

Project Requirements: LED Sign

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Core Requirements

Standard Serial Communication

- Must work at baud rate 9600 (required).
- Should also support standard faster baud rates where possible.
- Reliable handshake implementation to prevent transmission errors or instability.

Transmission Protocol

- Must include Start and End transmission indicators (defined using ASCII codes).
- Data packets will follow a standardized format to ensure consistency and stability.

For example:

125001Hello15

12 → Start of transmission

5001 → Instruction code (e.g., Scroll Fast)

Hello → Message content

15 → End of transmission

Must support sending at least 120 characters per transmission.

The transmission protocol will be fully documented.

Control Features

- Scrolling (Left to Right)
- Static Display
- Scroll Away / Continuous Scroll
- Large Font Mode (≈5 characters)
- Small Font Mode (≈20 characters)
- Combination Font Modes (e.g., 4 Large + 2 Small characters).

Additional Enhancements (if time allows)

- Stopwatch / Countdown Timer (integrate with RTC chip).
- IR Remote Integration for selected features.
- Includes a remote listening mode to detect and map remote button codes.

Primary Goals

Fully functioning, crash-free communication and display system.
Consistent and documented transmission protocol for future scalability.
Support for all core display features and font modes listed above.

Note

The bare minimum is the transmission protocol and the baud rate working. We can also use your code and the previous students' code as a base for ours.