

Description Differences between
CDT-TX-02M / CDT-TX-02M-R, CDT-RX-03M 434 MHz
and
CDT-TX-02M / CDT-TX-03M, CDT-RX-03M 426 MHz

For customers that would like to integrate the transmitter CDT-TX-02M / CDT-TX-03M and receiver CDT-RX-03M 426 MHz modules into their products for exporting to the Japanese market needs to read this guide and be aware of the differences in operation as follows:

1. Power

CDT-TX-02M / CDT-TX-02M-R 434 MHz	CDT-TX-02M / CDT-TX-03M 426 MHz
10mW (10 dBm)	1mW (0 dBm)

2. Range

CDT-TX-02M / CDT-TX-02M-R 434 MHz	CDT-TX-02M / CDT-TX-03M 426 MHz
1km or more*	500-800m*

* LOS

3. Conformity

CDT-TX-02M / CDT-TX-02M-R, CDT-RX-03M 434 MHz	CDT-TX-02M / CDT-TX-03M, CDT-RX-03M 426 MHz
RED EN 300 220	ARIB STD-T67 For Japan only

4. Frequency

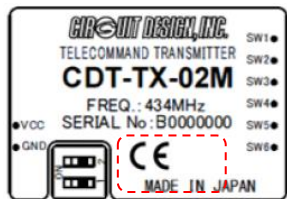
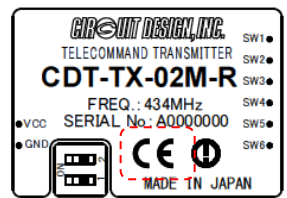
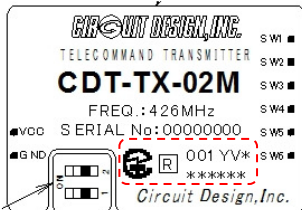
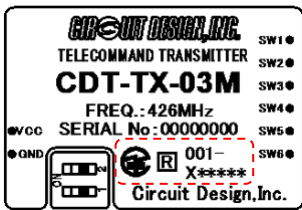
CDT-TX-02M / CDT-TX-02M-R 434 MHz	CDT-TX-02M / CDT-TX-03M 426 MHz
434.075/433.920/434.600/434.700 MHz	426.0250/426.0625/426.1125/426.1375 MHz

5. Operation Modes (see 10)



CDT-RX-03M 434 MHz	CDT-RX-03M 426 MHz
One-shot / Toggle / Switching / Continuous	One-shot / Toggle / Switching / Momentary

6. Front label

Transmitter

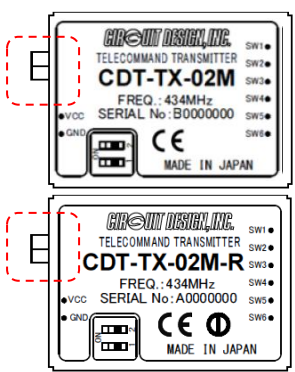
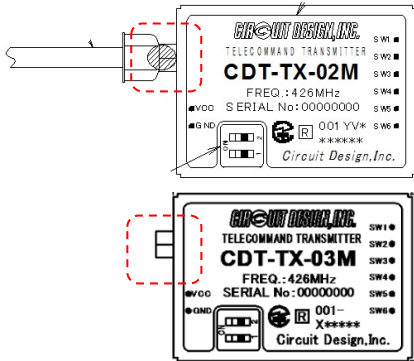
CDT-TX-02M / CDT-TX-02M-R 434 MHz	CDT-TX-02M / CDT-TX-03M 426 MHz
 <p>CE mark</p>  <p>CE mark</p>	 <p>Technical Regulations Conformity Certification mark and identification number</p>  <p>Technical Regulations Conformity Certification mark and identification number</p>

Receiver

CDT-RX-03M 434 MHz	CDT-RX-03M 426 MHz
 <p>CE mark</p>	

7. Antenna

Transmitter

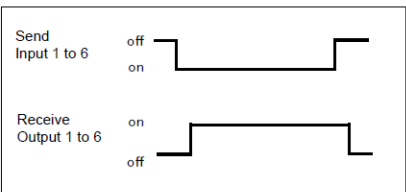
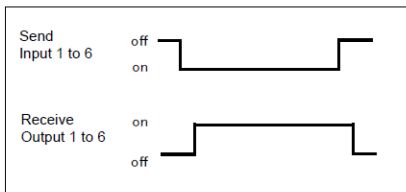
CDT-TX-02M / CDT-TX-02M-R 434 MHz	CDT-TX-02M / CDT-TX-03M 426 MHz
Removable	CDT-TX-02M: soldered CDT-TX-03M: *removable
 <p>Use the supplied ANT-LEA-01 or equivalent</p>	 <p>*Only use with specified antennas</p>

8. DIP SW setting / Frequency table

SW2	SW1	CDT-TX-02M / CDT-TX-02M-R, CDT-RX-03M 434 MHz	CDT-TX-02M / CDT-TX-03M, CDT-RX-03M 426 MHz
OFF	OFF	434.075*	426.0250*
OFF	ON	433.920	426.0625
ON	OFF	434.600	426.1125
ON	ON	434.700	426.1375

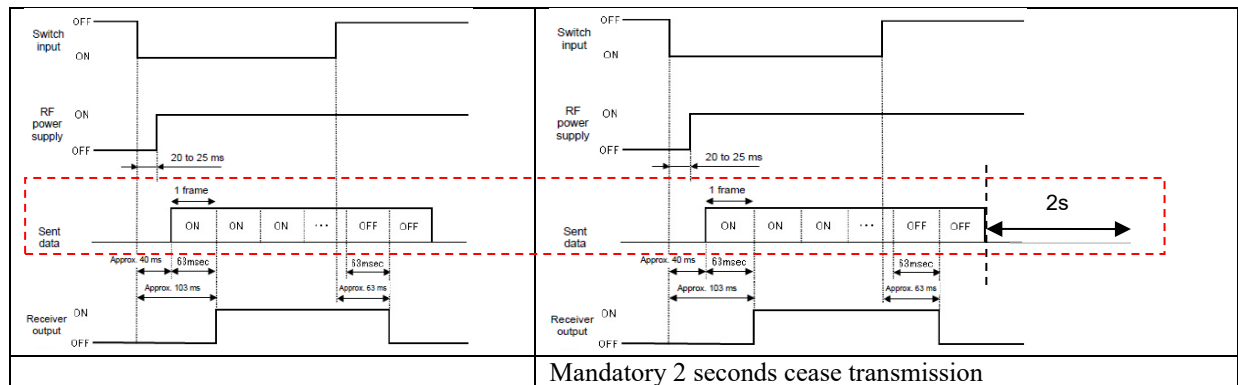
*- factory setting

9. Continuous and Momentary modes

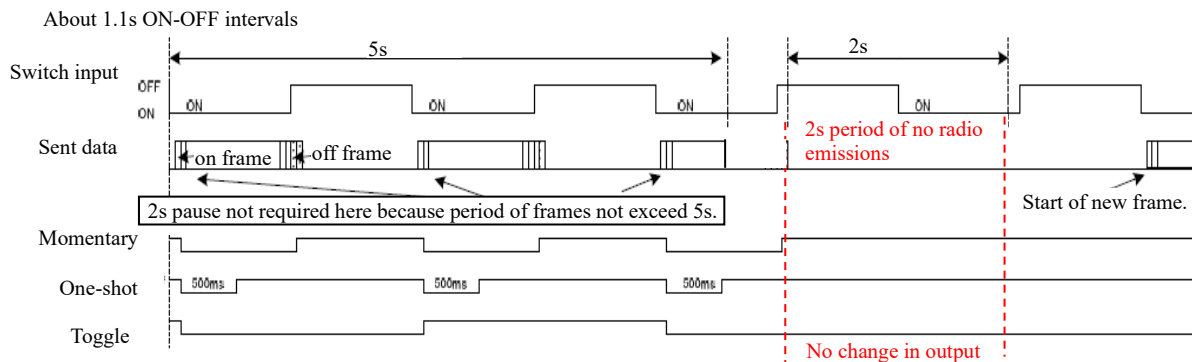
CDT-RX-03M 434 MHz	CDT-RX-03M 426 MHz																												
Continuous	Momentary																												
<table border="1"> <thead> <tr> <th>Transmitter SW input</th><th>Receiver Contact output</th></tr> </thead> <tbody> <tr><td>SW1</td><td>SW1 output Continuously on</td></tr> <tr><td>SW2</td><td>SW2 output Continuously on</td></tr> <tr><td>SW3</td><td>SW3 output Continuously on</td></tr> <tr><td>SW4</td><td>SW4 output Continuously on</td></tr> <tr><td>SW5</td><td>SW5 output Continuously on</td></tr> <tr><td>SW 6</td><td>SW6 output Continuously on</td></tr> </tbody> </table> 	Transmitter SW input	Receiver Contact output	SW1	SW1 output Continuously on	SW2	SW2 output Continuously on	SW3	SW3 output Continuously on	SW4	SW4 output Continuously on	SW5	SW5 output Continuously on	SW 6	SW6 output Continuously on	<table border="1"> <thead> <tr> <th>Transmitter SW input</th><th>Receiver Contact output</th></tr> </thead> <tbody> <tr><td>SW1</td><td>SW1 output Continuously on</td></tr> <tr><td>SW2</td><td>SW2 output Continuously on</td></tr> <tr><td>SW3</td><td>SW3 output Continuously on</td></tr> <tr><td>SW4</td><td>SW4 output Continuously on</td></tr> <tr><td>SW5</td><td>SW5 output Continuously on</td></tr> <tr><td>SW 6</td><td>SW6 output Continuously on</td></tr> </tbody> </table> 	Transmitter SW input	Receiver Contact output	SW1	SW1 output Continuously on	SW2	SW2 output Continuously on	SW3	SW3 output Continuously on	SW4	SW4 output Continuously on	SW5	SW5 output Continuously on	SW 6	SW6 output Continuously on
Transmitter SW input	Receiver Contact output																												
SW1	SW1 output Continuously on																												
SW2	SW2 output Continuously on																												
SW3	SW3 output Continuously on																												
SW4	SW4 output Continuously on																												
SW5	SW5 output Continuously on																												
SW 6	SW6 output Continuously on																												
Transmitter SW input	Receiver Contact output																												
SW1	SW1 output Continuously on																												
SW2	SW2 output Continuously on																												
SW3	SW3 output Continuously on																												
SW4	SW4 output Continuously on																												
SW5	SW5 output Continuously on																												
SW 6	SW6 output Continuously on																												

10. The difference in transmission timing:

ARIB STD-T67 states that for the 426 MHz (Japanese) module, a maximum transmission period of 5 sec, followed by a pause (no RF transmission) period of 2s must be applied.

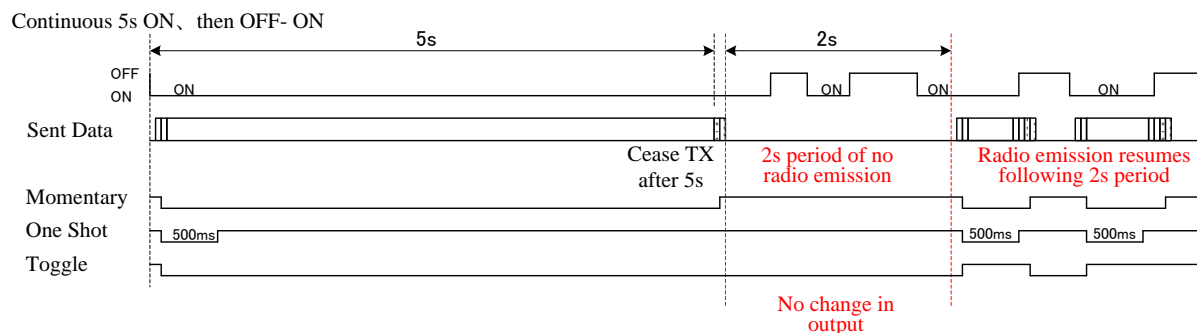


Example 1 :



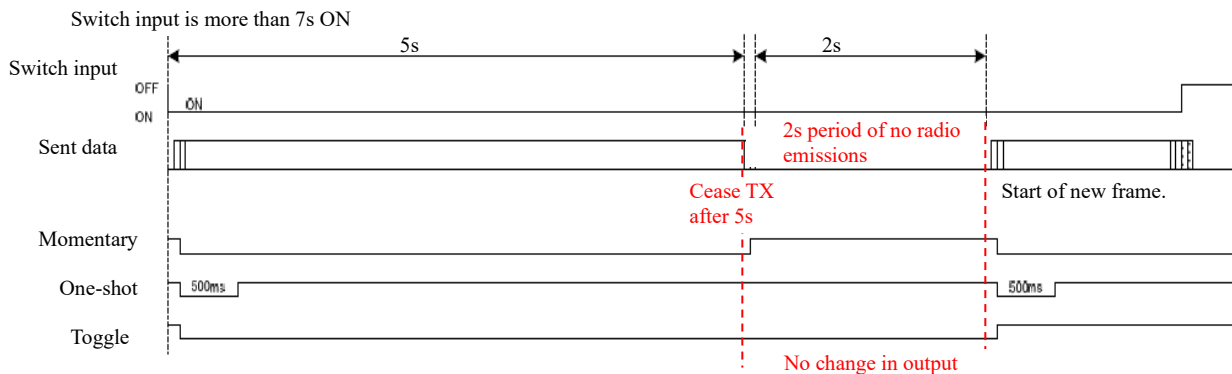
In the case where the switch is turned at on-off intervals, the 2 second rule means no radio transmissions allowed and therefore the switch coming ON during this time will not do anything.
During the 2 sec pause, the receiver will search for a valid RF signal and when no RF is found, will default all the receiver outputs to OFF.

Example 2:



The SW ON frames are sent as the SW is pressed. At the 5 second limit, radio ceases transmission and during the 2 second period, any changes to the sw input does not affect the receiver output.

Example 3



The switch input is pressed continuously for than 7 seconds.

Notes: Modes

One-shot:

During the 2 second pause period, any change in the switch input will not change the current receiver output state.

Be aware that if the switch input is pressed continuously, a 500ms pulse will always appear at every 7th second following the 2 second pause period.

Toggle:

Operating the switch within the 5sec transmission period, the receiver will also change its output. However, during the 2 second pause period, no toggle in the receiver output will occur.

To avoid problems:

- From power ON and operating the SW input continuously, toggling the switch again just before the 5 sec limit has elapsed will cause the receiver output to revert to the previous state.
- Operating the switch input continuously and then by toggling another switch input will cause the receiver output to revert.

Momentary:

During the 2 second pause period, operating the switch input will not affect the receiver output.

At the 2 second pause period and without radio transmission, the output of the receiver will always turn OFF by default.

To avoid problems:

- When operating the switch input in a continuous manner, have it for 5 sec ON, then 2 sec OFF and repeat.

Switching:

Depending on which switches turns receiver output ON or OFF, operating these switches during the 2 second pause period will not affect the receiver output.

Revision history

Version	Date	Description	Remark
1.0	Oct.20, 2022	First edition	
1.1	May 20,2024	Updated to include CDT-TX-03M 426 MHz	
1.2	Feb 18, 2025	Updated to include CDT-TX-02M 434 MHz	

All rights in this document are owned by Circuit Design, Inc. No part of this document may be copied or distributed in part or in whole without prior written consent of Circuit Design, Inc.