



# ISM 410-427, 433-435 MHZ VERTICAL FPC ANTENNAS

## FEATURES & BENEFITS

- ISM 433 MHz FPC antennas for LoRaWAN/LPWA and other IoT products
- Available cable lengths: 50,100,150 mm
- Available connectors: MHF-type & MHF4-type
- FPC with double side adhesive tape simplifies mounting within the device even on curved areas
- Omnidirectional coverage

## PART NUMBERS

PART NUMBER	CABLE LENGTH(A)		CONNECTOR TYPE (ON CABLE)
	MM	INCH	
<b>L000605-1</b>	50.0	1.968	MHF-TYPE PLUG
<b>L000605-2</b>	100.0	3.937	MHF-TYPE PLUG
<b>L000605-3</b>	150.0	5.905	MHF-TYPE PLUG
<b>L000605-4</b>	50.0	1.968	MHF4L-TYPE PLUG
<b>L000605-5</b>	100.0	3.937	MHF4L-TYPE PLUG
<b>L000605-6</b>	150.0	5.905	MHF4L-TYPE PLUG

**SPECIFICATIONS** (Shown as L000605-2 : Others can vary with different cable lengths.)

<b>Frequency Range (MHz)</b>	433 – 435
<b>VSWR</b>	< 1.6 : 1
<b>Average Efficiency</b>	47 %
<b>Peak Gain</b>	-0.3 dBi
<b>Average Gain</b>	-3.2 dB
<b>Power Handling</b>	10 Watt cw
<b>Feed Point Impedance</b>	50 ohms
<b>Polarization</b>	Linear
<b>Size</b>	100.0 mm x 20.0 mm x 0.15 mm
<b>Weight</b>	< 1 g
<b>Mounting</b>	Adhesive Tape
<b>Mating Connectors</b>	MHF and MHF4L type
<b>Cable</b>	1.13mm Dia.
<b>Operating Temperature</b>	-40 to +85°C
<b>Storage Temperature</b>	-40 to +85°C
<b>Hazardous Materials</b>	A certificate of conformance is available from the product page on TE website.

**ANTENNA RF SPECIFICATIONS WITH DIFFERENT CABLE ASSEMBLIES**

P/N Cable Length/ Connector/Cable OD	RF DATA	VSWR	
		410 - 427	433 - 435
50 mm	VSWR	NA	< 1.5 :1
	Avg. Efficiency	NA	65 %
	Peak Gain (Max)	NA	1.0 dBi
	Average Gain	NA	-1.87 dBi
100 mm	VSWR	<2.1 :1	<1.6 :1
	Avg. Efficiency	42 %	47 %
	Peak Gain (Max)	0.1 dBi	-0.2 dBi
	Average Gain	-3.77 dBi	-3.28 dBi
150 mm	VSWR	<2.6 :1	<1.9 :1
	Avg. Efficiency	30%	33 %
	Peak Gain (Max)	-1.5 dBi	-2.0 dBi
	Average Gain	-5.23 dBi	-4.81 dBi

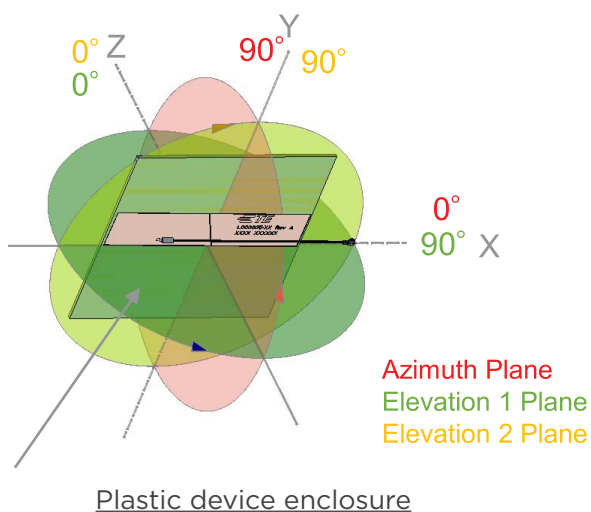
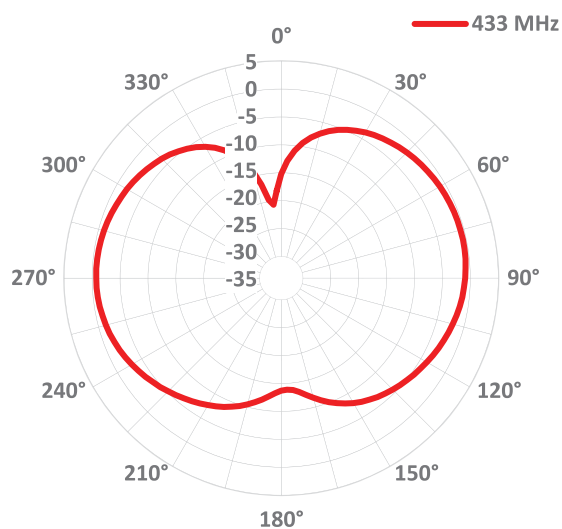
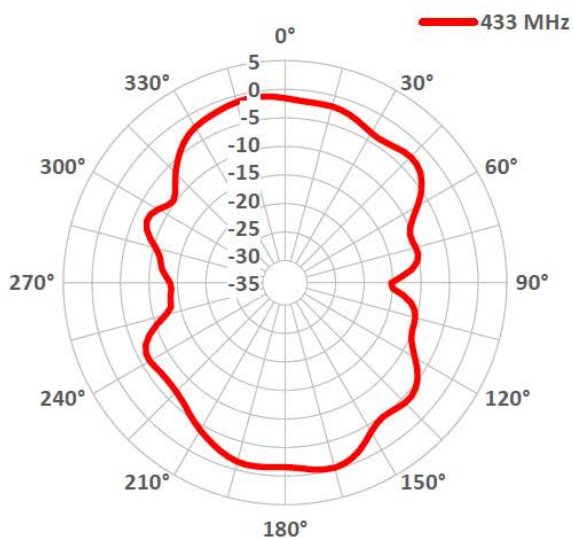
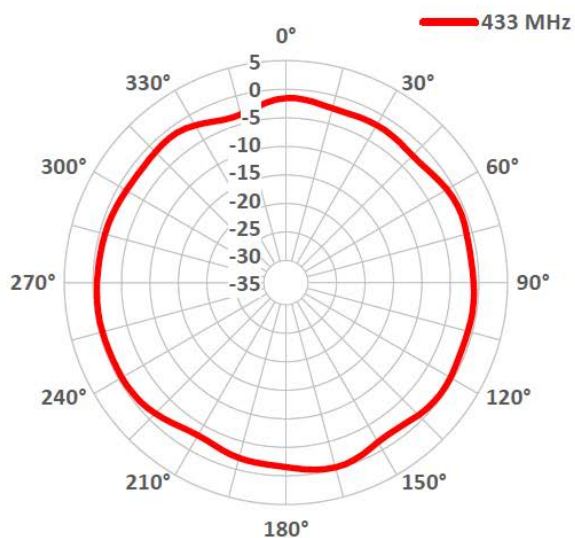
**RF DATA** (Shown as L000605-2 : Others can vary with different cable lengths.)



Data measured in free space and on reference ground plane of 41 x 90 x 1.6 mm ground plane condition, application data might vary.

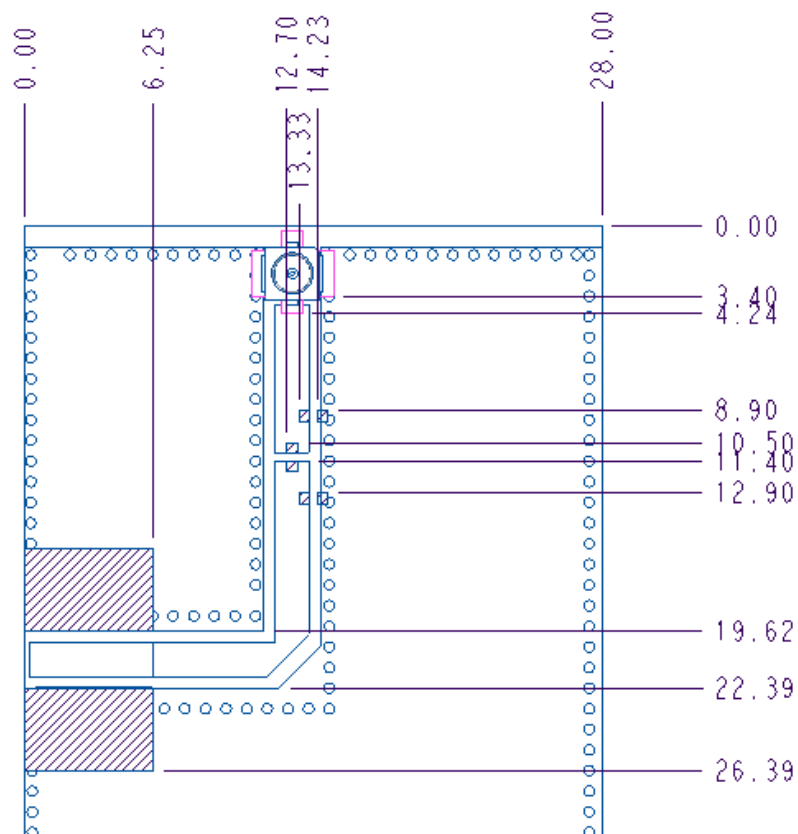
**RADIATION PATTERN**

(Shown as L000605-2 : Others can vary with different cable lengths.)

**Test setup****Azimuth****Elevation****Elevation 2**

Data measured on 1.7mm thick PC plastic with reference evaluation board and matching circuit. Application data might vary.

## EVALUATION BOARD MATCHING NETWORK LAYOUT



## NOTES

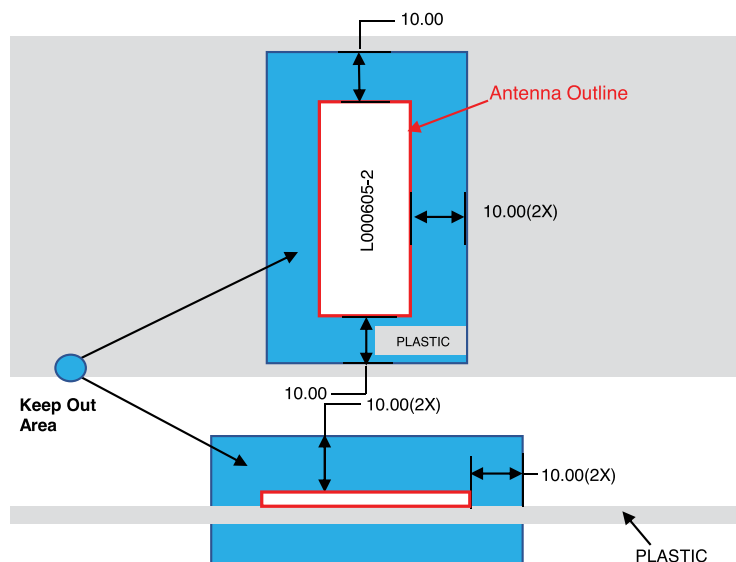
1. Antenna is connected to evaluation board with MHF
2. Measured with below matching circuit condition.
3. Reference PCB Dimension(mm) - 28 x 103 x 1.6mm
4. NC = Non connection (mechanical mounting pads).
5. NA = Not available for the frequency band.
6. For more information please contact TE.

Dimension: mm

Diagram is not to scale

P/N	Matching Network					
	433 - 435 MHz			410 - 427 MHz		
	1	2	3	1	2	3
<b>L000605-01</b>	56nH	3pF	NC	56nH	3pF	NC
<b>L000605-02</b>	56nH	3pF	NC	4.5pF	40nH	NC
<b>L000605-03</b>	6.2nH	13nH	NC	NC	4pF	20nH

### KEEP OUT AREA



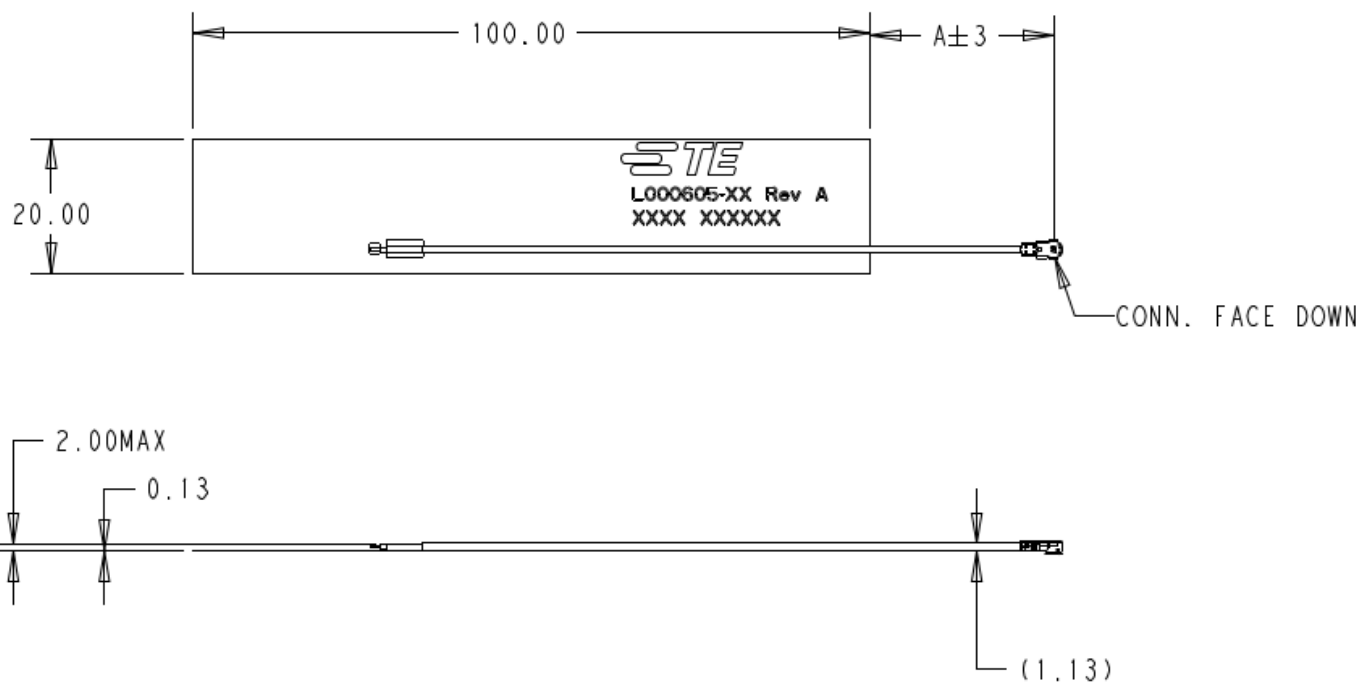
#### NOTES

1. Antenna designed to be mounted on plastic cover.
2. Area in blue above indicates Keep Out Area.
3. For more information please call TE.

Dimension: mm

Diagram is not to scale

### DIMENSIONS



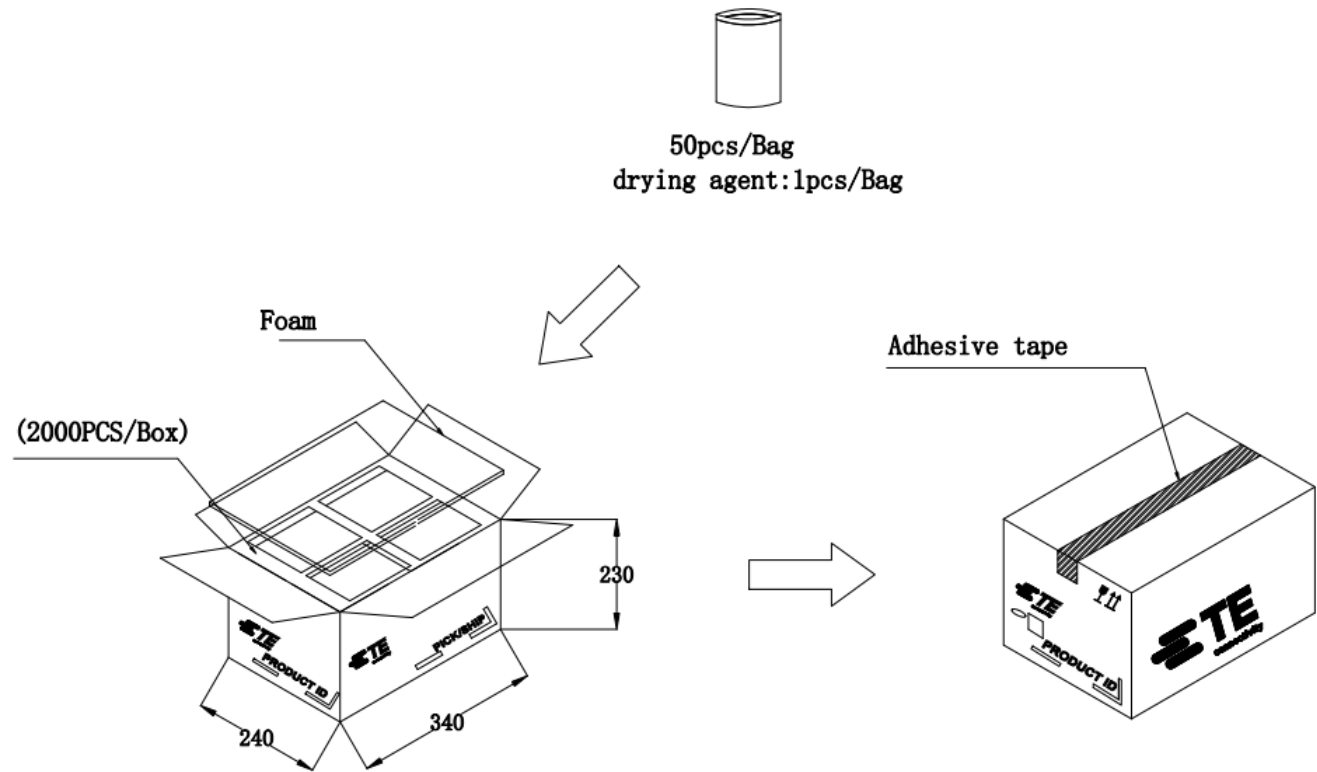
Dimension: mm

Diagram is not to scale

MATING COMPONENTS TO PART NUMBERS AND DIMENSIONS

PART NUMBER	CABLE LENGTH(A)		CABLE O.D, MM	CONNECTOR TYPE (ON CABLE)	PART NUMBER MATING COMPONENTS	IMAGE
	MM	INCH				
L000605-1	50.0	1.968	1.13	MHF-TYPE PLUG	RECEPTACLE (TE PN: 2337019-1)	
L000605-2	100.0	3.937	1.13	MHF-TYPE PLUG	RECEPTACLE (TE PN: 2337019-1)	
L000605-3	150.0	5.905	1.13	MHF-TYPE PLUG	RECEPTACLE (TE PN: 2337019-1)	
L000605-4	50.0	1.968	1.13	MHF4L-TYPE PLUG	RECEPTACLE (TE PN: 2334884-1)	
L000605-5	100.0	3.937	1.13	MHF4L-TYPE PLUG	RECEPTACLE (TE PN: 2334884-1)	
L000605-6	150.0	5.905	1.13	MHF4L-TYPE PLUG	RECEPTACLE (TE PN: 2334884-1)	

PACKAGING



## ISM 410-427, 433-435 MHZ VERTICAL FPC ANTENNAS

Standard Antenna Solutions

---

### TE TECHNICAL SUPPORT CENTER

USA:	+1 (800) 522-6752
Canada:	+1 (905) 475-6222
Mexico:	+52 (0) 55-1106-0800
Latin/S. America:	+54 (0) 11-4733-2200
Germany:	+49 (0) 6251-133-1999
UK:	+44 (0) 800-267666
France:	+33 (0) 1-3420-8686
Netherlands:	+31 (0) 73-6246-999
China:	+86 (0) 400-820-6015

For phone numbers in other countries, go to [te.com/support-center](https://te.com/support-center)

### te.com

TE, TE Connectivity and TE connectivity (logo) are trademarks owned or licensed by the TE Connectivity Ltd. family of companies. Other product names, logos, and company names mentioned herein may be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

©2024 TE Connectivity. All Rights Reserved.

Published 06-24