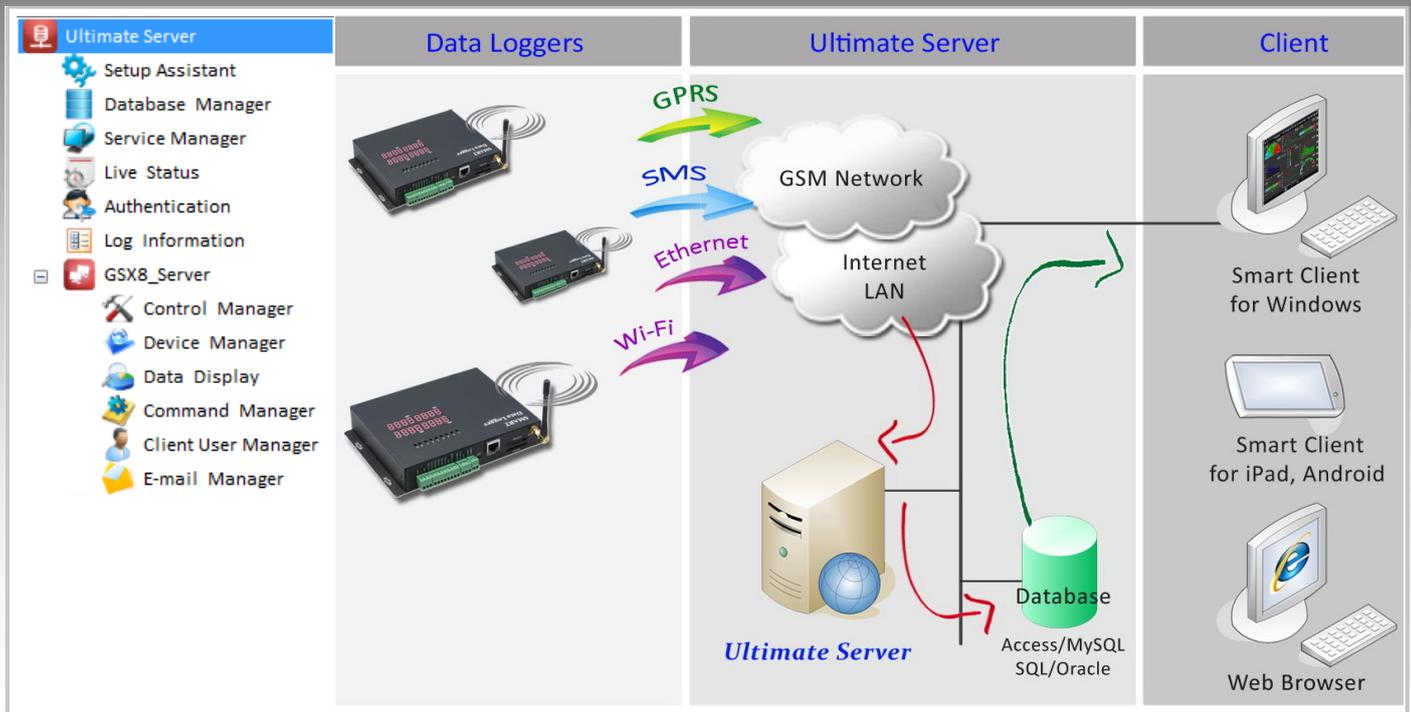


Ultimate Server Client Software

Smart Data Logger



Ultimate Server is dedicatedly developed for high volume data application.

1. Receive data from Data Loggers in UDP or TCP via GPRS, SMS, Wi-Fi and Ethernet
2. Management of database
3. Management of data loggers and clients
4. Management of data and alarm
5. Alarm Email Management
6. Support both Fixed IP & Dynamic Domain Name
7. Support 4 main types of database:
 - SQL Server
 - Oracle
 - MySQL
 - Access
8. Support redundant databases
9. Handling thousands threads of incoming data simultaneously [patented]
10. Support max. 999 groups in one single hosting
11. Support max. 999999 data loggers and 99 clients in one group

Smart Client displays live, historical data and alarm tracking in graphics & listing mode.

1. Retrieve data from Server Database [server mode]
2. Retrieve data from data loggers [direct mode]
3. Alert user via on screen display and alarm email
4. Support simultaneous display of multiple data loggers
5. Data Export
6. Support 5 display modes:
 - Split Screen (chart & meter)
 - HMI (Human Interface Machine)
 - Line Chart (a number of channels in comparison)
 - Data Listing
 - Dashboard

Platforms

1. Smart Client for Windows
2. Smart Client for iPad
3. Smart Client for Android Tablet, Android Phone

Ultimate Web Server supports web browser in displaying live and historical data.

Service Components

06/11/2012 12:42:02 192.168.0.12 UDP: TCP: SMS: CLT:

Data Receiving Modules are developed as Windows Service Components for Windows 7,8, 2012 Server OS.

Services are independent, reliable and stable in server grade application.

1. UDP service - manages the incoming data and outgoing command via UDP protocol
2. TCP service - manages the incoming data and outgoing command via TCP protocol
3. SMS service - manages the incoming data and outgoing command via SMS
4. CLT service - manages the data and command with Client Software

By virtue of multi-threading technology, each service is capable of handling thousands of incoming data per second simultaneously.

This design is dedicated for Windows Server platform application.



Management of Data Loggers

Central management of data loggers:

- Device ID & Name, Device Type, Password
- Ready for Data of Analog, Digital, Pulse Channels
- Central Alarm System independent of device hardware alarm
- Support 2 Levels of Alert High/Low Levels
- Data Loggers Health Status
- Auto Clock Synchronization of data loggers centrally



Device Type	A00	A01	A02	A03
GS828-H		A01	A02	A03
GS828-H2		Humidity	A01	A02
GS828-HV		Humidity	A01	A02
GS828-HX		Humidity	A01	A02
GS828-L	A00	A01		
GS828-L2	A00	A01	Humidity	Temp_2
GS828-LS		Temp	A01	A02
GS828-NH		A01	A02	A03
GS828-NH2		Humidity	A01	A02
GS828-NHV		Humidity	A01	A02
GS828-NHX		Humidity	A01	A02
GS828-NS		Humidity	A01	A02

Management of Remote Clients

Ultimate Server is designed for hosting a number of user groups in one single server:

- Each client can be assigned for different groups of data loggers
- Each group of data loggers can be assigned for one corporate customer
- Enterprise can manage different plants, factories or stores using one server license
- Service company can manage different groups of data for a number of its customers independently and individually

Client user using free bundled Smart Client software:

- Access data from Server Database
- Display live & historical data in graphics mode e.g. HMI, Split Screen, or Line Charts or simple data listing

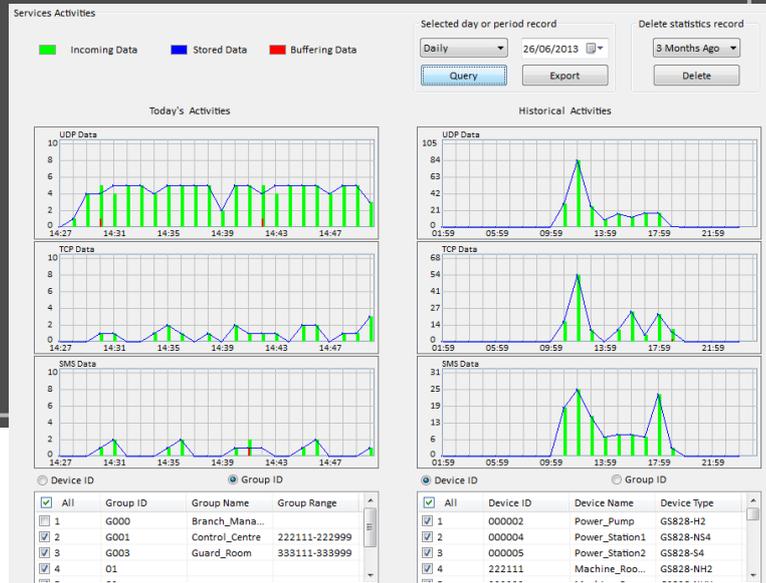
Monitor Server Loading

Ultimate Server keeps track of status, loading and performance of its data receiving service and database.

- Real time tracking of data incoming, buffer and saving
- Data buffering is an indication of system loading and data bandwidth usage
- Historical tracking of system performance for contingency plan
- Performance and Health Status tracking of individual data logger or groups of data loggers

Ultimate Server supports simultaneous port connection to a number of data loggers.

Our State of the Art Technology is capable of handling thousands of incoming data in a second.



Server Logs

Ultimate Server keeps track of its own activities of managing data loggers, service components, data, clients and alarms:

- Each server operation is stamped with date time, and logged
- Powerful tool for system analysis and error handling

System Log Information	UDP Log Information	TCP Log Information	SMS Log Information	CLT Log Information
System Log Info				
06-11-2012 12:41:33 >> [admin] >> Automatic Clock Synchronization Set success.				
06-11-2012 12:33:29 >> [admin] >> CLT_Service is started.				
06-11-2012 12:33:27 >> [admin] >> UDP >> DB 2 connect .				
06-11-2012 12:33:27 >> [admin] >> UDP >> DB 1 connect .				
06-11-2012 12:33:27 >> [admin] >> UDP_Service is started.				
06-11-2012 12:33:25 >> [admin] >> TCP >> DB 2 connect .				

Data Display in both Server & Client

Ultimate Server allows user to view the live and historical data in listing:

- Data by GPRS, SMS, Ethernet or Wi-Fi, Routine Data or Alarm Data can be selected
- Export selected data for third party software application or analysis

NO.	Client Code	Header	Device ID	Device Name	Device Type	Voltage	Upload_Time
1	GHG-XGY-GZG-JGI	STA	003549	Water_Station	GS828-L2	9.71	26-12-2012 10:25:00
2	GHG-XGY-GZG-JGI	STA	003549	Water_Station	GS828-L2	9.70	26-12-2012 10:20:00
3	GHG-XGY-GZG-JGI	STA	666111	Machine_Room	GS828-HV	null	26-12-2012 10:15:01
4	GHG-XGY-GZG-JGI	STA	003549	Water_Station	GS828-L2	9.70	26-12-2012 10:15:00
5	GHG-XGY-GZG-JGI	STA	003549	Water_Station	GS828-L2	9.71	26-12-2012 10:10:00
6	GHG-XGY-GZG-JGI	STA	122101	Water_Pump	GS828-LS	9.28	26-12-2012 10:10:00
7	GHG-XGY-GZG-JGI	STA	003549	Water_Station	GS828-L2	9.71	26-12-2012 10:05:00
8	GHG-XGY-GZG-JGI	STA	122101	Water_Pump	GS828-LS	9.28	26-12-2012 10:05:00

Free Smart Client software:

- Access data from Server Database
- Display live & historical data in graphics mode e.g. HMI, Split Screen, or Line Charts

Artificial Channels

Ultimate Server provides three Artificial Channels for more meaningful data presentation:

- It provides the user defined formula to work out rational values by data from different channels
- Compensation factor can be added into reading from pressure sensors
- Pulse rate can be worked out from dividing the pulse reading by time period

Device Type	Formula
GS828-HV	1.000*A13+1.000*A14+0.000

Artificial Channels Configuration:

Device Type: GS828-H2

Formulas:

- AC1 = a * CH(x) + b * CH(y) + c
- AC2 = m * CH(x) + n * CH(y) + r
- AC3 = s * [CH(x)(t) - CH(x)(t-1)]/P**

CH(x) = Channel: P01 - Pulse Counts

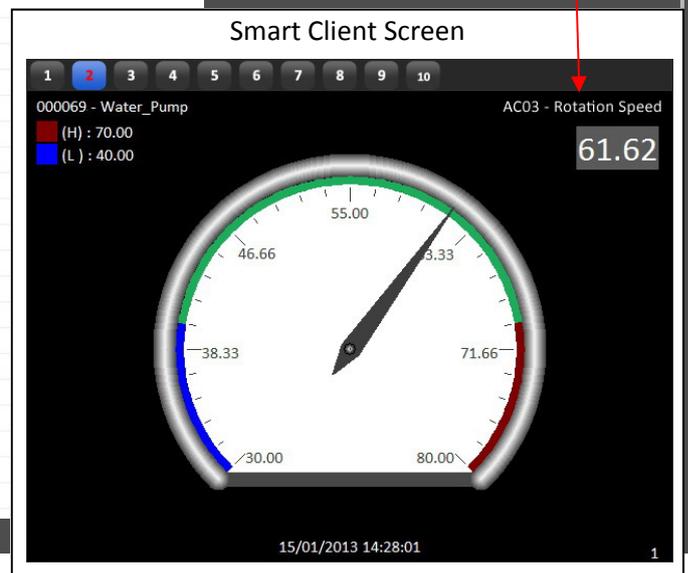
Multiple factor(s): 2.60

CH(x)(t) : data of channel x in current record.

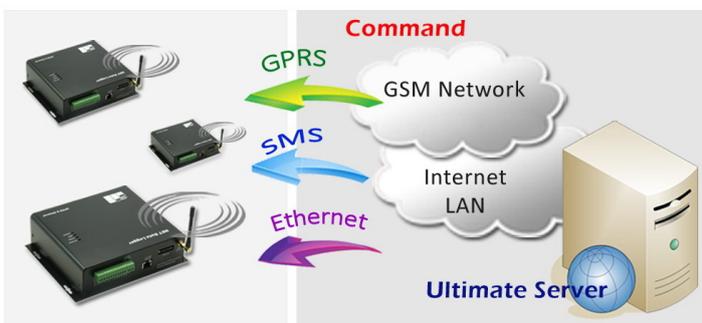
CH(x)(t-1) : data of channel x in previous record.

P : interval period between two sequential records (minutes).

Pulse Counts is converted to pulse rate by user-defined formula.



Remote Command & Configuration



Ultimate Server allows user to send command to data loggers:

- Server manage the setup or control command centrally on schedule.
- Simultaneous & Central Configuration of multi data loggers is possible.
- Command can be delivered to the data logger by GPRS, SMS or Ethernet.

Key Points:

- This feature is a useful tool for installer. A large number of data loggers can be configured in batch remotely.
- Configuration parameters can also be downloaded from data logger, and saved into a configuration file.
- The configuration file can then be imported and setup into a number of data loggers instantly.
- Parameter can be modified on schedule e.g. Daylight Saving Time every season.

Database

Ultimate Server supports 4 major database types common in the market:

- Connection engines are integrated in Server Software
- Easy creation and connection of 4 types of database in only few steps
- Database test tool is provided
- Database Connection List is built
- Select different database connection at any time

Creating Database

Database Type

- Access
 MySQL
 SQL Server
 Oracle

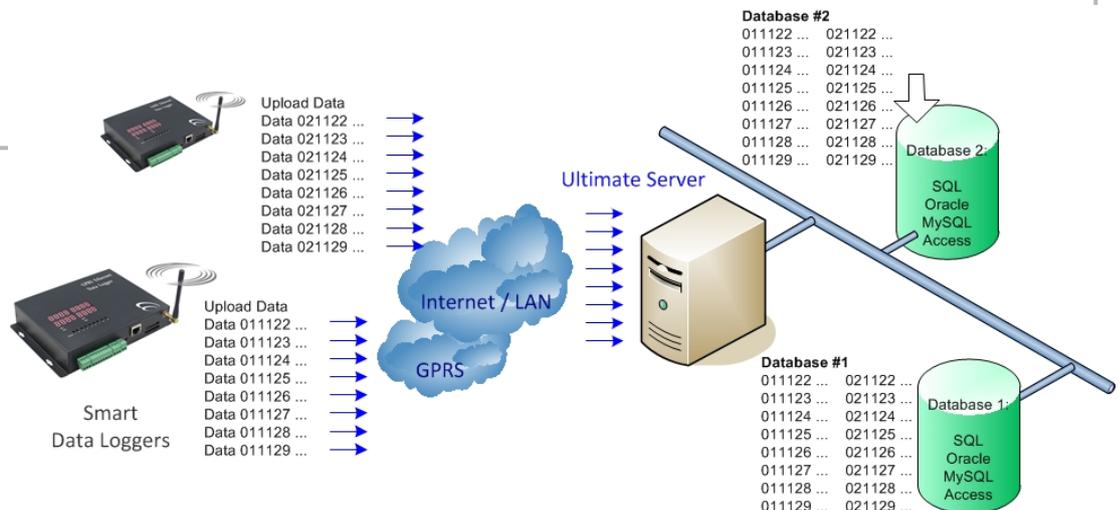
Database Redundancy

Data security is the key issue in telemetry industry. Ultimate Server provides fault tolerant architecture to protect data:

- Simultaneous data saving into two independent databases
- Automatic switching to health database when one of two databases is corrupted.
- Server and Database IP addresses are independent

Server configuration is saved into two databases at the same time:

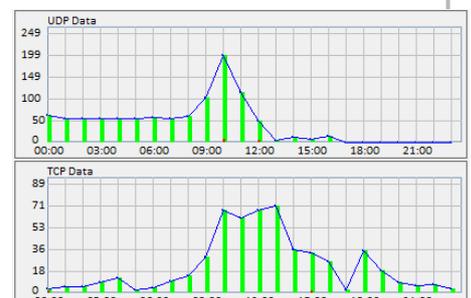
- Devices ID, Types, Channel Names, Device Grouping
- Clients Properties, Client Grouping, Server Users



Stress Test - Ultimate Performance

Ultimate Server Software undergoes stress testing on critical condition.

- It is capable of receiving data from >20000 data loggers simultaneously by creating a number of connections.
- Our patented "threading & multi-ports technology" handles thousands of incoming data records in seconds.
- Establishment of UPD and TCP multi-connections with thousands data loggers simultaneously.
- Synchronized data saving into two databases over network.
- Real Time Status of incoming data, buffering and saving is displayed in graphics



Database Manager

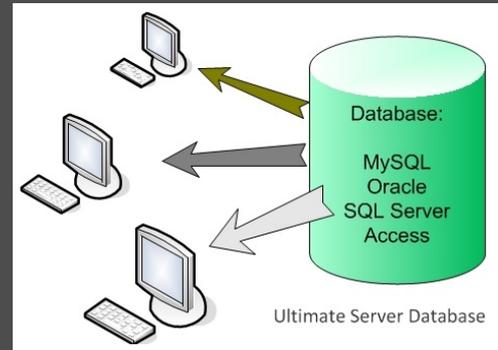
User can create its own database user login accounts.

With login accounts, users can develop their own client software:

- Web Server
- Web Client Browsing

Each data logger's information is stored individually:

- Each data logger has its own high/low alarm levels
- Each data logger is assigned to groups
- Alarm will be alerted on user groups



Designed for Hosting Companies

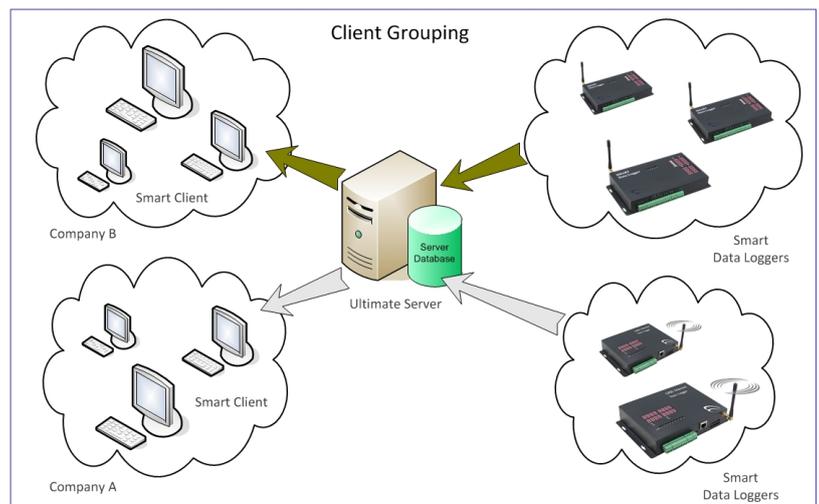
Ultimate Server allows devices assigned to groups of clients or emails for hosting management

Client Grouping

Client Grouping allows different users to access their own group of devices data.

This feature is unique and important for:

- Performance, Traffics and Health Status of different groups can be tracked and exported for analysis
- Number of data records for each group or individual data loggers are recorded
- Hosting Companies charge their clients for monthly service fee
- Project Management Companies
- Service Providers

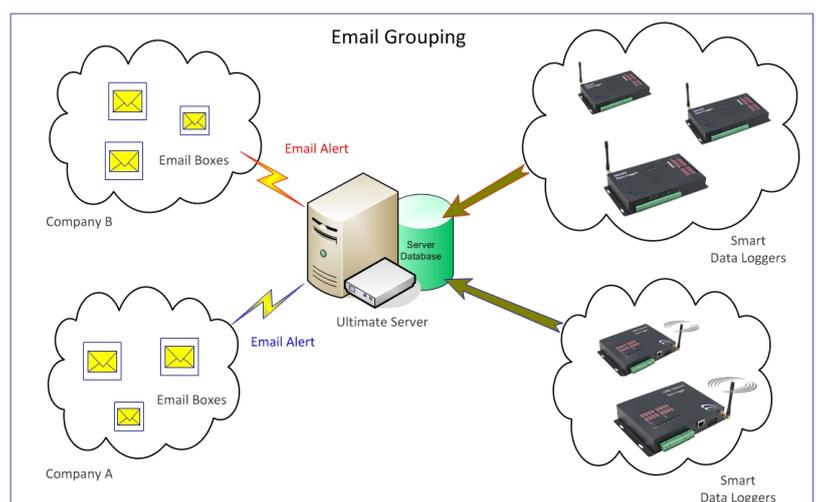


Email Grouping

Email Grouping allows alarms will be sent to different groups of emails associated with their devices.

This feature is unique and important for:

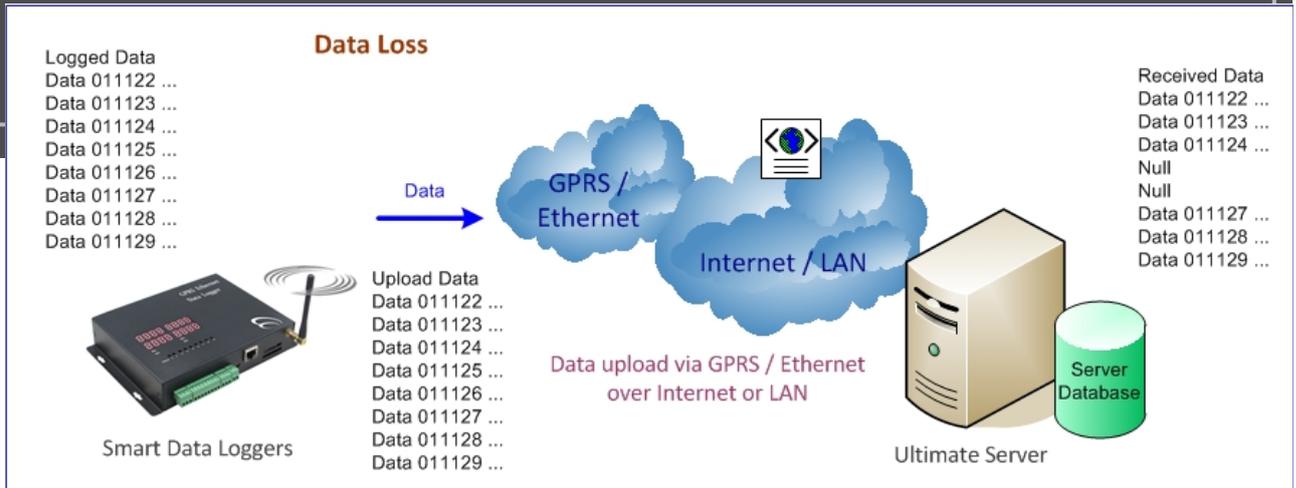
- Alerting different groups of users
- Project Management Companies
- Service Providers



Data Recovery [patented]

Auto Data Recovery Function:

1. When live data is lost owing to GSM or Ethernet network problem, Server will automatically retrieve the lost data from the internal memory of data loggers once network resumes.
2. Ultimate Server keeps track of the data integrity and initiates the "Data Recovery" module when data loss is detected.
3. No human intervention is needed.

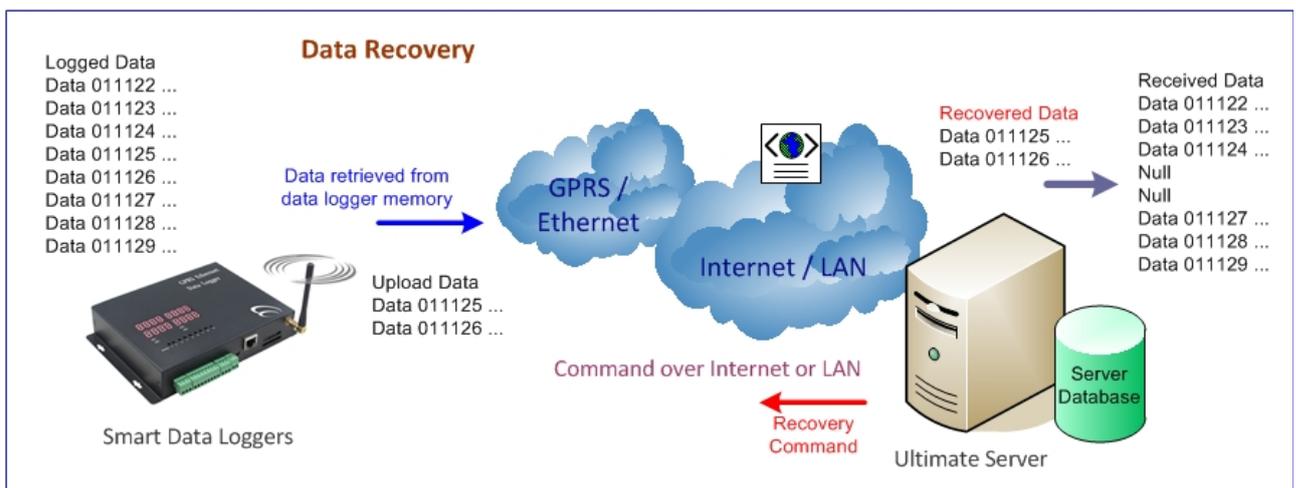


Patented Data Recovery Technology provides 99.9% data integrity in real application

Mechanism

When Server realized some records loss in the database by checking the previous data records:

- Send command to retrieve all data records during the period
- GPRS Ethernet Data Logger receives command, retrieves those data records from its internal memory
- GPRS Ethernet Data Logger uploads the logged data records instantly
- Server receives the data records, and inserted into the database
- All operation is completed automatically on background



Data Tracking

Smart Client allows user to track data from Server Database:

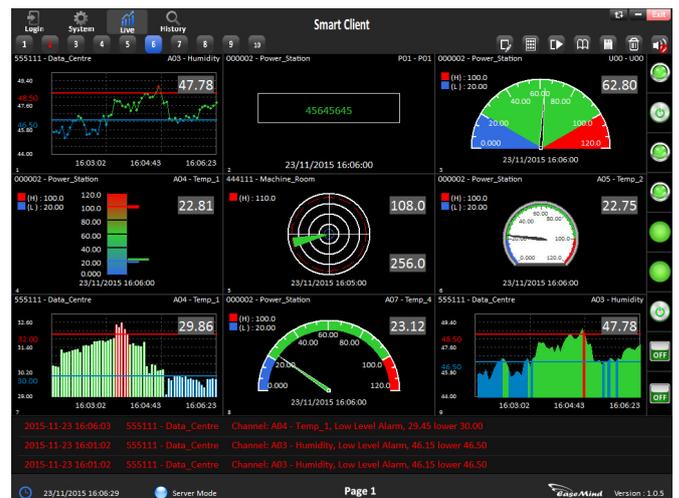
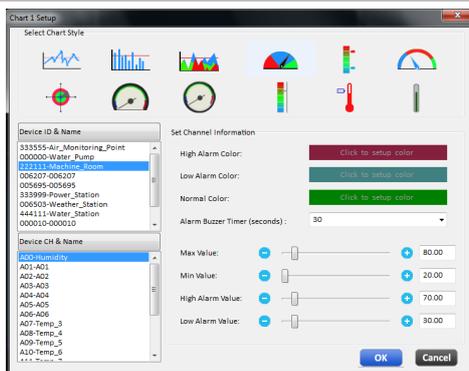
- Live & Historical Data Tracking in graphics mode
- Each client will be alerted when temperature or humidity is over the preset
- Client can be alerted by AD channel, Digital Input or AC Power Loss alarm.
- Each client is assigned to groups of data loggers
- Each client can monitor more than 300 channels in real time simultaneously

Key points:

- Max. 30 user profiles supported in each client station
- Max. 30 channels simultaneous real time display on single screen [HMI mode]
- Max. 300 channels live data update on background
- Supports [Direct Mode] and [Server Mode]
- Independent alarm levels of each individual channel [independent of Server and Data Logger Alarm]

Split Screen Display

- Supports 3x3, 2x2, 1x1 split screens
- More than 9 chart styles can be selected
- Wind Speed & Direction Plot
- Both Live & Historical Data are supported



Data Listing Display

- Max. 2000 records live data listing
- Max. 2000 records historical data query
- Data Logger and Channels user selectable
- Selectable period of history data
- Detail listing of record information
- Date/Time, Device Name & ID, All Channels

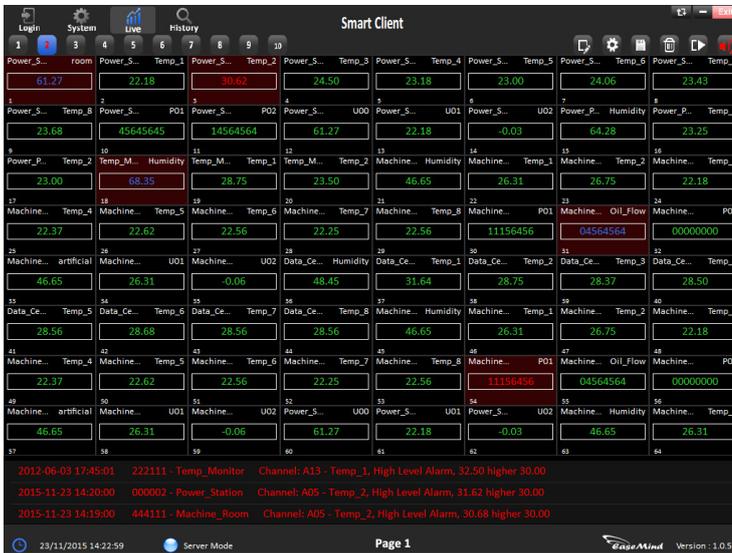
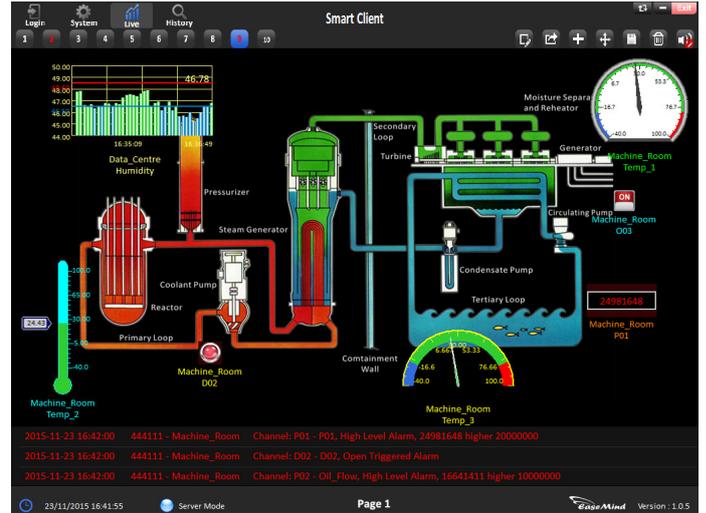
No.	Device ID	Device Name	Client Code	Device ID	Device Name	Upload Time	A00	A01	A02	A03	A04	
01	222211	Machine_Room	STA	GHG-KGY-G2G-JGI	555111	Temp_Monitor	21-01-2015 17:07:30	NULL	00000	00000	46.62	29.89
02	222222	Power_Station	STA	GHG-KGY-G2G-JGI	555111	Data_Centre	21-01-2015 17:07:30	NULL	00000	00000	46.62	29.89
03	222233	Power_Station	STA	GHG-KGY-G2G-JGI	222111	Machine_Room	21-01-2015 17:05:00	NULL	2100	1160	2532	29.31
04	555111	Temp_Mo	STA	GHG-KGY-G2G-JGI	222222	Power_Station	21-01-2015 17:07:00	NULL	25.62	25.00	25.50	24.56
05	555112	Data_Cen	STA	GHG-KGY-G2G-JGI	222111	Machine_Room	21-01-2015 17:04:01	NULL	2200	1160	2535	29.31

Smart Client for Windows

User Friendly Graphics Display

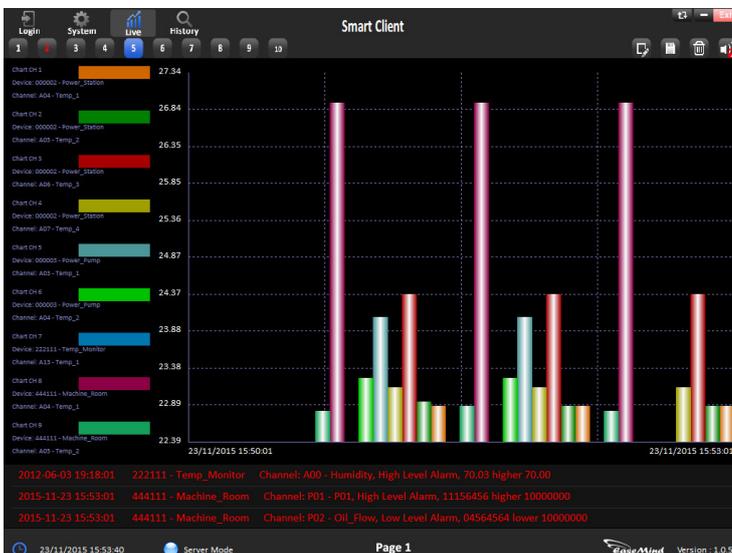
HMI Display

- Max. 30 channels in each background picture
- More than 12 chart styles for AD channels
- Wind Speed & Direction Plot
- Counter display for pulse channels
- LED for digital alarm channels
- Independent alarm levels for each channels



Dashboard

- Max. 64 channels in single screen
- Analog, Pulse, Temperature, Humidity
- Real Time Alarm display

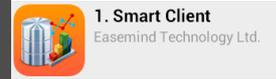


Line Chart Comparison

- Max. 8 channels in single chart
- 8 channels of same data logger comparison
- 8 data loggers of same channel comparison
- Both Live & Historical Data comparison
- Line or Column Chart style user selectable
- Data interval user selectable



Point & Tap, Pinch & Zoom



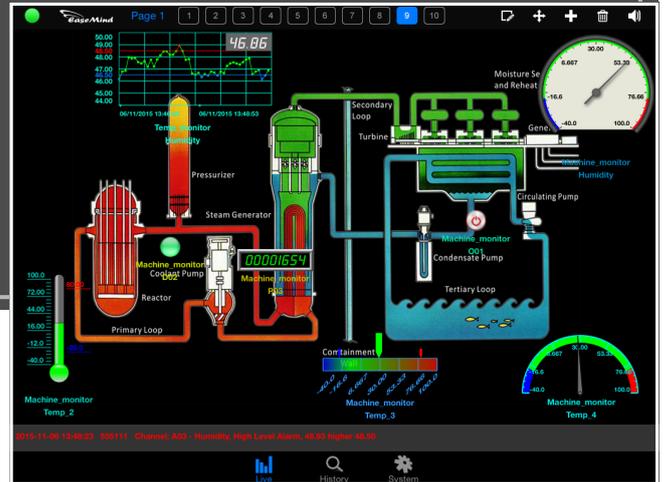
Smart Client for Android allows user to use iPad:

- More user friendly operation on touch screen, Fast response and crystal clear display
- Instant manual data checking
- Real time relay control on/off switch
- Works with and without Server

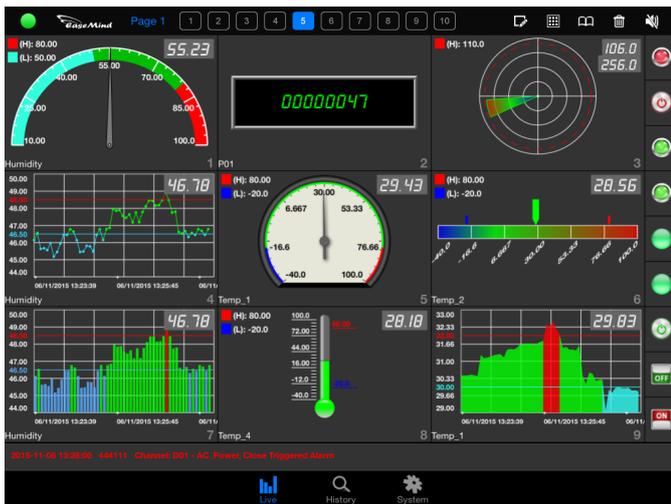
Features:

- Split Screen
- Data Listing
- Dashboard
- HMI [Human Machine Interface]
- Line Chart Display

HMI Display



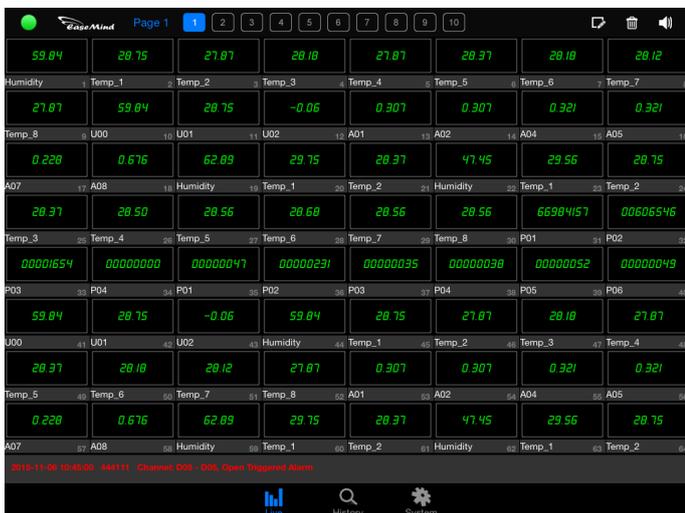
Split Screen Display



Line Chart Comparison



Dashboard



Data Listing Display

Num.	Type	ID	Name	Date	Time	A00	A03	A14	P01	P02
1	STA	444111	Water_Station	02/01/2013	15:47:12	58.73	135.0	12.93	23456814	23456104
2	STA	006503	Weather_Station	02/01/2013	15:47:11	50.17	87.55	27.66	00000000	00000000
3	STA	333999	Power_Station	02/01/2013	15:47:09	51.11	000000	22.43	10041241	01542444
4	STA	333555	Air_Monitoring_P...	02/01/2013	15:47:02	31.57	000000	23.75	00000000	00000000
5	STA	333555	Air_Monitoring_P...	02/01/2013	15:46:00	31.71	000000	23.75	00000000	00000000
6	STB	005695	005695	02/01/2013	15:45:00	35.51	000000	22.37	00101257	02189656
7	STB	005695	005695	02/01/2013	15:30:00	34.96	000000	22.37	00101257	02189656
8	STA	444111	Water_Station	02/01/2013	15:45:12	63.73	135.0	9.393	23456813	23456103
9	STA	006503	Weather_Station	02/01/2013	15:45:11	51.13	88.47	27.28	00000000	00000000
10	STA	333999	Power_Station	02/01/2013	15:45:09	52.07	000000	22.43	00041241	01542444
11	STB	222111	Machine_Room	02/01/2013	15:45:00	35.92	000000	23.00	10654024	08412121
12	STB	222111	Machine_Room	02/01/2013	15:40:00	36.12	000000	22.93	10654024	08412121
13	STB	222111	Machine_Room	02/01/2013	15:35:00	36.23	000000	22.87	01654454	08412121
14	STA	333555	Air_Monitoring_P...	02/01/2013	15:45:01	31.39	000000	23.75	00000000	00000000
15	STA	333555	Air_Monitoring_P...	02/01/2013	15:44:01	31.59	000000	23.81	00000000	00000000
16	STA	333555	Air_Monitoring_P...	02/01/2013	15:43:00	31.54	000000	23.81	00000000	00000000
17	STA	333999	Power_Station	02/01/2013	15:42:00	31.39	000000	23.87	00000000	00000000
18	STA	006503	Weather_Station	02/01/2013	15:41:44	52.88	89.57	27.00	00000000	00000000
19	STA	444111	Water_Station	02/01/2013	15:41:37	66.20	90.00	7.293	23456812	23456102
20	STA	333999	Power_Station	02/01/2013	15:41:31	50.97	000000	22.43	10041241	01542444
21	STA	333555	Air_Monitoring_P...	02/01/2013	15:41:01	31.33	000000	23.93	00000000	00000000

Server / Direct Mode Access

<Direct Mode>

Each data logger delivers data simultaneously to:

- Max. 1 Smart Client user via Ethernet or Wi-Fi
- Max. 1 Smart Client user via GPRS

Smart Client [Direct Mode]

- Alarm email delivered from Smart Client PC when channel level is beyond user preset level
- Direct control of relay output (Ethernet only)
- Direct access of both live and logged data from data logger (Ethernet only)

Direct Mode via Ethernet



Direct Mode via GPRS



<Server Mode>

Each data logger delivers data to one single server.

- Max. 999 Smart Client users can access data from the Server Database simultaneously

Smart Client [Server Mode]

- Receives data from unlimited number of data loggers
- Access of both live and historical data from Server Database

Server Mode



Highlight

Each Client: 3 Pages

Each Page: 10 User Profiles

HMI Display: max. 100 channels

Split Screen: max. 9 channels (3x3)

Data Listing: unlimited channels

Line Chart: max. 8 channels

Data: Live & Historical

Alarm: User programmable high/low

Alert: Visual & Buzzer

Key Points:

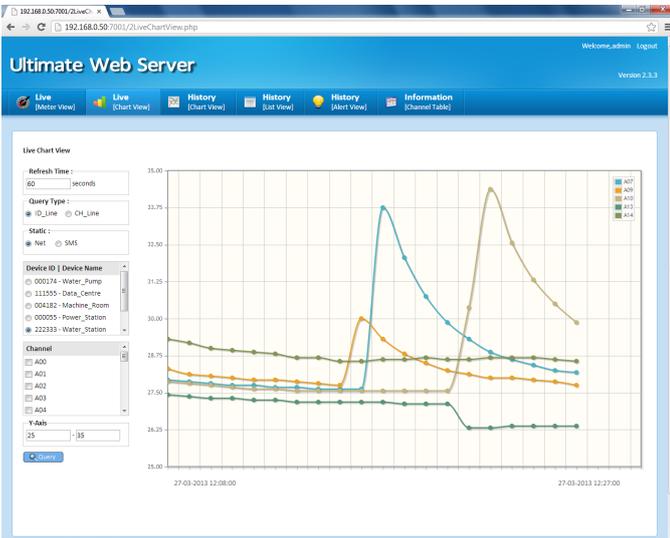
- Each user profile can be configured as:
HMI / Split Screen / Data Listing / Line Chart Display
- Channel data of all user profiles will be refreshed in interval automatically
- User can switch among user profiles for instant data viewing
- Client accesses data either in direct mode or server mode
- Alarm on each profile and individual channel will be displayed
- Analog Channel, Digital Alarm and Pulse Channel are all supported
- Chart Styles, High/Low Alarm Color, Range are user programmable

Web Server

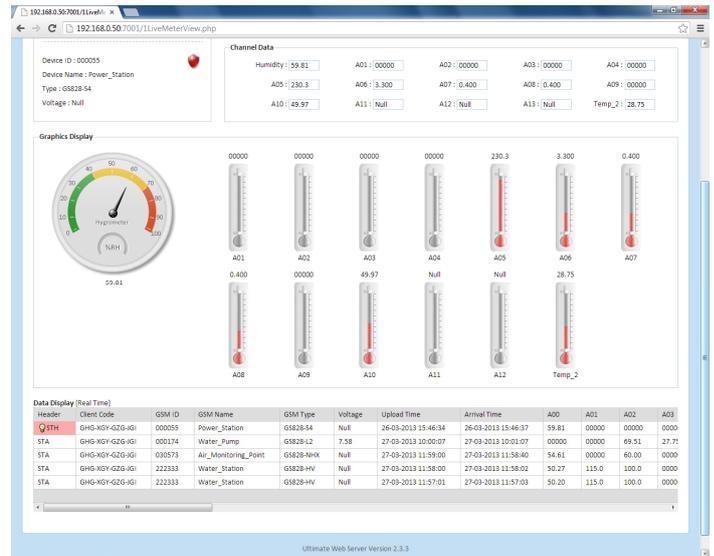
Data presentation is possible at any place using Web Browser

- No software installation is needed in Client PC.
- Any computer with Web Browser can access the data, and present in graphics.
- Browser accesses live, alarm and historical data from Web Server.
- Clients will be assigned to monitor their own Data Loggers in Ultimate Server.
- All channels data and alarm e.g. AD or temperature are displayed with alert signal.
- Each client can monitor a number of data loggers in real time simultaneously
- Developed with OS independent language: PHP

Line Chart

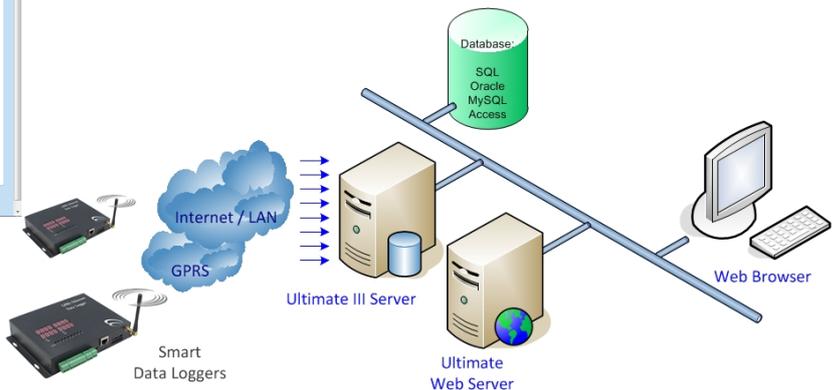


Meter Display



Data Listing

The screenshot shows the 'History List View' of the Ultimate Web Server. It displays a table with columns for Header, Client Code, GSM ID, GSM Name, GSM Type, Voltage, Upload Time, Arrival Time, and various channel values (A00-A03). The table contains multiple rows of data, with the first row highlighted in red. The 'Header' column shows 'STH' and the 'Client Code' is 'GHG-WY-G2G-01'. The 'GSM ID' is '000055' and the 'GSM Name' is 'Power_Station'. The 'GSM Type' is 'GSM28-54' and the 'Voltage' is 'Null'. The 'Upload Time' is '26-03-2013 15:46:34' and the 'Arrival Time' is '26-03-2013 15:46:37'. The channel values are '59.81', '00000', '00000', and '0000'.



Ultimate Server Edition



Edition	Centre	Ultimate III	Ultimate III +
[A] Server Software			
Product Line support	GSX8	GSX8	GSX8, G7
		GS828, GS902	GS828, GS902
Receive Data & Alarm via GPRS	Yes	Yes	Yes
Receive Data & Alarm via SMS	—	Yes	Yes
Receive Data & Alarm via Ethernet, Wi-Fi	Yes	Yes	Yes
Receive Data & Alarm via RS232 Port, USB	—	Yes	Yes
Both Live & Historical Data Display	—	Yes	Yes
Database	txt	Access / MySQL	Access / MySQL
		SQL / Oracle	SQL / Oracle
Data Export to Excel	—	Yes	Yes
Remote Command via SMS, Internet	—	Yes	Yes
Remote Command via Ethernet	—	Yes	Yes
Schedule & Batch Command	—	Yes	Yes
Temperature & Humidity Alert	—	Yes	Yes
Send Alarm Alert via TCP network, email	—	Yes	Yes
Users Grouping & Management	—	Yes	Yes
Remote Clients Grouping & Management	—	Yes	Yes
Client Software support	—	Yes	Yes
Max. Data Loggers simultaneous support	99	99999	99999
Data Loggers Management	—	Yes	Yes
Intelligent Data Recovery	—	Yes	Yes
Redundant Database Management	—	Yes	Yes
Login User Authentication & Management	—	Yes	Yes
Network Client Authentication & Management	—	Yes	Yes
Data Direct Access for user development	—	Yes	Yes
Server Loading & Performance Status Monitoring	—	Yes	Yes
[B] Web Server Software [PHP]	N.A.	Bundled	Bundled
[C] Client Software	N.A.	Bundled	Bundled
Direct & Server Mode	—	Yes	Yes
Live, Historical & Alarm Data Display	—	Yes	Yes
AD Level, Temperature & Humidity Hi/Low Alert	—	Yes	Yes
Graphics Display of Temperature, Humidity & AD	—	Yes	Yes
No. of User Profiles / No. of Channels each profile	—	30 / 9	30 / 9
Charts & Lines (Listing, Meter, Line Chart...)	—	12	12
Remote Setup	—	Yes	Yes
[D] Smart Client for Windows, iPad & Android	—	Yes	Yes
[E] GPS Client for Windows	—	—	Yes
[F] GSM Modem Bundled	—	Optional	Optional

Smart Client

	Smart Client Lite	Smart Client	Smart Client
	Free bundled with data logger	Free bundled with Server	Full Version License
Windows, iPad, Android	Yes	Yes	Yes
[A] Server Mode			
Receive Data & Alarm via GPRS	—	Yes	Yes
Receive Data & Alarm via Ethernet, WiFi	—	Yes	Yes
Receive Data & Alarm via SMS	—	Yes	Yes
Receive Data via GPRS & Ethernet simultaneously	—	Yes	Yes
Server Database	—	Yes	Yes
Data Export to Excel	—	Yes	Yes
Intelligent Data Recovery	—	Yes	Yes
Redundant Database Management	—	Yes	Yes
Remote Command via SMS, GPRS Internet, Ethernet	—	Yes	Yes
Schedule & Batch Command	—	Yes	Yes
Temperature & Humidity Software Alarm		Yes	Yes
Send Alarm Alert via IP network or email	—	Yes	Yes
Data Loggers Grouping & Management	—	Yes	Yes
Remote Clients Grouping & Management	—	Yes	Yes
Client Software support	—	Yes	Yes
Max. Data Loggers simultaneous support	—	99999	99999
Max. Clients simultaneous support	—	999	999
Max. Channels	—	unlimited	unlimited
	Smart Client Lite	Smart Client	Smart Client
[B] Direct Mode	Limited	—	Full Version
Receive Data & Alarm via GPRS	Yes	—	Yes
Receive Data & Alarm via Ethernet, WiFi	Yes	—	Yes
Receive Data via GPRS & Ethernet simultaneously	—	—	Yes
Max. Data Loggers accessed simultaneously	2	—	unlimited
Max. clients for each data logger	3	—	3
Live, Historical & Alarm Data Display	Yes	—	Yes
Digital Alarm Alert each profile	2	—	9
AD Level, Temperature & Humidity Hi/Low Alert	Yes	—	Yes
Graphics Display of Temperature, Humidity & AD	Yes	—	Yes

	Win	iPad	Android	All	All
No. of User Profiles	4	4	4	30	30
No. of Channels in Data Listing	unlimited	2	26	unlimited	unlimited
No. of Split Screen profiles / Channels each profile	1 / 9	1 / 4	1 / 4	30 / 9	30 / 9
No. of Channels in Chart Line profile	2	2	2	8	8
No. of HMI profiles / Channel each profile	1 / 4	1 / 4	1 / 4	30 / 30	30 / 30