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10: Network / SMS / Report Settings

Network Tab

Network parameters control how the device connects to the Cellular Network, Report Server, and Maintenance Server.

1000: Authentication

Select the correct GPRS/HSPA Authentication for the network you are connecting the device to. The options for this parameter are:

- 0 = PAP
- 1 = CHAP
- 2 = Automatic
- 3 = None

1001: APN

Input the Access Point Name for the carrier/network you are connecting the device to

1002: User ID

This is the ID for GPRS/HSPA Access if your network requires an ID and password to access the network.

1003: User Password

This is the password for GPRS/HSPA Access if your network requires an ID and password to access the network.

1004: PIN Number

Pin number to release PIN lock if it is enabled on the SIM

1005: Server IP

IP address of the Server/Platform the device will send it's reports to

1006: Server Port

Port of the Server/Platform that the device will send it's reports to


1007: Server Type

Select the type of server the device will be connected to

- 0 = TCP
- 1 = UDP

1008: Backup Server IP

IP address of the Backup Server/Platform the device will send it's reports to if it cannot connect to the Server IP

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1009: Backup Server Port

Port of the Server/Platform that the device will send it's reports to if it cannot connect to the Server IP

1010: Backup Server Type

Select the type of the backup server the device will be connected to

- 0 = TCP
- 1 = UDP

1011: UDP ACK

When using a UDP server type, this parameter will select whether or not to acknowledge or 'ACK' the messages that are sent from the device to the server.

Setting this parameter to 0 will disabled the acknowledge message, otherwise the Bitmap below shows the options to select which reports to require an acknowledgement for.

Bitmap:

- Bit 0 = Status Report (ASTT)
- Bit 1 = Alert ID Report (AALT)
- Bit 2 = Travel Report (ATRV)
- ...
- Bit 15 = TPR Report (ATPR)
- Bit 16 = Sensor Report (ASNB)
- Bit 17 = Sensor Report (ASNE)

Note :

SNB and SNE Report work together like a set.
 So, the bit setting for ASNB and ASNE must be the same
 If the bit of ASNB is 1, the ASNE must also be 1.

1026: UDP ACK Formula

Select the type of UDP ACK formula

- 0 = USA
- 1 = LATAM

1012: Device Port


When using a UDP server type, this parameter sets the port for receiving commands from the server via UDP.

If '0' or empty, the device would use port 9000.

1014: AGPS Mode

Selects whether or not to use the AGPS.

- 0 = Disable
- 1 = Enable

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1016: Scanning Band Mode

Select scanning band to use the Global Band or Mexico, Europe band.

- 0 = Global (Roaming) : LTE M1 and GSM all bands
- 1 = Country (Mexico) : LTE M1 Band 4, NB1 Band 5 and GSM all bands.
- 2 = Country (Europe)
 - B3 : 1800MHz
 - B8 : 900MHz
 - B20 : 800MHz

1017: UDP ACK Waiting Time

When UDP ACK is enabled, this setting is the waiting time to receive UDP ACK after sending report data to the UDP server. After waiting for the time, the same report is sent again.

Whenever retry is attempted, device waits for UDP ACK as much as the setting value * number of retries.

Range : 10~255 seconds

Default : 60 seconds

1018: UDP ACK Reopen Time

This setting sets the time to reopen the UDP socket when UDP ACK is not received.

For example, if it is set to 2, if UDP ACK is not received after retry 2 times, the UDP socket is reopened.

Range: 2~255 times

Default: 2

1019: UDP ACK Reboot Time

This setting is the time setting to reboot the Network Module when UDP ACK is not received.

If UDP ACK is not received after retrying as much as the set value, the Network Module is rebooted.

The number of retries is initialized after rebooting.

Range: 2~255 times

Default: 4

1020: Maintenance Server IP

The IP address of the Maintenance Server that can be used to update firmware or configurations to the device

1021: Maintenance Server Port


The IP address of the Maintenance Server that can be used to update firmware or configurations to the device

1022: Access interval

Range: 0, 24 – 999

Units: Hours

The interval in which the device will check-in with the maintenance server

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- 0 = Disabled/Does not report to maintenance server. Will only access the maintenance server by command.
- X = Time duration in hours that the device will periodically check in with maintenance server

1023: Access time

Format: hh:mm

The time when the device will check-in with the maintenance server.
 Device try to check-in with the maintenance server in this time every day.

- Set to 00:00 if you want to disable this feature
- Set to 24:00 if you want for the device to check in with the maintenance server at midnight.

Note. The SCUTI(Maintenance server) server in Suntech is running for the customer separately.
 The Suntech provides the command to change the setting values (ex: IP, port, interval) which are the configuration of the maintenance server if the customer is running it separately.
 Please be advised that the command should be used only by the customer who has the maintenance server separately.

SMS/CALL Tab

Parameters under the SMS tab control SMS reporting and what numbers can SMS the device to change the existing parameter values.

Note : Not Support Backup SMS reporting to Sensor Report(SNB/SNE Report) in B Series model (ex. ST4910B, ST4950B, ST4950BDS, etc)

1025: SMS Number

Phone Number that will receive SMS reports sent by the device

1030: SMS Lock


Range: 0 or 1
 Units: N/A

Lock of Receiving Commands by SMS
 0 = Disable
 1 = Enable

If enabled, only the phone numbers listed in parameters 1031 through 1034 (MT1-MT4) will be able to send SMS commands to the device. All other commands received by phone numbers that are not defined in these parameters will be ignored by the device.

1031: SMS MT1

When SMS Lock is set, the device will accept SMS commands from the phone number listed in this parameter.

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1032: SMS MT2

When SMS Lock is set, the device will accept SMS commands from the phone number listed in this parameter.


1033: SMS MT3

When SMS Lock is set, the device will accept SMS commands from the phone number listed in this parameter.

1034: SMS MT4

When SMS Lock is set, the device will accept SMS commands from the phone number listed in this parameter.

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Report Settings Tab

This section will cover the parameters that can be found in the “Report Settings” tab of SyncTrak. This section will go over the functionality of the parameters that control how the device sends its different reports.

1055: Zip/Normal

Selects whether or not to use the ‘Normal’ or ‘Zip’ reporting format

- 0 = Zip is Disabled, so ‘Normal’ reporting format will be used
- 1 = Zip is enabled, so ‘Zip’ reporting format will be used

1058: Command Response Direction

Sets how the device will send a response message when it receives a command from SMS or Server/Platform.

For example, if you set 2 and server send a command to device through GPRS communication, the device will try to send a response through SMS (SMS_NO)

How to set direction of Command response

0: No Use
1: Server
2: SMS

1072: AES128

Selects whether or not to use the AES128.
When using Auto Enc. Key, the device uses IMEI as the key.

Range: 0 – 2
Units: N/A

0 = Disable
1 = Auto Enc. Key
2 = User Enc. Key


1073: AES128 Key

This Parameter will be setting User AES128 Key
User AES128 Key should be 32 characters and possible range of each character are:
‘0’~‘9’, ‘a’~‘f’, ‘A’~‘F’

1080: Status Report Map

Binary map of the standard headers that will be included in the Status Reports

- Bit 0: Report Map
- Bit 1: Model
- Bit 2: Software Version
- Bit 3: Message Type
- Bit 4: Date
- Bit 5: Time
- Bit 6: Cell ID


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- Bit 7: MCC
- Bit 8: MNC
- Bit 9: LAC – Local Area Code
- Bit10: RX_LVL
- Bit11: Latitude
- Bit12: Longitude
- Bit13: Speed
- Bit14: Course/Heading
- Bit15: Satellite Count
- Bit16: GPS Fix Status
- Bit17: Input States(Not Support)
- Bit18: Output States(Not Support)
- Bit19: Mode
- Bit20: Status Report Type
- Bit21: Message Number
- **Bit22: reserved**
- **Bit23: Assign Map**

1081: Status Assign Map

Map of the Assign headers that will be included in the Status Reports from the device

- Bit 0: S_ASSIGN1
- Bit 1: S_ASSIGN2
- Bit 2: S_ASSIGN3
- Bit 3: S_ASSIGN4
- Bit 4: S_ASSIGN5
- Bit 5: S_ASSIGN6
- Bit 6: S_ASSIGN7
- Bit 7: S_ASSIGN8
- Bit 8: S_ASSIGN9
- Bit 9: S_ASSIGN10
- Bit 10: S_ASSIGN11
- Bit 11: S_ASSIGN12
- Bit 12: S_ASSIGN13
- Bit 13: S_ASSIGN14
- Bit 14: S_ASSIGN15
- Bit 15: M_ASSIGN1
- Bit 16: M_ASSIGN2
- Bit 17: M_ASSIGN3
- Bit 18: M_ASSIGN4
- Bit 19: M_ASSIGN5
- Bit 20: M_ASSIGN6
- Bit 21: M_ASSIGN7
- Bit 22: M_ASSIGN8
- Bit 23: L_ASSIGN1

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- Bit 24: L_ASSIGN2
- Bit 25: L_ASSIGN3
- Bit 26: L_ASSIGN4
- Bit 27: L_ASSIGN5
- Bit 28: L_ASSIGN6
- Bit 29: L_ASSIGN7
- Bit 30: L_ASSIGN8
- Bit 31: reserved

1082: Alert ID Report Map


Binary map of the standard headers that will be included in the Alert ID reports

- Bit 0: Report Map
- Bit 1: Model
- Bit 2: Software Version
- Bit 3: Message Type
- Bit 4: Date
- Bit 5: Time
- Bit 6: Cell ID
- Bit 7: MCC
- Bit 8: MNC
- Bit 9: LAC – Local Area Code
- Bit10: RX_LVL
- Bit11: Latitude
- Bit12: Longitude
- Bit13: Speed
- Bit14: Course/Heading
- Bit15: Satellite Count
- Bit16: GPS Fix Status
- Bit17: Input States(Not Support)
- Bit18: Output States(Not Support)
- Bit19: Alert ID
- Bit20: Alert Modifier
- Bit21: Alert ID Data
- **Bit22: reserved**
- **Bit23: Assign Map**

1083: Alert ID Assign Map

Map of the Assign headers that will be included in the Alert ID Reports from the device

- Bit 0: S_ASSIGN1
- Bit 1: S_ASSIGN2
- Bit 2: S_ASSIGN3
- Bit 3: S_ASSIGN4
- Bit 4: S_ASSIGN5
- Bit 5: S_ASSIGN6

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- Bit 6: S_ASSIGN7
- Bit 7: S_ASSIGN8
- Bit 8: S_ASSIGN9
- Bit 9: S_ASSIGN10
- Bit 10: S_ASSIGN11
- Bit 11: S_ASSIGN12
- Bit 12: S_ASSIGN13
- Bit 13: S_ASSIGN14
- Bit 14: S_ASSIGN15
- Bit 15: M_ASSIGN1
- Bit 16: M_ASSIGN2
- Bit 17: M_ASSIGN3
- Bit 18: M_ASSIGN4
- Bit 19: M_ASSIGN5
- Bit 20: M_ASSIGN6
- Bit 21: M_ASSIGN7
- Bit 22: M_ASSIGN8
- Bit 23: L_ASSIGN1
- Bit 24: L_ASSIGN2
- Bit 25: L_ASSIGN3
- Bit 26: L_ASSIGN4
- Bit 27: L_ASSIGN5
- Bit 28: L_ASSIGN6
- Bit 29: L_ASSIGN7
- Bit 30: L_ASSIGN8
- Bit 31: reserved

1097: PRM Report Enable

Selects whether PRM Report is used or not

- 0 = Disable
- 1 = Enable

1098: Removed. Not support

Removed. 'Battery Voltage Report Enable Setting' should be enabled always.

1099: Wi-Fi Report Enable

Selection whether mac address field of WI-Fi can be assigned in STT and ALT Report or not.


This is activated when GPS not fixed only.

- 0 = Disable
- 1 = Enable

*** This is only for B Series (ST4910B, ST4950B, ST4950BDS, etc)**

2601: Basic Sensor Report Map

Binary map of the Basic Sensor Report headers


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- Bit 0: Report Map
 - Bit 1: Model
 - Bit 2: Software Version
 - Bit 3: Total report number of the sensor report group
 - Bit 4: Current report number of the sensor report group
 - Bit 5: Number of scans
 - Bit 6: Date at first scan
 - Bit 7: Time at first scan
 - Bit 8: Time **packet** at each scan
 - Bit 9: Latitude position at first scan
 - Bit 10: Longitude position at first scan
 - Bit 11: Latitude gap **packet** from previous position of each scan
 - Bit 12: Longitude gap **packet** from previous position of each scan
 - Bit 13: Internal temperature **packet**
 - Bit 14: Internal humidity **packet**
 - Bit 15: Internal barometric pressure **packet**
 - Bit 16: Number of 1-Wire probe
 - Bit 17: Temperature **packet** of 1-Wire probe 1
 - Bit 18: Reserved
 - ...
 - Bit 23: Reserved
- * This is only for B Series (ST4910B, ST4950B, ST4950BDS, etc)**

2602: Extended Sensor Report Map

Binary map of the Extended Sensor Report headers

- Bit 0: Report Map
 - Bit 1: Model
 - Bit 2: Software Version
 - Bit 3: Total report number of the sensor report group
 - Bit 4: Current report number of the sensor report group
 - Bit 5: Number of scan count for dedicated BLE sensor
 - Bit 6: Number of scanned dedicated ELA devices
 - Bit 7: ELA ID **packet**
 - Bit 8: **packet** of temperature and humidity value for ELA BLE
 - Bit 9: Reserved
 - ...
 - Bit 23: Reserved
- * This is only for B Series (ST4910B, ST4950B, ST4950BDS, etc)**

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11: Assign Headers – Status Report

The Status Assign Headers consist of 3 different data options that can be added to the end of the Status Reports:

- Small Assign:
 - 2 Byte Data Field
 - Each option is assigned an ID value from 00 to FF
- Medium Assign
 - 4 Byte Data Field
 - Each option is assigned an ID value from 00 to FF
- Large Assign
 - 8 Byte Data Field
 - Each option is assigned an ID value from 00 to FF

1100 – 1114: Small Assign options 1 – 15

2-byte parameter to designate the ID from the Small Assign Table

- 1100 = S_ASSIGN1
- ...
- 1114 = S_ASSIGN15

1140 – 1147: Medium Assign options 1 – 8


4-byte parameter to designate the ID from the Small Assign Table

- 1140 = M_ASSIGN1
- ...
- 1147 = M_ASSIGN8

1160 – 1167: Large Assign options 1 – 8

8-byte parameter to designate the ID from the Large Assign Table

- 1160 = L_ASSIGN1
- ...
- 1167 = L_ASSIGN8

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12: Assign Headers – Alert Report

The Alert Assign Headers consist of 3 different data options that can be added to the end of the Alert Reports:

- Small Assign:
 - 2 Byte Data Field
 - Each option is assigned an ID value from 00 to FF
- Medium Assign
 - 4 Byte Data Field
 - Each option is assigned an ID value from 00 to FF
- Large Assign
 - 8 Byte Data Field
 - Each option is assigned an ID value from 00 to FF

1200 – 1214: Small Assign options 1-15 (ALT Report)

2-byte parameter to designate the ID from the Small Assign Table

- 1200 = S_ASSIGN1
- ...
- 1214 = S_ASSIGN15

1240 – 1247: Medium Assign options 1- 8 (ALT Report)


4-byte parameter to designate the ID from the Small Assign Table

- 1240 = M_ASSIGN1
- ...
- 1247 = M_ASSIGN8

1260 – 1261: Large Assign options 1 – 2 (ALT Report)

8-byte parameter to designate the ID from the Large Assign Table

- 1260 = L_ASSIGN1
- 1261 = L_ASSIGN2

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13: Alert Configuration

2-byte Parameters that designate whether or not the Alert Report is enabled, and the value of the Alert ID that will be sent when the Alert Report is generated.

1329: Power Up (99)

This Alert ID is sent by the when the device powers up by hall sensor.

Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1332: Charging Enable (44)

Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1333: Charging Disable (45)

Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1335: Battery Low (14)

This Alert ID is sent by the device right before it shuts down due to low battery voltage.


Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1340: Mode Change (18)

This Alert ID is sent by the when the mode of the device is changed.

Parameter Structure:

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- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1341: Shutdown (55)

This Alert ID is sent by the when the device turned off by hall sensor or battery shutdown threshold.

Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1339: Sim Card Removed (72)

Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1365: Exit Circular Geo-Fence(5)


Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

1366: Enter Circular Geo-Fence(6)

Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 - Option of Hex : 00 to FF (Decimal : 0-255)

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1342: Detection of Light(11) (Only ST4910B)

Parameter Structure:

- 1st Byte is the enable feature
 - 00 = Disabled
 - 01 = Enabled
- 2nd Byte is the ID that will be generated for the report
 Option of Hex : 00 to FF (Decimal : 0-255)

16: Mode Configuration and Profile Settings

Tracking Tab (Mode Configuration Tab)

This section will cover the Reporting Tracking Settings that can be assigned to each Mode.

1649: Heart Beat Alert1 UTC time

This parameter is used to wake up the device and report to the user platform and receiving command.

Format: HHMM (hour and minute)

Range: 0000 – 2359, Empty for no use

1650: Heart Beat Alert2 UTC time

This parameter is used to wake up the device and report to the user platform and receiving command.

Format: HHMM (hour and minute)

Range: 0000 – 2359, Empty for no use

1651: Heart Beat Alert3 UTC time

This parameter is used to wake up the device and report to the user platform and receiving command.

Format: HHMM (hour and minute)

Range: 0000 – 2359, Empty for no use

1652: Heart Beat Alert4 UTC time

This parameter is used to wake up the device and report to the user platform and receiving command.

Format: HHMM (hour and minute)

Range: 0000 – 2359, Empty for no use


1670: Parking Tracking Time

Range: 0, 600 – 86,400 (24 hour maximum)

Units: Seconds

Time Interval for which the device will send Status Reports when parking or the option of 'motion sensor' is disabled.

- 0 = Disabled
- X = Timer value

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1679: Driving Tracking Time

*ST4910, ST4950, ST4950DS

Range: 0, 30 – 86,400 (24 hour maximum)

*ST4910B, ST4950B, ST4950BDS

Range: 0, 600 – 86,400 (24 hour maximum)

Units: Seconds

Time Interval for which the device will send Status Reports when driving.

- 0 = Disabled
- X = Timer value

1681: Driving Angle (Only ST4950)

Range: 0, 10 – 179

Units: degrees

Heading/Angle Change value for which the device will send Status Reports in Driving Tracking Time

- 0 = Disabled
- X = Heading/Angle change value

1682: DC.PWR Tracking Time (Only driving)

*ST4950, ST4950DS

Range: 0, 30 – 86,400 (24 hour maximum)

*ST4950B, ST4950BDS

Range: 0, 600 – 86,400 (24 hour maximum)

Units: Seconds

Time Interval for which the device will send Status Reports when the (DC) power connected and driving.

- 0 = Disabled
- X = Timer value

* This is only for ST4950/ST4950B/ST4950BDS/ST4950DS.


1684: DC.PWR Driving Angle (Only ST4950)

Range: 0, 10 – 179

Units: degrees

Heading/Angle Change value for which the device will send Status Reports in DC.PWR and Driving Tracking Time.

- 0 = Disabled
- X = Heading/Angle change value

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17: Ignition

Ignition Tab

This section will cover the parameters that can be found in the “Ignition” tab of Sync-Trak. The parameters are used to configure how the device will determine movement mode and motionless mode.

1701: Ignition Off Delay

Range: **0 – 3600**

Units: Seconds

This parameter contains the time required to enter to ‘Motionless Mode’ after motions are disappeared, and send out the Alert ID on passed time if ‘Mode Change’ alert is enabled.

Recommended: **60**

1702: Ignition On Delay

Range: **0 – 999**

Units: Seconds


This parameter contains the time required to enter to ‘Movement Mode’ after motions are occurred, and send out the Alert ID on passed time if ‘Mode Change’ alert is enabled.

Recommended: **10**

1717: GPS ON at Motion

- 0 = Disable
- 1 = Enable(default)

This parameter indicates whether the device turns on GPS or not when a motion is occurred in Motionless Mode. GPS chipset will be turned on until getting GPS position 3 times when it’s enabled in the parking mode.

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19: Accelerometer / Power / RS232 / 1 Wire

This section will cover the parameters that can be found in the “Accelerometer” tab of Sync-Trak.

Accelerometer Tab

1900: Motion Sensor

This parameter controls the enable for the Motion Sensor

- 0 = Disable
- 1 = Enable

1901: Motion Threshold


Range: 0.06 – 8.0

Units: G's (Gravity)

Detection level of motion violation:

Recommend: 0.08.

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Power Tab

This section will cover the parameters that can be found in the “Power” tab of SyncTrak.

1930: Power Down Type

Power saving type

- 0 = Enable deep sleep
 - GPS and Cell are both turned off during sleep
- 1 = Enable sleep.
 - Only GPS is turned off during sleep

1936: Use Low Battery Shutdown

Enables protective shut down of the device if the back-up battery falls below a specified voltage

- 0 = Doesn't power off the device
- 1 = Power off the device when vehicle battery is disconnected and Backup battery voltage is low

1937: Low Battery Shutdown Threshold

Range: 3.1 – 3.3(ST4910), default: 3.1

Range: 3.4 – 3.6(ST4950), default: 3.4

Units: Volts DC

Threshold of battery voltage for power off.

1938: Low Battery Alert Threshold

Range: 3.2 – 3.6(ST4910), default: 3.2

Range: 3.5 – 4.1(ST4950), default: 3.5

Units: Volts DC

Threshold of battery voltage for the Alert.


1939: Turn On Battery Threshold

Range: 3.6 – 4.2(ST4950 only), default: 3.6

Units: Volts DC

Threshold of battery voltage for turned on itself when shutdown by low battery.

*** This is only for ST4950/ST4950B that has solar panel.**

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Wire Settings Tab

* 1-Wire is only for ST4950B/ST4950BDS

1970: 1-Wire Selection

Select which function the 1 wire will be used for:

- 0 = Disabled
 - **Setting:** The 1-Wire line is disabled on the device
- 1 = Driver ID (not support)
- 2 = Temperature Sensors
 - **Setting:** When the Temperature Sensor function is selected for the 1-Wire line, the device will be set to have the supported DS28EA00 temperature sensors connected to the 1-Wire line. A total of 8 of these temperature sensors can be chained together and connected to the device.
 - **Functionality:** When 1-Wire Selection Parameter has been set to Temperature Sensors, the device will look at the Parameters Threshold for Temp High and Temp Low to send Alerts for each temp probe for Temp High, Temp Return, and Temp Low.
- 3= Temperature Sensors & Driver ID (not support)

1980: Temp 1 High Threshold

The value to send an alert when 1-wire temperature goes up more than high threshold.

Range: -55 to +125

Units: Degrees Celsius

Default: 100


1981: Temp 1 Low Threshold

The value to send an alert when 1-wire temperature goes up less than high threshold.

Range: -55 to +125

Units: Degrees Celsius

Default: -50

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26: Sensor Configuration

This section will cover the parameters about sensors inside the device.

*** This section is only for B Series (ST4910B/ ST4950B/ST4950BDS).**

2610: Sensor Report

This parameter selection is used to enable sensor's information in status reports or alert reports and sensor reports.

- 0 = Disable
- 1= Enable

Default: Disable

2611: Light sensor

This parameter selection is used to check if the cover of the device is peeled off using the illuminance sensor. This parameter is used to select the profile to report temperature sensor's values through Sensor Report.

- 0 = Disable
- 1= Enable, Alert when light is detected.

*** This is only for ST4910B.**

2612: Internal Temperature/Humidity Sensor Support

Determines whether the sensor will be read or not.

- 0 = Disable
- 1 = Enable

2613: Internal Temperature Sensor – High Threshold

Determine the value for an alert when internal temperature goes up to high threshold.

- Temperature value (2Byte)
Range: -55 to +125
Units: Degrees Celsius
Default: 100

2614: Internal Temperature Sensor – Low Threshold

Determine the value for an alert when internal temperature goes up to high threshold.

- Temperature value (2Byte)
Range: -55 to +125
Units: Degrees Celsius
Default: -50

2615: Internal Humidity Sensor – High Threshold


Determine the value to send an alert when internal temperature goes up to high threshold.

- Humidity value (2Byte)
Range: 0 to 100
Units: percent
Default: 80

2616: Internal Humidity Sensor – Low Threshold

Determine the value to send an alert when internal temperature goes down to low threshold.

- Humidity value (2Byte)
Range: 0 to 100

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Units: percent
 Default: 20

2617: Internal Atmospheric Pressure Sensor – Support

Determines whether the sensor will be read or not.

- 0 = Disable
- 1 = Enable

2618: Sensor Report Interval

Determines time interval by which the device will send Sensor Report including internal and dedicated sensors.

Range: 10 – 1,440 (24 hours maximum)

Units: Minutes

Default: 1440

2619: Sensor Scan Interval in Driving

Determines time interval by which the device will scan and store the values of internal and dedicated sensors for 'Sensor Report' in Driving.

Range: 10 – 1,440 (24 hours maximum)

Units: Minutes

Default: 360

Note : The maximum number of sensor scans per sensor report is 15. So, when the Sensor Report Interval is divided into Sensor Scan Interval, it cannot exceed 15 times.

Also, 'Sensor Scan Interval' cannot be set to a value greater than 'Sensor Report Interval'.

Ex) -. Possible to setting Sensor Report Interval 150 minutes and Sensor Scan Interval 10 minutes.

-. Not possible to setting Sensor Report Interval 160 minutes and Sensor Scan Interval 10 minutes.

-. Not possible to setting Sensor Report Interval 10 minutes and Sensor Scan Interval 60 minutes.

2620: Sensor Scan Interval in Parking

Determines time interval by which the device will scan and store the values of internal and dedicated sensors for 'Sensor Report' in Parking.

Range: 10 – 1,440 (24 hours maximum)

Units: Minutes

Default: 360


Note : The maximum number of sensor scans per sensor report is 15. So, when the Sensor Report Interval is divided into Sensor Scan Interval, it cannot exceed 15 times.

Also, 'Sensor Scan Interval' cannot be set to a value greater than 'Sensor Report Interval'.

Ex) -. Possible to setting Sensor Report Interval 150 minutes and Sensor Scan Interval 10 minutes.

-. Not possible to setting Sensor Report Interval 160 minutes and Sensor Scan Interval 10 minutes.

-. Not possible to setting Sensor Report Interval 10 minutes and Sensor Scan Interval 60 minutes.

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40: BLE Configuration

This section will cover the parameters about BLE features.

*** This session is only for B series (ST4910B/ST4950B/ST4950BDS)**

4011: BLE SCAN TIME

Determine scanning duration to read some value from around BLE.

The device may stop the scanning although it's not passed the time, if all BLE is read already.

Range: 20 – 120

Unit: Seconds

Default: 60

*** Encourage not use the scan time over 60 seconds.**

4020: Max. Count of External Dedicated BLE

Determine maximum count of dedicated BLE devices.

Range: 0 – 5. (0 = not support)

Default: 5.

4021: BLE Scan

Determines whether the BLE will scan or not.

- 0 = Disable
- 1 = Enable


4100: Register Dedicated Sensor BLE (1)

This parameter is used to register BLE sensor which has ID tag to **Point 1**.

- **Active:**
Disabled is to delete the registered BLE and Enabled is to confirm BLE registration.
 - 00 = Disabled
 - 01 = Enabled
- **BLE type:**
 - 00 = Not registered (No check)
 - 01 = ELA coin (ID Tag)
 - 02 = ELA puck (ID Tag + temperature + humidity)

Note: the types will be expanded in the future,
- **ID of the BLE device:**
 - String: Fixed 6 characters(HEXA)
- **In Alert:**
Determines whether an Alert will be generated when the sensor enters within the BLE communication range and the device recognizes the sensor or not.
 - 00 = Disabled
 - 01 = Enabled

Default: Disable
- **Out Alert:**
Determines whether an Alert will be generated when the sensor is out of the BLE communication range and the device doesn't recognize the sensor or not.
 - 00 = Disabled
 - 01 = Enabled

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Default: Disable

- **High Threshold of Temperature Sensor:**

Determine the value to send an alert. An alert will be sent when temperature goes up more than it.

- Temperature value (2Byte)

Range: -55 to +125

Units: Degrees Celsius

Default: 100

- **Low Threshold of Temperature Sensor:**

Determine the value to send an alert. An alert will be sent when temperature goes down less than it.

- Temperature value (2Byte)

Range: -55 to +125

Units: Degrees Celsius

Default: -40

- **High Threshold of Humidity Sensor:**

Determine the value to send an alert. An alert will be sent when humidity goes up more than it.

- Humidity value (2Byte)

Range: 0 to 100

Units: percent

Default: 80

- **Low Threshold of Humidity Sensor:**

Determine the value to send an alert. An alert will be sent when humidity goes down less than it.

- Humidity value (2Byte)

Range: 0 to 100

Units: percent

Default: 20

4101: Register Dedicated Sensor BLE (2)

This parameter is used to register BLE sensor which has ID tag to **Point 2**.

Command structure is same with 4100.

4102: Register Dedicated Sensor BLE (3)


This parameter is used to register BLE sensor which has ID tag to **Point 3**.

Command structure is same with 4100.

4103~4115: Register Dedicated Sensor BLE (4~16)

This parameter is used to register BLE sensor which has ID tag to **Point 4~16**.

Command structure is same with 4100.

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50: Geo-fence

The points of the Poly Geofence must be defined in either clockwise or counter clockwise order. The zone will be constructed by connecting each of the point defined in the list of parameters below in order from 00 through 99.

*** This is only for ST4910B/ST4950/ST4950B/ST4950BDS**


5025 – 5034: Circular Geo-Zone Point 1 – 10

Point Parameters:

- 5025 = Circular Geo-Zone Point 1
- ...
- 5034 = Circular Geo-Zone Point 10

5025: Circular Geo-Zone Point 1

- **Latitude:** +37.479323
- **Longitude:** +126.887827
- **Distance:** 00A5
 - Radius is meters for Circular Geo-Zone
 - Range: 30~65500
- **In Alert:** 01
 Determines whether or not an Alert ID Report will be generated when the device enters the defined Circular Zone
 - 00 = Disabled
 - 01 = Enabled
- **Out Alert:** 01
 Determines whether or not an Alert ID Report will be generated when the device exits the defined Circular Zone
 - 00 = Disabled
 - 01 = Enabled

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Programming Parameter Format

Here are some examples for programming parameters of the device
 PRG and REQ Command can use maximum 20 items at one time.

Structure

Program Command

- Parameter of XYY are equal to:
 - XX = Group Param ID
 - YY = Param ID
- Program structure
 - PRG;[DEVICE ID];[Group Param ID];[Param ID]#[Param Value]
 - PRG;[DEVICE ID];[Group Param ID];[Param ID]#[Param Value];[Param ID]#[Param Value]

Response Options:

- RPR;[DEVICE ID];[Parameter]
 - Will list the XYY Parameter in the response for each parameter that was successfully received and programmed.
- ERROR
 - Error with no successful programming completed
- ERR;[Parameter]
 - Error with the listed parameter, but other parameters programmed successfully
- USP;[Parameter]
 - A parameter was given in the command that is not listed in the supported parameter of the device (or FW version of the device).

Examples

This section will cover some examples of program commands and device responses

Example 1: Basic Command

Program command for parameter numbers 1000: Authentication and 1001: APN


- Command sent to device:
 - PRG;[DEVICE ID];10;00#1;01#testapn.test
- Response sent back from device:
 - RPR;[DEVICE ID];1000;1001

Example 2: ERR incorrect data given

Program command for parameter numbers 1000: Authentication and 1001: APN

- Command sent to device:
 - PRG;[DEVICE ID];10;00#99;01#testapn.test
 - Parameter number 1000 does not support value 99, so the device encounters an error when trying to program this value
- Response sent back from device:
 - RPR;[DEVICE ID];1001
ERR;1000

Note: In this case the "OK" response means that the device successfully programmed parameter ID 1001, but the ERR in the response designates that the parameter ID 1000 was not able to be written to the device.

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Example 3: Errors

- Command sent to device:
 - PRG;[DEVICE ID];1;00#1;01#testapn.test
- Response sent back from device:
 - ERROR
- Command sent to device
 - PRG;[DEVICE ID];10;00#1;01testapn.test
- Response sent back from device:
 - RPR;[DEVICE ID];1000;
 - ERROR

Requesting Parameter Value Format

Structure

Program Command

- Parameter of XYY are equal to:
 - XX = Group Param ID
 - YY = Param ID
- Request structure
 - REQ;[DEVICE ID];[Group Param ID];[Param ID];
 - REQ;[DEVICE ID];[Group Param ID];[Param ID],[Param ID]

Response Options:

- Response with Parameter values:
 - RRE;[DEVICE ID];[Group Param ID];[Param ID]#[Param Value]
 - RRE;[DEVICE ID];[Group Param ID];[Param ID]#[Param Value];[Param ID]#[Param Value]
- ERROR
 - Error with no successful request completed

Examples

This section will cover some examples of request parameter commands and device responses

Example 1: Basic Command


- Command sent to device:
 - REQ;[DEVICE ID];10;00,01
- Response sent back from device:
 - RRE;[DEVICE ID];10;00#1;01#testapn.test

Example 2: USP parameter

- Command sent to device:
 - REQ;[DEVICE ID];10;00,01,15
- Response sent back from device:
 - RRE;[DEVICE ID];10;00#1;01#testapn.test
USP;1015

Example 3: Errors

- Command sent to device:
 - REQ;[DEVICE ID];1;00,01
- Response sent back from device:
 - ERROR

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- Command sent to device:
 - REQ:[DEVICE ID];10;00;1
- Response sent back from device:
 - RRE:[DEVICE ID];10;00#1
ERROR

10: Network / SMS&Call / Report Settings Parameters

Configuring Authentication, APN, Server IP, Server Port, Server Type


- Authentication = Param 1000
 - PAP is setting of 1
- APN = Param 1001
 - Setting of testapn.test
- Server IP = Param 1005
 - Setting of 123.456.789.012
- Server Port = Param 1006
 - Setting of 1234
- Server Type = Param 1007
 - Setting of U for UDP

<Example>

ASCII:


Command: PRG;6009999001;10;00#1;01#testapn.test;05#123.456.789.012;06#1234;07#U

Response: RPR;6009999001;1000;1001;1005;1006;1007

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REVISIONS

Rev. No.	Date	Modifications were made on:	Writer
Rev. 1.00	2020-03-18	Draft	BC.Jeon
Rev. 2.00	2020-03-20	'Keep Alive' parameters deleted.	BC.Jeon
Rev. 3.00	2020-03-24	Changed the range of 'low battery shutdown and alert'	BC.Jeon
Rev. 4.00	2020-04-02	Changed the ID of 'Accelerometer'	BC.Jeon
Rev. 5.00	2020-04-14	Changed the parameter ID of 'Driving Tracking Time'	BC.Jeon
Rev. 6.00	2020-04-22	Added the parameter of 'AGPS enable'	BC.Jeon
Rev. 7.00	2020-04-29	Added the parameter of 'Charge Enable/ Disable' of alert config.	BC.Jeon
Rev. 8.00	2020-05-19	Added the parameter of 'Driving Tracking when charging' of Tracking config. Added the parameter of 'power down type' of Power config.	BC.Jeon
Rev. 9.00	2020-06-11	Changed the range of 'low battery shutdown and alert'	BC.Jeon
Rev. 10.00	2020-06-26	Changed the range of 'low battery alert' Added the parameter of 'Sensor Config' Tab. Added the parameter of 'Geo-Fence' Tab.	BC.Jeon
Rev. 11.00	2020-06-30	Added the parameter of 'Geo-Fence' and 'light' of alert config Deleted the parameter of 'BLE Device' of sensor config. Added the parameter of 'BLE Scan Time' of sensor config. Modified the character of 'Battery Voltage Report Enable'	BC.Jeon
Rev. 12.00	2020-07-08	Changed the parameter of 'UDP ACK'	BC.Jeon
Rev. 13.00	2020-07-10	Changed the alert ID of 'light brighten'	BC.Jeon
Rev. 14.00	2020-07-16	Changed the operation of 'Driving Interval(DC.PWR)'	BC.Jeon
Rev. 15.00	2020-07-24	Added the parameter of 'Turn on battery threshold' Added the parameter of 'Wi-Fi report enable'. Changed the range of 'shutdown battery threshold'	BC.Jeon
Rev. 16.00	2020-07-29	Changed the operation of 'DC.PWR Tracking Interval(1682)'	BC.Jeon
Rev. 17.00	2020-08-14	Changed the range and description of 'Tracking Tab'.	BC.Jeon
Rev. 18.00	2020-08-19	Changed the range and description of 'Tracking Tab'.	BC.Jeon
Rev. 19.00	2020-08-31	Added the parameter of '1-wire device' at 'sensor config'	BC.Jeon
Rev. 20.00	2020-10-23	Changed the range of Parking/Driving/DC.PWR Tracking Time for ST4950 series	YH Choe
Rev. 21.00	2020-10-30	Indicated of model available for sensor and setting	YH Choe
Rev. 22.00	2020-11-06	Changed udp ack bitmap of Temperature Report (ATPR) from 2 to 15 Added the parameter of 'LTE Cat M1 Band'	YH Choe
Rev. 23.00	2020-12-02	Added 'Shocked' and 'collision' in Alert config Added Description of Motion Sensor for ST4910 in Accelerometer Tab Added Shock Detection Delay, Shock Threshold, Collision Threshold in Accelerometer Tab	YH Choe
Rev. 24.00	2020-12-07	Updated the explain that The Shock and Collision feature is only applied to the ST 4910 of special customer.	YH Choe
Rev. 26.00	2020-12-28	Updated 'Status Report Map' and 'Alert ID Report Map'(Added Parking time and Driving time)	YH Choe
Rev. 27.00	2021-01-13	Changed name to 'Collision Project' about the feature of shock and collision.	YH Choe
Rev. 28.00	2021-02-15	Added setting for Senso , BLE WIFI. Removed shock and collision	SA Kim
Rev. 28.01	2021-02-16	Modified some duplicated setting ID in Sensor configuration	SA Kim
Rev. 28.02	2021-02-18	Added 4011 for BLE scan time and modified expression in 2636~ 2638 Modified 2602, Extended Sensor Report Map.	SA Kim
Rev. 28.03	2021-02-19	Added unit of BLE Scan Time Divide unit of tracking time for USA and Europe. 1670, 1679 and 1692. Modified models that 'Turn on battery Threshold'. Is implemented. Modified Register Dedicated Sensor BLE (4100)	SA Kim
Rev. 28.04	2021-03-18	1. Unify tracking time for all models. 2. Added 1080 Status Report Map and 1082 Alert Report Map 3. Modified 0701, 0702 range and recommended value 4. Removed internal temp. hum., pressure sensor - report in STT/ALT and Sensor Report. Because the REPORT MAP of each report indicates use of report for the sensors.	SA Kim

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Rev 29.00	2021-03-21	1. Turn On Battery Threshold, Change Default Value 3.7 -> 3.6 2. Add Heart Beat	KSH
Rev 29.01	2021-03-23	Removed unnecessary setting, enable/disable sensors at the end of each report. Replaced this setting to assign field setting	SA Kim
Rev 30.01	2021-03-24	Change the 26:Sensor Configuration	KSH
Rev 30.02	2021-03-25	Changed Sensor Scan Interval in Driving default value to 360 minutes. Changed Sensor Scan Interval in Parking default value to 360 minutes. Changed Preparing Time for External Dedicated BLE default value to 20 seconds.	YH Choe
Rev 30.03	2021-03-25	Modified options of heart beat	
Rev 30.04	2021-03-30	Changed the Description '17. Driving Mode → 17. Ignition'	KSH
Rev 30.05	2021-04-01	4021 : Preparing time → Scan(Combo Box) 4100: Max ID characters, 20 -> 32	KSH
Rev 30.06	2021-04-06	Delete Param Setting 1996 : Temp. scan interval in Driving 1997 : Temp. scan interval in Parking	KSH
Rev 30.07	2021-04-13	Add UDP ACK (bit16: ASNB, bit 17: ASNE)	KSH
Rev 30.08	2021-04-14	Add Description Active item of 4100: Register Dedicated Sensor BLE Delete both the item of Temperature Report in Sensor Report and the item of Humidity Report in Sensor Report in Register Dedicated Sensor BLE	YH Choe
Rev 30.09	2021-04-20	The name of the NW Band(1016) has been changed to "Scanning Band Mode".	JH Sim
Rev 30.10	2021-04-26	Add 1026(UDP ACK Formula)	KSH
Rev 30.11	2021-05-26	Added note in 'SMS/CALL Tab' Added note in 'Sensor Scan Interval in Driving' and 'Sensor Scan Interval in Parking' Changed Range 0-16 to 0-5 in 'Max Count of External Dedicated BLE'	YH Choe
Rev 30.12	2021-05-28	Added note in 'UDP ACK'	YH Choe
Rev 30.13	2021-06-01	Changed the setting range value 30 – 86,400 to 600 ~ 86,400 in 'Parking Tracking Time' Modified the setting range value according to the model in 'Driving Tracking Time' and DC.PWR Tracking Time'	YH Choe