



Transmit Module User's Manual
-DRAFT-

The WTC TX (Wireless Tool Control Transmit) module is a 433 MHz transmitter for sending DEWALT WTC status messages. These messages are commonly used to signal if a tool is operating which can be used to turn on and off a remote vacuum or dust extractor equipped with a corresponding receiver. The WTC TX module is based on the Microchip MICRF112 UHF transmitter and the ATTINY416 microcontroller. The WTC TX module is classified by the FCC as a Single-modular transmitter which is a complete RF transmission sub-assembly designed to be incorporated into another device.

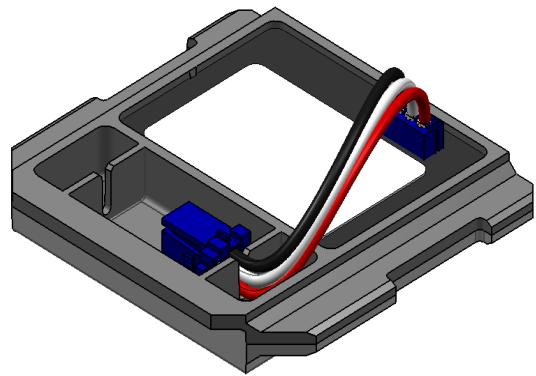


Table of Contents

1. General description
 - 1.1 Simplified block diagram
2. Electrical characteristics
 - 2.1 Circuit activation
3. Compliance information

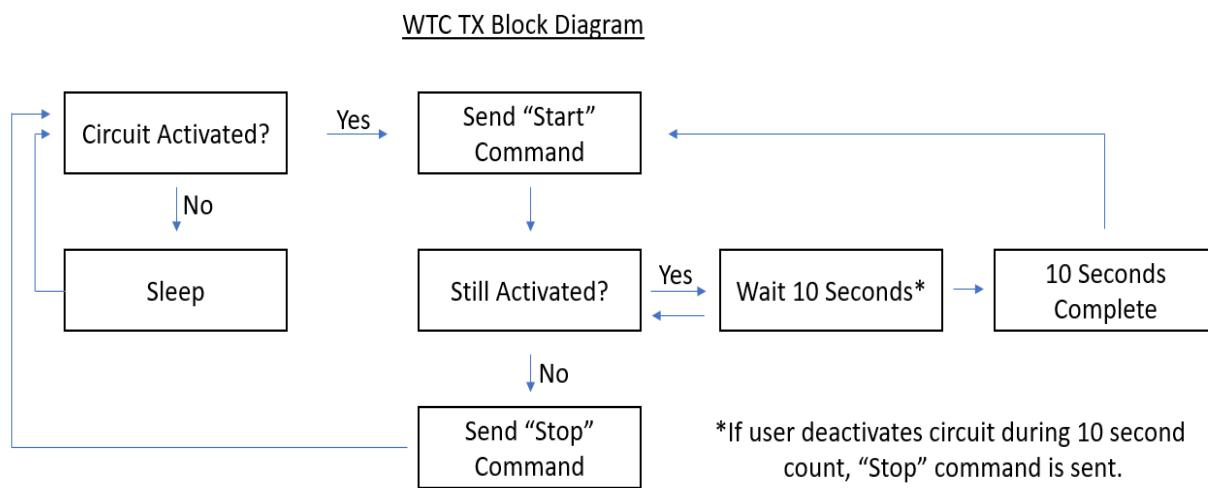
1.0 General Description

The WTC TX module is a transmit only device that is externally controlled, usually from a tool control module. The simple circuit is composed of an LDO, buffer FET, ATTINY416 microcontroller and Microchip MICRF112 FSK data-in/RF out transmitter.

Operation:

When the buffer FET in the WTC TX receives a logic “high” signal, the transmit circuit is activated. The module immediately sends a “Start” command and starts a 10 second timer. If the timer reaches 10 seconds, it re-transmits the “Start” command. This automatic, reoccurring transmission cycle is never less than 10 seconds or more than 11 seconds. If at any time the circuit is deactivated by the user, a “Stop” command is sent, and the circuit goes to sleep. It is important to note that circuit activation and deactivation needs to be a user initiated event.

Block Diagram:

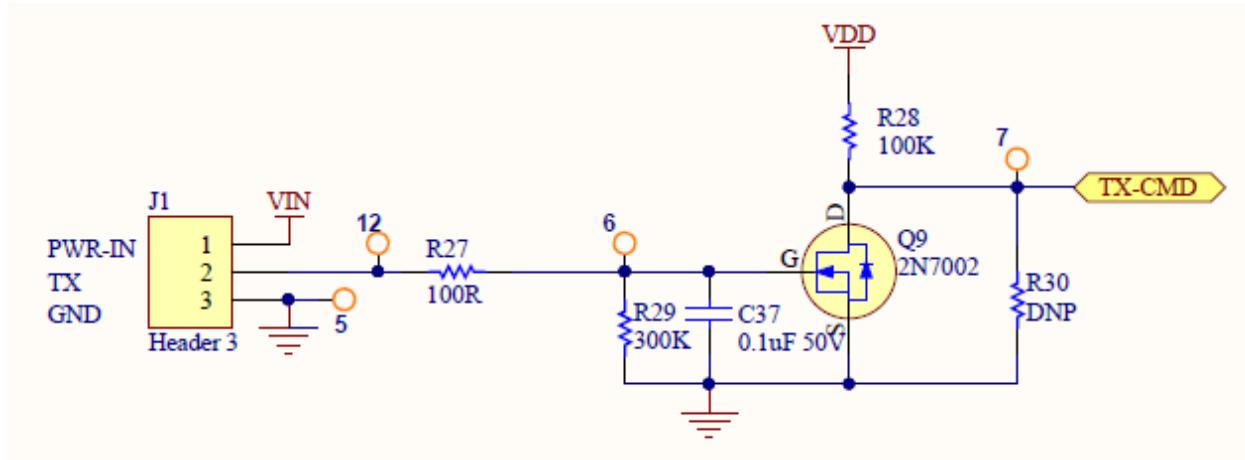


2.0 Electrical Characteristics:

PIN #	TYPE	Label	Description	RANGE	NOM	Abs. MAX
1 (Red)	PWR	PWR-IN	Power Input	5-25VDC	5VDC	30VDC
2 (White)	INPUT	TX	Triggers Transmitter	5-20VDC	5VDC	20VDC
3 (Black)	GND	GND	Power Ground	N/A	NA	N/A

2.1 Circuit Activation:

In a typical configuration, a constant voltage of +5VDC is applied to J1-Pin 1 and GND applied to J1-Pin 3. When the tool is not operating, J1-Pin2 is pulled to GND by an external circuit. When the tool begins operation, the voltage on J1-Pin2 is transitioned from GND to +5VDC and held high. Once operation ceases, the voltage is then transitioned back to GND. The system then waits 1 second and goes to sleep awaiting another transition.



3.0 Compliance Information

Federal Communications Commission

The WTC TX transmitter is an FCC/IC certified module and when placed in a host device (i.e., power tool) there are conditions that must be met to maintain the certification.

- 1) The transmitter circuit cannot be modified.
- 2) The RF shield on the module must remain in place.
- 3) The host device must have the module label visible:
 - 3a. Visible through a window (or)
 - 3b. It must be visible behind an access panel, door or cover that is easily removed (or)
 - 3c. A second label must be placed on the outside of the device that contains the following text:

Contains FCC ID: YJ7WTCTX

Contains IC: 9082A-WTCTX

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.

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.

Industry Science and Economic Development Canada

“This digital apparatus does not exceed the Class B limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.”

“Cet appareil numérique ne dépasse pas les limites de la classe B pour les émissions radio bruit des appareils numériques, tel qu'énoncé dans le Règlement sur le brouillage radioélectrique du ministère des Communications du Canada.”

This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Cet appareil contient des émetteurs / récepteurs exemptés de licence conformes aux RSS (RSS) d'Innovation, Sciences et Développement économique Canada. Le fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne doit pas causer d'interférences.
2. Cet appareil doit accepter toutes les interférences, y compris celles susceptibles de provoquer un fonctionnement indésirable de l'appareil.

