

COMPAGNO FOR INDUSTRIAL WIRELESS EDGE NODE

Overview

Compagno (Italian for “Companion”) is a multi-sensor wireless edge node evaluation board designed by Future Electronics System Design Center. It is designed as companion board to work with ST Micro’s STWIN (STEVAL-STWINKT1) SensorTile wireless industrial node development kit. In addition to the MEMS motion sensors, humidity and temperature sensor and MEMS microphones on the STWIN kit, the Compagno board provides additional sensing capabilities including CO₂, VOC, particulate matter and 8x8 temperature grid imaging.

The driver software for the Compagno enables easy integration of external sensors. The Compagno board also provides positioning tracking capability with onboard TESEO GNSS module and direct wireless cloud capability with an optional cellular module. The STWIN kit and Compagno board combination simplifies design, prototyping and testing for industrial IoT applications such as condition monitoring and predictive maintenance.



Compagno
Part Number:
FUT-COMPAGNO-0

STWIN:
STEVAL-STWINKT1

Features

- Multi-sensing platform:
 - CO₂ Sensor
 - VOC Sensor
 - Particulate Matter Sensor
 - Temperature Grid Sensor
- Wireless connectivity:
 - CAT1 Cellular Modem (optional)
 - NFC
- GNSS Module with Antenna.

System Block Diagram

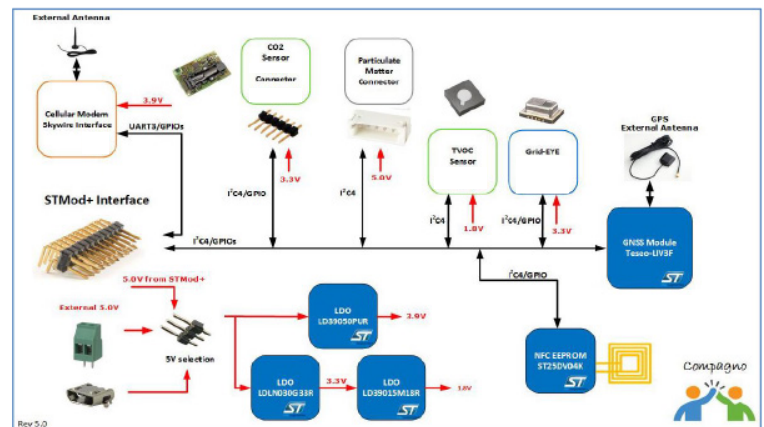
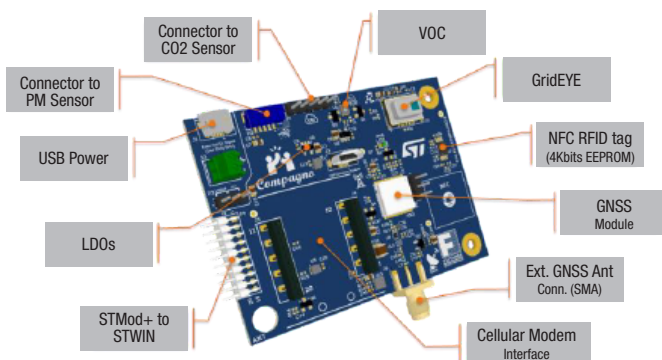


Figure 1. Compagno System Block Diagram



Applications

The combination of STWIN and Compagno board provides a complete solution for industrial IoT edge node in condition monitoring and predictive maintenance applications.

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Key Components

Function	Part Number	Description	Manufacturer
GPS	Teseo-LIV3F	Multiple constellation GNSS module	ST Micro
NFC	ST25DV04K	NFC RFID Tag (4Kbits EEPROM)	ST Micro
Power	LD39050PUR	LDO	ST Micro
Power	LDLN030G33R	LDO	ST Micro
Power	LD39015M18R	LDO	ST Micro
Cellular	NL-SW-LTE-S7648	4G LTE CAT 1 module	NimbeLink
CO2 Sensor	SCD30	CO2 sensor	Sensirion
VOC Sensor	SGP40	Digital VOC sensor	Sensirion
PM Sensor	SPS30	Particulate matter sensor	Sensirion
PM Sensor	SN-GCJA5	Particulate matter sensor	Panasonic
Thermal Sensor	AMG8833	8x8 Grid-EYE® Thermal array sensor	Panasonic
Antennas	APAMPG-117	GPS antennas	Abracorn
Antennas	AEACAC198013-S5GNR	5G/4G External Whip Antenna	Abracorn
Connectors	282834-2, 5-146278-5	Wire-to-Board PCB Header, AMPMODU Header	TE

Table 1. Compagno Key Components

Smart Sensors Node



Compagno:
FUT-COMPAGNO-0



STWIN:
STEVAL-STWINKT1

