1. What type of battery does the Wireless Module use?
   The 52WM platform uses 2 Energizer Lithium Ion AA Cells.

2. Can we buy the batteries locally?
   The batteries for the 52WM can be replaced with the specified Energizer batteries.

3. What is the expected Battery life for the 52WM?
   4+ Years under ideal Network Conditions. For ideal network conditions – see best practices in the 52WM User Guide

4. What is the data sampling rate?
   The default sampling rate is 32 seconds. This sample rate was chosen to provide measurement data fast enough to allow for precision cooling control applications while optimizing providing the maximum battery life.

5. Is there any way we can provide a “local Alarm” with your sensor?
   Local Alarms cannot be set directly by the Wireless Module. Local Alarms must be set through the Gateway.
   The default burst rate for the sensor is 32 seconds and can be changed through the gateway to 2, 4, 8, 16, 32 seconds, and in increments of 1 minute.
   Note: With an increase in data sampling rate, the expected battery life will decrease.

6. Does gateway report show battery life?
   The 52WM does report its battery voltage. This battery voltage can be seen through the gateway and is an indication of the battery life. A reading below 2.9V indicates a low battery.

7. What is accuracy of our sensor reading for T & RH?
   The specified accuracy for the Temperature reading is ±0.5°C and ±3.0% Relative Humidity

8. What burst rate should be used for environment monitoring & control application?
   For environmental monitoring applications, the customer can specify how often they would like to receive the data based on their application. For environmental control applications, the customer should use a reporting rate that allows for optimized control of their control system.

9. What are the connection protocols from the Gateway to the customer system? Do our sensors / gateway support non-Emerson software?
   The Smart Wireless gateway is a software agnostic system that can be connected to any software platform that can read HART IP, Modbus RTU/TCP, OPC, and Ethernet IP.

10. What does it mean that there is no RF Site Survey Required?
    The RF survey provides information required for other sensor types like Zigbee so interference is understood for set-up. Our WirelessHART sensors/Gateway can recognize the other RF in the DC and adapt by not using channels that are used by other wireless devices in the space.

11. What certificates do the Wireless Modules and Gateway have (CE, FCC, ROHS...)?
    They carry spectrum approvals for US, Canada, Europe, and some Asian countries. The 52WM is ROHS Compliant
12. Do you mean even if there is no direct visibility between sensor & gateway, it is still ok?
   Communication pathways are dependent on the site layout and type of obstructions. The Wireless Module does
   not need a direct line of sight to the Gateway. The WirelessHART Mesh Network enables these devices to use
   neighbors as pathways back to the Gateway.

13. Network Continuously Monitors Path for Degradation, and Repairs itself. How do they do this?
   This autonomous monitoring and healing process is a built-in function of the WirelessHART Protocol.

**Gateway**

1. What are the connection protocols from the Gateway to the customer system?
   *The communication protocols for the Gateway to Customer System are Modbus TCP/IP, OPC, Ethernet/IP and
defined in the Rosemount 1410b Product Datasheet.*

2. Can our 1410 gateway do alarm notification / management?
   *The gateway can be set up to provide local alarms based upon user defined thresholds.*

3. Can multiple gateways use same Network ID if located near to each other?
   *It is not recommended to have multiple gateways within the same space using the same Network ID. Each
gateway should be assigned its own unique Network ID and Join Key. This will provide the best security as well
as network reliability.*

4. What happens if power to gateway fails?
   *If the gateway loses power, the wireless sensors will be lost until the gateway is powered back on and establishes
a secure wireless network for the sensors.*

5. Does gateway or sensor have any memory to store data locally?
   *The gateway is able to store information such as Network ID, Join Key, Connected Sensor, and other network
specific information.*

6. What burst rates are supported by our gateway?
   *Burst Rate Intervals
   1, 2, 4, 8, 16, 32 seconds or 1 - 60 minutes*

7. What does PV, SV, TV, QV reading means in gateway report?
   *PV = Primary Variable, SV = Secondary Variable, TV = Tertiary Variable, QV = Quaternary Variable*

8. Can one gateway be simultaneously connected to two different software modules / PC?
   *Yes, the gateway can be simultaneously connected to multiple software applications*

9. What different techniques does WirelessHART use to ensure network security & reliability?
   *WirelessHART is a Self-Organizing and Self-Healing Network that uses AES 128-bit encryption to secure every
data packet transmission. WirelessHART also employs Time Synchronized Channel Hopping (TSCH) to ensure
co-existence with other wireless networks and reduce the risk of network to network interference.*
10. What is the use of two Ethernet ports in our gateway?

The two Ethernet ports on the gateway can be used to connect the gateway to multiple software, BMS, information integrators, or other data gathering applications.

11. What protocols are supported by our gateway?

The Smart Wireless gateway is a software agnostic system that can be connected to any software platform that can read HART IP, Modbus RTU/TCP, OPC, and Ethernet IP.

Network

1. What is the maximum number of devices on one Gateway?

A maximum of 100 52WM modules can talk to the Rosemount 1410b Gateway at once.

2. What is the communication frequency of the Wireless Network?

The Emerson Smart Wireless Network operates on the 2.4 GHz frequency band and employs the 802.15.4

3. What does it mean that there is no RF Site Survey Required?

The RF survey provides information required for other sensor types like Zigbee so interference is understood for set-up. Our WirelessHART sensors/Gateway can recognize the other RF in the DC and adapt by not using channels that are used by other wireless devices in the space.

4. Do you mean even if there is no direct visibility between sensor & gateway, it is still ok?

Communication pathways are dependent on the site layout and type of obstructions. The Wireless Module does not need a direct line of sight to the Gateway. The WirelessHART Mesh Network enables these devices to use neighbors as pathways back to the Gateway.


This autonomous monitoring and healing process is a built-in function of the WirelessHART Protocol.

6. How many sensors should be talking to gateway directly to ensure proper network communication?

It is a Best Practice to have at least 5 Wireless Sensors talking directly to the gateway.

7. Is there any requirement for network topography to ensure proper communication?

There is no need to do an RF Site Survey for network topography layout for a tradition data center layout. Be advised that large equipment and walls may interfere with the performance of the network.

8. What is relationship between the number of sensors, gateways, burst rate, network size & latency rate?

Connected Devices @ Specified Burst Rate

100 wireless devices @ 8 sec.
50 wireless devices @ 4 sec.
25 wireless devices @ 2 sec.
12 wireless devices @ 1 sec.

* Burst Rate Intervals *
1, 2, 4, 8, 16, 32 seconds or 1 - 60 minutes

* Latency *
100 Devices: less than 10 sec.
50 Devices: less than 5 sec.

9. What is max transmitting distance between sensor to sensor / gateway for effective communication?
The 52WM Wireless Sensors can transmit data over 150 meters with a clear line-of-sight to the gateway. Obstructions for equipment or walls can reduce the communication range of the devices.

**Trade Compliance**

10. What certificates do the Wireless Modules and Gateway have (CE, FCC, ROHS...)?
They carry spectrum approvals for US, Canada, Europe, and some Asian countries. The 52WM is ROHS Compliant

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