High efficiency transmission during multi-hop repeating: The backbone throughput will remain at a high level, even after several hops. (eg 100 Mbps @ 10 hops), and the total latency is under 15 ms (@ 10 hops).
- Flexible wireless backbone deployment options In addition to the **Fast data switching** and integrated multi-radio interfaces, uses high output power **MIMO-OFDM technology.**
- Secure and efficient client connectivity: The QoS (Quality of Service) configuration provides flexible management of wireless connectivity.
- Easily integrated with the central RADIUS server and data encryption (WEP/WPA/WPA2) to provide secure wireless connectivity for each client device.

Applications – Bridge & Access Point Multi-Functions

MIMO OFDM / Multi-Hops Feature

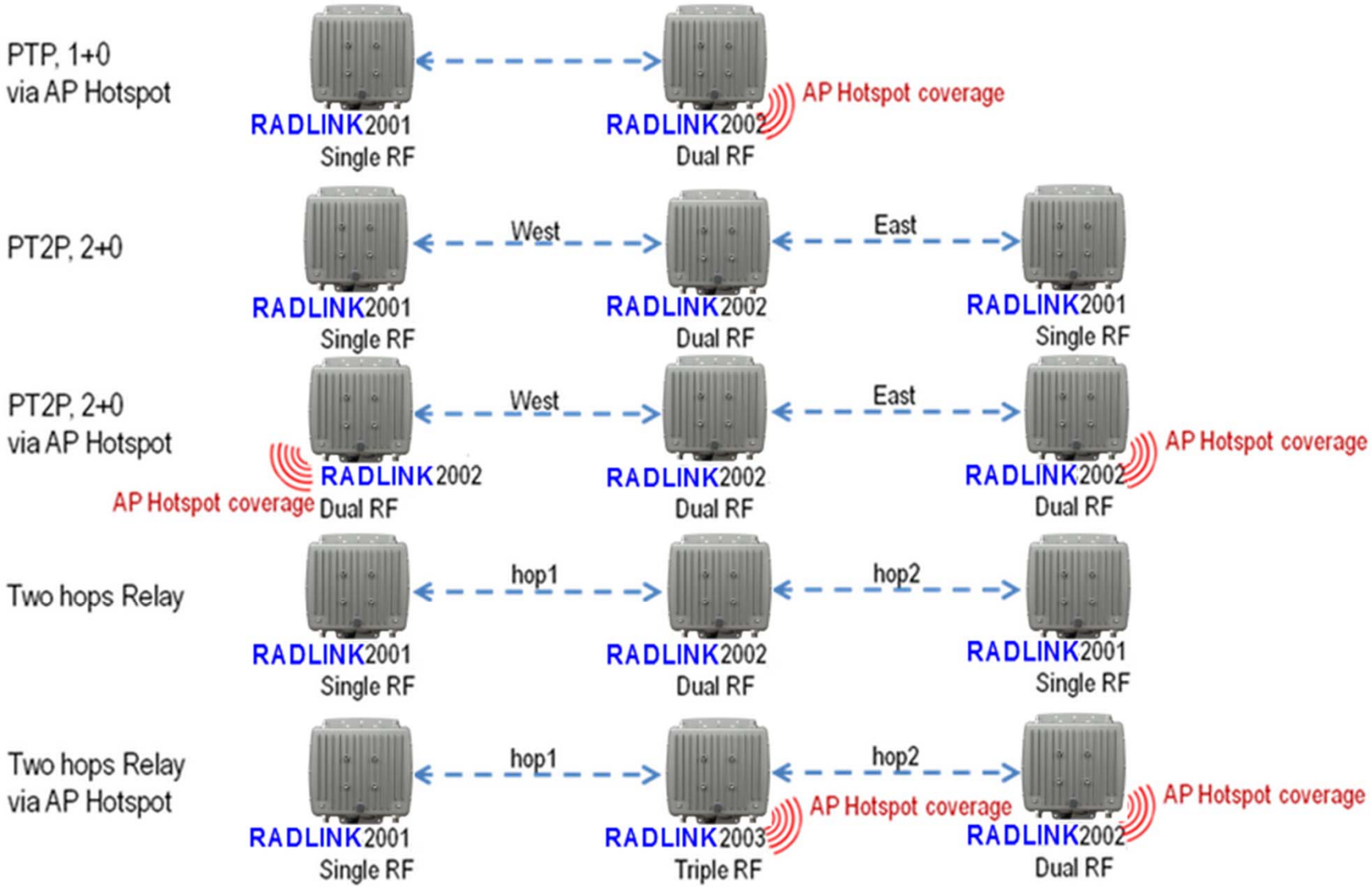
-Low Loss Bandwidth Throughput

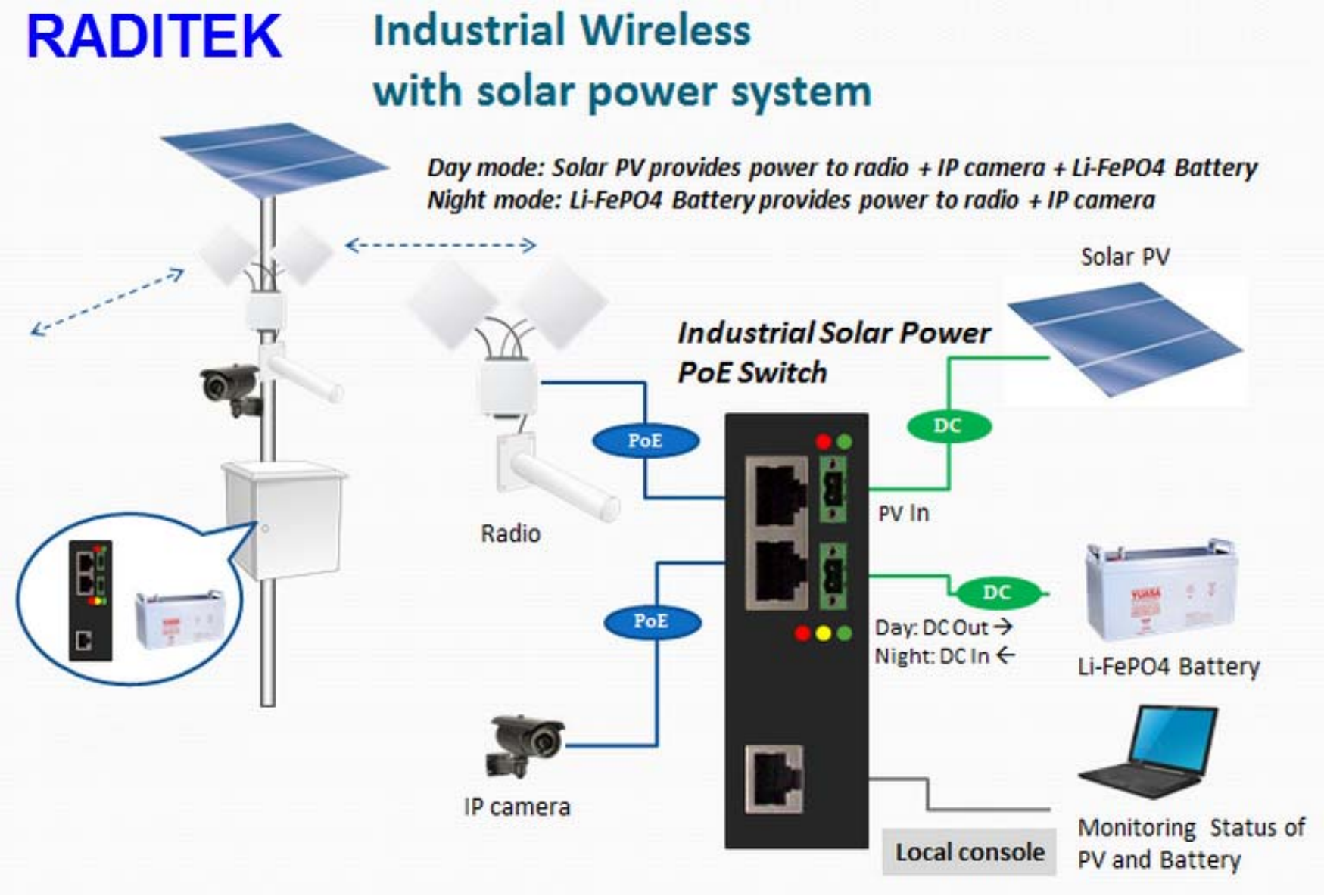
-Hop 1 160 Mbps

-Hop 2 152 – 154 Mbps -Hop 3 144 – 150 Mbps -Hop 4 136 – 145 Mbps -Hop 5 128 – 136 Mbps

-Hops 6th after, the bandwidth throughput will not reduce again, less than 10ms response time delay.

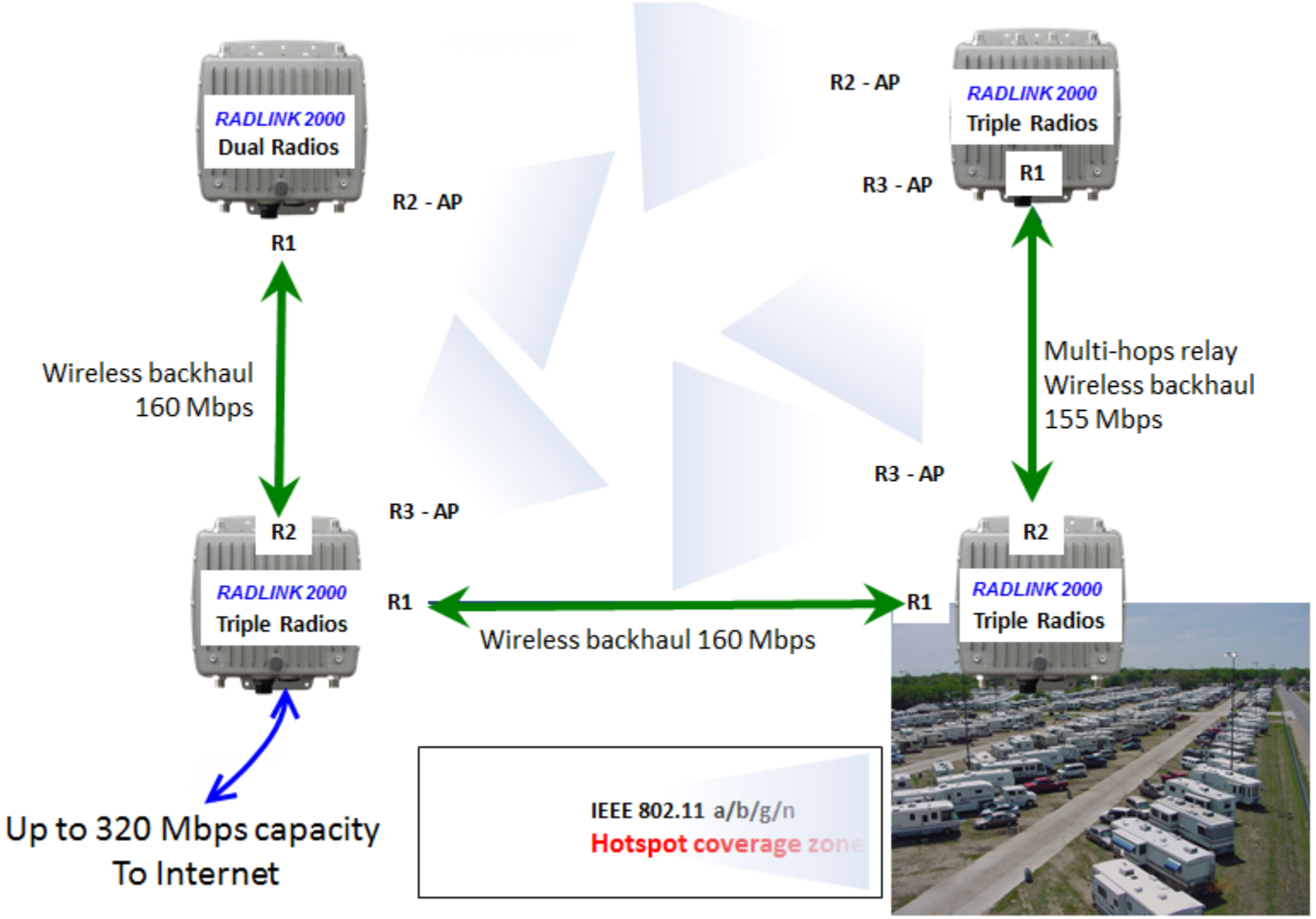
RADLINK 2000 examples




RADITEK
Industrial Wireless
with solar power system
Day mode: Solar PV provides power to radio + IP camera + Li-FePO4 Battery
Night mode: Li-FePO4 Battery provides power to radio + IP camera
Solar PV
Industrial Solar Power
PoE Switch
DC
PoE
PV In
Radio
DC
PoE
Day: DC Out →
Night: DC In ←
Li-FePO4 Battery
IP camera
Local console
Monitoring Status of
PV and Battery

Raditek has developed, installed and field proven a total GREEN solution for RADLINK 2000 remote sites Consisting of:
A RADLINK 2000 2.4GHz Radio Access point and solar system with solar panel, 24 hour battery backup DC regulator and 9m concrete pole to house the equipment for a complete turn-key deployment.
The solar system powers the CPE, access point and charges the batteries via the regulator keeping the system working day and night without power interruptions.
This solution is prepackaged and tested at the factory to verify the proper performance of all components prior of shipment, expediting the field deployment.

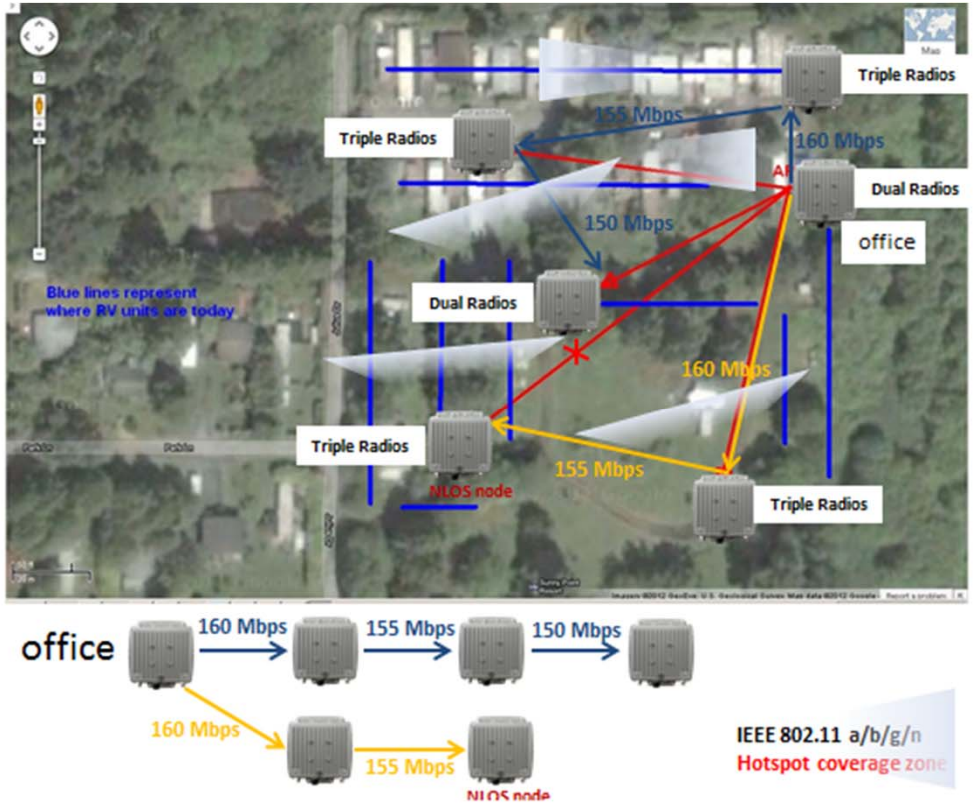
Multi-hops Repeater & Hotspot coverage for RV PARK



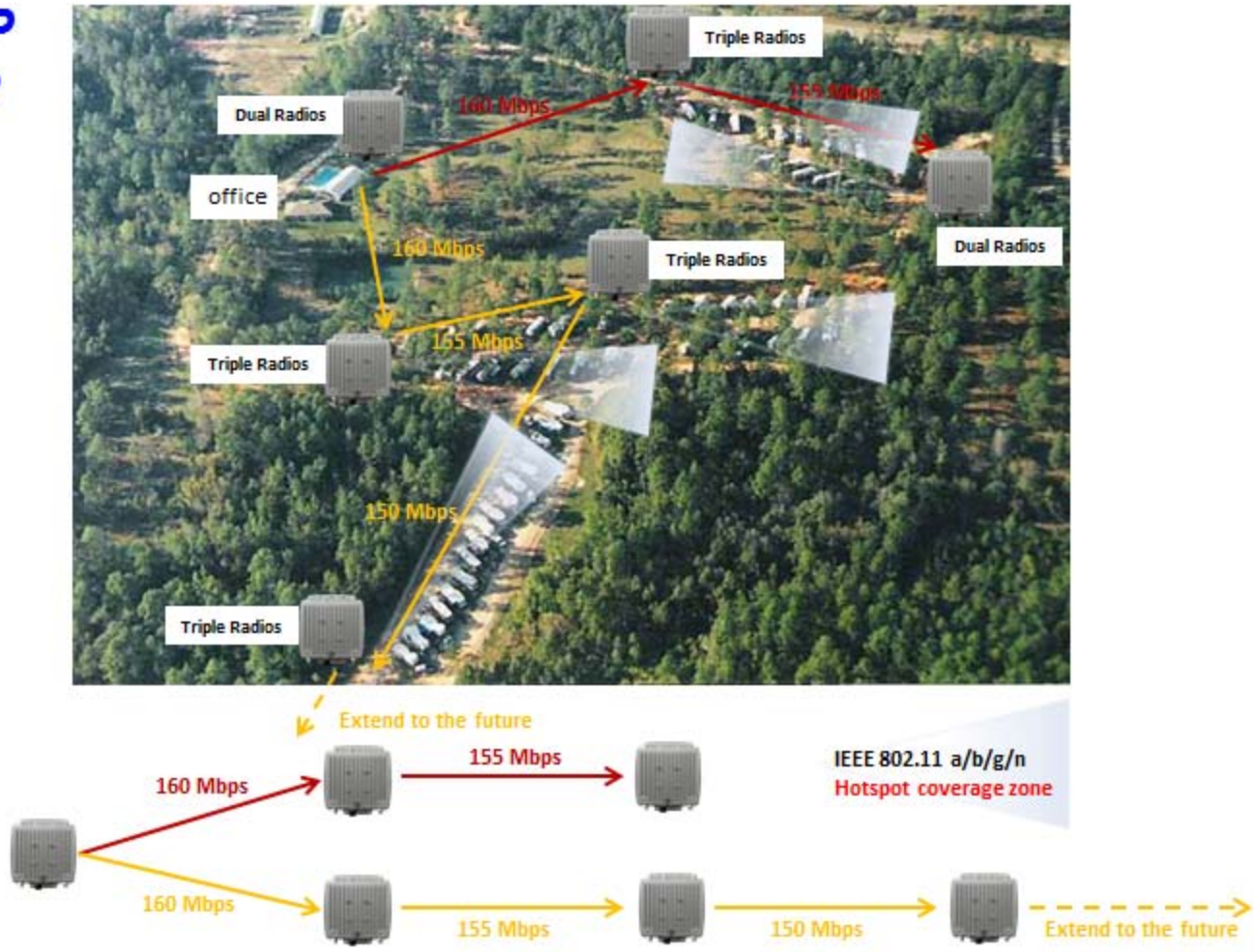
Traditional Installation Problems
for RV PARK application

Traditional problems with (other) wireless installations include:

Low TCP/IP (Transmit Control Protocol) throughput to SHARE with remote STAs (STAtion)
So, (for example) each Hotspot zone gets a lower throughput service. (for example: each STA accesses only160Mbps/3 for 802.11g/n or 23Mbps/3 for 802.11b/g)
Packets collide at each remote STA.
Near-Far & hidden nodes problems between STAs and AP (Access Points)
Cannot provide NLOS area Hotspot service



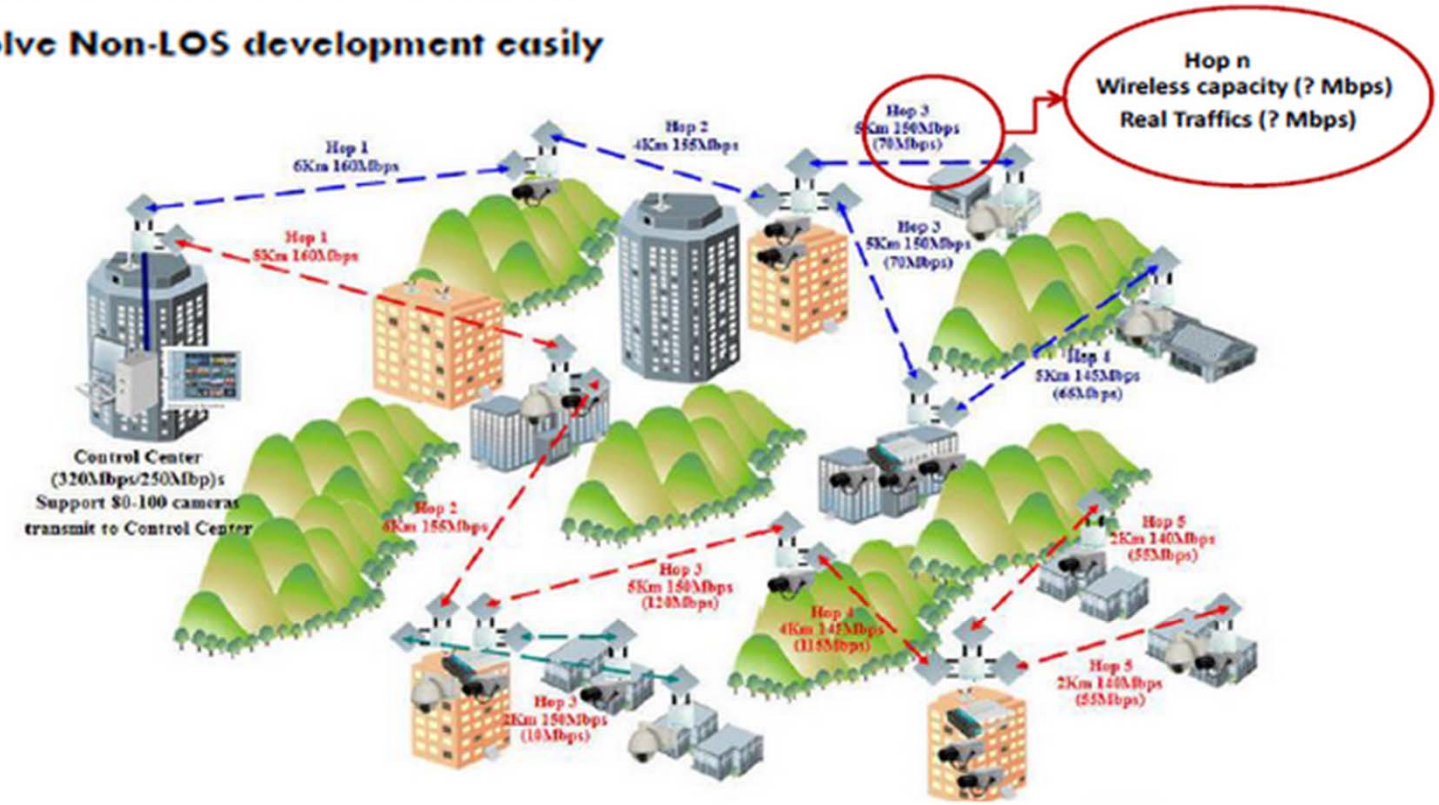
MULTI-HOP REPEATER



900MHz, 2.3 / 2.4 / 4.9/5GHz PTP / PTMP Surveillance Application

Applications – Surveillance:

To solve Non-LOS development easily



1, Multi-Hops >= 4 hops up to 140 Mbps throughout and latency < = 10ms,

2, To solve Non-LOS deployment issue easily

3, To extend wireless coverage quickly

Please see RADITK's other products including:

- Licensed band point to point radios (to 38GHz band)
- Advanced Satellite network products (Modems, BUCs, Antennas etc)
- Internet on the move (IOTM) antennas at Ku and Ka bands
- Antennas with installation to 15m aperture
- Antenna controllers and beacon trackers
- BUCs (Block Up Converters) to 1.2KWatts (Rated power C, Ku bands)
- To 700W Ka band (1:2 protected)
- DVB-S2 (with latest extensions) modulators and demodulators, IRDs
- TV (DVB-T1/T2/LITE/PAL) and FM Radio transmitters with power amplifiers to several KWatts.
- Tier 2 DMR (UHF and UHF) handsets, mobile units and repeaters
- RF/Microwave components:
- Power amplifiers to 18GHz, cw and pulsed to 10KWatts.
- Isolators, Circulators: Waveguide to over 100GHz, Microstrip to 60GHz
- Oscillators: synthesizers, PLDRO to 38GHz.
- Filters, couplers, combiners