



# Keyhole Radio™

RF planning server

<https://cloudrf.com>

## Open architecture

Cloud-RF™ evolved around an API-first principle which champions open file formats for reference data, and OpenAPI specifications.

**Add RF as a service** to your existing map(s) or use one of our turnkey interfaces.

## Cross platform

Use the service from any standards based HTML5 web client on your network. Phones, tablets and laptops are all supported. The system can also be driven directly from our **unique Google Earth™ layer**.

## BYO & DIY data

We sell reference data but that's not our model. We prefer to **support open standard geospatial formats** and antenna patterns so customers can add their own data.

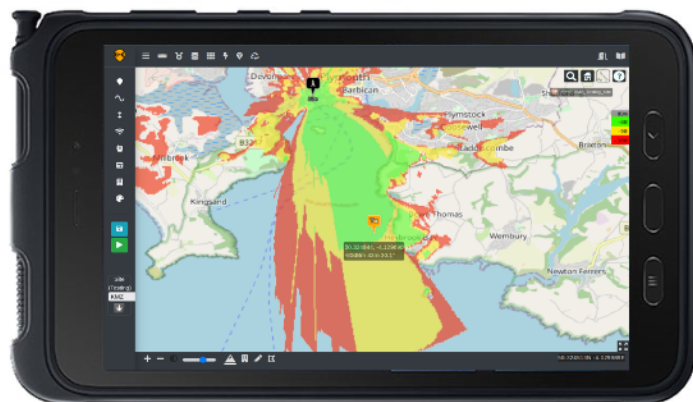
The service can model obstacles at **2 metre resolution** with adjustable attenuation for accurate urban operations using LiDAR and BYO / DIY surface clutter.

## Scalable and accessible radio mapping for your network.

Keyhole Radio™ brings the versatility and power of the popular Cloud-RF™ service to **your network**.

The product is the result of 10 years of R&D, optimisation and improvements in it's public form as the Cloud-RF™ online service **for radio operators**, not scientists.

The software stack has been tested, 24/7, worldwide, by thousands of operational radio users, students and engineers which has matured it to a field proven, cited, service.



For integrators the powerful API offers a myriad of possibilities from **automated network modelling**, dynamic route analysis, modelling links and RF footprints in near real time.



## Interfaces

- Cross-platform 3D web interface
- Google Earth™ interface
- OpenAPI 2.0 specification REST API for integration

## Inputs

- Frequencies: 2MHz to 100GHz
- RF power: 1mW to 1MW
- Feeder loss options
- Co-ordinates: DD,DMS,MGRS
- Height ceiling: 60,000 ft
- Antenna templates
- Antenna azimuth, tilt, gain
- Custom antenna patterns
- Tx & Rx gains in dBi
- Terrain and climate contexts
- Clutter attenuation variables

## Outputs

- dB (PL), dB (S/N), dBm, dBμV/m
- Bit Error Rate & Modulation
- Receiver threshold
- Min resolution: 2m/6ft
- Custom colour schemas
- Max range: 300km / 180Mi
- Profile & Fresnel zone
- Area efficiency & %

## Models

### General purpose

- ITM / Longley Rice
- ITU-R P.525
- ITU-R P.529
- Line-of-sight
- Plane Earth Loss

### Cellular

- Okumura-Hata
- COST231-Hata
- Egli VHF/UHF

### Microwave

- Stanford Interim (SUI)

## Profiles

- Rural / Optimistic
- Suburban / Average
- Urban / Conservative

## Multipath

- Knife edge diffraction

## Clutter

- 9 classes for trees, timber, brick, concrete and metal
- Manual density override

## Security

- AES-256 disk encryption
- Role based accounts
- TLS 1.2 transport encryption
- **Internet not required**

## Standards

- HTML5, KML, KMZ, CoT, JSON, GeoJSON, PNG, HTTP, ISO-8601
- WMS, EPSG:4326, EPSG:3857, GeoTIFF, SHP

## Host requirements

- **VMware hypervisor**
- 4 x 2.4GHz CPU
- 8GB Memory
- Minimum 200GB disk space

## Options

- WMS OSM tile server
- Global LiDAR & buildings
- Pre-defined radio templates

