

# espGROW Topics

Table 1 lists topics that may be published and/or received by all modules subscribing to them in the present invention. Where it appears in the Table 1, “BASE”, “LOCATION” and “ROOM” may be replaced with the text strings defined on the module’s configuration web page (FIG 33) by the firmware. Where it appears in the Table 1, “MODULE\_TYPE” may be replaced with a lowercase text string identifying the type of each module by the firmware during runtime, for example, “plant” for Plant modules, “water” for Water modules, and so on.

ALL_STATUS_TOPIC	BASE/LOCATION/ROOM/#
ALERT_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/alert
BROKER_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/broker
BROKER_WILL_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/disconnected
CONFIG_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/config
CYCLE_COUNT_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/cycles
EMERGENCY_STOP_TOPIC	BASE/LOCATION/ROOM/e_stop
FAIL_OVER_BROKER_TOPIC	BASE/LOCATION/ROOM/fail_over_broker
FLASH_LEDS_TOPIC	BASE/LOCATION/ROOM/flash_leds
GET_RECIPE_TOPIC	BASE/LOCATION/ROOM/get_recipe
HEARTBEAT_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/heartbeat
REBOOT_TOPIC	BASE/LOCATION/ROOM/reboot
RESET_CALIBRATE_TOPIC	BASE/LOCATION/ROOM/plant/reset_calibrate
RESET_CONFIG_TOPIC	BASE/LOCATION/ROOM/reset_config
RESET_CONFIG_BY_MODULE_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/reset_config
RESET_RECIPE_TOPIC	BASE/LOCATION/ROOM/reset_recipe
SET_BACKUP_BROKER_TOPIC	BASE/LOCATION/ROOM/set_backup_broker
SET_DEFAULTS_TOPIC	BASE/LOCATION/ROOM/set_defaults
SET_EMERGENCY_STOP_TOPIC	BASE/LOCATION/ROOM/set_e_stop
SET_RECIPE_TOPIC	BASE/LOCATION/ROOM/set_recipe
SET_STANDALONE_TOPIC	BASE/LOCATION/ROOM/set_standalone
SET_WEB_SERVER_TOPIC	BASE/LOCATION/ROOM/set_web_server

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SHOW_CALIBRATE_TOPIC	BASE/LOCATION/ROOM/show_calibrate
SHOW_CONFIG_TOPIC	BASE/LOCATION/ROOM/show_config
SHOW_MAC_TOPIC	BASE/LOCATION/ROOM/show_mac
SHOW_RECIPE_TOPIC	BASE/LOCATION/ROOM/show_recipe
SHOW_SUPPORT_TOPIC	BASE/LOCATION/ROOM/show_support
SHOW_TAG_TOPIC	BASE/LOCATION/ROOM/show_tag
SHOW_TIMESTAMP_TOPIC	BASE/LOCATION/ROOM/show_timestamp
SHOW_VERSION_TOPIC	BASE/LOCATION/ROOM/show_version
STANDALONE_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/standalone
SUPPORT_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/support
UPDATE_FIRMWARE_TOPIC	BASE/LOCATION/ROOM/update_firmware
VERSION_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/version
WEB_SERVER_TOPIC	BASE/LOCATION/ROOM/MODULE_TYPE/web_server

**Table 1**

# espGROW Topics

Table 2 lists topics that may be received by Controller, Viewer, Logger, RTCLogger, RGB, and any and all modules subscribing to them in the present invention.

ALL_STATUS_TOPIC	BASE/LOCATION/ROOM/#
LIGHT_STATUS_TOPIC	BASE/LOCATION/ROOM/light/#
LOGGER_STATUS_TOPIC	BASE/LOCATION/ROOM/logger/#
PH_STATUS_TOPIC	BASE/LOCATION/ROOM/ph/#
PLANT_STATUS_TOPIC	BASE/LOCATION/ROOM/plant/#
RELAY_STATUS_TOPIC	BASE/LOCATION/ROOM/relay/#
RGB_STATUS_TOPIC	BASE/LOCATION/ROOM/rgb/#
RTC_STATUS_TOPIC	BASE/LOCATION/ROOM/rtc/#
RTCLOGGER_STATUS_TOPIC	BASE/LOCATION/ROOM/rtclogger/#
WATER_STATUS_TOPIC	BASE/LOCATION/ROOM/water/#

**Table 2**

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Table 3 lists topics that may be published and/or received by Plant modules subscribing to them in the present invention.

CALIBRATING_SOIL_TOPIC	BASE/LOCATION/ROOM/plant/calibrating_soil
HZ_TOPIC	BASE/LOCATION/ROOM/plant/hz
MAX_MOIST_TOPIC	BASE/LOCATION/ROOM/plant/max_moist
MIN_MOIST_TOPIC	BASE/LOCATION/ROOM/plant/min_moist
MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/plant/moist_percent
MOIST_VALUE_TOPIC	BASE/LOCATION/ROOM/plant/moist_value
PUMP_TOPIC	BASE/LOCATION/ROOM/plant/pump
SENSOR_MOIST_MAX_DRY_TOPIC	BASE/LOCATION/ROOM/plant/sensor_moist_max_dry
SENSOR_MOIST_MAX_WET_TOPIC	BASE/LOCATION/ROOM/plant/sensor_moist_max_wet
SET_CALIBRATE_SOIL_DRY_TOPIC	BASE/LOCATION/ROOM/plant/set_calibrate_soil_dry
SET_CALIBRATE_SOIL_WET_TOPIC	BASE/LOCATION/ROOM/plant/set_calibrate_soil_wet
SET_HZ_TOPIC	BASE/LOCATION/ROOM/plant/set_hz
SET_MIN_MOIST_TOPIC	BASE/LOCATION/ROOM/plant/set_min_moist
SET_MIN_WATER_TOPIC	BASE/LOCATION/ROOM/plant/set_min_water
SET_PUMP_DELAY_TOPIC	BASE/LOCATION/ROOM/plant/set_pump_delay
SET_PUMP_RUNTIME_TOPIC	BASE/LOCATION/ROOM/plant/set_pump_runtime

**Table 3**

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Table 4 lists topics that may be published and/or received by Water modules subscribing to them in the present invention.

AIR_TOO_COLD_TOPIC	BASE/LOCATION/ROOM/water/air_too_cold
AIR_TOO_DRY_TOPIC	BASE/LOCATION/ROOM/water/air_too_dry
AIR_TOO_HOT_TOPIC	BASE/LOCATION/ROOM/water/air_too_hot
AIR_TOO_HUMID_TOPIC	BASE/LOCATION/ROOM/water/air_too_humid
CALIBRATING_WATER_TOPIC	BASE/LOCATION/ROOM/water/calibrating_water
CONTAINER_DEPTH_TOPIC	BASE/LOCATION/ROOM/water/container_depth
HEAT_INDEX_C_TOPIC	BASE/LOCATION/ROOM/water/heat_index_c
HEAT_INDEX_F_TOPIC	BASE/LOCATION/ROOM/water/heat_index_f
HUMIDITY_TOPIC	BASE/LOCATION/ROOM/water/humidity
MIN_WATER_TOPIC	BASE/LOCATION/ROOM/water/min_water
SET_AIR_TOO_COLD_TOPIC	BASE/LOCATION/ROOM/water/set_air_too_cold
SET_AIR_TOO_DRY_TOPIC	BASE/LOCATION/ROOM/water/set_air_too_dry
SET_AIR_TOO_HOT_TOPIC	BASE/LOCATION/ROOM/water/set_air_too_hot
SET_AIR_TOO_HUMID_TOPIC	BASE/LOCATION/ROOM/water/set_air_too_humid
SET_CALIBRATE_WATER_TOPIC	BASE/LOCATION/ROOM/water/set_calibrate_water
SET_CONTAINER_DEPTH_TOPIC	BASE/LOCATION/ROOM/water/set_container_depth
TEMP_C_TOPIC	BASE/LOCATION/ROOM/water/temp_c
TEMP_F_TOPIC	BASE/LOCATION/ROOM/water/temp_f
WATER_ALERT_TOPIC	BASE/LOCATION/ROOM/water/alert
WATER_HEARTBEAT_TOPIC	BASE/LOCATION/ROOM/water/heartbeat
WATER_PERCENT_TOPIC	BASE/LOCATION/ROOM/water/water_percent
WATER_VALUE_TOPIC	BASE/LOCATION/ROOM/water/water_value

**Table 4**

# espGROW Topics

Table 5 lists topics that may be published and/or received by Relay modules subscribing to them in the present invention.

OUTLET_1_CYCLED_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/cycle_mins
OUTLET_1_OFF_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/off/humidity
OUTLET_1_OFF_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/off/moisture_percent
OUTLET_1_OFF_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/off/temp_f
OUTLET_1_ON_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/on/humidity
OUTLET_1_ON_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/on/moisture_percent
OUTLET_1_ON_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/on/temp_f
OUTLET_1_TIMER_MINS_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/timer_mins
OUTLET_1_TIMER_MS_REMAINING_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1/ms_remaining
OUTLET_1_TOPIC	BASE/LOCATION/ROOM/relay/outlet/1
OUTLET_2_CYCLED_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/cycle_mins
OUTLET_2_OFF_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/off/humidity
OUTLET_2_OFF_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/off/moisture_percent
OUTLET_2_OFF_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/off/temp_f
OUTLET_2_ON_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/on/humidity
OUTLET_2_ON_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/on/moisture_percent
OUTLET_2_ON_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/on/temp_f
OUTLET_2_TIMER_MINS_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/timer_mins
OUTLET_2_TIMER_MS_REMAINING_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2/ms_remaining
OUTLET_2_TOPIC	BASE/LOCATION/ROOM/relay/outlet/2
OUTLET_3_CYCLED_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/cycle_mins
OUTLET_3_OFF_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/off/humidity
OUTLET_3_OFF_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/off/moisture_percent
OUTLET_3_OFF_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/off/temp_f
OUTLET_3_ON_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/on/humidity
OUTLET_3_ON_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/on/moisture_percent
OUTLET_3_ON_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/on/temp_f
OUTLET_3_TIMER_MINS_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/timer_mins

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OUTLET_3_TIMER_MS_REMAINING_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3/ms_remaining
OUTLET_3_TOPIC	BASE/LOCATION/ROOM/relay/outlet/3
OUTLET_4_CYCLED_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/cycle_mins
OUTLET_4_OFF_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/off/humidity
OUTLET_4_OFF_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/off/moisture_percent
OUTLET_4_OFF_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/off/temp_f
OUTLET_4_ON_HUMIDITY_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/on/humidity
OUTLET_4_ON_MOIST_PERCENT_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/on/moisture_percent
OUTLET_4_ON_TEMP_F_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/on/temp_f
OUTLET_4_TIMER_MINS_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/timer_mins
OUTLET_4_TIMER_MS_REMAINING_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4/ms_remaining
OUTLET_4_TOPIC	BASE/LOCATION/ROOM/relay/outlet/4
RELAY_1_TOPIC	BASE/LOCATION/ROOM/relay/1
RELAY_2_TOPIC	BASE/LOCATION/ROOM/relay/2
RELAY_3_TOPIC	BASE/LOCATION/ROOM/relay/3
RELAY_4_TOPIC	BASE/LOCATION/ROOM/relay/4
SET_RELAY_1_TOPIC	BASE/LOCATION/ROOM/relay/1/set
SET_RELAY_2_TOPIC	BASE/LOCATION/ROOM/relay/2/set
SET_RELAY_3_TOPIC	BASE/LOCATION/ROOM/relay/3/set
SET_RELAY_4_TOPIC	BASE/LOCATION/ROOM/relay/4/set

**Table 5**

# espGROW Topics

Table 6 lists topics that may be published and/or received by Light modules subscribing to them in the present invention.

LIGHT_FULL_TOPIC	BASE/LOCATION/ROOM/light/full
LIGHT_IR_TOPIC	BASE/LOCATION/ROOM/light/ir
LIGHT_LUX_TOPIC	BASE/LOCATION/ROOM/light/lux
LIGHT_LUX_PERCENT_TOPIC	BASE/LOCATION/ROOM/light/percent
LIGHT_UV_TOPIC	BASE/LOCATION/ROOM/light/uv
LIGHT_VISIBLE_TOPIC	BASE/LOCATION/ROOM/light/visible

**Table 6**

Table 7 lists topics that may be published by pH modules and received by any and all modules subscribing to them in the present invention.

PH_TOPIC	BASE/LOCATION/ROOM/ph/ph_value
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**Table 7**

Table 8 lists topics that may be published and/or received by Logger modules subscribing to them in the present invention.

LOGGING_INTERVAL_TOPIC	BASE/LOCATION/ROOM/logger/interval
SET_LOGGING_INTERVAL_TOPIC	BASE/LOCATION/ROOM/logger/set_interval



# espGROW Topics

**Table 8**

Table 9 lists topics that may be published and/or received by DTC modules subscribing to them in the present invention.

AIR_TOO_COLD_TOPIC	BASE/LOCATION/ROOM/dtc/air_too_cold
AIR_TOO_DRY_TOPIC	BASE/LOCATION/ROOM/dtc/air_too_dry
AIR_TOO_HOT_TOPIC	BASE/LOCATION/ROOM/dtc/air_too_hot
AIR_TOO_HUMID_TOPIC	BASE/LOCATION/ROOM/dtc/air_too_humid
HEAT_INDEX_C_TOPIC	BASE/LOCATION/ROOM/dtc/heat_index_c
HEAT_INDEX_F_TOPIC	BASE/LOCATION/ROOM/dtc/heat_index_f
HUMIDITY_TOPIC	BASE/LOCATION/ROOM/dtc/humidity
SET_AIR_TOO_COLD_TOPIC	BASE/LOCATION/ROOM/dtc/set_air_too_cold
SET_AIR_TOO_DRY_TOPIC	BASE/LOCATION/ROOM/dtc/set_air_too_dry
SET_AIR_TOO_HOT_TOPIC	BASE/LOCATION/ROOM/dtc/set_air_too_hot
SET_AIR_TOO_HUMID_TOPIC	BASE/LOCATION/ROOM/dtc/set_air_too_humid
TEMP_C_TOPIC	BASE/LOCATION/ROOM/dtc/temp_c
TEMP_F_TOPIC	BASE/LOCATION/ROOM/dtc/temp_f

**Table 9**

Table 10 lists topics that may be published and/or received by RTCLogger modules subscribing to them in the present invention.

LOGGING_INTERVAL_TOPIC	BASE/LOCATION/ROOM/rtclogger/interval
SET_LOGGING_INTERVAL_TOPIC	BASE/LOCATION/ROOM/rtclogger/set_interval
SET_TIMESTAMP_TOPIC	BASE/LOCATION/ROOM/set_timestamp

**Table 10**

# espGROW Topics

Table 11 lists topics that may be published and/or received by RTC modules subscribing to them in the present invention.

SET_TIMESTAMP_TOPIC	BASE/LOCATION/ROOM/set_timestamp
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**Table 11**

## IDENTIFYING MODULES

To uniquely identify modules within each module type, the MAC address is used. For brevity, given the small display size of the Controller (4x20) and Viewer (2x16) displays, only the last two characters of the MAC address (the “short MAC”) are displayed on the modules’ tiny LED screens. The MAC address is a unique identifier assigned to a network interface controller (NIC) for use as a network address in communications within a network segment. This use is common in most IEEE 802 networking technologies, including Ethernet, Wi-Fi, and Bluetooth. Using the short MAC address eliminates the requirement to manually identify and/or number modules of the same type, e.g. Plant1, Plant2, etc. for use with topics targeting a single module.