

iPal® User Manual

For Children's Education, Families, Senior Care, and
Retail/Hospitality



Official Website - www.ipalrobot.com

Twitter – www.twitter.com/avatarmindinc?lang=en

Facebook -- www.facebook.com/AvatarMindInc

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1. Introduction to iPal

iPal® is a fully functional humanoid robot that is 3½ ft/1.03 m tall. It has many motors, microphones, cameras, and sensors (infrared, ultrasonic, and touch) which enable iPal to be aware of its surroundings and to facilitate interactions with humans.

iPal is an open, Android based system with extensions for motion, sensors and natural conversation, allowing a wealth of third party applications to be delivered on the robot.

For families, iPal is an affordable social robot that acts as a friend, teacher, and safety monitor for children. iPal provides educational content in an engaging manner that supports social development and encourages interest in science and technology. iPal aids parents in providing their children a better quality of life and a head start in education. iPal is not intended to be a standalone babysitter, a replacement for parents, or an alternative to finding friends of their own - no robot can or should take the place of parents or friends. However, iPal can make the everyday lives of parents a little easier and can provide children a richer educational experience than watching TV.

For seniors, iPal is a constant companion that supplements personal care services and has the potential to provide security with alerts for many medical emergencies. As a companion and safety monitor, iPal can facilitate social interaction and companionship for seniors who

may not be able to get out as much as they'd like due to physical limitations. iPal can also aid in health and safety monitoring, reminding seniors to take their medication and allowing caregivers and loved ones to check in on individuals through the iPal smartphone app.

Other versions of iPal catering to areas such as special needs (e.g., autism), hospitality, retail, home security, and more, are currently in development.

AvatarMind also offers the iPal platform for 3rd party developers. The goal of the iPal Robot Development Platform is to provide partners with all the tools and support needed to enable them to quickly and efficiently modify iPal's software and content for their specific use. They can then deploy and market their own robotic product at a small fraction of the cost of developing their own robot. Details are given in the iPal platform section of www.ipalrobot.com.

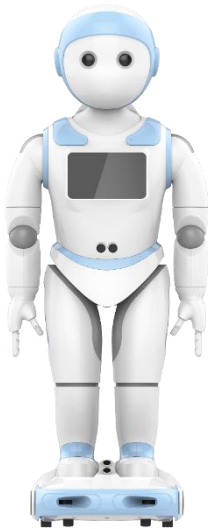
2. iPal as a Friend

iPal is designed with a friendly, non-threatening demeanor, and has multiple sensors to ensure safe human interaction. iPal has a spoken language interface, facial expressions, full arm and head mobility, and the potential to sense moods. iPal encourages physical activity and enables people to stay connected with their friends and the world.

3. Accessories

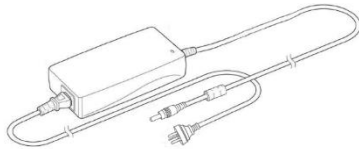
To begin, please verify that you have received the items and accessories listed below:

- iPal robot, charger, warranty card, quick start guide, user manual, and iRemoter manual



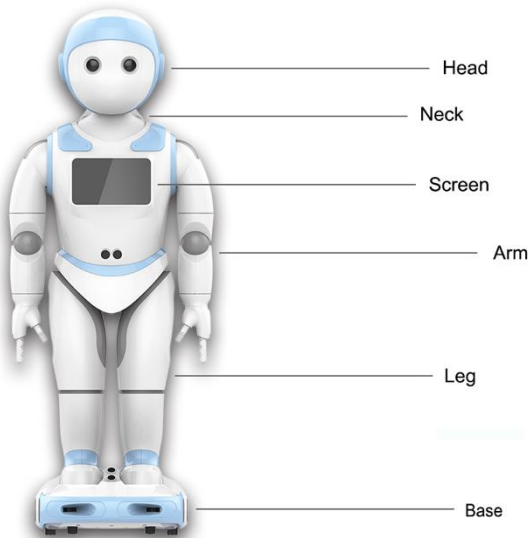
iPal robot

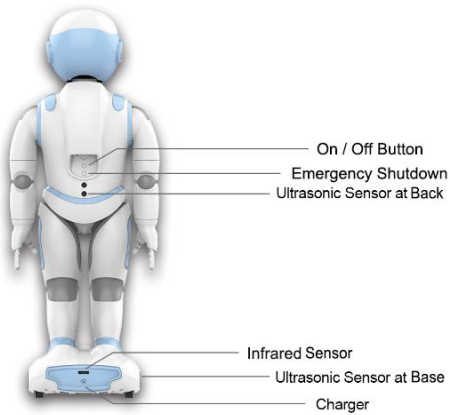
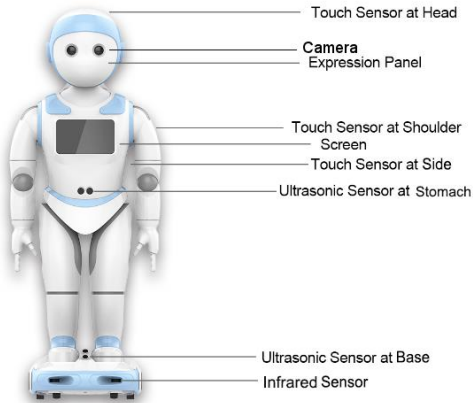
Charger (including wire)



4. Hardware

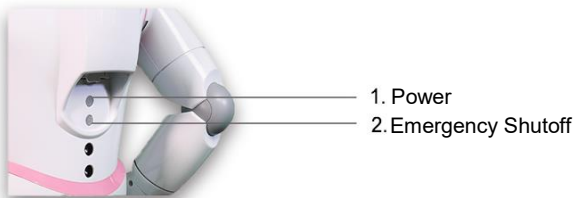
4.1. Components





4.2. Power Buttons

iPal has 2 buttons on its back, a power button and an emergency shutdown button. To turn on iPal, hold down the power button for 2 seconds. To turn off iPal, hold down the power button for 2 seconds. For emergencies, such as instances where iPal is not responding, press the emergency shutdown button to immediately power off iPal.



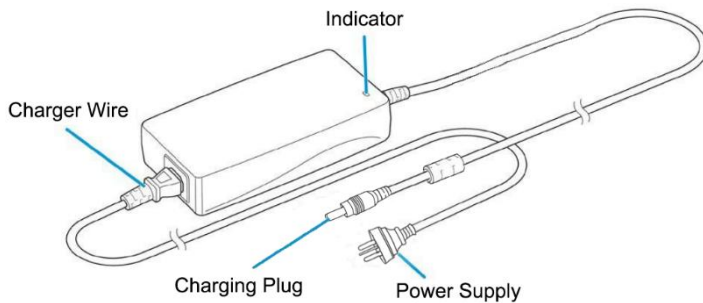
4.3. Screen

The screen on iPal's chest can be used to change settings, start and stop applications, and control iPal in various ways.



4.4. Charging

For security and safety reasons, iPal is automatically turned off or put in screen protection mode when charging.



Charging steps:

- Plug charger into power source.
- Verify that the indicator light on the charger is green.
- Plug the charger into the back of iPal's base.
- When iPal is charging, its eyes will blink yellow.
- When iPal is fully charged, its eyes will turn green.

5. Getting Started

5.1. Operating Environment

- iPal moves best on a flat and dry surface. Movement is slower on thick carpet.
- iPal detects and avoids obstacles, so people or objects within a 50cm/20in range may affect iPal's movements.
- Outdoor use is not recommended.

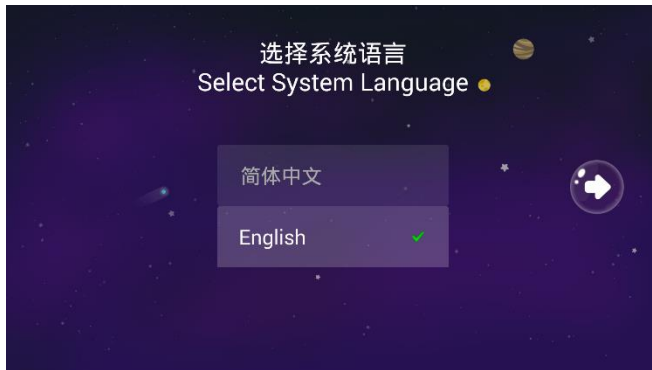
5.2. Moving Your iPal

- ***Do NOT pick up iPal by its head or arms!***
- To carry iPal, use the handle above the power button or hold the body.
- iPal may also be pushed forward on its wheels.

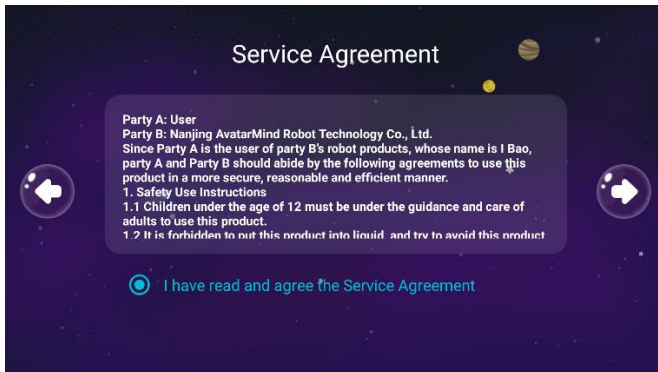
5.3. Setup Wizard

When you first turn on iPal, a Setup Wizard appears on the screen to guide you through the setup process.

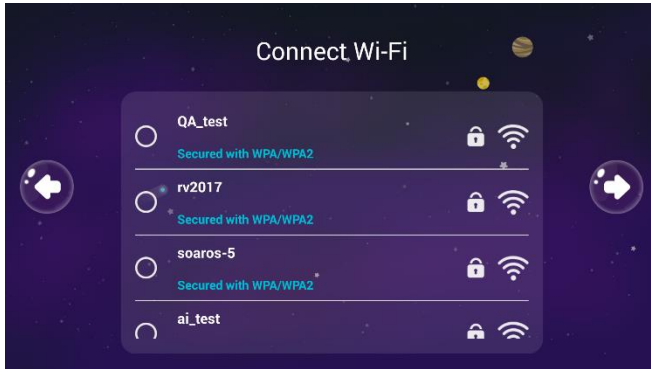
- Select a language and tap the right arrow to continue.



- If you agree to the service policy, select “I have read and agree the Service Agreement”, then tap the right arrow to continue.

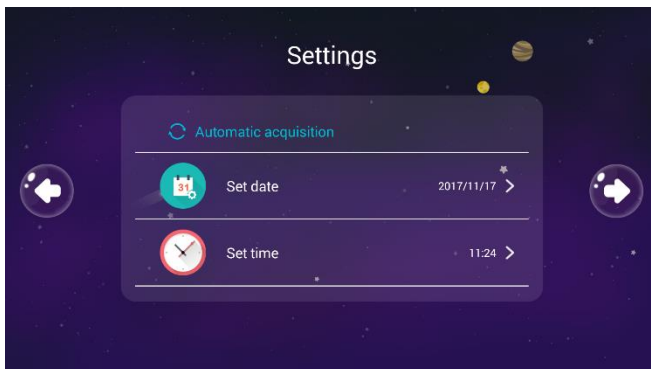


- Connect to a Wi-Fi network. To connect to a Wi-Fi network, select the name of your network. If a password is required, you will be prompted to enter the password. You can skip this section and connect to a network later through the Settings menu.

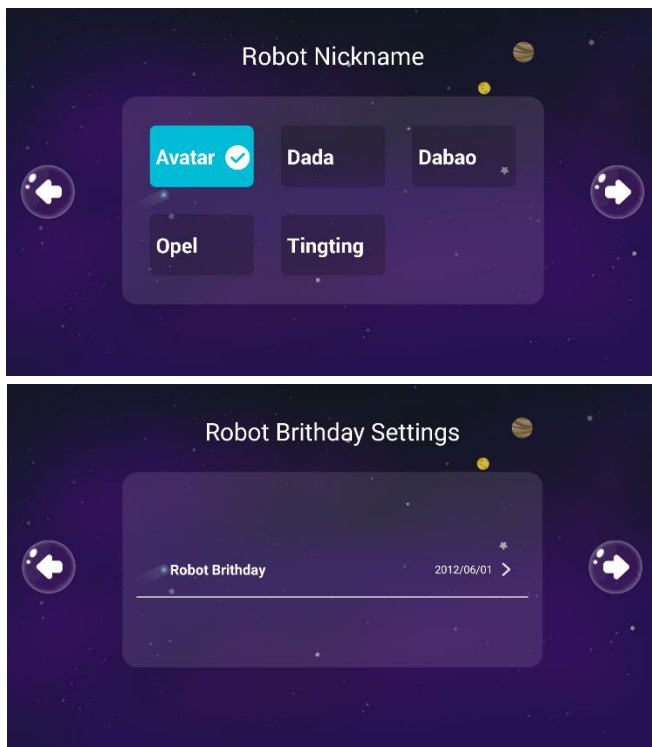


Some internal functionalities and applications require a network connection, so connecting to a network is highly recommended.

- Set the date and time if it is not correct.



- If desired, give iPal a nickname and birthday.



- Tap on the play button to watch an instructional video, or press “skip” to continue. It is recommended that you watch this short video.



6. iPal Applications

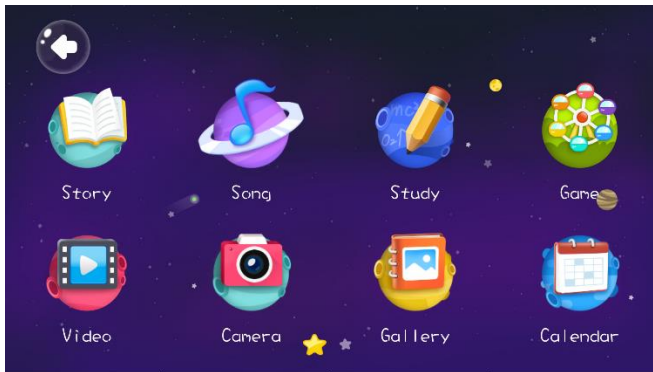
Your iPal is bundled with a wide selection of applications. Simply touch iPal’s screen to activate an application.

6.1. The App Menu

- After completing the setup procedure, and subsequently after turning on iPal, the home screen below appears.



- The bar at the center, top shows the time, Wi-Fi signal strength, and battery charge.
- Touch the “APP” button to show applications and content.



- Tap an icon to start an application. In some cases, such as “Game”, touching the icon takes you to a sub-directory.
- To access additional applications, swipe left or right on the screen.

6.2. Tips and Tricks

To get you started, here are some cool things you can do with your iPal:

- Make iPal giggle by rubbing firmly the sensors on its sides.
- Pause or resume your iPal at any time by touching its head.
- Customize iPal by choosing from 12 different voices. See section [6.5.2](#) for more instructions on customizing your iPal.
- Use your Android device to remotely control iPal with the iRemoter app. See section [6.5.2](#) for info on downloading iRemoter, and the iRemoter manual for instructions.
- Say “Alexa” to speak with iPal. Some example commands:
 - “Alexa, what’s the weather like today?”
 - “Alexa, set an alarm for 5:00.”
 - “Alexa, tell me a joke.”


These examples only scratch the surface of what you can do with Alexa, so don’t be afraid to experiment! See section [6.5.4](#) for more details.

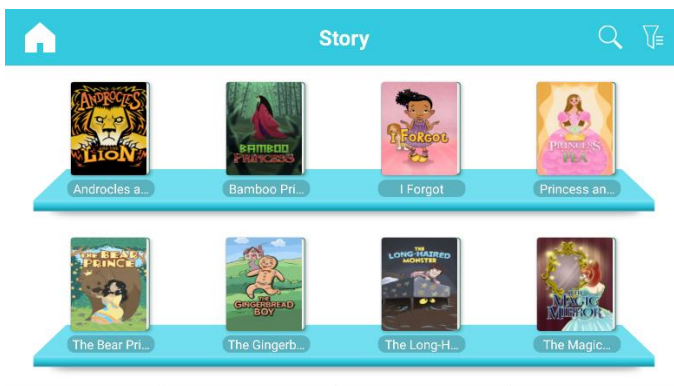
- Use iPalProgrammer to create your own custom program for iPal to follow. For details on using iPalProgrammer, see section [6.4](#).

6.3. App Categories

6.3.1. Stories




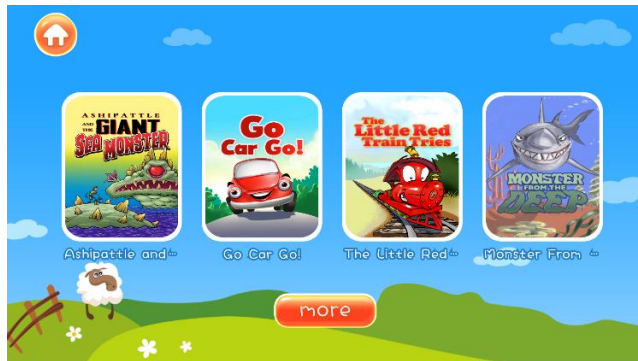
- Tap the  icon to enter the Story folder.
- Select a story by tapping its icon.



6.3.2. Farfaria



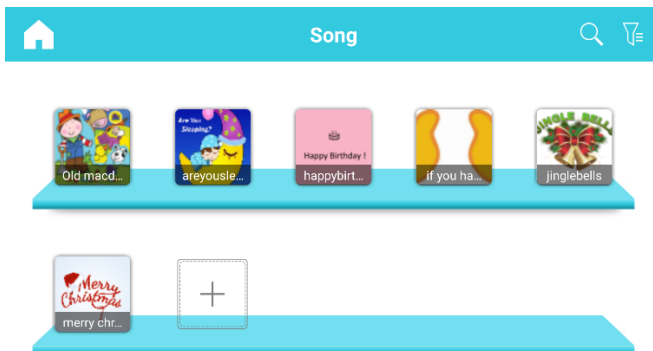
- Tap the  icon to enter the Farfaria app.
- Select a picture book by tapping on its icon.
- Scroll left and right to see all the stories.
- Tap “more” to buy more stories in the iPal Store.



6.3.3. Music



- Tap the icon to enter the Song folder.
- Browse music by swiping up and down on screen.



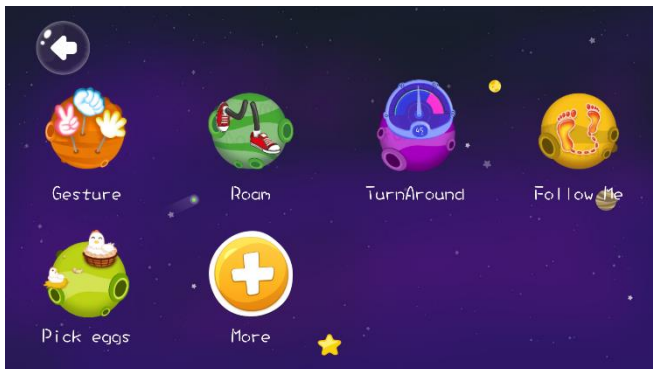
-
- Select a song to play by tapping its icon.

- **NOTE:** to return to the previous section on this or any other page, touch the house icon at the top left.

6.3.4. Games



- Tap the icon to enter the Games folder.



- **Gesture** is a game of rock, paper, scissors. When you open the game, iPal will prompt you to display rock, paper, and scissors to learn your hand gestures. Then, each time iPal counts down from three, you can play rock, paper, scissors with iPal.
- **Roam** allows iPal to freely explore its surroundings. iPal is capable of detecting obstacles and will navigate its way around them.
- **Follow Me** demonstrates iPal's intelligent face recognition and navigation system. iPal will prompt you to show it your face, and iPal's camera feed will appear on screen. When you see your

face highlighted with a red box, feel free to move around. iPal will follow you diligently, avoiding obstacles along the way.

- **Pick Eggs** is a game of skill. Use the basket to catch as many eggs as possible before time runs out. To move the basket, there are two options. You may simply touch the basket and drag it around the screen. You may also touch iPal's touch sensors located on its sides to move the basket. Tip: Try to catch the clocks, as they will give you additional time. Also make sure to avoid the droppings!
- For additional games, tap the "More" icon to enter the Store. See Section [7.2](#) for more details.

6.3.5.Camera



- Tap the icon to open the camera.
- The screen shown below appears.



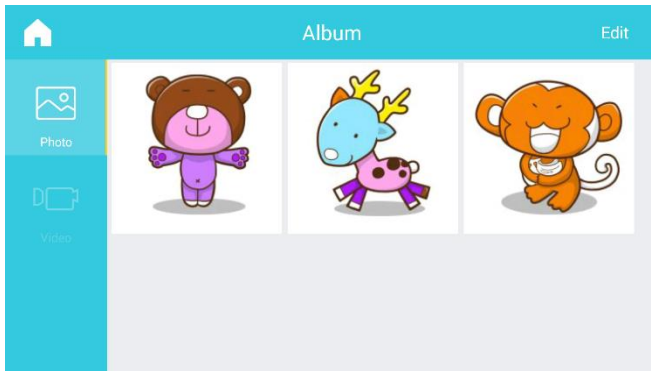
- Tap the Camera icon at right to take a photo.

- Tap the red button to record video.
- Tap the circle at bottom-left to enter the gallery and view your photos.

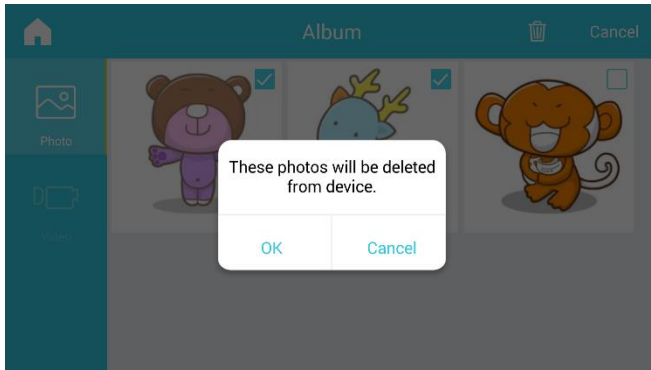
6.3.6. Gallery



- Tap the icon to enter the Gallery.
- Scroll to view your photos and videos.




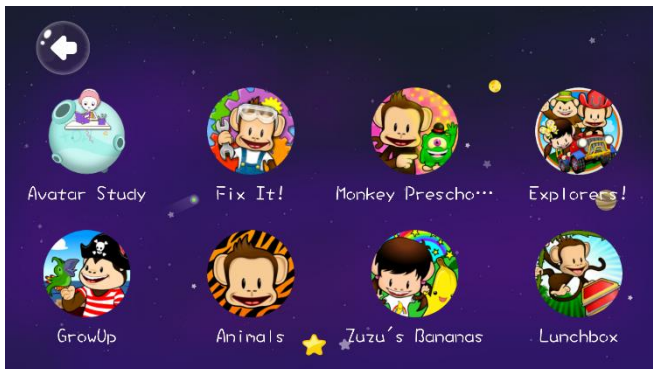
- Tap the “Edit” button at top right corner to select photos or videos to delete.



6.3.7. Education




- Tap the  icon to enter the Education folder.
- Tap Avatar Study to browse educational resources.
- Touch the icons to activate the other educational games shown on the page

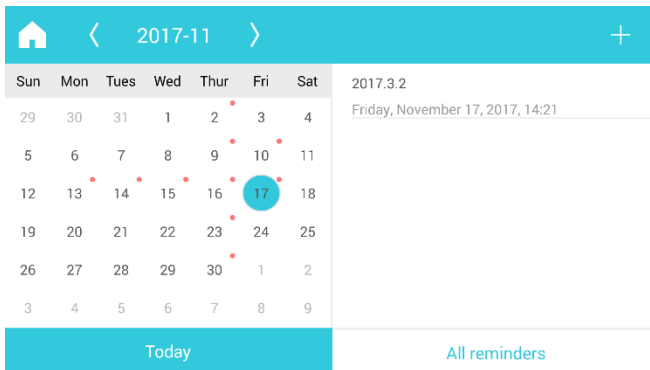


- Tap the “More” icon (plus icon shown above) to enter the Store for more educational resources.

6.3.8. Calendar

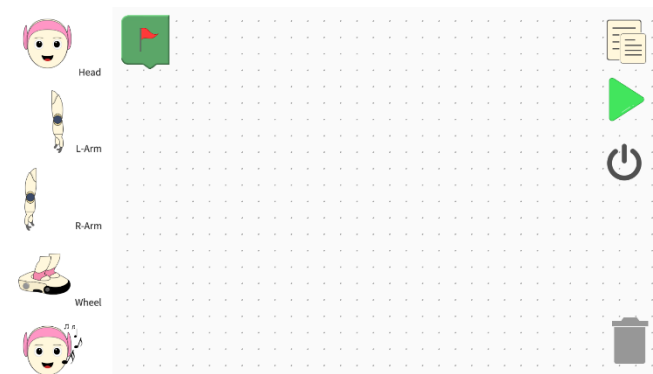



- Tap the  icon to enter the Calendar application.
- View your calendar and browse alerts.

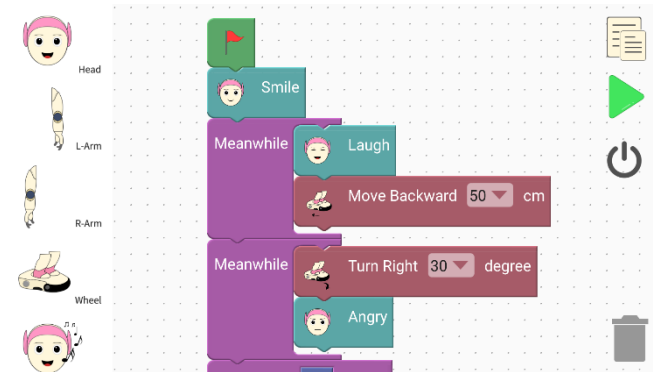






- To set a new alert: Tap the “+” symbol at the top right corner.
- Edit alert content: set the title, time, place and mode of your alert. You may also add a recording to play during the alert. Set alert by tapping the “Done” button at top right corner.

create routines for iPal to follow.



1. **Actions:** The left-hand column shows categories of iPal's actions.
2. **Start Icon:** The start icon  is the starting point of your program. Blocks connected to the start icon will run and are colored, while blocks not connected to the start icon and inactive blocks will remain gray.
3. **Workspace:** The large dotted area, called the workspace, is the main area in which you will create your program. Drag blocks from the action tab to add them to your workspace and connect them to the start icon.
4. **Create a program:** Drag blocks from the action bar on the left to the workspace to begin making your program. See the picture below for an example.



5. **Templates:** Tap  to load from a library of template (example) programs.
6. **Run:** Tap  and iPal will run all blocks connected to the start icon in sequence.
7. **Exit:** Tap  to Exit iPalProgrammer. Your work will not automatically be saved!
8. To save your program locally, touch and hold the Template icon (at the top right). A popup will appear, prompting you to enter a file name. Enter a name for your program, then tap “Save” to save it.
9. **Trash:** Drag blocks to the trash  to delete them.

6.4.3. Operations

➤ **Workspace**

The workspace is the main coding space. It contains the start icon and space to develop your program. Valid action blocks that will run are colored, while invalid blocks will be grayed-out. Blocks are run sequentially starting from the start icon, and each block is run individually, only starting after the previous one has finished (an exception is when you specify that operations should occur simultaneously – see below for “Simultaneous Actions”)

➤ **Movement**

Select a body part from the menu on the left to open a selection of movement action blocks for that body part. Drag your desired block into the workspace and connect it to another block. Valid connections will snap to each other.

Note: Some blocks allow you to input angles. Once in the workspace, tap the number to change it to a desired angle. You can set some angles to be negative.

Additionally, input angles are not additive. For example, if you raise the left arm 30 degrees, the arm will raise 30 degrees. If you add another block to raise the arm 30 degrees again, the arm will remain raised at 30 degrees.

➤ **Voice**

Select Voice in the left-hand column. Select one of the options below.

Music: iPal can play stored mp3 music files.

Text-to-Speech: Once in the workspace, you can edit the text in this block. When the block is run, iPal will read out the text.

➤ **Expression**

Select the Expressions menu. From here you can alter iPal's expression to simulate a variety of different moods.

➤ **Simultaneous Actions**

iPalProgrammer provides the capability to combine actions, for example moving both arms at the same time. Select the Control menu on the left-hand side by scrolling down. Drag a meanwhile block into the workspace. You can now drag multiple action blocks into the meanwhile block to have them run simultaneously.

Note: Some actions cannot be performed simultaneously. For example, you cannot raise and lower an arm at the same time. If two conflicting actions are inserted in a meanwhile block, the two actions will be executed sequentially.


➤ **Control Logic**

Select the Control menu at the bottom of the left-hand column.

- “if/do”: Insert a condition on the right side. If the condition is met, run the contained action block. If the condition is not met, move on to the next block.
- “if/do/else”: Similar to “if/do” blocks, but if the condition is not met, run the block inside the “else” section.

- “Circulation x times”: Run the contained action block x times. You can set x to be a desired number of repetitions.
- “Repeat/do”: Insert a condition on the right side. You may select to repeat “while” or “until” the condition is met.
- “Meanwhile”: Discussed above under “Simultaneous Actions”
- “Reset”: Reset all of iPal’s body parts to the default state.
- “Sleep”: iPal will remain in its position for x seconds before moving to the next block. You can set x to be a desired number of seconds.

➤ **Run**

Tap the Run icon  to run your program. While the program is running, a pop up will appear on the screen.

➤ **Exit**

Tap the Exit button  to exit iPalProgrammer.

6.4.4. Templates

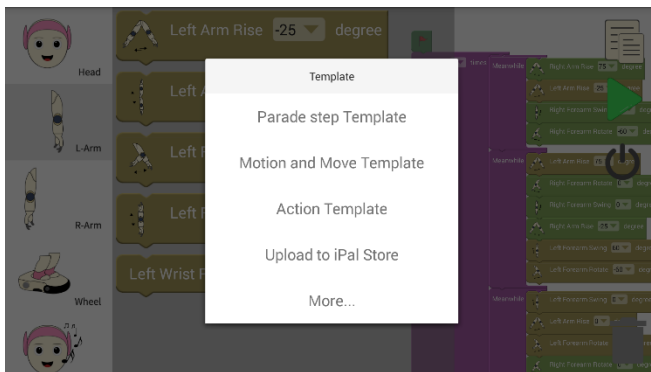
➤ **Loading Templates**

iPalProgrammer provides a variety of preloaded template (example) programs for you to use. Tap the template icon to open the templates menu. Tap on a template to load it into your workspace.

Note: Loading templates will clear the workspace, so make sure to save your work beforehand.

➤ **Uploading Templates**

You can upload your own programs to iPal store. Tap the Template icon and scroll to the bottom of the template menu. Tap “Upload to iPal Store”. Your program will be reviewed by an administrator. Once approved, your program will be available for others to download as a custom template.



➤ **Saving a Program**

To save your program locally, touch and hold the Template icon (at the top right). A popup will appear, prompting you to enter a file name. Enter a name for your code, then tap “Save” to save your program. You will see your program when you select “more” in the figure above.

➤ **Loading a Program**

Tap the Template icon and scroll down to “More...”. Tap “More...” and select the program you would like to load into your workspace.

6.4.5. Deleting Your Work

- To delete a single block in iPalProgrammer, drag the block to the Trash icon. When the Trash icon changes to an open trash can, release the block to delete it.
- To clear the whole workspace, tap and hold the Trash icon. A popup will ask if you would like to delete all, tap “Delete” to delete everything in the workspace.

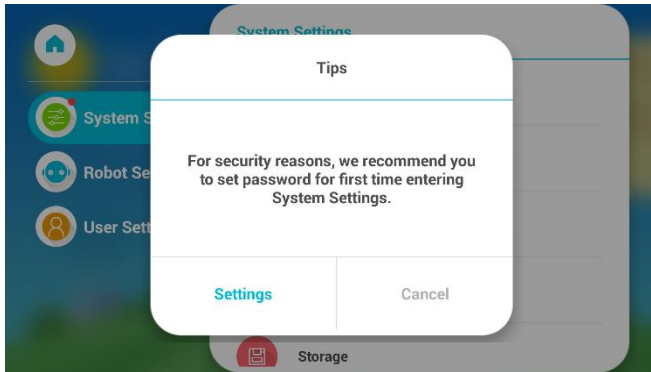
Note: The Start icon cannot be deleted.

6.4.6. Downloading Templates

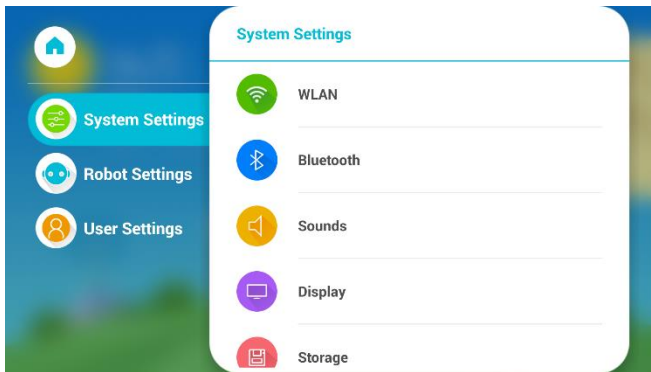
iPal Store collects templates from other users and provides download links. Please refer to iPal Store for more information.

6.5. Settings

The Settings icon can be found in the second page of applications (to move to this page, swipe left.) When first entering Settings, you will be asked to set a password for iPal. This is optional but recommended.

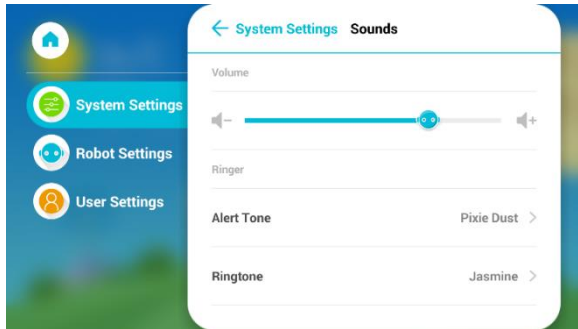


6.5.1. System Settings

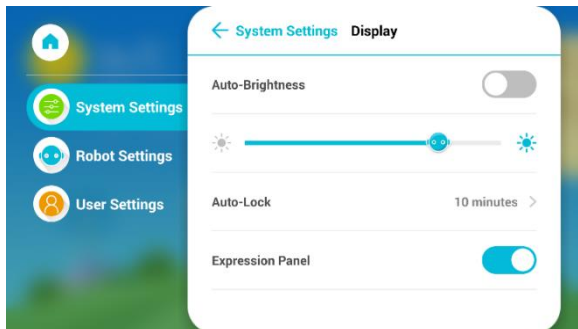


- **WLAN:** You will see a selection of Wi-Fi networks that iPal can connect to. Networks with a lock symbol require a password on selection.
- **Bluetooth:** Search for and pair Bluetooth devices. You can also set iPal as a Bluetooth speaker and play media from your iPal.
- **Sounds:** Adjust system volume, set system alert tone and

ringtone.



- **Display:** adjust screen brightness, set sleep time, and toggle the facial expression panel (controls the mouth and eyebrow display).

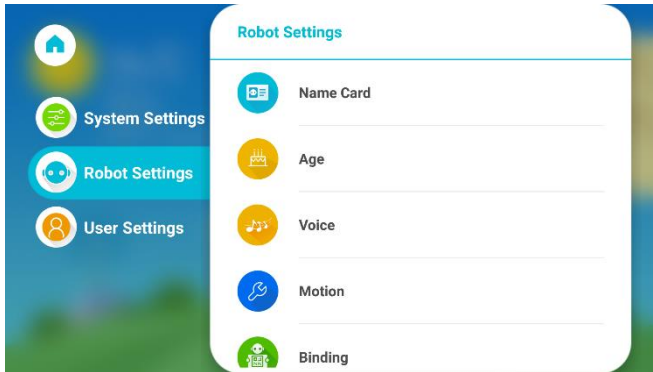


If you want to prevent the display screen from going into sleep mode after 10 minutes you can use “auto-lock” to set a longer time.

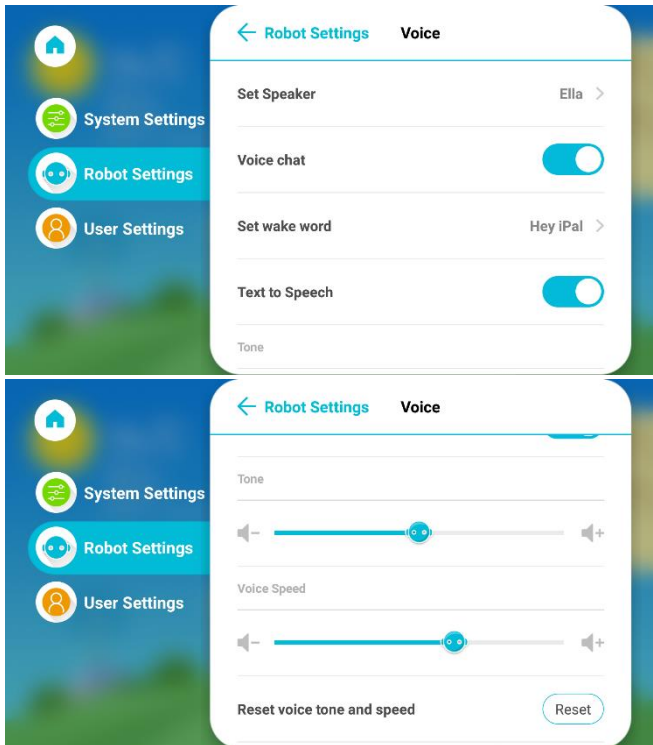
- **Storage:** Shows the stored and available data on the SD card.
- **Content:** Manage downloaded content. Unneeded content can be selected and deleted.
- **Apps:** Manage or uninstall applications.

- **Security:** Set or change password, and enable/disable voice calls
- **Anti-Addiction:** Set the maximum allowed game time, as well as the wait time before games are unlocked.
- **Language:** Supports simplified Chinese and English.
- **Time & Date:** Set current date, time, and time zone.
- **About:**
 - System Details: Shows iPal software and hardware version.
 - Terms of Use: Specifies iPal terms in detail.
 - Privacy: Describes privacy terms for iPal.
 - System Update: Checks if a new version is available to download.
 - Reset to Default: Reset iPal to factory status (***WARNING – Use caution, all content and applications you have added to iPal will be deleted, including photos, videos and other resources***).

6.5.2. Robot Settings



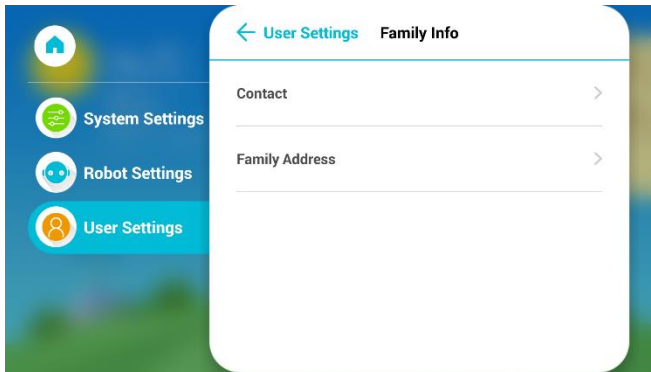
- **Name Card:** Edit iPal's nickname or birthday.
- **Age:** Set the age group that the robot will interact with.
- **Voice:** Customize your iPal's speaking voice. Set Speaker allows you to choose from 12 different speakers. Choose your favorite speaker, then you can further adjust iPal's voice tone and speed by scrolling down. Set Wake Word allows you to choose between "Hey iPal" and "Alexa" as the word to start voice chat. You may also toggle voice chat and text to speech. Turning off "Voice chat" will disable Alexa, and turning off "Text to Speech" will turn off iPal's speaking voice.



- **Motion:** Toggle on or off iPal's motor movements. This will turn off all iPal movements as well as mobility.
- **Binding:** Scan the QR code to pair with iPal.
- **NUI:** Toggle the Natural User Interface. See section [6.5.4](#) for more details.
- **iRemoter:** The iRemoter app allows you to remotely control iPal from your Android device. Scan the QR code to download the iRemoter app. For detailed instructions on using iRemoter, see the iRemoter manual.

6.5.3. User Settings

User can add or edit contact and family information in this section.

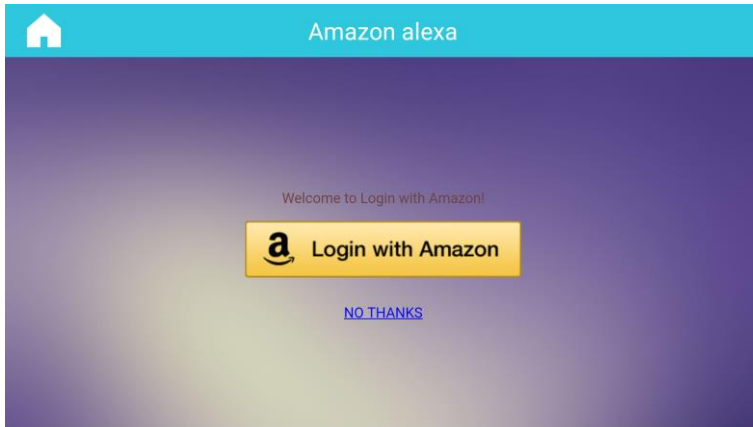


6.5.4. Amazon Alexa

iPal has two options for the wake word, which tells Alexa to be ready for a question or request: Amazon Alexa and “Hey iPal”. Alexa is the default wake word, but you will need to log in to your Amazon account on your first time using Alexa.

Getting Started

To select Alexa as your default voice chat option, enter the settings menu, tap “Robot Settings” on the left, then tap “Voice”. If “Voice Chat” is off, turn it on, and then set the wake word to “Alexa”. Say “Alexa” to begin chatting.



Setting Up Alexa

When you first use Alexa, the screen shown above will appear. Tap “Login with Amazon”. You will be redirected to an Amazon login page. If you have an Amazon account, enter your credentials and tap “Sign in”. If you do not have an Amazon account, scroll down and tap “Create a new Amazon account”, then follow the instructions provided. Amazon may ask you to verify your account, if so, check your account email for the verification code. Once you have successfully logged into your Amazon account, you can now freely use Alexa at any time by saying “Alexa”.

Troubleshooting

If your voice chat is on and “Alexa” is set as the wake word, but iPad does not respond when you say “Alexa”, you may need to login to Amazon Alexa manually. From the Home screen, tap “App”, then “Other”, and finally “Amazon Alexa”. The login screen will appear.

6.5.5. Natural User Interface Settings

The Natural User Interface (NUI) is iPal's way of interacting with you. iPal can track your face and maintain eye contact with you whenever you are in the home screen. Additionally, iPal can even chat with you. Ask iPal a question about the weather or for a joke and iPal will respond.

NUI is enabled by default, but to change NUI settings, enter the "Settings" app, and select "Robot Settings" on the left. Scroll down



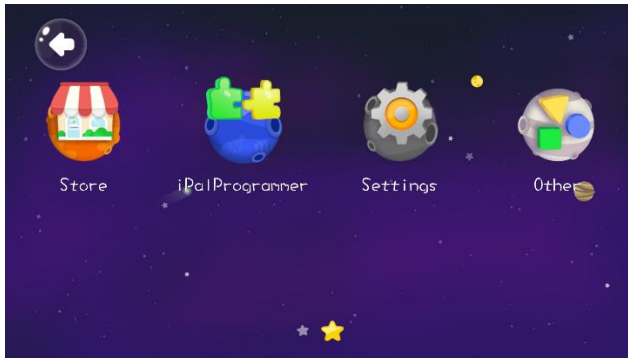
and tap the NUI icon. You can turn NUI and Device Discovery Protocol on or off.

Device Discovery Protocol: This setting enables your iPal to be discoverable for the iRemoter app. If you want your iPal to not show up on iRemoter, turn this setting off.

7. Downloading Applications

7.1. iPal Store

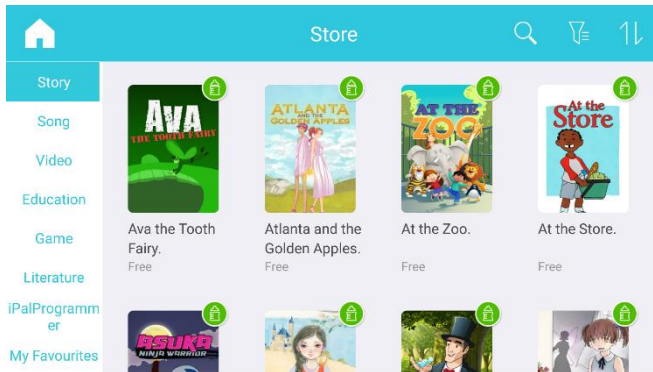
- Enter the App menu and swipe left.






- Tap the  icon to enter the Store.

7.2. Downloading from the Store

7.2.1. Store Menu



7.2.2. Searching by Category/Filter

Use the left-hand menu to choose a category of content. To search for content by name, tap the  button. You may also tap  to filter content, or tap  to sort by rating or newest.

7.2.3. Installing an App

Any downloaded application will be installed in its respective folder. For example: applications under the Story category will be

downloaded to the Story folder, and Music apps to the Music folder.

7.2.4. Starting Your New App

Find the app in the category it was installed in and tap the new app to start it.

8. iPal Maintenance

8.1. Maintenance

- Do not use polishing compounds, alcohol sprays or any other flammable substances on iPal.
- Do not attempt to disassemble iPal.
- Maintenance:
 - Make sure the charger is unplugged.
 - Shutdown iPal using the power button on iPal's back.
 - Use a dry towel to clean iPal.
 - Make sure that iPal remains completely dry.
 - Clean iPal's base occasionally as it may be affected by dust or hair. The front wheels can be removed by simple tools and hair can be cleaned out.

8.2. Charger Maintenance

- If the charger is covered in dust, please unplug it then clean it with a dry towel.
- Please keep charger out of the reach of children.

9. Warranty

Damage or abuse to iPal due to improper use will void your warranty. AvatarMind Robot Technology will not be responsible for any damage to iPal or user injuries due to user violation of the guidelines provided in this chapter.

Your safety is our highest priority. Please follow the usage and maintenance instructions in this chapter.

Warning: Do not allow children under 3 years old or pets to use iPal without adult supervision.

9.1. Emergency Shutoff

Please press the emergency stop button (lower button at iPal's back) under any of the following conditions:

- iPal is in danger, such as from contact with water
- iPal is in danger of harming its surroundings
- iPal is behaving abnormally
- Any other actions which may cause harm to people or objects

9.2. Usage

- ***Do NOT pick up iPal by its head or arms.***
- ***Do not attempt to disassemble or re-assemble iPal.***

- iPal should only be used in temperatures between 5°C ~ 35°C/41°F ~ 95°F.
- Do not charge, use or store iPal near fire or heaters, or in direct sunlight.
- iPal is for indoor use only.
- Do not let iPal come into contact with water.
- Do not handle iPal with wet hands.
- Do not let iPal get close to fire. Provided.
- Only charge iPal with the included charger.
- Do not intentionally set barriers within iPal's detectable range.
- Do not cover iPal's sensors.
- Staying too close to iPal may restrict the movement of iPal or cause unexpected behavior.
- Do not insert anything into iPal's chassis or gaps by the head.
- Do not touch the internal battery.
- Do not touch or move iPal's joints as illustrated below, it may cause damage to the joints and/or pinch your fingers.



Shoulder Joint / Motor



Head Joint / Motor



Elbow Joint / Motor

9.3. Storage

- Make sure iPal is turned off.
- Store iPal in a dry place without dust and within 0°C ~ 45°C/32°F ~ 113°F.
- Periodically charging iPal is suggested, even when not in use.

10. FCC Warnings

10.1. FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by AvatarMind compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This

equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

10.2. RF Exposure Statement

To maintain compliance with FCC's RF Exposure guidelines, this equipment should be installed and operated with a minimum distance of 20 cm from your body.

10.3. IC Warning

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotopically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Appendix

I : iPal Specifications

Item	Description	
Size	Height x Length x Width: 40 x 16 x 17 (in) / 1025 x 395 x 440 (mm)	
Weight	27.6lb / 12.5kg (including battery)	
Standards	ASTM F963-17 : Part 1-2, Part 3 SOR/2011-17 : Part 1-2, Part 3 B/O Test CPSIA CA65 TPCH US Public Law 104-142	
Battery	Capacity	6600mAh/13200mAh
	Voltage	18~21V
Working	Temperature	41°F~95°F / 5°C~35°C
	Humidity	30% ~ 70%
Storage	Temperature	-4°F~140°F / -20°C~60°C
	Humidity	20 ~ 80%
Control	Voice	Supported
	Keyboard	Supported
	Touch Panel	Supported
Color	5 colors (Blue, Pink, Green, Gold, Silver)	

Material	Body (White) / Back Buttons: ABS-PC + Paint / UV coating
	Body (Grey): ABS-PC + Paint / UV coating
	Chassis: ABS-PC + Paint / UV coating

II : Charger Specifications

Item	Description
Input Voltage	AC100V- 240V
Input Voltage Frequency	47-63Hz
Output Voltage	24V
Output Current	3.75A
Output Power	90W
Idle Power	<0.8W
Efficiency	>85%
Overload Current	>10A
Overload Voltage	>25V
Short Circuit Protection	No smoke, fire or change on shape
Input Wire	5ft / 150 cm
Input Socket	US 120V 3 pins
Output Wire Spec	AWG16
Output Wire Length	4 ft / 120 cm
Output DC	5.5x2.5mm round
Temperature	32°F-104°F / 0°C-40°C
Humidity	5—95%
Average Lifetime	20000h
Material	Flame Retardant ABS
Pack Size	23 x 53 x 12 in / 58 x 139 x 31 cm
Appearance	Black
Max Current	4A

III: Notices and Warnings

Important Safety Information:

- Please use this product only under the supervision of an adult.
- Do not use this product outdoors or in unsafe places.
- iPal should be periodically examined to make sure that everything is operating correctly.
- Any attempt to disassemble this product is unsafe and WILL void the warranty.
- Do not allow children to play with a product that is damaged.
- Do not expose this product to high temperatures, humid environments or directly to the sunlight.
- This product should not be cleaned by water. If product is dirty, please wipe off with a dry towel. Do not use diluent or benzene liquid on this product.

Battery Warning:

- iPal contains a lithium battery.
- DO NOT short circuit the power supply.
- Charging must be operated by adult.
- The battery is not replaceable, DO NOT remove the battery from this product.
- Periodically examine the charger. If damage is found, stop using it immediately until it is repaired.



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