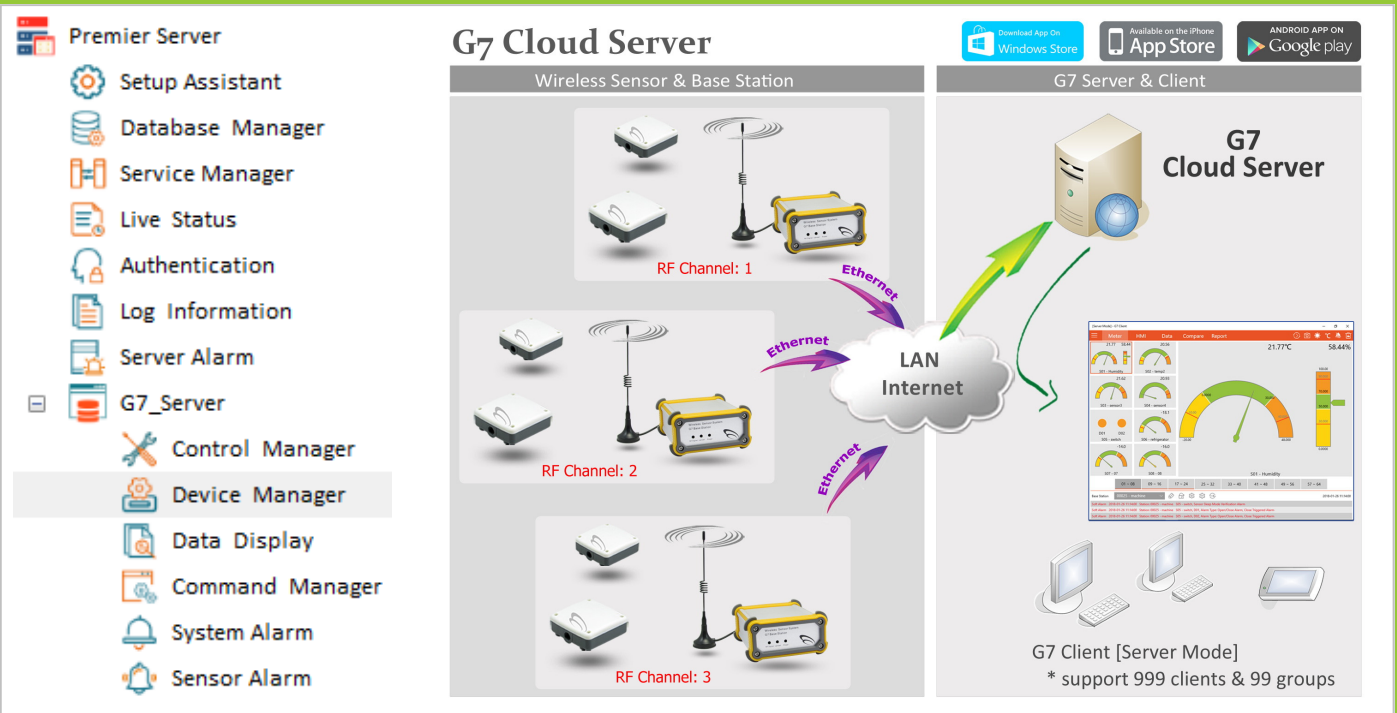


# G7 Cloud Server



G7 Client for Windows, iPad, iPhone & Android Phone



**G7 Server** is dedicatedly developed for high volume data application from base stations.

- Receive data from base station via LAN or Internet
- Management of database
- Management of base stations, emails and clients
- Management of data and alarm
- Alarm Email & SMS Management
- UTC Management for different time zones
- Support MySQL database
- Support redundant databases
- Handling thousands threads of incoming data simultaneously [patented]
- Support max. 99999 base stations
- Support max. 999 client users
- Support max. 99 groups in one single hosting
- Administrator and Normal User Levels
- Remote Server Configuration
- Temperature & Humidity, Analog Sensor, Digital Alarm Level Setting
- Individual Grouping of user, station, alarm
- Automatic Stations Clock Synchronization

**G7 Client** displays both live, historical data and analytical report in graphics mode.

1. Receive data from Server Database [server mode]
2. Receive data from base stations [direct mode]
3. Alarm on high/low sensor reading or low battery level
4. Alert user via on screen display and alarm email
5. Instant alert on digital alarm
6. Remote configuration Server Setting e.g. alarm level, alarm email address, alarm phone
7. Support Administrator/User access privilege
8. Data Export as SQLite or cvs format
9. Display modes:
  - Meter Screen
  - HMI (Human Interface Machine)
  - Line Chart (comparison of sensors)
  - Dashboard for 64 sensors on single screen
  - Statistic & Tracking Report

## Platforms

Windows 10, iPad, iPhone & Android Phone

Desktop & Touchscreen Mode

**Windows Service**

Data Receiving Modules are developed as Windows Service Components for Windows 10 & 2012 Server OS.

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

1. TCP service - manages the incoming data and outgoing command via TCP protocol
2. 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.



Station ID	Station Name	Enable Display Alert	Enable Email Alert	Enable Phone Alert
00005	00005	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00010	datacentre	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00022	machineroom	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00025	machine	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00040	tempmonitor	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00100	00100	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00101	00101	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00102	00102	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00103	00103	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00104	00104	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00105	00105	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00106	00106	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00107	00107	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00108	00108	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00109	00109	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00110	00110	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00111	00111	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00112	00112	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00113	00113	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
00114	00114	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Management of Base Stations**

Central management of base stations:

- Station ID & Name, Remote Client User Login
- Data of Sensor Reading and Battery Voltage Level
- Display, Email & SMS Alarm Management
- Central control of each station's UTC time zone
- Real Time Monitoring of Base Station Health Status

**Management of Alarms**

Central management of alarms:

- Each wireless sensor has individual and independent alarm in 2 levels
- Independent control of temperature, humidity, analog and digital alarm
- Alarm Time Delay & Alert Interval are independent in each sensor
- Alarm email message is user programmable
- Wireless Sensor Defect and Communication Loss alarm

Each Sensor is associated with:

- \* Higher/High/Low/Lower Alarm Levels
- \* Time Delay, Display/Email/SMS Alarm Interval

Each Base Station is associated with:

- \* administrator and user password
- \* 3 alarm email address, 3 SMS phone number and 2 time zones

**Device Setup**

Station ID:

Station Name:

Sensor ID:

Wireless Sensor Analog Channel Alarm

Sensor Type:  A01  H01

Level\_Max Value :

Level\_2\_Higher Alert :

Level\_1\_High Alert :

Level\_1\_Low Alert :

Level\_2\_Lower Alert :

Level\_Min Value :

Wireless Sensor Digital Channel Alarm

Sensor Type:  D01  D02

System Alarm is assigned as problem in database, service, base station data loss and corrupted data with its own alarm email and SMS.

**Management of Client Users**

G7 Server is designed for hosting a number of user groups in one single server:

- Each client can be assigned as administrator or normal users to access each base station
- Each group of base stations can be assigned for one corporate customer, which can appoint its own administrators or users
- Enterprise can manage different plants, factories or stores using one server license
- Hosting company can manage different groups of data for a number of its customers independently and individually
- Management of UTC time zone for each device and client user worldwide

Free G7 Client software allows users:

- Access data from Server Database
- Graphics Display of live data, historical data and statistic data
- HMI, Meter, Line Charts, Dashboard, Report
- Remote configuration of alarm in administrator mode

Device Manager | Sensor Activation | Dev

Device Setup

Station ID: 11111

Station Name: 11111

Admin Password: 999999

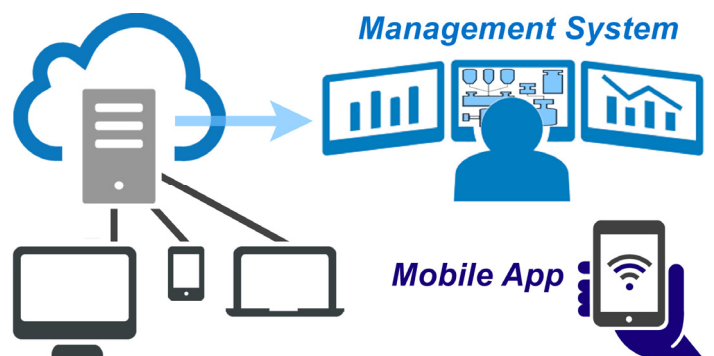
User Password: 123456

Device UTC: UTC-06:00

**Data Display in G7 Server**

**Live Data:**

- \* Auto Search Station Name or ID
- \* Selection of Normal Data and Alarm Data



Live Data | History Data | Statistical Data

NO.	Client Code	Header	Station ID	Station Name	Record_Time
1	ZZZ-WZJ-ZIZ-AZY	STA	11111	DataCentre	2018-02-01 23:36:00
2	ZZZ-WZJ-ZIZ-AZY	STA	22222	22222	2018-02-01 23:34:00
3	ZZZ-WZJ-ZIZ-AZY	STA	11111	DataCentre	2018-02-01 23:34:00
4	ZZZ-WZJ-ZIZ-AZY	STA	00119	00119	2018-02-01 23:33:20
5	ZZZ-WZJ-ZIZ-AZY	STA	00118	00118	2018-02-01 23:33:20
6	ZZZ-WZJ-ZIZ-AZY	STA	00117	00117	2018-02-01 23:33:20
7	ZZZ-WZJ-ZIZ-AZY	STA	00116	00116	2018-02-01 23:33:20
8	ZZZ-WZJ-ZIZ-AZY	STA	00115	00115	2018-02-01 23:33:20
9	ZZZ-WZJ-ZIZ-AZY	STA	00114	00114	2018-02-01 23:33:20
10	ZZZ-WZJ-ZIZ-AZY	STA	00113	00113	2018-02-01 23:33:20

**History Data:**

- \* Auto Search Station Name or ID
- \* Selection of Normal Data and Alarm Data
- \* Selection of historical data period
- \* Data Export as mdb for future data analysis or backup
- \* Background Data Export optimizes the server performance

**Statistical Data:**

- \* Auto Search Station Name or ID
- \* Selection of Statistical Period
- \* Statistic Data Export as mdb for data tracking and analysis
- \* Server performs data statistic calculation in background

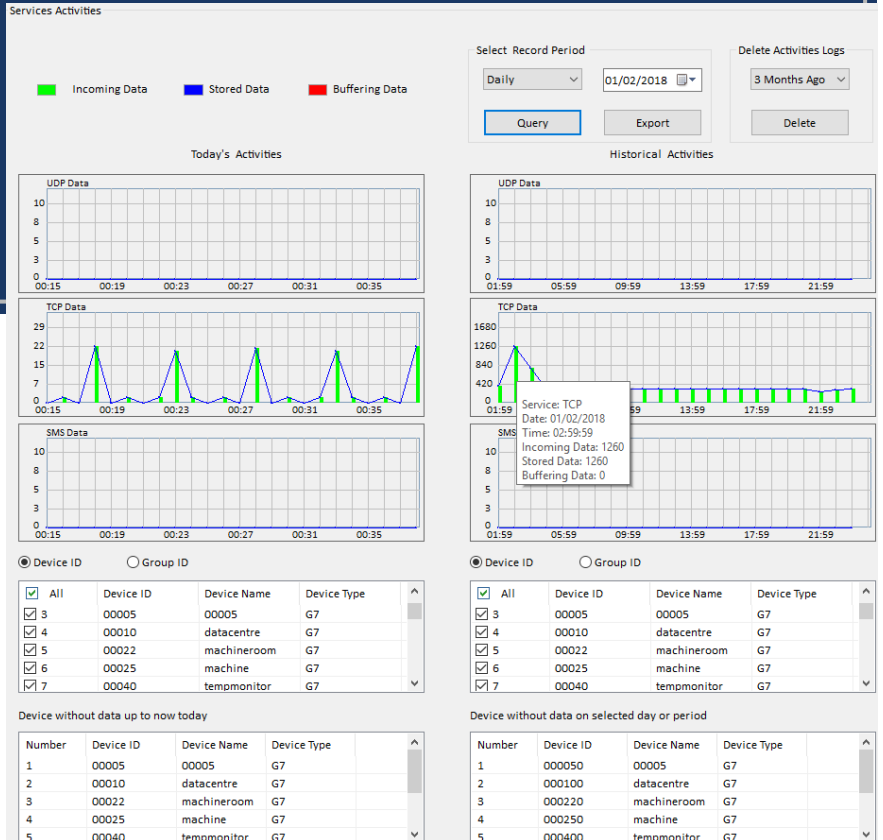
**Monitor Server Loading**

G7 Server keeps track of status, loading and performance of its data receiving service and database.

- Real time tracking of data incoming, buffering 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 base station or groups of base stations
- Management of network bandwidth consumption

G7 Server supports simultaneous port connection to a number of base stations.

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



**Server Logs**

G7 Server monitors its own health status by keeping track of its own activities.

- Each server operation is stamped with date time, and logged
- Powerful tool for system analysis and error handling
- Send alarm when no data is uploaded from any base station or group of devices

**Management of Base Stations**

Live Status Display of Server, Device, Client, Data & Alarm:

- Real time display of service and operation
- Communication status among server, device, client user and alarm
- Database connection status

**Premier Server Status**

[02-02-2018 00:48:46] -> Soft Alarm, ID: 11111 SMS Delivery Completed.  
 [02-02-2018 00:48:44] -> Soft Alarm, ID: 11111 Email Delivery Completed.  
 [02-02-2018 00:48:44] -> Soft Alarm, ID: 11111 SMS Delivery Completed.  
 [02-02-2018 00:44:41] -> Soft Alarm, ID: 11111 Email Delivery Completed.  
 [02-02-2018 00:43:45] -> CLT\_Service is Started.  
 [02-02-2018 00:43:44] -> CLT\_Service is stop.  
 [02-02-2018 00:43:42] -> TCP >> DB 1 connect

**Alarm Display**

[02-02-2018 00:48:40] -> G7 Soft Alarm Data, Station ID: 11111, Channel: S13, sensor probe defect  
 [02-02-2018 00:48:40] -> G7 Soft Alarm Data, Station ID: 11111, Channel: S07, A07, High/Low Level Alarm, Low Level 1 Alarm: -9.12 lower than 0.00  
 [02-02-2018 00:45:09] -> G7 Soft Alarm Data, Station ID: 22222, Channel: S10, A10, High/Low Level Alarm, Low Level 1 Alarm: 18.50 lower than 20.00

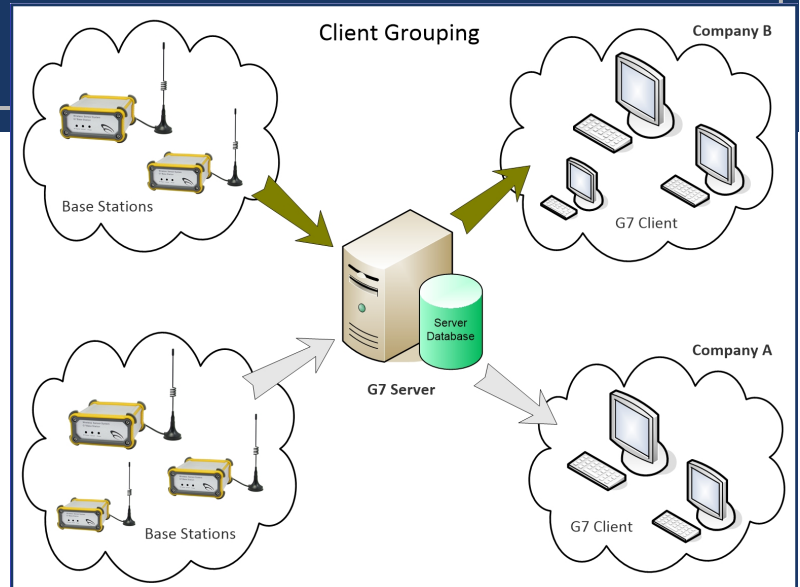
## Database Manager

G7 Server supports MySQL database commonly available in the market:

- Database Connection Engines is integrated in Server Software
- Easy creation and connection of new database with few steps
- Database test tool integrated
- Database Connection List for clear installation
- Select different database connection at any time

Designed for  
Hosting Companies

*G7 Server allows stations assigned to groups of clients with their own alarm emails and sms phone number.*

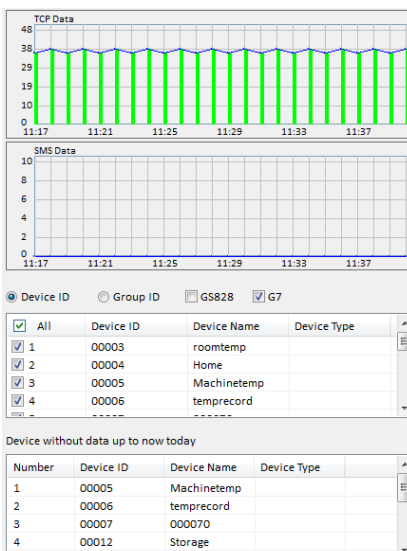


## Database Redundancy

Data security is the key issue in telemetry industry. G7 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

Database Information			
Database Type	mysql	UDP	TCP SMS
Primary Database : DB 1	gs_database#root@localhost	i	i
Secondary Database : DB 2	gs_database#root@192.168.0.50	i	i



## Stress Test - G7 Performance

G7 Server Software undergoes stress testing on critical condition.

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

## Alarm Levels Remote Setup

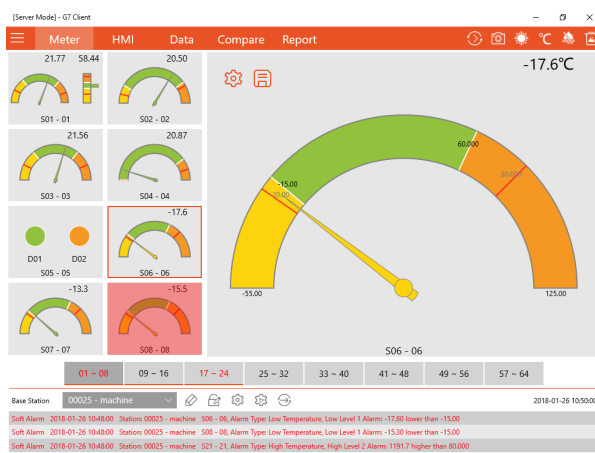
Following setup parameters are synchronized between G7 Server and G7 Client.

- Alarm High/Low Level
- Alarm Email Address, Alarm SMS Phone Number
- Alarm Delay Time, Alarm Interval
- Admin & User Passwords

*G7 Server and G7 Client are synchronized in configuration setting*

G7 Client [Administrator] is able to configure the alarm setting in Server.

G7 Client [User] displays data from server in graphics, and is alerted when alarm is triggered.



## Alarm Email & SMS Phone Number Remote Setup



## Server Configuration Import/Export

It allows backup of configuration for maintenance or upgrade.

- All system parameters including remote users, station, sensors information
- All alarm setting for each sensor, alert email and sms phone number

## Data Tracking

Support Windows 10  
Desktop & Touchscreen Mode

G7 Client allows user to track data from Server Database:

- Live, Historical and Statistical Data Tracking in graphics mode
- Each client will be alerted when sensor reading is beyond the preset
- Client can be alerted by on screen display, audio buzzer, email and SMS
- Each client is assigned to groups of base stations
- Real time monitor up to 64 sensors on one screen, and max. 640 sensors in background

Key points:

- Max. 99999 base stations supported in each client user
- Max. 64 wireless sensors data simultaneous real time display on single screen [DATA mode]
- Live alarm update, data monitoring and saving on background
- Simultaneous monitor of temperature, humidity, analog sensor and digital alarm
- Independent soft alarm levels of individual sensor [independent of Server and Base Station Alarm]

## Meter Display

- Supports 8 sensors meter view each page
- Total 8 pages provide 64 sensors meter display for each base station
- Higher/High/Low/Lower Temperature, Humidity, Analog & Digital Alarm
- Low Battery Alarm
- Real Time Alarm Alert on screen and buzzer
- Temperature Unit Selection: C° & F°
- Background Alarm Listing



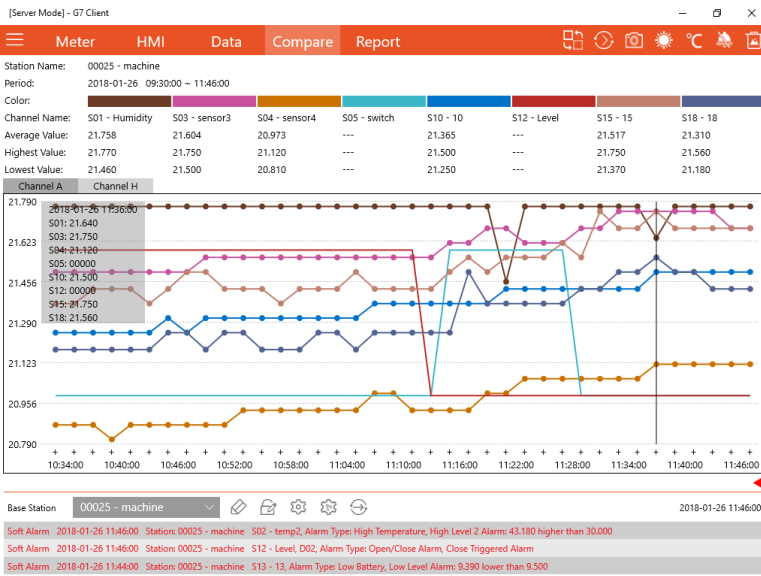
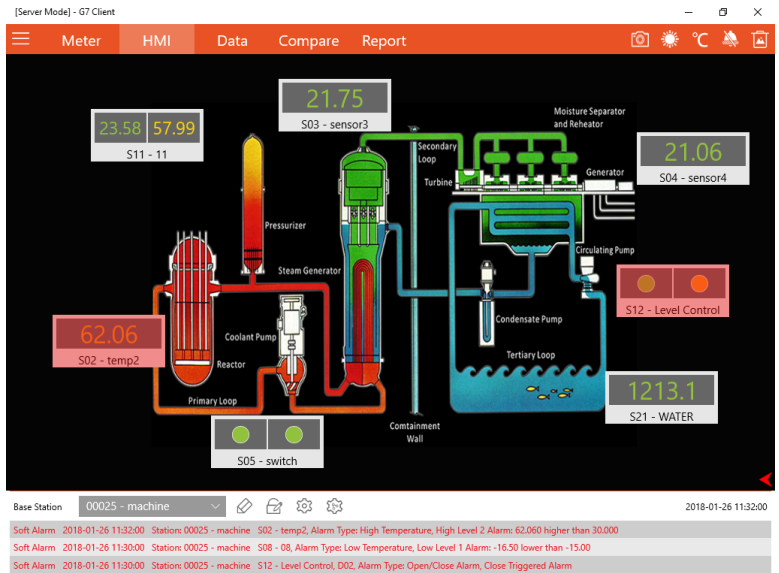
S01 - Humidity	S02 - temp2	S03 - sensor3	S04 - sensor4	S05 - switch	S06 - FOOD	S07 - 07	S08 - 08
21.77	57.46	51.43	21.75	21.12	-18.8	-14.8	-16.8
22.32	57.88	21.50	0.717	21.75	21.68	21.81	21.81
S09 - 09	S10 - 10	S11 - Door	S12 - Level	S13 - 13	S14 - 14	S15 - 15	S16 - 16
21.81	21.50	21.81	8.7240	1213.1	8548.0	282.15	37.870
S17 - 17	S18 - 18	S19 - 19	S20 - 20	S21 - WATER	S22 - 22	S23 - 23	S24 - 24
S25 - 25	S26 - 26	S27 - 27	S28 - 28	S29 - 29	S30 - 30	S31 - 31	S32 - 32
S33 - 33	S34 - 34	S35 - 35	S36 - 36	S37 - 37	S38 - 38	S39 - 39	S40 - 40
S41 - 41	S42 - 42	S43 - 43	S44 - 44	S45 - 45	S46 - 46	S47 - 47	S48 - 48
S49 - 49	S50 - 50	S51 - 51	S52 - 52	S53 - 53	S54 - 54	S55 - 55	S56 - 56
S57 - 57	S58 - 58	S59 - 59	S60 - 60	S61 - 61	S62 - 62	S63 - 63	S64 - 64

## Dashboard

- Max. 64 sensors on one single screen
- Selection of sensor and battery reading display
- Higher/High/Low/Lower Level Alarm for Temperature, Humidity, Analog Sensors
- Digital Alarm
- Real Time Alarm Alert on screen and buzzer
- Temperature Unit Selection: C° & F°
- Background Alarm Listing

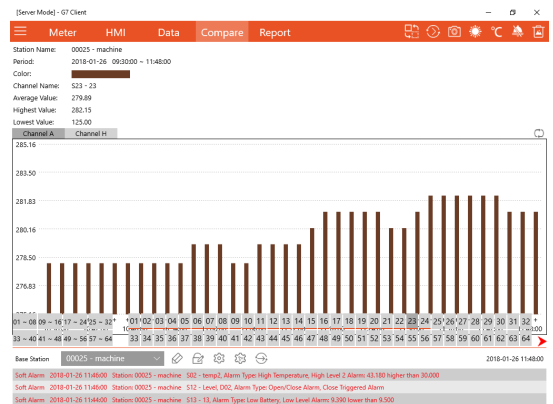
## HMI Display

- Max. 64 sensors in each HMI picture
- High/Low Temperature Humidity Alarm
- Low Battery Alarm
- Both Live & Historical Data are supported
- Real Time Alarm Listing
- User selectable import of jpg picture



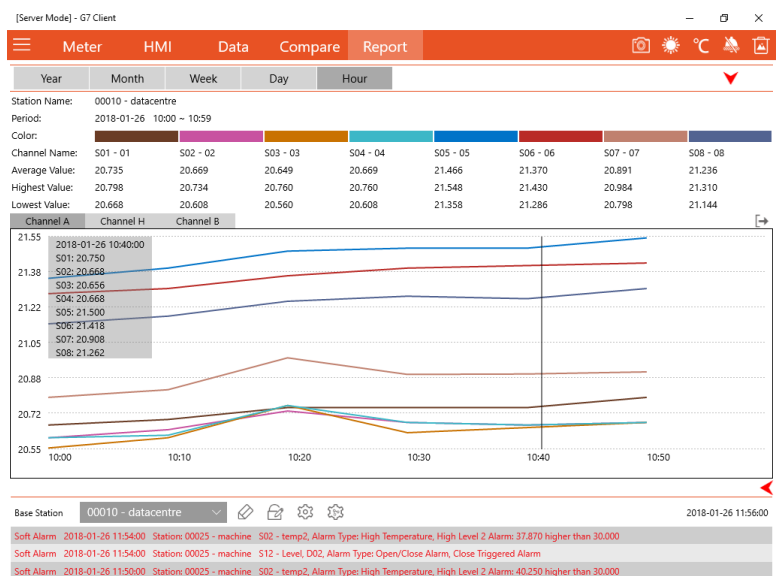
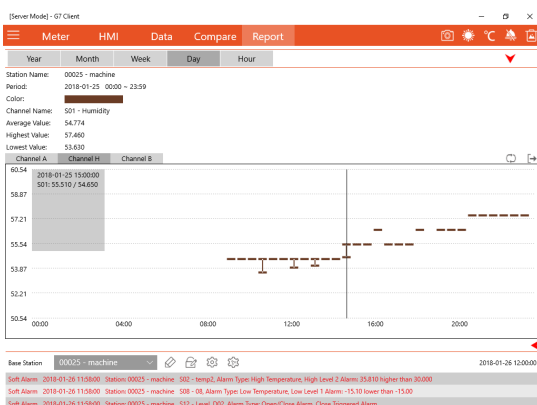
## Line Chart Comparison

- Max. 8 sensors in single chart
- Total 8 groups comparison for 64 sensors
- Live & Instant Historical Data comparison
- Line or Column Chart style user selectable
- Time Line automatic scale



## Statistic Report

- Max. 8 sensors in single chart report
- Total 8 groups comparison for 64 sensors
- Statistical Data comparison
- Line or Column Chart style user selectable
- Time Line Scale selectable (day, week, month, year)
- User selectable historical period





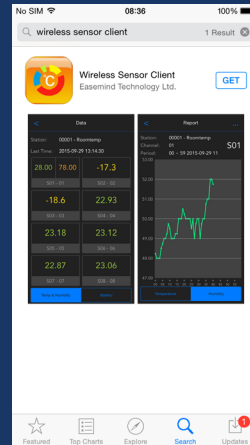
## Simple & User-Friendly Graphics

G7 Client [Server Mode] for iPhone & Android Phone:

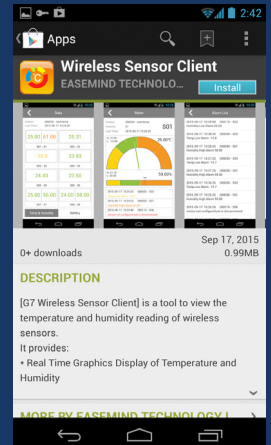
- User friendly operation on touch screen, Fast response and crystal clear display
- Instant live and historical data display, alarm alert
- Support Server Mode only

Features:

- \* Meter View
- \* Dashboard
- \* Alarm List
- \* Line Chart
- \* Statistic Report

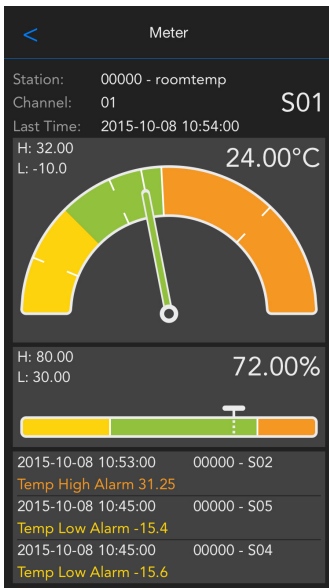


iPhone

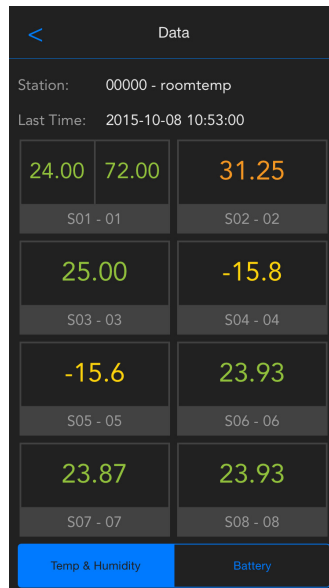


Android Phone

### Meter View



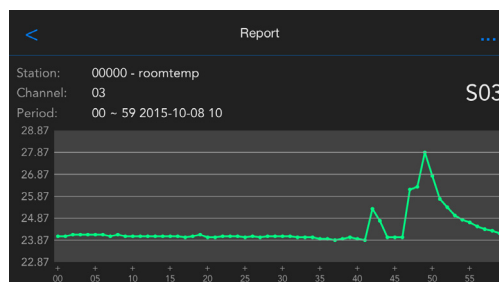
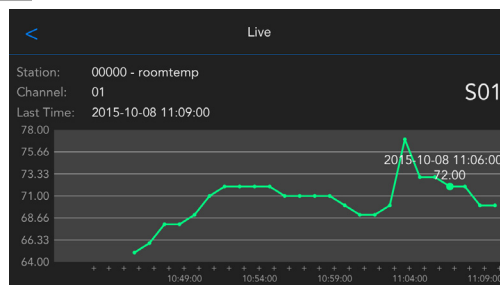
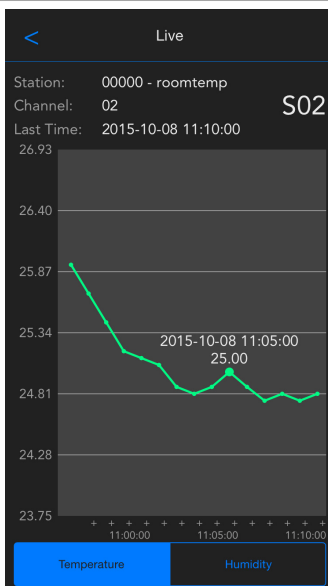
### Dashboard



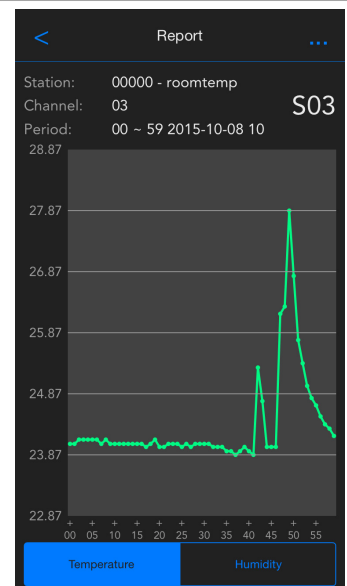
### Alarm List

2015-10-08 11:11:00	00000 - S05
Temp Low Alarm	-16.0
2015-10-08 11:11:00	00000 - S04
Temp Low Alarm	-16.3
2015-10-08 11:10:00	00000 - S05
Temp Low Alarm	-16.0
2015-10-08 11:10:00	00000 - S04
Temp Low Alarm	-16.3
2015-10-08 11:09:00	00000 - S05
Temp Low Alarm	-16.0
2015-10-08 11:09:00	00000 - S04
Temp Low Alarm	-16.2
2015-10-08 11:08:00	00000 - S05
Temp Low Alarm	-16.0
2015-10-08 11:08:00	00000 - S04
Temp Low Alarm	-16.2
2015-10-08 11:07:00	00000 - S05
Temp Low Alarm	-16.0
2015-10-08 11:07:00	00000 - S04
Temp Low Alarm	-16.2

### Line Chart



### Report Display



### Server / Direct Mode Access

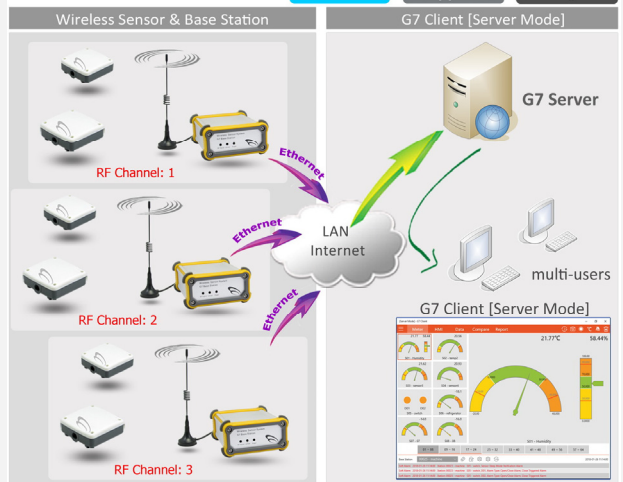
#### G7 Client [Server Mode] - free bundled with G7 Server package

- Each base station receives data from max. 64 wireless sensors
- G7 Server receives data from max. 99999 base stations simultaneously
- Max. 999 client users can retrieve data from Server simultaneously
- Each client user can retrieve 20 base stations data simultaneously
- Access of both live and historical data from Server

#### Alarm

- G7 Server delivers alarm Email and SMS
- Independent sensor alarm setting of each user
- Remote alarm configuration by administrator

#### Server Mode



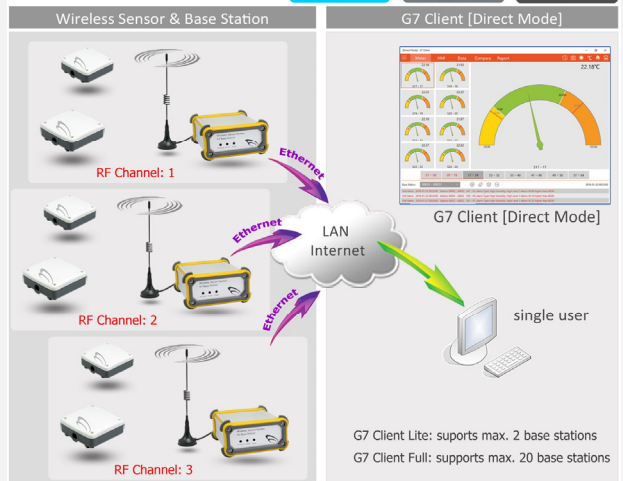
#### G7 Client [Direct Mode] - free download

- Each base station receives data from max. 64 wireless sensors
- Each base station uploads sensors to one single client user
- G7 Client Lite [Direct Mode]
  - Each single client user accesses max. 2 base stations
- G7 Client Licensed [Direct Mode]
  - Each single client user accesses max. 20 base stations
- Local storage of incoming data from base stations

#### Alarm

- Alarm email delivered from G7 Client PC
- Sensor alarm setting for one single user only

#### Direct Mode



### Highlight

Data:	Live, History, Statistic
Meter Screen:	max. 8 sensors one screen 8 screens each base station
HMI Display:	max. 64 channels
Line Chart:	max. 8 channels 8 charts each base station
Dashboard:	max. 64 sensors one single screen
Report:	Statistic & Comparison Hour, Day, Week, Month, Year
Alarm:	User programmable high/low
Alert:	Email, Visual & Buzzer

#### Key Points:

- Each user can select display mode:
  - METER / HMI / Dashboard / Line Chart / Report / Alarm List
- Sensors data will be refreshed in interval automatically
- User can switch among display modes for instant data viewing
- Client accesses data either in direct mode or server mode
- Alarm on each sensor will be alerted
- Sensor defect and disconnection alarm supported
- High/Low Temperature, Humidity and Battery alarm user programmable
- Both email and SMS alarm supported
- Remote configuration of Alarm in Server via Client