

User Manual & Command List

R2-D2 Astromech Droid Unit - Capabilities Overview

1. 📶 Internet Intelligence (WiFi Time)

- **Automatic Sync:** R2 connects to your WiFi (YOUR WIFI/YOUR PASSWORD) on boot.
- **Precision Time:** He fetches the exact atomic time from the internet (pool.ntp.org).
- **Zero Drift:** Unlike normal clocks, he never runs fast or slow. He re-syncs automatically.
- **Smart DST:** He is programmed for Eastern Standard Time (EST) and handles Daylight Savings automatically.
- **ATTN: CODE MUST BE CHANGED TO YOUR WIFI INFO AND TIME ZONE**

2. 📱 Long-Range Comms (Bluetooth Control)

- **App Control:** You can send commands via the "Serial Bluetooth Terminal" App on your phone.
- **Remote Playback:** Type any track number (1, 5, 66) to play it instantly.
- **Remote Alarm:** Set the alarm textually (ALARM 07:30(AM) 19:30(PM) without touching the droid. (*24HR Format is ONLY used in Bluetooth Mode)
- **Emergency Stop:** The STOP command kills all noise and lights immediately.

3. 🚨 Security System (The Alarm)

- **Wake-Up Protocol:** When the alarm triggers, R2 plays the selected track on a loop.
- **Visual Alert:** The Red, White, and Blue LEDs flash in a specific emergency pattern.
- **Snooze/Dismiss:** Pressing the knob button stops the alarm and resets the system.

4. 🎧 Auditory System (DFPlayer Mini)

- **MP3 Playback:** Plays high-quality audio files from your SD card.
- **Volume Control:** Digital volume control (Levels 0-30) via the knob or app.
- **Selection:** Can play specific tracks for alarms or entertainment.

5. 💡 Holographic & Logic Displays (LEDs)

- **Red, White and Blue LEDS:** On at all times, except Alarm sequences
- **All LEDS:** Flash during alarm sequences along with the alarm song/sound until knob on R2 Droid is pressed

The Knob (Manual Control)

1. Normal Mode (Default)

- Rotate: Adjust Volume (0-30).
- Display: UOL 15
- Click (Short Press): Toggle Alarm ON/OFF.
- Display: On or OFF
- Click (While Music/Alarm is Playing): SILENCE / STOP.
- Stops the alarm or the jukebox immediately.

2. The Setup Menu (Hold Knob 1 Second)

Enter this mode to change time, alarm, or play music manually.

Step, Display Shows, Action (Rotate Knob), Click to...

- Blinking Hour, Set Current Hour, Save & Next
- Blinking Minute, Set Current Minute, Save & Next
- Blinking Hour, Set Alarm Hour, Save & Next
- Blinking Minute, Set Alarm Minute, Save & Next
- **So 01**, Pick Alarm Song (1-99), Save & Next
- **PL 01**, Jukebox Mode (Pick Song), PLAY NOW

The Bluetooth App (Phone Control)

App Setup:

Control your Droid using the **Serial Bluetooth Terminal** App.

Device Name: **R2D2_Final**

- **Bluetooth Name:** R2D2_Final
- **Service UUID:** FFE0
- **Channel:** FFE1

Connection Type: Bluetooth LE (BLE)

Command Action:

- Type 1 (or 2, 3...) Is Lazy Mode: Just type a number and hit send, R2 will play that song immediately.

- Type: STOP Is the Emergency Brake: Stops music, silences the alarm, and resets the LEDs.
- Type: ALARM 07:30, Sets the alarm for 7:30 AM and turns Alarm Mode ON.
- (Use 24-hour time: 19:30 for 7:30 PM).
- Type: PLAY 5, Plays track #5 (Same as Lazy Mode, just more formal).

3. The Lights (Status Indicators)

- Solid ON: R2-D2 is Awake & Normal.
- Rapid Blinking: Alarm is Ringing (Wake up!).
- Blinking Colon (Display): Seconds are passing (Clock is running).
- Solid Colon (Display): PM Indicator (Afternoon/Evening).