SRIJON
MICROSYSTEMS
**AN ISO 9001:2015 CERTIFIED COMPANY**

DATASHEET

EARLY WARNING
SYSTEMS

DATASHEET

Integrated Logger : (skYnet 7.1)

Make : Srijon Microsystems

The Integrated logger is a rugged system capable of running 24x7 in harsh environment with dust and temperature. It has versatile integrated memory and interfaces. It is designed with industry standard 32 bit ARM Cortex and dual SIM wireless 4G based redundant wireless systems. If one 4G channel fails, the other 4G channel will take over automatically to send the data. It has a integrate port for External VSAT (optional) transceiver. Data logger is sending data over wireless media through GSM connectivity and VSAT (optional).

DATASHEET
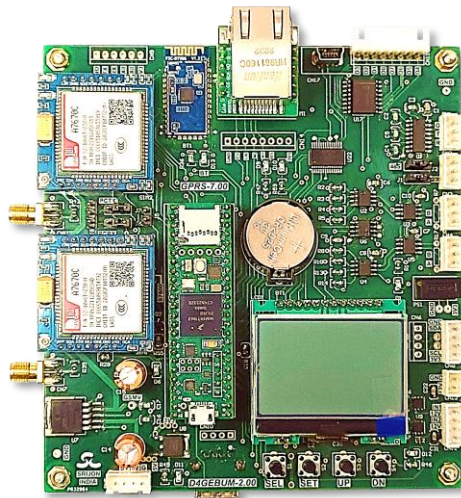
Integrated Logger : Features

- Input/output: 02 Analog I/O, 04 nos. 4-20mA Input. Supports addressing of MODBUS devices through RS485 and RS232 ports.
- 04 Digital Input for acquire digital signal from relay or any other digital source
- 04 Digital Input for Bridge Rupturing Detection System (BRDS)
- Built in 10 Base T/100 Base TX Ethernet for External VSAT (optional) connectivity
- On-board Dual SIM GSM/GPRS 3G/4G connectivity.
- Power Supply: 5-10V DC
- Inbuilt signal conditioning for various parameter measurements
- Display: Mono colour graphic LCD Display Module 128×64 pixel
- Interface Type: SPI
- Pixel Colour: Black
- LED Back light Colour: White
- Programming: Local and remote through web server.
- USB port for programming through PC
- Software: Compatible configuration, diagnostic, parameter setting and view.
- SMS alert
- Battery status checking
- Memory: 1MB Internal, External up to 16 GB (SD Card/ Pen Drive)
- Serial Output : RS 232/RS485
- Inbuilt RTC. Interval with accuracy of $\pm$ 2min/year and leap year compensation.
- Each logger can be configured for its own ID and other parameters like data fetching interval.

** SIM (Jio/airtel/VI) will be provided by customer.
**VSAT will be provided by customer.

The data view system will display instant data (i.e. water level, velocity, rain) as well as historical data in tabular and graphical manner. User can download day-wise/month-wise/year-wise historical data through filtering in excel format.

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Radar Water Level Sensor
Make: Vega

- Range: 0-45 meter
- Radar type
- Beam Angle 4 degree
- Frequency: 26 GHz
- Resolution: 1mm
- Operating Temperature : - 40°c to 65°c

Radar Water Velocity Sensor
Make: Geolux

- Radar type
- Range: 0.5-35m
- Frequency: 24 GHz or better
- RS-485 Output
- Output: 4-20mA / RS485
- Measurement range: 0,1 to 15m/s
- Resolution: 1mm
- Power supply: 12V DC
- Operating Temperature : - 40°c to 65°c

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MPPT Solar Charge Controller

- Degree of Protection - IP 55
- Usage/Application - Solar System Controller
- Battery Voltage - 12V / 24V (auto-select)
- Maximum solar panel voltage - 70V
- Product Efficiency (%) - Up to 98.8%
- Load cut-off in low battery condition - 10.8 V / 21.6 V
- Battery deep discharge cut-off voltage - 10.5 V / 21 V
- Charge Controller Type - MPPT

150 WP Solar Panel (12V)

- Chloride Photovoltaic Module uses the best available technology and raw materials.
- White tempered glass and EVA resin with back sheet provide maximum protection from severe environmental conditions.
- High torsion strength and corrosion resistant anodized aluminium frame provide maximum structural strength and ease of installation.
- DC 12V/24v
- Output lead wire terminal with waterproof connector for higher wattage modules.

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D A T A S H E E T

42AH SMF 12V Battery

- Maintenance Free
- Rechargeable and sealed
- Leak-proof

Accessories

- Enclosure IP66/67 Panel
- Silicon gasket
- Sensor Cables

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Dashboard Software for Control Stations

Make : Srijon Microsystems

- The system shall automatically collect the observations from attached sensors, transmit it to Cloud on real time basis through GPRS (Ku-Band VSAT optional) and store it there.
- Stored Information processed on real time basis to display information onto Dashboard at Control Stations.
- Sensor Dashboard software is provided by the vendor on Cloud, capable of being accessed by multiple NHPC users through Username & Password.
- Dashboard should be customized as per NHPC requirements so as to provide display of real time information regarding water depth, water level and other related parameters.
- Dashboard is capable of providing multiple views like, Graphs I Charts, text, excel spreadsheet, pdf etc. related to water level/depth.
- Dashboard allows downloading of .sensor data in required format (text/excel sheet/PDF etc.).
- Dashboard is capable at continuously monitoring the status of the instruments, power supply and communication. In the event of failure of an instrument or disruption of any of the power sources, an alarm shall be sent to Control centre.

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Web Database Server

Make : Srijon Microsystems

- The Central Web Database Server Software will be developed on ASP .NET, PHP & SQL or latest platform.
- The web server space, database space and associated domain will be allocated distinctly for the purpose. The services may be extended for availing continuous service.
- The database server will be configured to accommodate all data received from Remote Wireless Data Acquisition units located at different remote locations with local time stamp.
- The configuration, programming and uploading of the database server application for validating and storing all data received from each Remote Wireless Data Acquisition units will be within the scope of the supply for the warranty period.
- Proper security will be provided through specific passwords for preventing unsolicited update of database for each Remote Wireless Data Acquisition units. Each set of data will be stored with node name, serial number, local date & time stamp received from each Wireless Remote Data Transmitter cum Logger. There will not be direct access to the database by any logger or application.
- Provision for downloading data based on various filter criteria (for specific period/node basis) in Excel format is included in the application.
- The web application will be protected with proper password authentication. Separate forms should be incorporated for showing instant data, historical data (in tabular format) and graphical representation of system parameters (especially graphical representation of flow data). There will be provision of selecting locations and period for filtered display of data.
- Edit/Addition of new location ID and corresponding password will be provided with proper authentication of users at higher privilege.
- The web application will be able to provide raw data of the SQL data base to other servers.

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API Facility

- An API with JSON response containing Water Level, Velocity, Discharge, Location, Date Time, Battery Voltage etc. shall be provided for integration of the system with Early Warning System maintained by Customer
- MeitY approved server
- Data send using Authentication key
- HTTPS facility available
- JSON response Sample :

```
{
  "Project Name" => "ABC",
  "Location Name" => "ABC123",
  "Date Time" => "YYYY-MM-DD HH:MM:SS",
  "Water Level" => "537.3",
  "Water Discharge" => "271.7",
  "Water Velocity" => "3.4",
  "Battery Voltage" => "13.1",
}
```

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