



ORBIT TEACHER REMOTE

Teacher User Guide

*13th July 2021
Version 1.2*

Revision History

Rev.	Date	Description of Changes	Author
1.0	25 th June 2021	First public release	
1.1	05 th July 2021	Corrected language as per CC team suggestions	
1.2	13 th July 2021	Updated install the application section	

1 Introduction

The Orbit Teacher app is a revolutionary platform allowing teachers in mainstream classrooms to seamlessly interact with blind or visually impaired students.

Teachers are now able to connect to their student's Orbit Reader 20 braille display by connecting to the app via Bluetooth on a smartphone or tablet. It then provides a real-time text translation of the braille being typed or read by the student using the device.

The Orbit Teacher Remote allows teachers to effectively teach in a remote setting. Through an internet connection, the teacher can view the student's braille display and can type the text that will appear on the student's braille display.

The system requires just an Orbit Reader braille display and two inexpensive Android tablets or phones to provide internet connectivity.

The teacher needs:

1. The Orbit Teacher app running on an Android phone or tablet
2. (Optional) Teachers may also use an Orbit Reader 20 braille display if they wish

The Orbit Reader is connected via Bluetooth to the Orbit Teacher app on the phone or tablet. This document uses the term “tablet” to mean either a cell phone or tablet. Tablets must be connected to Internet through WiFi, while phones have the option to link cellularly.

The Orbit Teacher app is fully accessible through the TalkBack screen reader that is available for Android.

If you need assistance for various issues such as downloading and installing the application on an Android phone, establishing the connections with OR-20 or completing the first-time user sign up/login, relevant instructions are included in subsequent sections of the document.

2 The interface

The diagram below shows the basic interface.

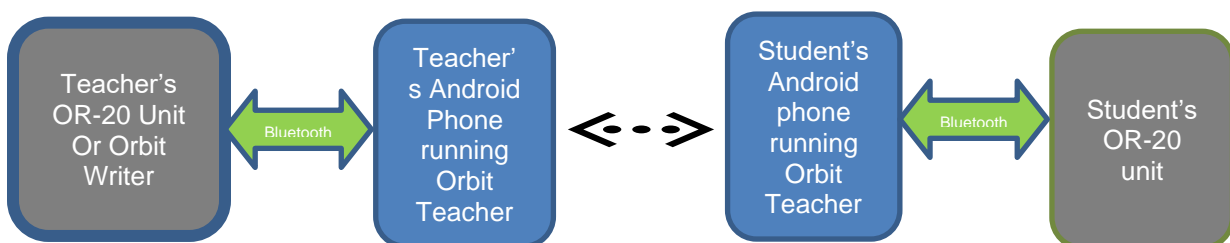


Figure-1: Interface diagram

The essential devices are the teacher's Android Phone with the Orbit Teacher app, the student's android phone with the Orbit Teacher app, and the student's Orbit Reader 20.

3 Connect with Wi-Fi

If your device is not connected to Wi-Fi you need to connect it with Wi-Fi to get internet access. To configure Wi-Fi, you need to perform the following steps:

Option 1:

1. Swipe down from the top of the screen.
2. Tap and hold Wi-Fi.
3. Turn on Use Wi-Fi.
4. Tap a listed network. Networks that require a password.
5. After entering a password tap on connect.

Option 2:

1. On some devices, the Wi-Fi option is directly available. If the Wi-Fi option is not available then tap on Network & Internet or Connections then tap on Wi-Fi.
2. Open your device's Settings app.
3. Tap on your desired Wi-Fi listed on the networks.
4. Enter the password for the Wi-Fi.
5. After entering a password, tap on connect.

4 Download TalkBack

To check whether TalkBack downloaded on your android device, need to perform the following steps

- Go to Settings
- Tap on Accessibility
- In some devices, you can directly see the TalkBack, if you cannot find TalkBack in Accessibility then tap on option installed services/additional settings option from Accessibility
- You can see the option TalkBack if it's installed.
- If TalkBack is not installed on your device you can download it from Google Play to download TalkBack you need to perform the following steps
 1. Go to the application list and open the Play Store application
 2. After opening the Play Store you can search for the Android Accessibility suite or use this link to download the android accessibility suite:
<https://play.google.com/store/apps/details?id=com.google.android.marvin.talkback>
 3. Now tap on Install

4. After installation is completed, you can find the TalkBack on the above-mentioned path

5 Turn on-off TalkBack

To enable TalkBack you need to follow the following steps

- You can directly turn on/off TalkBack by pressing the Volume Up + Volume Down- keys together. If you are not able to use these keys then you need to activate TalkBack from Android settings, please perform the following steps:
 1. Go to Settings
 2. Tap on Accessibility
 3. In some device you can directly see TalkBack, if you cannot find TalkBack in Accessibility, then tap on the option 'Installed services/Additional settings' option from the Accessibility
 4. Tap on TalkBack will ask you to turn on/off TalkBack

6 How to use

The first step is to establish an Internet connection between the student's tablet and the teacher's tablet. Because the Orbit Teacher app does not include voice communication capabilities, the teacher and student must be able to speak over a normal phone call or platform such as Zoom or Skype for effective interaction.

Next, the student selects "Student Profile" from the menu in the app, and will log in to the app using a valid email ID. The app automatically generates a user ID and password that are displayed to the student. The student must then share his user ID and password with the teacher over the phone, text, email, etc., allowing the teacher to initiate the connection.

Next, the teacher selects "Teacher Profile" from the app's menu and signs in using a valid email ID. Fields will appear that requires the teacher to enter the user ID and password given by the student. After entering this information, the teacher will choose the "Connect" button on the screen.

This login and sign-up is a one-time process.

When the teacher's app is connecting to the student's app, the student will receive a notification regarding the incoming connection request, along with the name of the person requesting the connection. They will then either accept or reject the connection request.

Both sides will receive a notification once the student accepts or rejects the connection request.

7 Getting Familiar with Android phones and TalkBack

If you are unfamiliar with the use of Android phones and TalkBack, please refer to the “Operating Android Phone- Beginner's Guide” document supplied with the package before proceeding further.

8 Downloading and Installing the application

8.1 Install the application

You can either search for “Orbit Teacher Remote” download page in google play store, or directly go to this link

<https://play.google.com/store/apps/details?id=com.orbitteacherremote> and click on install button. It will download and install the app in your device

8.2 Permissions

While installing the Orbit Teacher, the Android system will ask you to grant permission to the application to access various capabilities. Orbit Teacher needs the following permissions to run:

1. **Access Bluetooth Settings:** This permission is required so that if the Bluetooth is turned off while using the Orbit Teacher, it can request the user to turn Bluetooth back on.
2. **Approximate Location:** This permission is required because Android relies upon location services to retrieve the identity of the nearby Bluetooth devices. It is only required while pairing. The location can be turned off once the app is paired with OR-20.
3. **Storage:** The application needs permission to read a text/BRF file from the storage. The application will not modify or delete any stored contents.

Note: On denying any of the above permissions, the application will not work properly.

9 Launching the application

The application is downloaded and installed on the device, you can now launch the application.

This will land you on a welcome screen you will see two options. “Orbit Teacher Tutorial” and “Take me to app”.

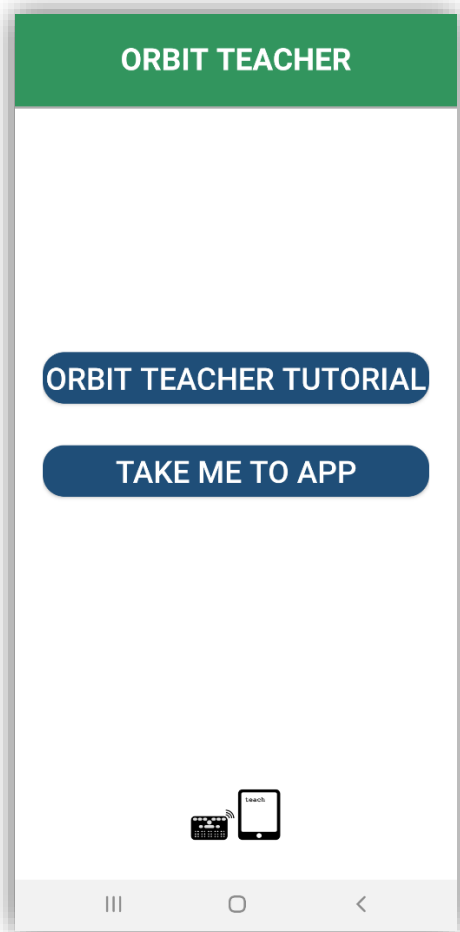


Figure-3: Welcome Screen

If you are a new user and wish to learn about how to use this application, you can select “Orbit Teacher Tutorial” to open the tutorial.

Otherwise, you can select the “Take me to app” option which will redirect you to a screen from where you can select your role and further use the application.

10 Orbit Teacher Tutorials

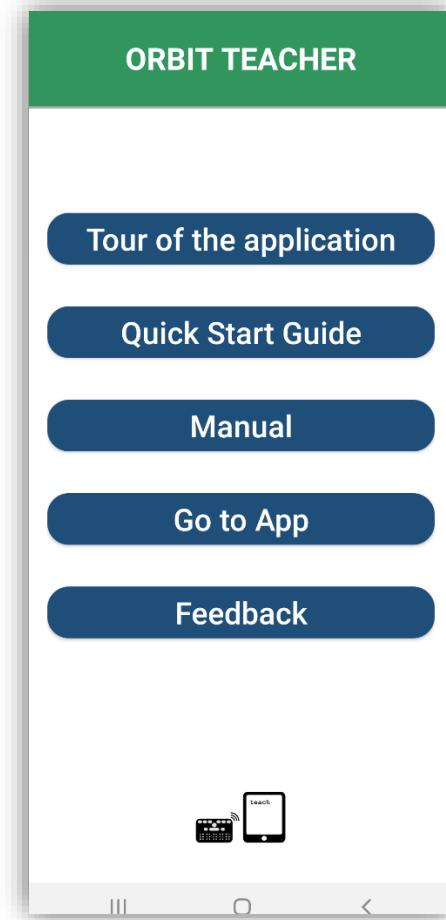


Figure-4: Tutorial Screen

This Tutorial has the following options using which you can learn about the Orbit Teacher and also about the Orbit Reader.

10.1 Tour of the Application

This page gives you a tour of different features in the form of slides. You can press “next” to switch from one slide to another.

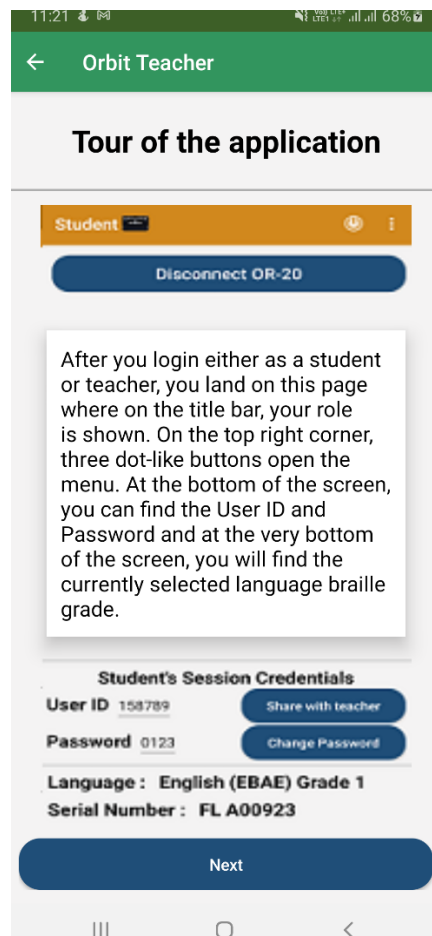


Figure-5: Tour of the application Screen

10.2 Quick Start Guide

This page gives you a list of useful shortcut commands to operate your Orbit Reader. This page is accessible using TalkBack.

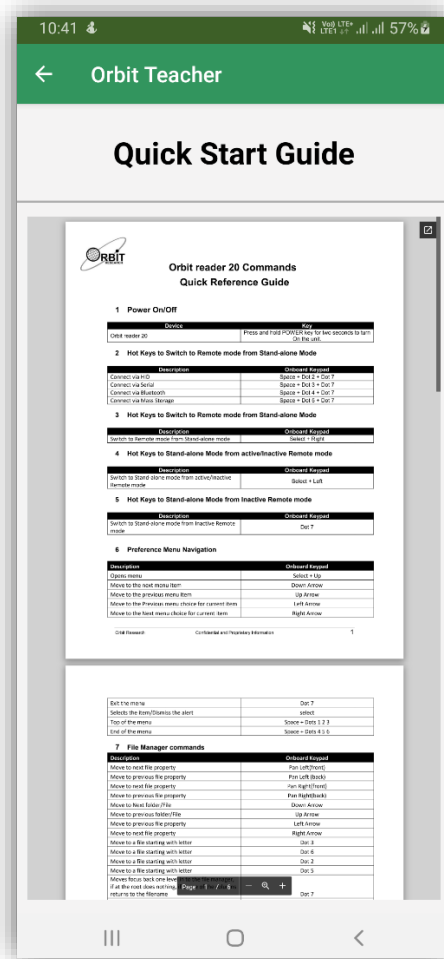


Figure-6: Quick Start Guide Screen

10.3 Manual

This page opens the application manual using which you can learn about how to use the Orbit Teacher application step by step in detail. This page is accessible using TalkBack.

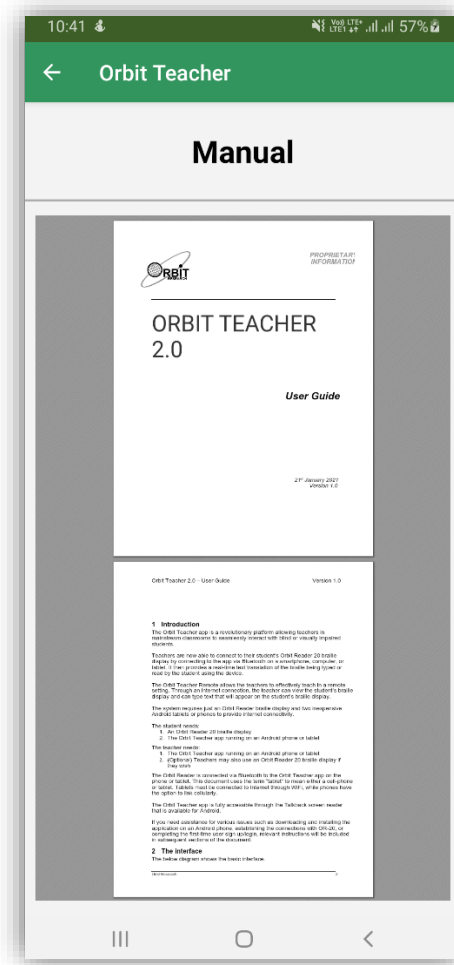


Figure-7: Manual Screen

10.4 Go to App

This option redirects you to the main application.

10.5 Feedback

This redirects you to the compose email option of the Gmail application and you can share your feedback with us.

11 Main Application

Once you launch the main application using the “Go to App” option, it redirects you to the screen asking you to choose your role between a teacher or a student. If you are a teacher or a person helping a visually impaired student remotely, choose “I am a teacher”. If you are a student receiving help from the teacher, choose “I am a student”.

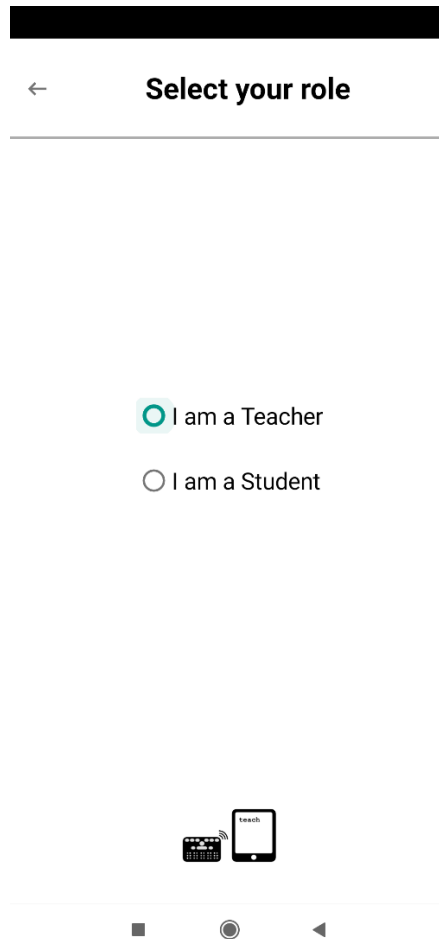


Figure-8: Select Your Role Screen

The application will launch the respective home screen depending on the role chosen, teacher, or student. The home screen and available controls are slightly different between the two roles.

12 I am a Teacher

If you selected the “I am a Teacher” option, it takes you to the home screen for the Teacher’s role.

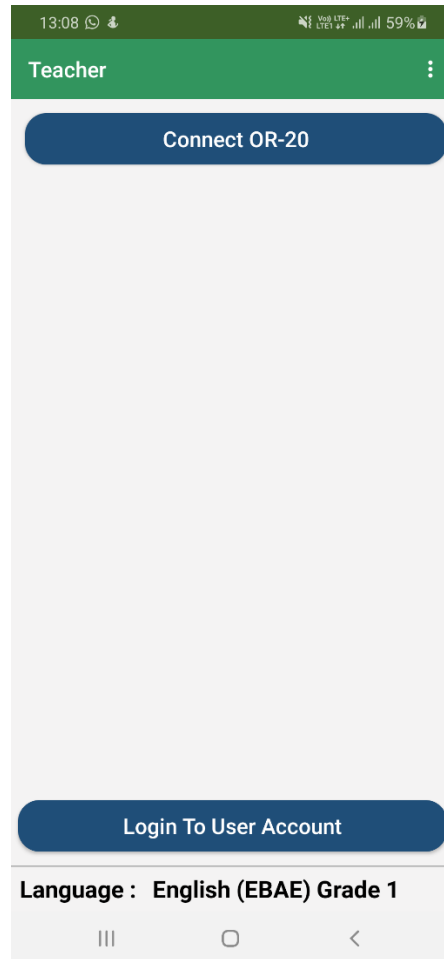


Figure-9: Home screen for teacher's role

12.1 Connect with the Orbit Reader 20

For a teacher, it is optional to connect with OR-20. If you connect, you can use your OR-20 display to view the student's display and use the OR-20 keypad to control the student's OR-20. However, all these features are available with the application as well otherwise.

To connect to an OR-20 for the first time, tap on the "Connect OR-20" button. It opens a page showing a list of already paired OR-20 available for connection. If your OR-20's serial number mentioned on the listed devices, tap on it to initiate the connection.

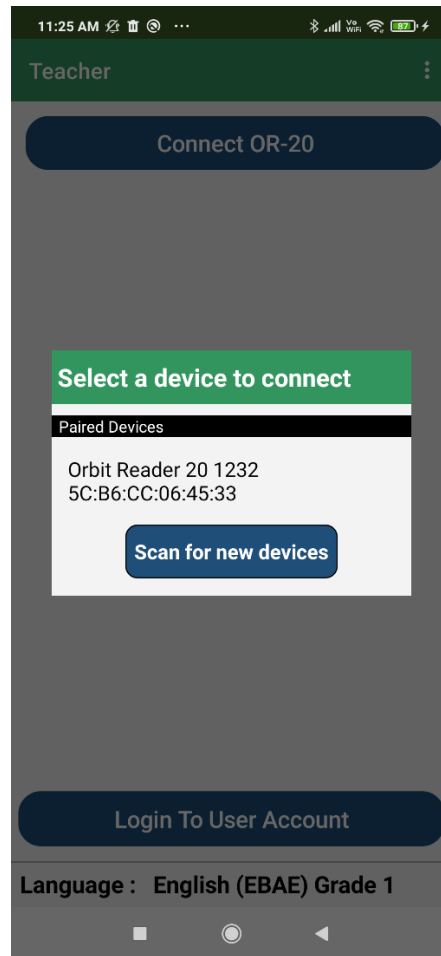


Figure-10: Paired devices list dialogue box

If your OR-20 is not already paired with your phone, it would not show on the list. You can tap on the “Scan for devices” button to initiate the first-time pairing. It will show all the OR-20 within the range to be paired.

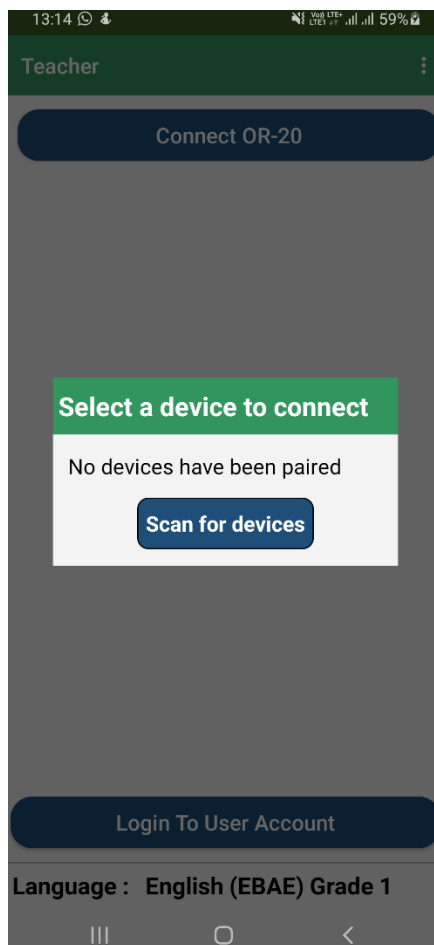


Figure-11: Scan devices button

Tap on the serial number of the OR-20 you wish to connect to. If that unit is not paired already, the Orbit Teacher would generate a pop-up message asking to pair with the new OR-20. Tap on the “Pair” button on the pop-up message to establish the connection.

Once connected, it displays the serial number of the connected device at the bottom of the screen and mirrors the display on the display area of the application showing the display in the translated visual fonts as well as Braille fonts.

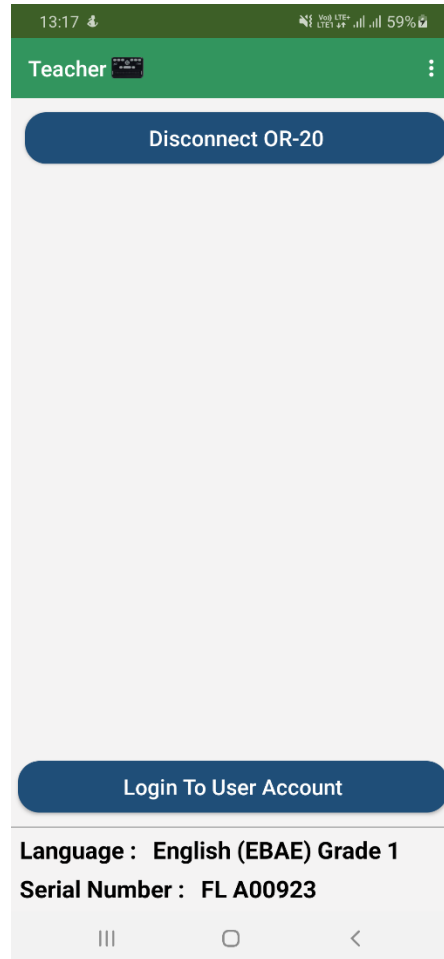


Figure-12: Home screen for teacher's role

Once the connection is established, the “Connect to OR-20” button turns into the “Disconnect OR-20” button. To disconnect the OR-20, tap the same. To manually disconnect from the OR-20 keypad, press SPACE + D (Dots 1 4 5 7).

The connection is closed automatically when you put the OR-20 to sleep or turn it off. The connection is also disconnect automatically when you close the application. Note that the application and the OR-20 remains connected when you put the phone/tablet on standby (screen lock).

OR-20 reconnects to the last connected host when you wake it up from sleep or turn it on provided the phone/tablet's Bluetooth is ON and the Orbit Teacher application is running. If you had locked the phone screen, while the application was still running, any activity on the OR-20 wakes the phone/tablet and re-connects.

To connect manually, follow the same process as you followed for the first-time connection, except that you don't have to pair it again.

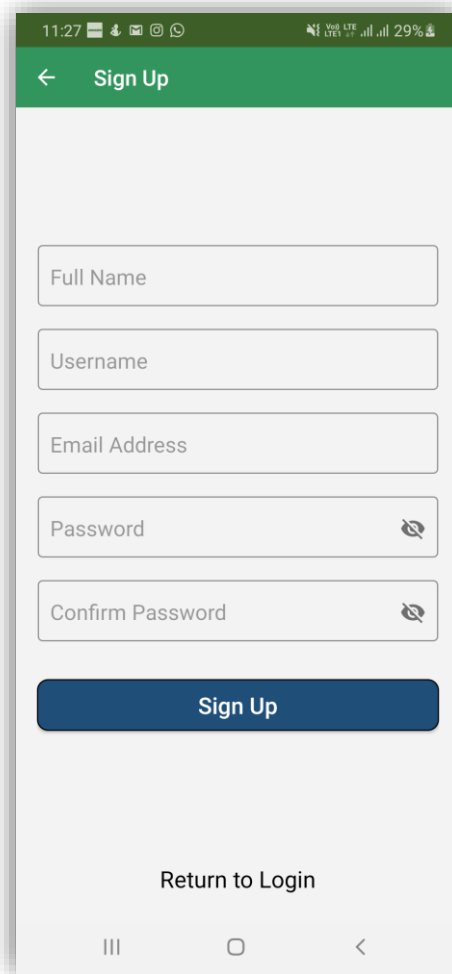
12.2 Login

If you are using the application for the very first time, then you must sign-up and login using your authentic email ID. It is required so that the application server can create a unique identity for you which will be then used by the student to identify your connection request and allow the connection. You can still connect to OR-20 without login. It is required only when you wish to connect to another application over the internet.

You can tap on the “Login to get remote ID” button to open the sign-up/login page.

Login is a one-time process. The login information remains with the application on the phone. Unless the application data is cleared/deleted from the phone settings, or you log out, you are not required to do the login again.

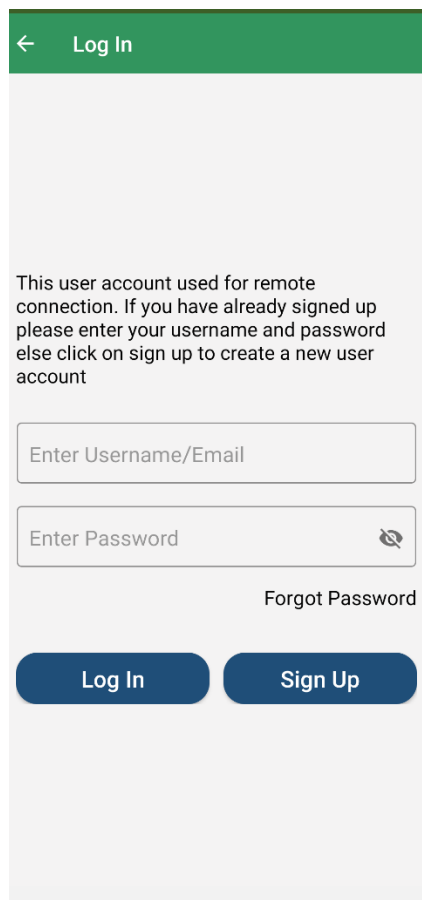
There is an option for sign-up for an account for first-time users. For the sign-up, you will be required to provide Full name, the username (alias), email id, and the password of your choice.



The screenshot shows a mobile application interface for signing up. At the top, there is a green header bar with a back arrow and the text "Sign Up". Below the header, there are five input fields stacked vertically: "Full Name", "Username", "Email Address", "Password", and "Confirm Password". Each input field has a light gray border and placeholder text. To the right of the "Password" and "Confirm Password" fields, there are small eye icons for toggling password visibility. Below the input fields is a dark blue button with the text "Sign Up" in white. At the bottom of the screen, there is a link that says "Return to Login". The bottom of the screen shows the standard Android navigation bar with three icons: a square, a circle, and a triangle.

Figure-13: sing up page

Once you have an account, you can use your ID and password on different phones, but not at the same time. You should log out from existing phone before you log in to the other phone using the same account.



The screenshot shows a mobile app interface for the login page. At the top, there is a green header bar with a white back arrow and the text "Log In". Below the header, the main content area is light gray. It contains a paragraph of text: "This user account used for remote connection. If you have already signed up please enter your username and password else click on sign up to create a new user account". Below this text are two input fields: "Enter Username/Email" and "Enter Password". The password field has a small eye icon to its right. Below the password field is a link that says "Forgot Password". At the bottom, there are two dark blue buttons: "Log In" and "Sign Up".

Figure-14: Login page

In case you lost your password, you will be able to retrieve it using the “Forgot password” option from the sign-up/log in page.

Once you log in successfully, it will take you back to the home screen.

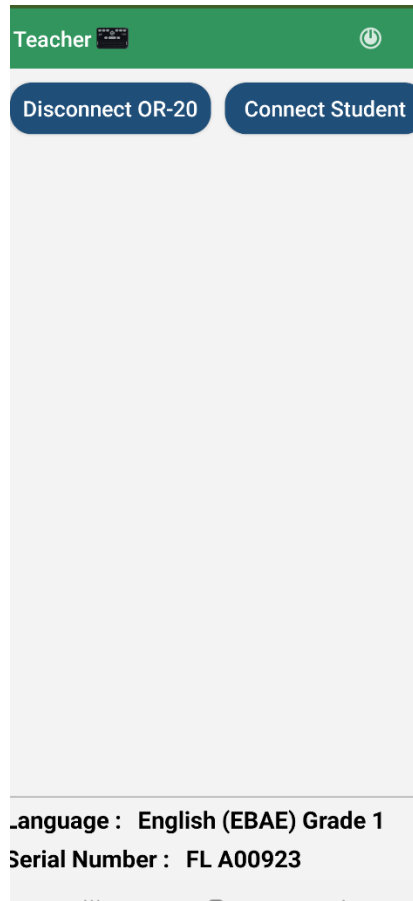


Figure-15: Home screen for teacher's role

12.3 Connection to Student

To connect to a student, tap on the "Connect Student" button. It opens up a page where you can enter the user id and password of the student you wish to connect to and press the "connect" button to send the connection request.

Alternatively, if you had connected to the same student in the past, their names are displayed in the history section. You can simply tap on the name from the history list to initiate the connection process. In this case, you are not required to enter the connection credentials again.

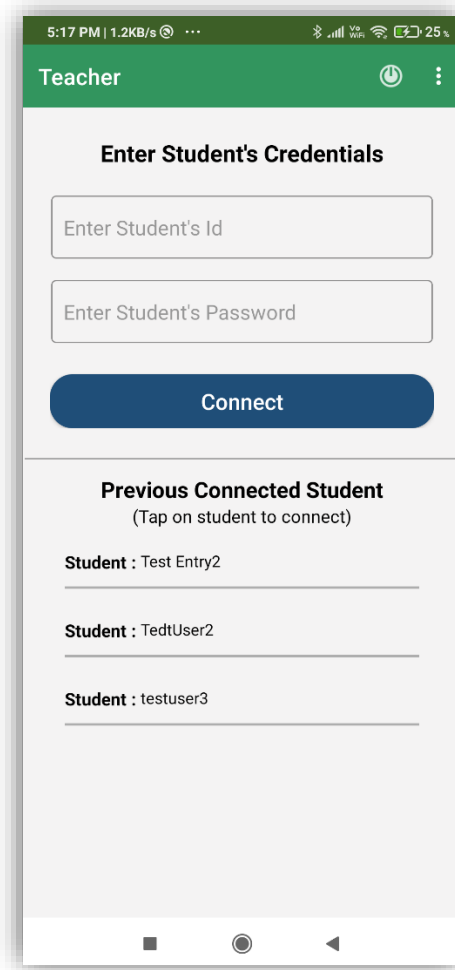


Figure-16: Connect to the student page

Once the student initiates, accepts, or rejects the request, you will receive a notification message saying the connection request is accepted/rejected or the connection error with details.

12.4 Viewing Student's OR-20 Display

Once connected, it will switch to the mirrored screen page where you can see the mirrored data of the Student's OR-20 on the Text display window as well as on the display screen of your OR-20 if it is connected. Any changes happening on the Student's OR-20 display are reflected in real-time on your phone screen as well as on your OR-20 display.

If you wish to use normal functionalities of your OR-20 you can disable teacher mode on your OR-20 by pressing the hotkey Space + T (Dot 2 3 4 5) + Dot 7. You can return to teacher mode by pressing the same hotkeys again.

12.5 Remotely Navigating and editing files on Student's OR-20

You can access and control the student's OR-20 using:

1. On-Screen keyboards
2. Physical keyboards

Using these keyboards, you can entirely control and operate the student's OR-20. For example, you can open, read or edit files and change the menu configurations.

You cannot put the student's OR-20 to sleep or turn it off remotely. You cannot perform the hard reset and put the device into firmware upgrade mode.

12.5.1 On-screen Keyboards

The following on-screen keyboards are available for you to use.

1. The Virtual Perkins keypad
2. Third-party keyboard applications

The default is the Virtual Perkins keypad, but you can switch between the two by tapping on the edit button available at the top right corner of the text display area.

12.5.1.1 Virtual Perkins keypad

It offers the same functionality as the OR-20 keypad. (i.e. you can use the pan keys of the virtual Perkins keypad to perform the file navigation or press the hot key to open the menu on the student's OR-20).



Figure-17: Mirrored text page with the on-screen virtual keypad

For phones, with small screen sizes, if it is not possible or convenient to use multiple key presses, then you can use “one-handed mode”. When a one-handed mode is enabled, you can press the multiple keys in sequence and then press the “submit” button to trigger the key input. The keys will turn green as you press them. If you pressed the wrong key sequence, then you can press the same key again to deregister the key. Pressing the key again (deregistering) shall return to its default color.

For example, if you wish to press select + Up to open the menu, you can first press “select”, and then “up”, and then choose the “Submit” button, so that OR-20 will receive it as simultaneous keypress and it will open the menu on student’s OR-20.

12.5.1.2 *Third-party keyboard applications*

You can use the third-party keyboard applications installed on your phone for typing but note that they usually don’t have the navigation keys. If you are using

these applications to perform navigation, you need to switch to the virtual Perkins keyboard. These applications will be used only for the editable fields for the OR-20 screen, such as file editor or find command.

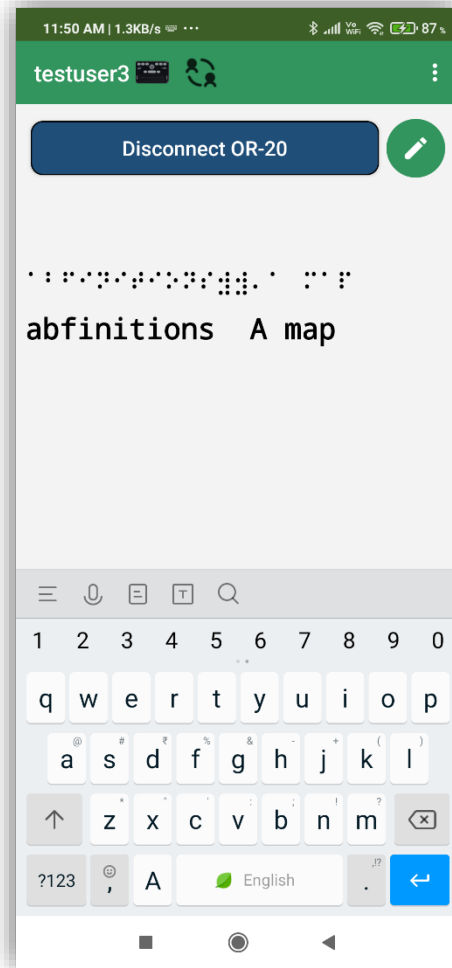


Figure-18: Mirrored text page with on-screen Qwerty keypad

12.5.2 External physical keyboards

You can use the following external physical keyboards:

1. If connected, using the Teacher's OR-20 Perkins style keypad
2. Orbit Writer paired with the phone (It does not have panning keys)
3. External Qwerty keypad (Does not support navigation functionality)

13 Context Menu

The context menu is available at the top right corner of the screen for both Teachers and Student. It offers the following options

- Change your Role: This allows you to switch between student and teacher Roles
- Select language table: This lets you choose the translation table to be used for Braille to text conversion when you are working with a BRF file
- Activate License: This lets you to activate the license
- Check License Info: This option gives an information about current activated license
- Set Font Size: This Lets you adjust the size of the fonts being displayed
- Read a file from phone: Opens up an offline reading mode where you can read the files form the phone
- Show/Hide braille font: This Lets you show/hide braille fonts on the screen of the application
- Do not speak/Speak braille display text: This will not announce the braille display text of the application
- Show/Hide Braille Keyboard: This lets you show/hide the braille keyboard in teacher mode of the application
- Go to tutorial: Opens up a tutorial screen to guide you about the application
- Enable logging: Enables debug logging for developers
- About: Displays the version number of the application installed