VM Connect T410
User Manual

Version 0.3

Revision History

Date	Version	Changes
May 1, 2019	0.1	Initial Draft
June 5, 2019	0.2	Added Certification information
June 20, 2019	0.3	Updated Certification Information

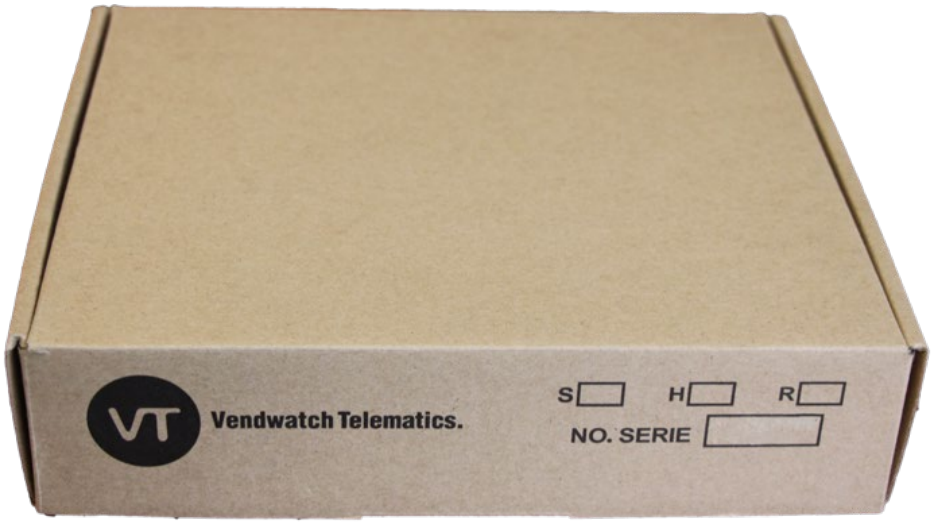
Safety

Before proceeding with the installation of the T410, verify that the vending machine is NOT connected to power.

Unpacking

Each container includes the following:

- Antenna
- Cable
- Magnetic mounting clips
- VM Connect T410 telemetry device



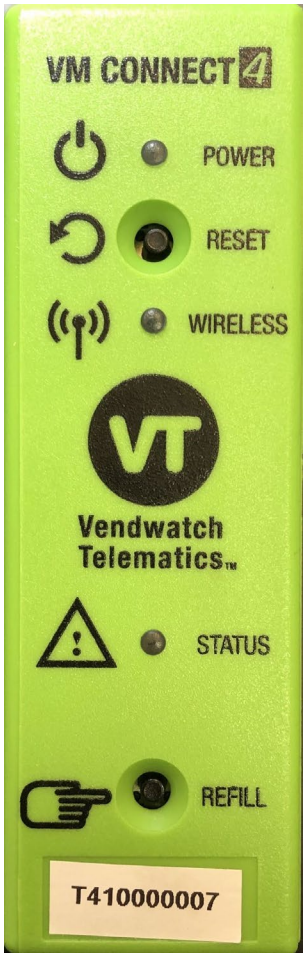
High Gain Antenna

MODEL	LBE-7-2-27-NJ
ELECTRICAL DATA	
FRECUENCY RANGE (MHz)	698-960 / 1710 - 2700
VSWR	⩽2.5:1
PEAK REALISED GAIN: ISOTROPIC	700MHz – 3dBi
	800 MHz - 3dBi
	900 MHz – 4dBi
	1800 MHz – 4dBi
	1900 MHz – 5dBi
	2100 MHz – 5dBi
	2400 MHz – 5dBi
	2600 MHz – 5dBi
VSWR	<2.5:1
POLARISATION	Vertical
PATTERN	Onmi-directional
IMPEDANCE	50Ω
MAX INPUT POWER (W)	60

MDB-DEX-EPay-Intelligent Door Switch Cable

Magnetic Mounting Clips

T410 Telemetry Device



Front View

Back View

Front

Power - Indicates if power is applied to the T410
Reset - Press button to reset the T410
Wireless - Indicates if a wireless signal is present
Status - Multi-color status indicator
Refill - Press button to send a DEX to vending

Back

USB Connector
Cable Connector
Expansion Port Connector
Antenna Connector

Power LED Functionality

STATE	ILLUMINATION	DESCRIPTION
On	Solid Green	VM is powered on AND the device is connected to MDB
Off	Off	VM is powered off

Wireless LED Functionality

STATE	ILLUMINATION	DESCRIPTION
Radio On	Solid Green	Power was applied to the Telemetry module
Radio Off	Off	Power was removed from the Telemetry module
Radio Training	Green, On 50%	Radio is searching for available networks
Radio Connected	Green, On 87%	Radio is connected to selected network

Status LED Functionality

STATE	ILLUMINATION	DESCRIPTION
Off	Off	The device is off
Booting Up	Green, On 50%	The device is getting up to the normal state
Normal	Green, Solid	The device is in normal state
Programing	Purple, Blinking 50%	The device is being programmed
Alert	Orange, Solid	The device has detected issues
Handheld	Blue, Solid	The device is connected to VM Guide/Care
Battery	Red, Blinking 50%	The device is running on battery
Refill	White, Blinking 50%	The device is reading DEX

Installation Planning

The antenna cable is 1.5m long. Plan the mounting of the T410 1.5m of the antenna and near the vending machine controller board.

Antenna Mounting

1. Drill a 5/8" diameter hole on the top side of the vending machine door
2. Remove the hex nut from the bottom of the antenna
3. Feed the antenna cable into the vending machine through the 5/8" hole
4. Attach the hex nut to the antenna to secure it to the vending machine

EPay Mounting

The Electronic Payment (EPay) unit should be mounted on the VM using, as a minimum, two of the mounting metal inserts in the back of the EPay un

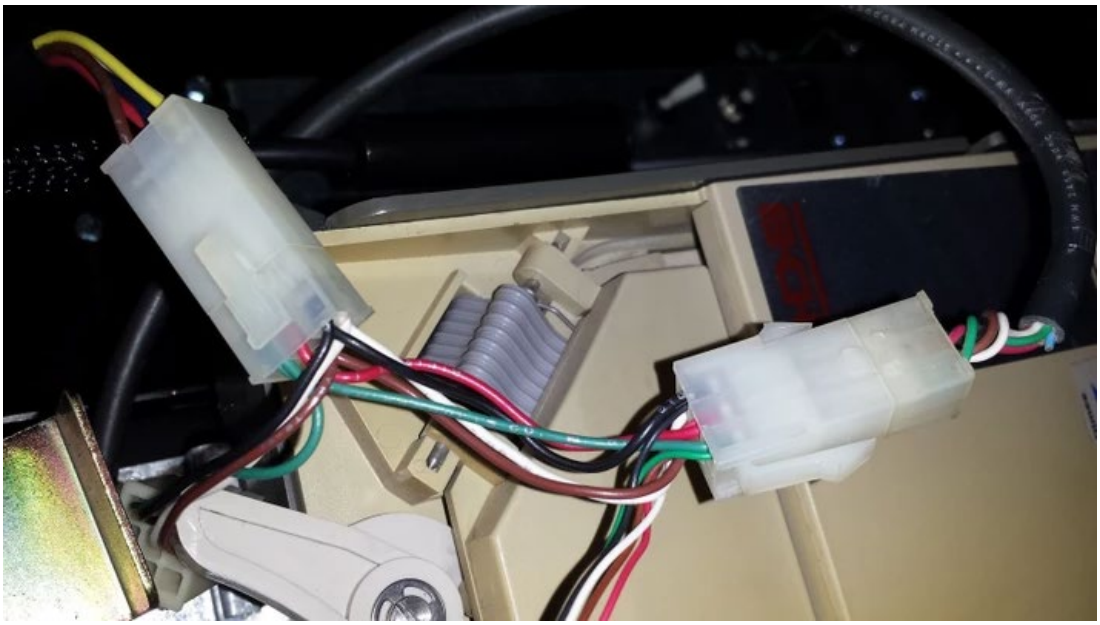
T410 Mounting

Use the magnetic clips to mount the T410 in either orientation as shown.

Cable Installation

MDB

The Vending Machine Controller (VMC) provides power and controls the legacy payment system by allowing multiple devices to connect to the MDB bus. The installation would require to find the last device on the MDB bus and connect the T313 Telemetry Device at the end.

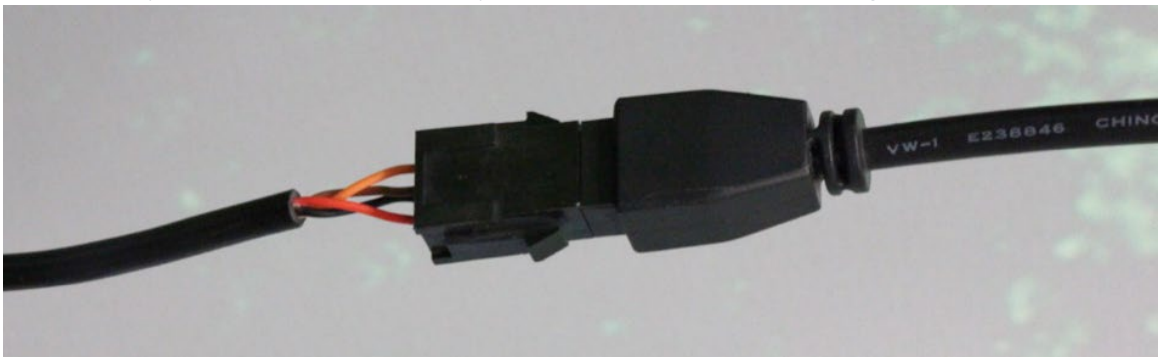


DEX

The T410 requests Sales, Health and Status of the VM by connecting to the Direct EXchange (DEX) connector. The VM Controller (VMC), the intelligence behind the VM functionality, provides a DEX interface connector, 1/4"" phone jack, in some models solder directly on the board and other models as a dongle.

EPay

Find the EPay cable on the T313 Telemetry Device and connect the cables together.



FCC and other information

FCC ID

T410 FCC ID: **2ATJP-T410**
Contains the Sierra Wireless HL7688 cellular module. **FCC ID: N7NHL7688 IC: 2417C-HL7688**

Federal Commission (FCC) statement (USA)

Intentional Radiator
This device meets the FCC requirements for RF exposure in public or uncontrolled environments. This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: 1. This device may not cause harmful interference and 2. This device must accept any interference received, including interference that may cause undesired operation.

Unintentional Radiator
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure
This device meets the FCC requirements for RF exposure in public or uncontrolled environments. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

FCC Modification Warning

Changes or modifications not approved by the manufacturer could void the user’s authority to operate the equipment.

Cellular Operation Frequency

Device	Technology	Bands/Frequency
HL7688	4G LTE CAT1	B2 (1900 PCS), B4 (1700 AWS), B5 (850 CLR), B17 (700)
HL7688	3G UTMS	B2 (1900 PCS), B5 (850 CLR)