1. GPS RECEIVER WITH GPS CLOCK

Sl. No.	Parameter	Required Technical Specification
1	Equipment	Industrial GPS/GNSS Network Time Server with GPS Clock
2	Time Reference	Satellite-based GPS/GNSS
3	Time Synchronization Protocol	SNTP and NTP
4	SNTP Ports	Minimum 2 independent SNTP-capable Ethernet ports
5	Ethernet Interface	Minimum 2 independent RJ45 Ethernet interfaces
6	Ethernet Speed	10/100/1000 Mbps
7	Time Source	GPS/GNSS satellite receiver with continuous time reference
8	Time Distribution	Capable of distributing synchronized time to numerical relays, Ethernet switches, HMI and SCADA servers through SNTP/NTP
9	Time Format	UTC time reference with IST time-zone support
10	Time Accuracy	Vendor shall declare GPS-locked time accuracy with datasheet evidence
11	Holdover	Vendor shall declare holdover performance and oscillator type
12	Status Indication	Power, GPS/GNSS Lock, Synchronization and Alarm/Fault
13	Local Display	Built-in time/status display or equivalent indication
14	Configuration Access	Manufacturer-standard configuration interface
15	Power Supply	230V AC, 50Hz or suitable site-compatible supply
16	Mounting	Rack/Panel mounting arrangement, as applicable
17	Operating Conditions	Suitable for continuous industrial operation
18	Accessories	Complete compatible outdoor GNSS antenna, antenna cable, connectors, mounting accessories and power connection accessories

2. GPS/GNSS ANTENNA AND ACCESSORIES

Sl. No.	Parameter	Required Technical Specification
1	Antenna Type	Outdoor GPS/GNSS antenna
2	Compatibility	Fully compatible with offered GPS/GNSS Time Server
3	Installation	Suitable for outdoor installation
4	Enclosure	Weather-resistant and UV-resistant construction
5	RF Connector	Compatible with offered Time Server
6	Antenna Cable	Low-loss coaxial cable with compatible connectors
7	Cable Length	
8	Mounting Accessories	Suitable antenna mounting bracket and fixing hardware
9	Surge Protection	Compatible coaxial surge protection device, recommended for outdoor antenna installation
10	Earthing Accessories	Required antenna-line bonding/earthing accessories

3. GPS-SYNCHRONIZED DIGITAL TIME DISPLAY

Sl. No.	Parameter	Required Technical Specification
1	Equipment	GPS-Synchronized Digital Time Display
2	Application	Installation inside Network-Level Ethernet Switch Box
3	Display Type	High-visibility Digital LED Display
4	Time Format	24-Hour Format (HH:MM:SS)
5	Time Synchronization	Synchronization from the same GPS/GNSS Time Server
6	Communication Interface	Ethernet NTP/SNTP preferred
7	Alternative Interface	If another interface is offered, vendor shall specify protocol and required accessories
8	Time Zone	IST
11	Power Supply	230V AC, 50Hz or suitable compatible supply
12	Mounting	Suitable for installation inside the Network-Level Ethernet Switch Box
15	Accessories	Required mounting hardware, power connector and synchronization interface accessories