ReadMe:

App Overview

This application is just to get information of worldwide hams community like Callsign, Name, Handle, and geographically location, so that Hams know each other and can test their antennas and other technical experiments as this app gives bearing, distance between two hams and also elevation of the QTH, line–Of-Sight obstruction, etc

This app gives Prediction according to season using the latest updated data from NoAA satellites collecting data like solar wind K-index ,A- index, Aurora Value, etc. Prediction considering the curvature of earth, distance, Fresnel zone and terrain details between two QTH. Predcition like Ground reflection effects, D-Layer absorption estimates, Temperature inversion effects, Tropospheric ducting probability, band wise condition (day to day as well as 27 days prediction) etc are displays prediction. Band wise real-time forecast and prediction is also display fetching live data from NoAA.

What this App collects

This allows profile providing app users to create by their Name, Email, Callsign, Handle, Location Name (Qth), VHF/UHF antenna Height, Contact Number, RadioId and Profile Photo (choose from gallery or take photo optional). The app also automatically fetches Location Coordinates (latitude and longitude) with user permission once.

Key Features

1. User Profile Creation:

- All data(except contact number and profile photo) are compulsory as those are the heart of the App
- Fill in your details like their Name, Email, Callsign, Handle, Location Name (Qth), VHF/UHF antenna Height, Contact Number(optional), RadioId (if any) during signup.
- o Choose a profile photo(optional) from the gallery or take a new one using the camera.
- App fetches location coordinates (latitude and longitude) automatically in background with one-time location permission.

2. Publicly Visible Information:

 Only Name, Callsign, Handle, Elevation, RadioId, Grid Locator, CQ Zone, ITU Zone, ISO2 Code & Flag of country and Location Name are visible to other users of this app.

3. Private Information:

 Email, Password, Contact Number, and Location Coordinates, never shared publicly (even this app users).

4. **Permissions**:

o **Internet Permission:** As data of this app stores in remote secure server, internet is required to get and save data.

- Location Permission: Required once to fetch coordinates for mapping and distance measurement.
- o Camera Permission: Required once to take a profile photo during signup.
- Media Gallery Permission: Required once to choose a profile photo from the gallery during signup.

5. Data Security:

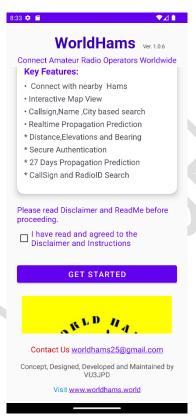
- o All user data are securely stored on a secure cloud server.
- Sensitive information like password is encrypted. Email, Contact number, and location coordinates are not accessible to Users.
- Data transition from user device to server are encrypted in transit.

6. Location-Based Features:

Location coordinates are used to:

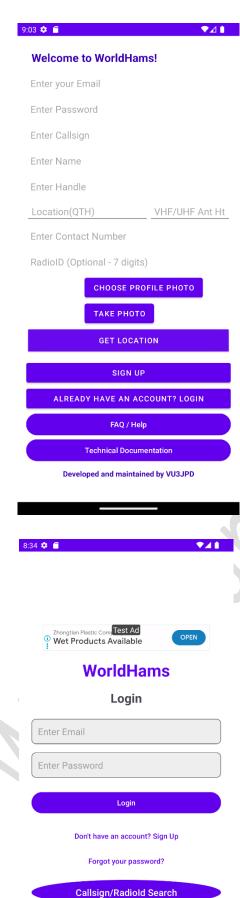
- Show user markers on a map.
- Measure distances between users.
- Elevation of QTH
- Gives Bearing (Angle with North-South clockwise) of Line of sight of two QTH
- Calculate Fresnel Zone Radius ¹, Radio Horizon ²

Dive into App:



Open the WorlHams app pressing app icon Splash screen will be open ,there you can find features of this app ,also find links to open files "Disclaimer" and "Readme" .There is link of website www.worldhams.world where all documents like "Disclaimer", ReadMe", "Technical Doc", "privacy Policy" and 'Data deletion" are kept. Users are advised to read disclaimer, privacy policy before proceed to sign up. Disclaimer and privacy policy described what data this app collects, which permission needed and which data will be shared with other users and which not. How and where data is stored is also narrated in these two files. Readme is a guide to signup and steps how to use this app . email address to contact app developer is also in this screen. This screen is scrollable

- 1. Signup:
- a) SignUp only from your QTH exclusively
- b) Open SignUp Screen.(link on login page)
- c) Wait for 5 second until app ask for your location permission. Choose precise location (advisable). Wait until it fetch precise location coordinates and elevation display at bottom part of app screen.
- d) Fill in your details (valid Email, Password, Name, Callsign, Handle, Location Name, Contact Number and VHF/UHF antenna Height in mt., RadioId.
- e) After typing Callsign and Name ,at the bottom some message will be display telling you that the callsign and name are matched or not. As most of armature radio operators have their details in qrz.com ,app callsign and name through qrz.com. If all ok , dialog box will be popup asking you to confirm that information fetched is yours and correct. If you click ,it save in DB as "verified".



27 Day Propagation Forecast

- f) Choose or take a profile photo.(optional)
- g) Grant location permission to fetch coordinates automatically pressing button **Location** (If location is not fetched earlier or forgot to allow location permission)
- h) When pressing Signup, notification message will be display informing you to verify your email to complete the signup process.
- i) Minimise the App and go to your email inbox (or spam) and find email from "Worldham". You will find a link to verify email. It is just to ensure that nobody create account with fake email address as the app checks if the email is fake.
- j) After verification, again go to Signup Page which was minimised. According to your internet connection speed, app will sense verification received from server and **SignUP** button may Turn its Label Text like "verify email" or "complete Your Registration". After email verification, press button either "SignUP", "Verify email" or "complete Your registration" .If registration is completed, a message will be display 'registration competed" then it will redirect you to another screen (Login screen)
- k) If you have already done signup (registered user), you can redirect from Signup to Login screen using Redirect Login button and vice versa.
- 2. Login: <<<=
- a) After Registration completion, do logon using email and password which were used at the time of registration (Signup)
- b) If you have not registered and came on this page accidently you can register using signup link shown on this page
- c) After successful login, message will be displayed asking to add optional details if you wish to add (see below image) or it will be redirected to another screen that show list of registered(in this app) Hams.
- d) On this screen, you find links of two useful feature. One is Callsign/Radioid Searching and another is 27 days HF Propagation prediction.
- e) Details of both the features kept below.



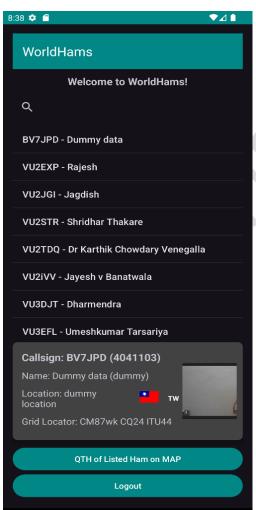
3. List of Registered Hams (List View\Card View)

- a) After successful logon, user will be redirected to this page, where you can see list of users(Hams) who have registered, his/her CallSign, Name. List is scrollable.
- b) There is also a search bar at top, where you can filter typing callsign, name or city name. On list, if user press one of Ham from the list, a card view can be seen where you can see Callsign, Name, Handle, City, RadioId, Grid Locator, CQ Zone, ITU Zone, ISO2 Code & Flag of the country and photo of the user (Ham).
- c) If User wish to see all hams listed in map, he/she has to press "View Listed Hams on Map" where he\she will be

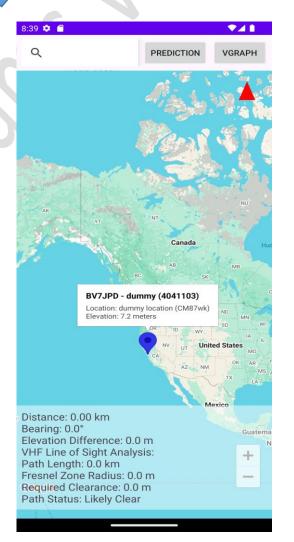
redirected to another page (Map View)

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List shows some dummy data just to display features. Read same for Map View below.



4. Map View (Very important section of this App)

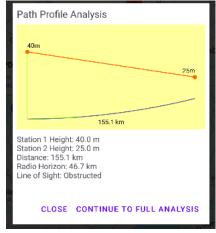




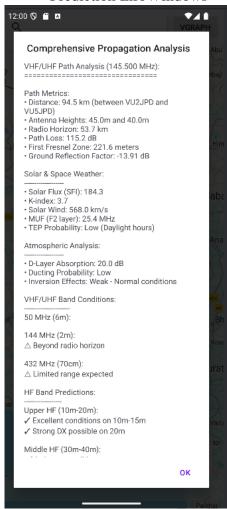
- d) Opening Note: List of hams and locations on map is using dummy data and just to display the features.
- e) Opening MapView, user can see locations of Hams across Globe like
- f) User have to adjust Map View, using zoom in-zoom out tool at bottom right to focus on his/her location or area interested.
- g) This map is very interactive, so , before use or clicking on map or any location, please read instruction carefully to get best ,as under.
- h) When user first press any location (**Red Marker**) on map, it will be considered as first marker (QTH of user). CallSign-Handle(RadioId), City (Grid Locator) and Elevation in mt. of that Station (QTH) can be seen and the marker will be turn in Light Green .Within few seconds, user have to (should) press another location marker for which He/She wish to measure distance and bearing. If you select same marker it will turn blue
- i) Just after second station(here location marker) is pressed a straight line will be drawn and info window will be open which will display distance between two stations, bearing (clock wise angle from north), elevation difference of both stations.VHF Line of Sight Analisys,

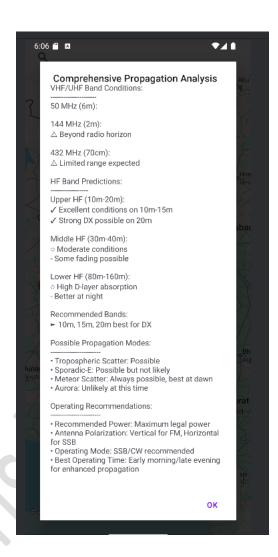
Fresnel Zone Radious¹, required Clearance³.

- j) App starts searching along line drawn (line of sight) to find whether any obstruction is there between two stations or not. Using Map View User can decide to set direction of directional antenna and can predict whether Line- of- Sight communication is possible or not.
 - There is Prediction section. When both stations selected and info window open to display above information, "Prediction" button will Visible at top right corner. VHF frequency 145.500 Mhz is considered. Another window will popup shows more information for radio wave propagation for current time and day.
- k) This enhanced version includes:
 - Solar wind speed,
 - Solar Flix(SFI),
 - K-Index, MUF(F2- Layer),
 - TEP Probability, Ground reflection effects
 - D-Layer absorption estimates
 - Temperature inversion effects
 - Tropospheric ducting probability
 - Trans-equatorial propagation (TEP) probability
 - Maximum Usable Frequency (MUF)



Prediction InfoWindows





1) **Detailed Band Analysis**:

- Separate sections for 6m, 2m, and 70cm
- Specific propagation modes probability
- Aurora possibilities

m) Operating Recommendations:

- Power levels
- Antenna polarization
- Operating modes
- Best times for operation

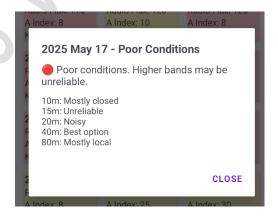
These features will be displayed in prediction section makes more realistic prediction. Band wise prediction also there. <u>All these prediction is make possible because this app fetching real-time latest data of NOAA satellites</u>. Note that this view is scrollable, so do not forget to scroll up.

5. HF Radio Wave Prapagation prediction for 27 days.

WorldHams `Propagation Forcast Good Moderate Poor		
2025 May 12 Radio Flux: 125 A Index: 8 Kp Index: 5	2025 May 13 Radio Flux: 120 A Index: 12 Kp Index: 4	2025 May 14 Radio Flux: 120 A Index: 10 Kp Index: 3
2025 May 15 Radio Flux: 115 A Index: 5 Kp Index: 2	2025 May 16 Radio Flux: 115 A Index: 5 Kp Index: 2	2025 May 17 Radio Flux: 115 A Index: 5 Kp Index: 2
2025 May 18 Radio Flux: 115 A Index: 8 Kp Index: 3	2025 May 19 Radio Flux: 120 A Index: 10 Kp Index: 4	2025 May 20 Radio Flux: 125 A Index: 8 Kp Index: 3
2025 May 21 Radio Flux: 125 A Index: 8 Kp Index: 3	2025 May 22 Radio Flux: 125 A Index: 6 Kp Index: 2	2025 May 23 Radio Flux: 130 A Index: 6 Kp Index: 2
2025 May 24 Radio Flux: 130 A Index: 6 Kp Index: 2	2025 May 25 Radio Flux: 130 A Index: 5 Kp Index: 2	2025 May 26 Radio Flux: 135 A Index: 5 Kp Index: 2
2025 May 27 Radio Flux: 140 A Index: 8 Kp Index: 3	2025 May 28 Radio Flux: 140 A Index: 25 Kp Index: 5	2025 May 29 Radio Flux: 140 A Index: 30 Kp Index: 5
2025 May 30 Radio Flux: 140 A Index: 20 Kp Index: 5	2025 May 31 Radio Flux: 140 A Index: 20 Kp Index: 5	2025 Jun 01 Radio Flux: 145 A Index: 20 Kp Index: 5
2025 Jun 02 Radio Flux: 145 A Index: 12 Kp Index: 4	2025 Jun 03 Radio Flux: 145 A Index: 8 Kp Index: 3	2025 Jun 04 Radio Flux: 145 A Index: 10 Kp Index: 4
2025 Jun 05 Radio Flux: 140 A Index: 12	2025 Jun 06 Radio Flux: 130 A Index: 10	2025 Jun 07 Radio Flux: 125 A Index: 10

Since updated version 1.0.4, new features for 27 days HF radio wave propagation prediction is added. You will find link for this activity feature at Login Screen. you can find "27 days Propagation Forcast" text. You have to press/click to open the link. It will open a calendar style 27 days grid. Each grid displays values of Radio Flux Index (SFI) ,A index, Kp Index which are fetched from NOAA sites.

Clicking On any grid will display band wise prediction for that selected day as under. Color code is representation of Good, Moderate and Poor propagation condition and it is automatically shows reading each grid's values.

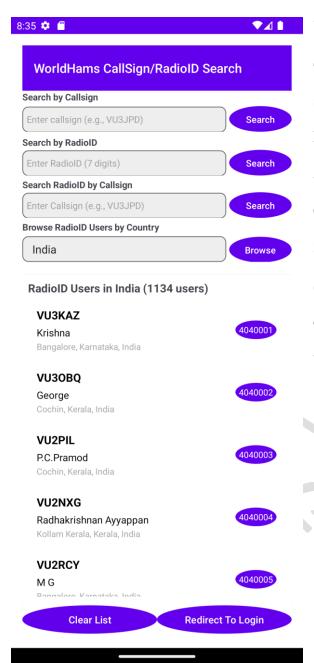


Read "Technical Document" to understand the technical terminology used in prediction section

Password Reset Feature:

- 1. Password Reset Button is at Login screen
- 1. Enter a **registered email** in the login field
- 2. Click "Forgot Password"
- 3. Server sends a secure, time-limited reset link to your email. Link expires after 1 hour
- 4. Check the email inbox (and spam folder) of email (here ID of App user) for which password is to reset.

6. CallSign and RadioID searching:



You can find link for this activity (feature) on bottom of login screen. This screen have searching facility for CallSign and RadioId. Four type of searching is available. 1. Details of ham by searching Callsign. 2. Searching details by Radioid. 3. Searching RadioId by Callsign and 4. Searching country wise RadioId selecting country from list. Use can get details of the user clicking one item of list.

5. Suggestions: Further updating, addition of new features is going on. Suggestions/ observations and appreciation are welcomed and can be communicated to worldhams25@gmail.com Concept, Designing, Developing and Maintaining by VU3JPD