

1. Technical Requirements

1.1 Communication & Protocols

- Support for standard communication protocols:
 - RS232 (Serial)
 - Ethernet/IP
 - USB (with Virtual COM Port support)
 - Modbus / MQTT (optional but preferred)
 - Wi-Fi
- Detailed documentation must be provided for:
 - Communication protocols
 - Data format (ASCII / CSV / Hexadecimal)
 - Parsing structure
- Command/Response support:
 - Tare (T)
 - Zero (Z)
 - Weight Read (W)

1.2 Connectivity & Interface

- Stable connectivity via RS232 / USB / Ethernet/ Wi-Fi
- Plug-and-play driver support
- Compatibility with Windows-based systems
- Virtual COM Port support for USB devices

1.3 e-Mandi Integration Requirements

- Availability of **API/SDK** for seamless integration
- Sample integration code (preferably in .NET / C#)
- Integration guide/documentation
- Support for:
 - Real-time weight capture
 - On-demand data fetching
- Configuration utility for:
 - Baud rate
 - Parity
 - Transmission mode

1.4 Configuration & Calibration

- Remote configuration capability
- Software-based calibration support
- Weight stabilization indicator (Stable/Unstable status output)

1.5 Compliance & Accuracy

- Compliance with **Legal Metrology Act (India)**
- Certification for trade use
- High accuracy and reliability standards
- Data integrity checks to prevent transmission errors

2. Functional Requirements

- Automatic weight capture into e-Mandi system
- Elimination of manual data entry
- Audit trail for all weight transactions
- Error handling and retry mechanism
- Support for multi-device integration per mandi

3. Deliverables

- Hardware (weighing scales)
- API/SDK and documentation
- Installation and configuration reports
- Training materials and user manuals
- Warranty and support documentation

4. Training & Support

- On-site / virtual training for mandi staff
- Dedicated technical support team
- SLA-based support (response & resolution time)
- Helpdesk support during peak operations