Product	**VCM8002V5031 Wi-Fi™ Module**
Application	Thanks to the Wi-Fi™ card, the VT8000 and SE8000 room controllers offer additional benefits by incorporating BACnet®/IP over Wi-Fi and email notifications and alerts. Whether you are a BMS expert or a mechanical contractor the Wi-Fi card will allow you to reduce installation time and cost while increasing customer satisfaction
Document:	Functional Specification
Object:	This document provides the information required for preliminary studies

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Summary

Introduction

The VCM8002V5031 Wi-Fi communication module allows the upgrade of 8000-series Room Controllers to support networking communication using the IEEE 802.11 (Wi-Fi) wireless local area network.
8000-series Room Controllers are capable of being retrofitted in the field with an accessory communication module, which enables the controllers to be integrated into a wireless network. This approach provides the flexibility to add network communication strategically, when budgets allow, or when building management requires the change. The Wi-Fi module allows 8000-series controllers to communicate using BACnet/IP, and can be commissioned, updated and configured by using a built-in web-based commissioning tool.

Standards to comply with:

Standard	Note
FCC Part 15 (Class B) Maximum Permissible Exposure (MPE)	Radio / Intentional Radiator
ICES-003 (Issue 6) - Class B	Radio / Intentional Radiator
FCC Class 1 Permissive Change (C1PC)	Radio / Intentional Radiator
RE Directive 2014/53/EU	Safety & EMC
IEC 63044-3:2017 (EN 63044-3:2018)	Safety
ETSI EN 300 328 V2.1.1	Radio / Intentional Radiator and EMC
ETSI EN 301 489-1 V1.9.2	EMC
ETSI EN 301 489-17 V2.2.1	EMC
RSS 247	Radio / Intentional Radiator
EN 62479 (2010)	EMC
EN 301 489-17 (v2.2.1)	EMC
EN 50491-5-1 (2010)	EMC
EN 50491-5-2 (2010)	EMC
CISPR 32 (2015) / EN 55032 (2015)	EMC

Certifications / Declaration of Conformity

- CE mark

Material Declarations

- Directive 2011/65/EU (RoHS2), amended 2015/863/EU (RoHS3)
- REACH (Regulation 1907/2006)
- California Proposition 65

ESD guidance

Once the Wi-Fi module is installed, the room controller complies with the following standard for Electrostatic Discharge:

- IEC 6100-4-2 (2008) 4-kV Contact | 8-kV Air discharge

Cyber Security

Whilst it is impossible to guarantee against possible future vulnerabilities in Wi-Fi or embedded software components, it should be noted that:

- The VCM8002V5031 was developed within the guidelines of Schneider Electric's cyber security process.
- Possible threats were analyzed and designed for:
    - Wi-Fi access point is secured with WPA2;
    - Web page communication is secured with https with unique self-signed certificates;
    - Web page access is authenticated with a username and password;
    - All features are disabled by default and must be individually enabled by the user based on their requirements;
    - Firmware updates are signed via Schneider Electric's Public Key Infrastructure, ensuring only authentic software provided by Schneider Electric can be loaded onto the device;
- Penetration testing has been performed within Schneider Electric's cyber security process, to ensure the product is not vulnerable to common attacks known at the time of testing.

The VCM8002V5031 stores all user data in an encrypted file system. Configuration data is only available via the configuration web pages, where users must authenticate with a user name and password and sessions are protected via https. All user data can be entirely removed by factory resetting the module.

Specification

The Product shall:

A. Communicate using the IEEE 802.11 b/g/n 2.4 GHz wireless protocol (Wi-Fi) when the VCM8002V5031 is installed in a VT(R)8000 and SE(R)8000 room controller.
    a. Controller can be retrofitted with the module in the field.
    b. Controller with an installed module can connect to a Wi-Fi local area network.
B. Communicate with a BMS directly over BACnet/IP.
    a. BACnet IP configuration is to be done via the commissioning web pages, which are an integral part of the Wi-Fi module.
C. Operate with all VT(R)8000 and SE(R)8000 room controllers with firmware version 2.2 or later.

D. Support the sending of email notifications.
    a. Thresholds (e.g. minimum and maximum ambient temperatures) can be configured via the provided commissioning web pages.
    b. Compatible with any SMTP-server of choice.

Physical aspects:

E. Operating conditions:
    a. 0 °C to 50 °C (32 °F to 122 °F)
    b. 0% to 95% R.H. non-condensing
F. Storage conditions:
    a. -30 °C to 50 °C (-22 °F to 122 °F)
    b. 0% to 95% R.H. non-condensing
G. WiFi range
    a. Open space based on characterization report
H. The IEEE MAC address is printed on the product label and can also be viewed on the controller HMI.

Volumetric data:

I. Approximate shipping weight:
    a. 0.1 kg (0.22 lb)
J. Packaging size:
    a. 124mm x 75mm x 40.5mm (W/H/L)

Product limitations:

K. VT(R)8000 and SE(R) controllers can only accommodate one module at a time. Thus, if either a CO2 or a ZigBee module has been installed in a controller, the Wi-Fi module cannot be installed.
L. Either BACnet/IP or BACnet MSTP must be selected. BACnet/IP is enabled on the controller HMI and commissioning web pages. The wired connection is automatically disabled upon selecting BACnet/IP.
M. Firmware upgrade of the Wi-Fi module is supported over-the-air via the commissioning web pages.
N. Commissioning web pages are only available in English.

End