TWN4 MultiTech Nano M

Miniature RFID module (LF/HF/NFC) for external direct matched antenna

C0 version (SMT mounting)

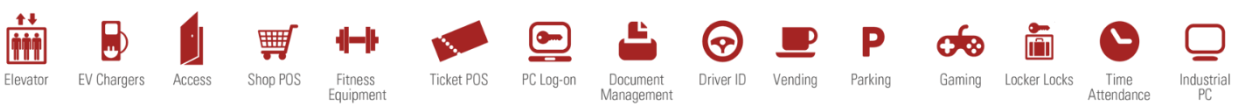
C1 version (THT mounting)

With the TWN4 MultiTech Nano family, ELATEC offers extremely compact RFID modules that are also fully compliant with the TWN4 technology. Their miniature size and low energy consumption give the option to integrate them in smaller battery-powered consumer devices, like tablet PCs. Furthermore, their components are mounted on one side only, which facilitates easy placement on the main circuit board. These devices are the ideal solution in case of particular restrictions during the installation (space limitations, metal surrounding the reader antenna, etc.).

Key features of the TWN4 MultiTech Nano M RFID module include compact dimensions and two mounting options (Surface Mounting or Through Hole Technology) for an easy integration into almost all mobile and battery-operated applications, as well as the possibility to read more than 60 RFID technologies from low (LF) and high (HF) frequency bands, including NFC, depending on the external antenna/mother board connected to the module. The ELATEC B option also gives the possibility to connect the reader module with an external BLE module.

Special features:

+ Easy integration thanks to a compact design and components mounted only on one side
+ Available with edge-plated pads for easy and reliable surface mounting (C0 version) or with connectors (C1 version) for THT mounting
+ Supports connection of external ISO 7816 compatible SAM cards
+ Powerful SDK for writing apps which are executed directly on the module
+ Firmware update in the field possible
+ On-board 18 kB flash storage, e.g. for storing user accessible non-volatile data
+ Supports transparent data exchange with RFID media
+ CCID and PC/SC 2.01
+ Development board and I/O Extender for interface testing available on request



TECHNICAL DATA

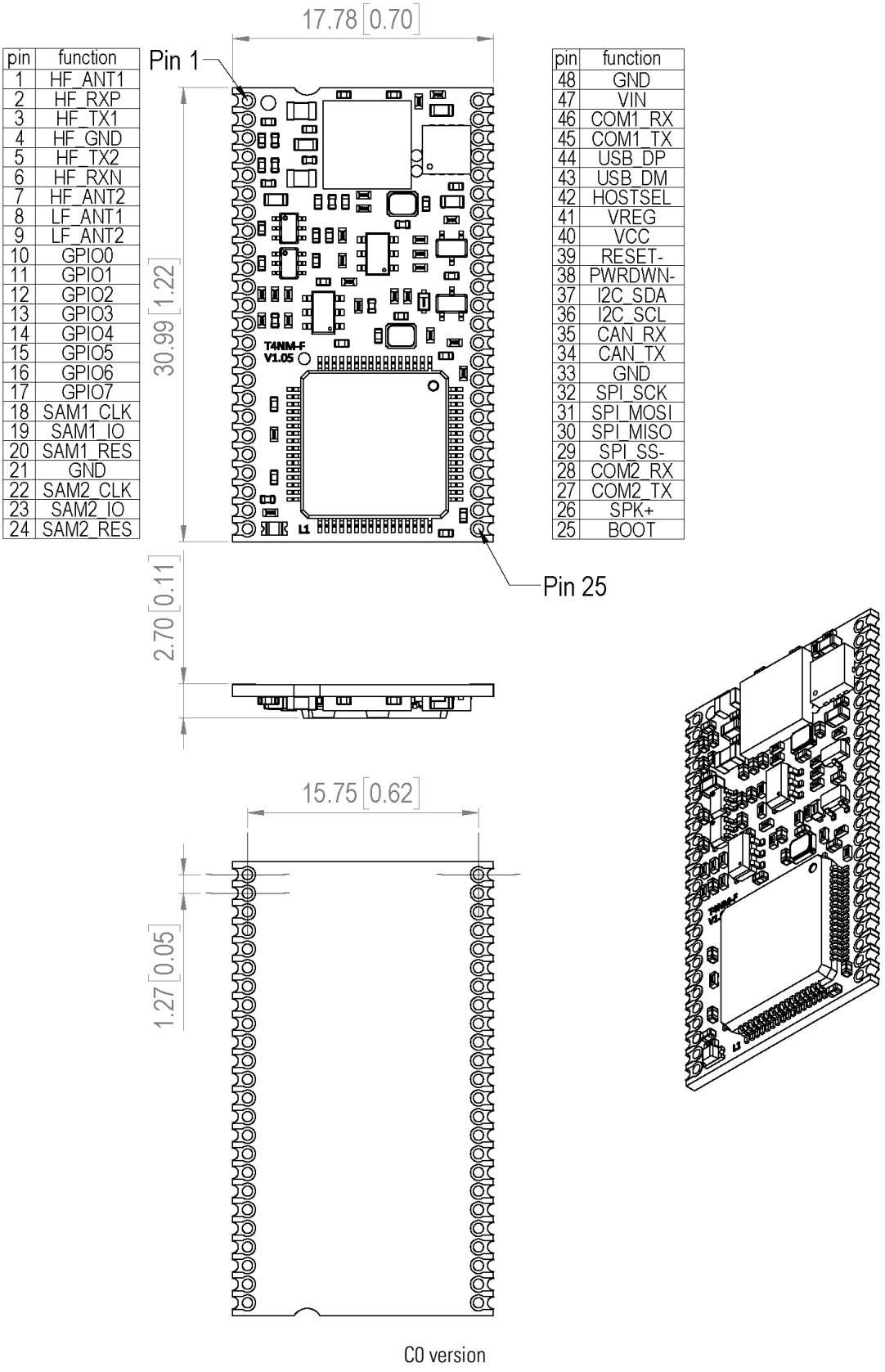
FREQUENCIES	125 kHz (LF) / 13.56 MHz (HF)
ANTENNAS	Externally, direct matched for 13.56 MHz – 490 µH ± 5% for 125 kHz
DIMENSIONS (L X W X H)	C0 version: approx. 31.00 x 17.80 x 2.70 mm / 1.22 x 0.70 x 0.11 inch C1 version: approx. 31.00 x 17.80 x 8.11 mm / 1.22 x 0.70 x 0.32 inch
POWER	Direct power supply: 3.3 V ± 5% On-board voltage regulator: 4.3 V – 5.5 V ES1/PS2 classified power source according to IEC 62368-1, short-circuit current < 8 A
CURRENT CONSUMPTION	RF field on: 120 mA typically / Sleep: 500 µA typ.
TEMPERATURE RANGE	Operating: -25 °C up to +80 °C (-13 °F up to +176 °F) Storage: -40 °C up to +85 °C (-40 °F up to +185 °F)
RELATIVE HUMIDITY	5% to 95% non-condensing
OPERATING MODES (USB)	USB keyboard emulation – USB virtual COM port – CCID / PC/SC 2.01
MTBF	500,000 hours
WEIGHT	Approx. 7 g / 0.25 oz
SUPPORTED OPTIONS AND TRANSPONDERS	Depending on the firmware version and installed options, ELATEC readers and modules can support a wide range of RFID technologies. Please refer to the relevant ELATEC transponder matrix (available at www.elatec-rfid.com/int/transponder-technology) for more information about the available options and RFID technologies supported by the product.
OS SUPPORT	Windows 7 (32-/64-bit) and higher versions, Linux, Android[1)], iOS[1)], MAC OS X[1)]
PERIPHERAL INTERFACES	USB, 2 x TTL serial (logic level 3.3 V, CMOS 5 V tolerant), I²C, SPI, 8 GPIOs, Clock/Data, Wiegand D0/D1
TRANSMISSION SPEED	Host: USB Full speed (12 Mbit/s), TTL serial: up to 115,200 baud, HF Air: up to 848 kbit/s
CERTIFICATION NAME	TWN4 MultiTech Nano M
CERTIFICATIONS	Non-exhaustive list[2)]: CE/RED, FCC, IC, TAA compliant, REACH and RoHS-III compliant
ORDER CODES	C0 version (SMT) T4NM-FDC0 Standard reader module T4NM-FDC0-P Reader module with P option T4NM-FDC0-PI Reader module with PI options C1 version (THT) T4NM-FDC1 Standard reader module T4NM-FDC1-P Reader module with P option T4NM-FDC1-PI Reader module with PI options

[1)]On request

[2)]Please note that TWN4 MultiTech Nano M has been tested with an external printed circuit board equipped with specific RFID LF and HF antennas (refer to the user manual for more information). The use of TWN4 MultiTech Nano M with other antennas is not part of the approvals granted to the product. In case TWN4 MultiTech Nano M is used with other antennas, a separate approval, additional testing or new authorization for a use with these specific antennas is required. Contact ELATEC for more information.

pin	function
1	HF_ANT1
2	HF_RXP
3	HF_TX1
4	HF_GND
5	HF_TX2
6	HF_RXN
7	HF_ANT2
8	LF_ANT1
9	LF_ANT2
10	GPIO0
11	GPIO1
12	GPIO2
13	GPIO3
14	GPIO4
15	GPIO5
16	GPIO6
17	GPIO7
18	SAM1_CLK
19	SAM1_IO
20	SAM1_RES
21	GND
22	SAM2_CLK
23	SAM2_IO
24	SAM2_RES

pin	function
48	GND
47	VIN
46	COM1_RX
45	COM1_TX
44	USB_DP
43	USB_DM
42	HOSTSEL
41	VREG
40	VCC
39	RESET-
38	PWRDWN-
37	I2C_SDA
36	I2C_SCL
35	CAN_RX
34	CAN_TX
33	GND
32	SPI_SCK
31	SPI_MOSI
30	SPI_MISO
29	SPI_SS-
28	COM2_RX
27	COM2_TX
26	SPK+
25	BOOT



C0 version

pin	function
1	HF_ANT1
2	HF_RXP
3	HF_TX1
4	HF_GND
5	HF_TX2
6	HF_RXN
7	HF_ANT2
8	LF_ANT1
9	LF_ANT2
10	GPIO0
11	GPIO1
12	GPIO2
13	GPIO3
14	GPIO4
15	GPIO5
16	GPIO6
17	GPIO7
18	SAM1_CLK
19	SAM1_IO
20	SAM1_RES
21	GND
22	SAM2_CLK
23	SAM2_IO
24	SAM2_RES

pin	function
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27	COM2_TX
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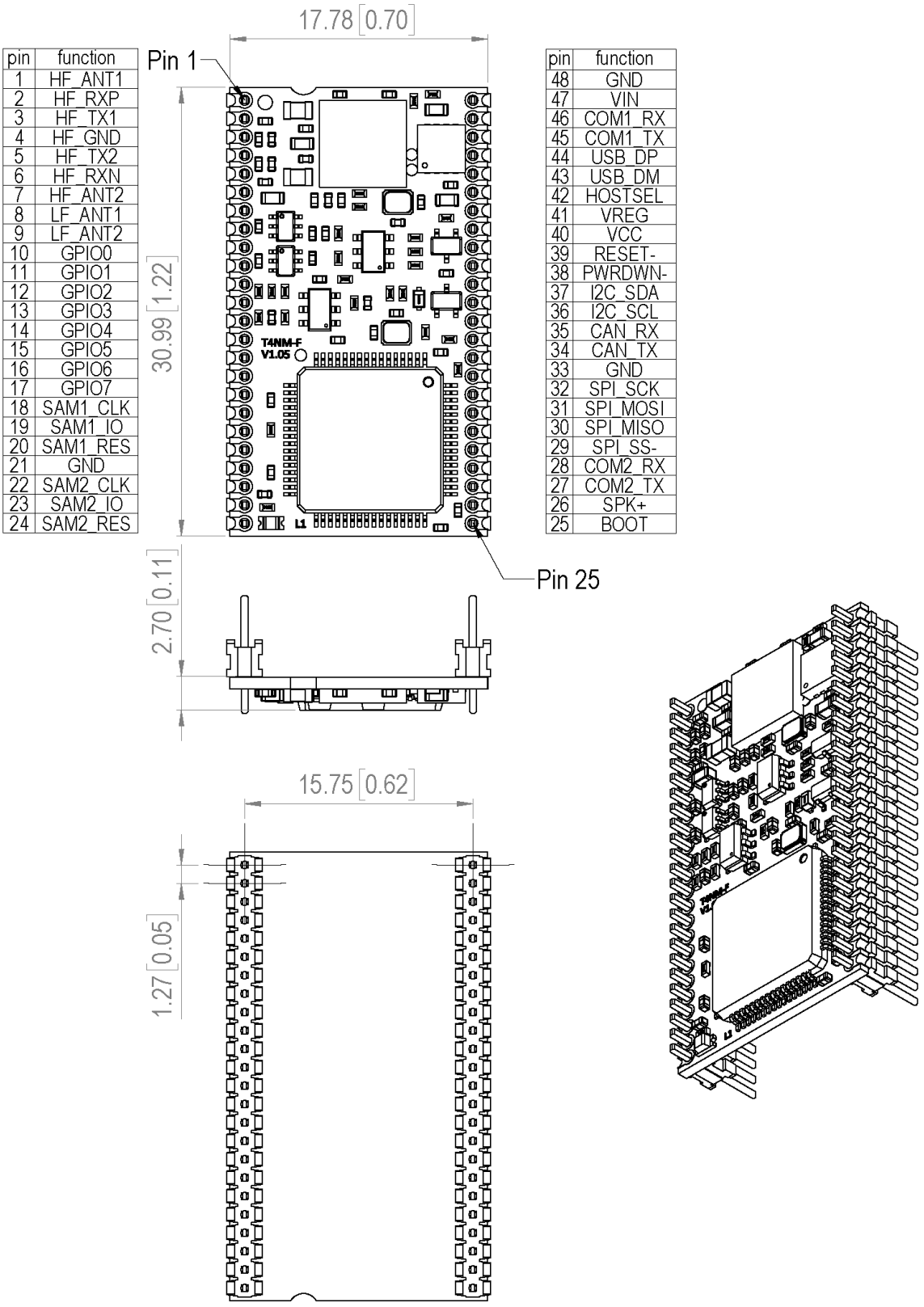
25	BOOT



C1 version

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