

# Product Catalogue

Antennas · RF filters & LNA · Cable assemblies  
Development and customisation for your application

EDITION 2026

## An engineering office that also delivers

Sevskiy GmbH is a development partner for radio-frequency engineering based in Munich. The core of our work is customised development: antennas, RF circuits and complete signal paths, designed around the actual geometry, enclosure and environment of your product.

Over the years this development work has produced a product range of its own – antennas, RF filters, LNAs and cable assemblies, available as series components. For many projects this is the fastest route: an existing product as the starting point, adapted to your application where required.

**15+**

years of RF experience

**Munich**

development &amp; laboratory

**Series**

from prototype to production

### Technologies

IoT

5G

GNSS

LTE / 4G

3G / 2G

WLAN 2.4 / 5 / 6 GHz

Bluetooth

RFID

LP-WAN

M2M

ISM / SRD

UWB

### Expertise

Integrated antennas

Embedded antennas

Antenna arrays

Phased arrays

Smart antennas

Antenna systems

RF/MW components

RF circuit design

Layout optimisation

### Industries

Automotive · medical technology · Industry 4.0 · logistics and tracking · smart metering · industrial radio applications

### What sets us apart from a pure distributor

- **We answer the question before you order.** Which antenna suits your enclosure, your available space and your bands – and whether a standard antenna is viable at all.
- **We measure in the installed state.** An antenna that looks good on the datasheet behaves differently inside a metal enclosure. We evaluate it in your product, not on the test bench.
- **We change the product when it does not fit.** Tuning, cable, connector, mounting, dimensions – up to a completely new design.



## The complete RF signal path – from a single source

We accompany a project from the first idea to series production. Customers often come to us when a radio module in a finished device does not deliver the expected range – and the cause lies in the antenna environment.

**01**

### Customised development

Antennas and RF components designed around your space constraints, your enclosure material and your frequency bands. From concept to production-ready design.

**02**

### Adaptation of existing products

A series product as the basis, adapted to your device: tuning in the installed state, modified cable length and connector, different mounting.

**03**

### Simulation & measurement

3D field simulation and verification by measurement. We test the antenna not in isolation but in the real installed state of your product.

**04**

### Signal optimisation

Analysis and optimisation of the complete signal path – matching network, filtering, low-noise pre-amplification, layout and grounding concept.

**05**

### Prototyping

Samples at short notice for evaluation in the device, before tooling costs and approval effort arise.

**06**

### Series production

Transfer to series production through an established partner network – with consistent specification and reproducible RF performance.

**A typical starting point:** the radio module is fixed, the mechanics are settled, the range is not right. In this case an assessment of the installed state is usually the quickest and cheapest first step.

# Table of Contents

|                       |       |
|-----------------------|-------|
| 01 — The company      | 02    |
| 02 — Services         | 03    |
| 03 — Antennas         | 6–62  |
| 04 — RF Filters       | 63–75 |
| 05 — Cable Assemblies | 76–80 |
| 06 — Instrumentation  | 81–82 |

## AN05xx — Embedded-PCB-Antennen · 433 / 868 MHz ISM, LoRa

|          |   |
|----------|---|
| AN050201 | 6 |
|----------|---|

## AN08xx — Embedded-PCB-Antennen · Multiband ISM inkl. 5,8 GHz

|          |   |
|----------|---|
| AN080227 | 7 |
|----------|---|

## AN10xx — Embedded-PCB-Antennen · 868 / 915 MHz Basis

|          |    |
|----------|----|
| AN100201 | 8  |
| AN100202 | 9  |
| AN100203 | 10 |
| AN100204 | 11 |

## AN11xx — Embedded-PCB-Antennen · Mobilfunk UMTS / LTE / 5G

|          |    |
|----------|----|
| AN110201 | 12 |
| AN110204 | 13 |
| AN110205 | 14 |
| AN110206 | 15 |
| AN110221 | 16 |
| AN110501 | 17 |
| AN110502 | 18 |
| AN110503 | 19 |
| AN110504 | 20 |
| AN110505 | 21 |
| AN110506 | 22 |
| AN110507 | 23 |
| AN110508 | 24 |

## AN12xx — Breitband-UWB-Dipole

|          |    |
|----------|----|
| AN120201 | 25 |
| AN120202 | 26 |
| AN120501 | 27 |
| AN120502 | 28 |
| AN120503 | 29 |

## AN15xx — GNSS – Leiterplatte und Patch

|          |    |
|----------|----|
| AN150201 | 30 |
| AN150202 | 31 |
| AN150203 | 32 |
| AN150204 | 33 |
| AN150205 | 34 |
| AN150206 | 35 |

## AN22xx — Externe Antennen: SMA, Mast, Vivaldi, log- periodisch

|          |    |
|----------|----|
| AN220201 | 36 |
| AN220202 | 38 |
| AN220203 | 39 |
| AN220206 | 40 |
| AN220207 | 41 |
| AN220208 | 42 |
| AN220209 | 43 |
| AN220210 | 44 |
| AN220211 | 45 |
| AN220212 | 46 |
| AN220213 | 47 |
| AN220214 | 48 |
| AN220215 | 49 |

## AN24xx — ISM / WLAN, Patch-Arrays

|          |    |
|----------|----|
| AN240202 | 50 |
| AN240203 | 51 |
| AN240205 | 52 |
| AN240206 | 53 |
| AN240207 | 54 |
| AN240208 | 55 |
| AN240209 | 56 |

## AN25xx — Embedded-PCB-Antennen · WLAN 2,4 / 5 / 6 GHz und Bluetooth

|          |    |
|----------|----|
| AN250201 | 57 |
| AN250202 | 58 |
| AN250203 | 59 |
| AN250204 | 60 |
| AN250205 | 61 |
| AN250206 | 62 |

## RF Filters — Low-pass filters

|              |    |
|--------------|----|
| FT220412-01A | 64 |
| FT220411-01A | 65 |
| FT220404-01H | 66 |

|              |    |
|--------------|----|
| FT220404-02H | 67 |
|--------------|----|

## RF Filters — Band-stop (notch) filters

|              |    |
|--------------|----|
| FT220403-01A | 68 |
| FT220403-01H | 69 |

## RF Filters — Bandpass filters

|              |    |
|--------------|----|
| FT220401-2   | 70 |
| FT220408-01A | 71 |
| FT220406-01A | 72 |
| FT220409-01A | 73 |
| FT220407-01A | 74 |
| FT220410-01A | 75 |

## Cable Assemblies

|                        |    |
|------------------------|----|
| MHF1 → MHF1, Ø 1,13 mm | 77 |
| MHF1 → MHF1, Ø 0,81 mm | 78 |
| MHF1 → MHF4, Ø 1,13 mm | 79 |
| MHF4 → MHF4, Ø 1,13 mm | 80 |

## Instrumentation

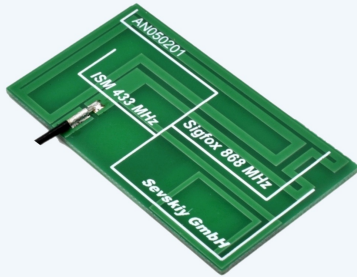
|             |    |
|-------------|----|
| TB130101-01 | 82 |
|-------------|----|



# LoRa/Sigfox, dual-band

433–435 MHz

863–870 MHz



Very compact multi-band antenna for ISM and SRD links. For mounting inside the plastic enclosure of IoT, M2M and telemetry devices.

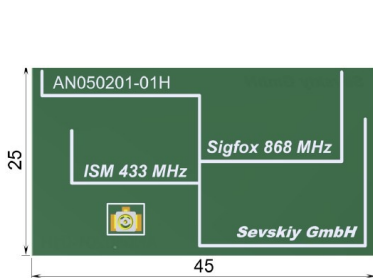
## Wireless standards

ISM 433, SRD 868 (LoRa, Sigfox, mioty)

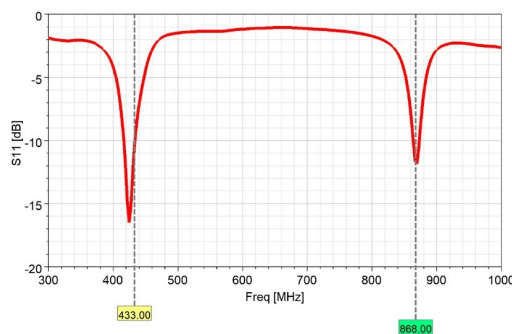
|            |                    |
|------------|--------------------|
| Bands      | 2                  |
| VSWR       | 1.78 ... 1.92      |
| Gain       | -1.7 ... -1.6 dBi  |
| Dimensions | 45.0 × 25.0 × 1 mm |
| Versions   | 3                  |

## Versions

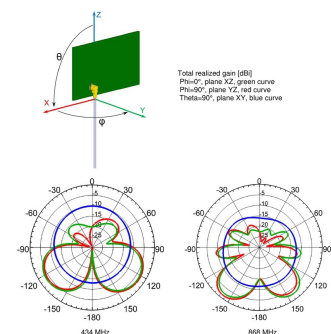
| PART NUMBER           | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    |
|-----------------------|----------------------------------|------------|--------------------|---------------|---------------|
| AN050201-01C-175-MHF1 | RF ANT 433MHZ/868MHZ PCB         | 175        | U.FL / MHF1, cable | 1.78 ... 1.92 | -1.7 ... -1.6 |
| AN050201-01H          | RF ANT 433MHZ/868MHZ/ 5.8GHZ PCB | none       | U.FL (UMCC) / MHF1 | 1.78 ... 1.92 | -1.9 ... -1.4 |
| AN050201-03H          | RF ANT ISM 433MHZ SRD 868MHZ PCB | none       | U.FL (UMCC) / MHF1 | 1.67 ... 1.92 | -1.9 ... -1.3 |



Drawing (mm)



Input matching S11



Radiation pattern

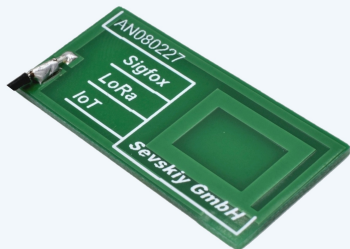
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

750–960 MHz

4.4–5.0 GHz

5.725–6.0 GHz



Embedded multi-band antenna covering three ranges: sub-GHz communication and the upper WLAN bands in a single part.

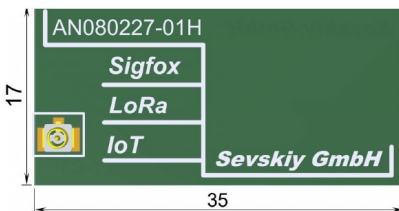
### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900, WLAN 5, ISM 5,8

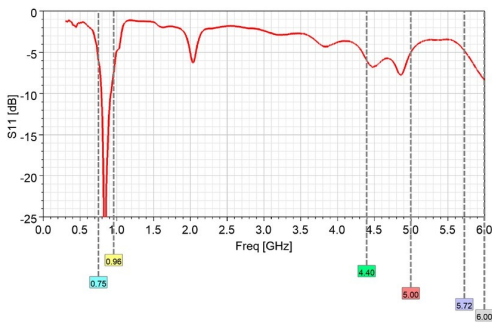
|            |                    |
|------------|--------------------|
| Bands      | 3                  |
| VSWR       | 2.61 ... 3.01      |
| Gain       | +1.0 ... +4.0 dBi  |
| Dimensions | 35.0 × 17.0 × 1 mm |
| Versions   | 2                  |

### Versions

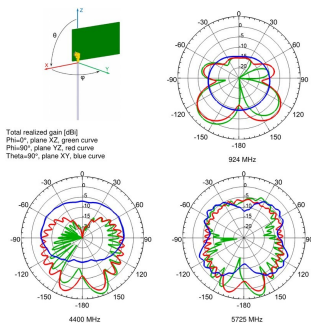
| PART NUMBER           | SHORT DESCRIPTION                      | CABLE [MM] | CONNECTOR                | VSWR                | GAIN [DBI]          | DATASHEET |
|-----------------------|----------------------------------------|------------|--------------------------|---------------------|---------------------|-----------|
| AN080227-01C-175-MHF1 | RF ANT SRD860<br>ISM915 ISM5800<br>PCB | 175        | U.FL / MHF1,<br>cable    | 2.61<br>...<br>3.01 | +1.0<br>...<br>+4.0 |           |
| AN080227-01H          | RF ANT<br>433/868/5800MHZ<br>PCB U.FL. | none       | U.FL<br>(UMCC) /<br>MHF1 | 2.61<br>...<br>3.01 | +1.2<br>...<br>+4.1 |           |



Drawing (mm)



Input matching S11

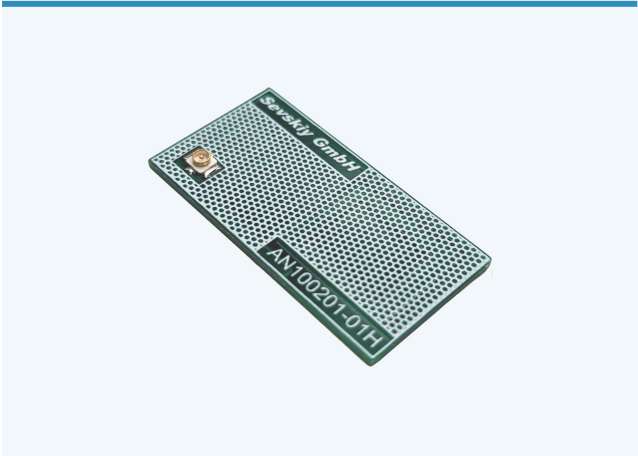


Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular and LoRa/Sigfox

800–960 MHz



Compact embedded antenna for SRD 860, ISM 915 and common sub-GHz IoT standards. Small FR4 structure for tight enclosures.

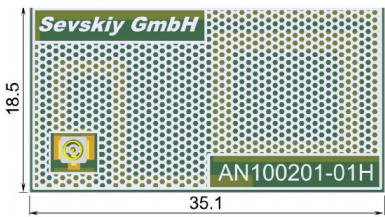
### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900

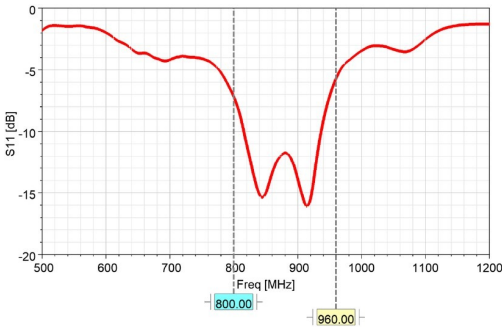
|            |                    |
|------------|--------------------|
| Bands      | 1                  |
| VSWR       | 1.92               |
| Gain       | +1.5 dBi           |
| Dimensions | 35.1 × 18.5 × 1 mm |
| Versions   | 1                  |

### Versions

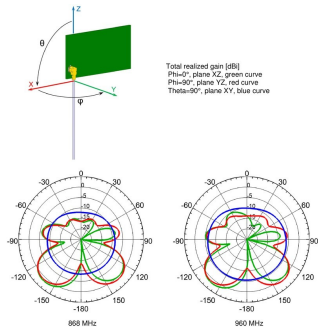
| PART NUMBER  | SHORT DESCRIPTION               | CABLE [MM] | CONNECTOR          | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|---------------------------------|------------|--------------------|------|------------|---------------------------------------------------------------------------------------|
| AN100201-01H | RF ANT 868MHZ/ 915MHZ PCB U.FL. | none       | U.FL (UMCC) / MHF1 | 1.92 | +1.5       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Cellular and LoRa/Sigfox

800–960 MHz



Same as the AN100201, but with slightly higher gain and a different form factor – longer and narrower.

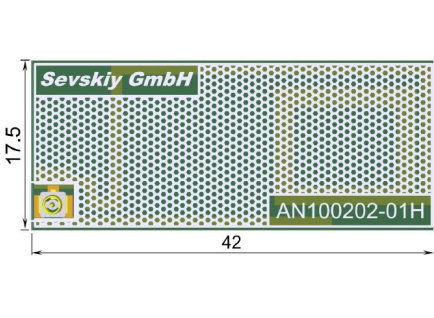
### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900

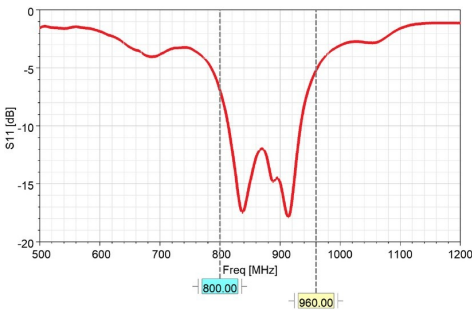
|            |                    |
|------------|--------------------|
| Bands      | 1                  |
| VSWR       | 1.92               |
| Gain       | +2.0 dBi           |
| Dimensions | 42.0 × 17.5 × 1 mm |
| Versions   | 1                  |

### Versions

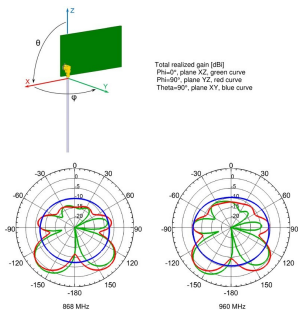
| PART NUMBER  | SHORT DESCRIPTION              | CABLE [MM] | CONNECTOR          | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|--------------------------------|------------|--------------------|------|------------|---------------------------------------------------------------------------------------|
| AN100202-01H | RF ANT SRD860 ISM915 PCB U.FL. | none       | U.FL (UMCC) / MHF1 | 1.92 | +2.0       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

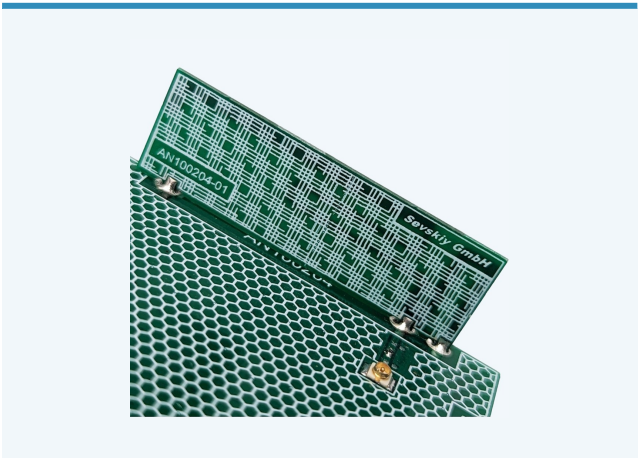




# Cellular, WLAN/Bluetooth and LoRa/Sigfox, dual-band

863–960 MHz

2.4–2.5 GHz



Dual-band antenna combining LoRa and Sigfox communication with Bluetooth and WLAN in a single part.

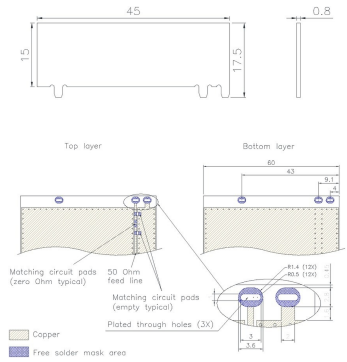
### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, WLAN 2,4 · Bluetooth · Zigbee

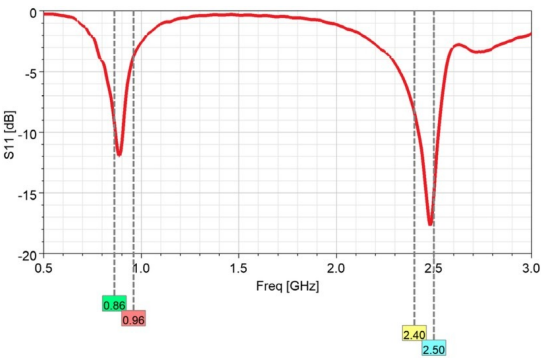
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.92 ... 2.32        |
| Gain       | +2.2 ... +3.5 dBi    |
| Dimensions | 45.0 × 15.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

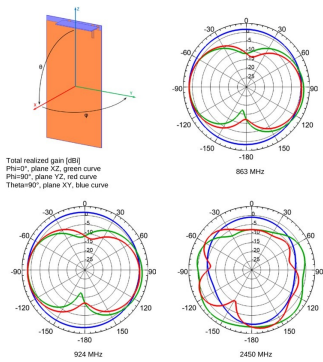
| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR  | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|----------------------------------|------------|------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN100204-01S | RF ANT 868MHZ/ 915MHZ/2.4GHZ PCB | none       | Solder pad | 1.92 ... 2.32 | +2.2 ... +3.5 |  |



Drawing (mm)



Input matching S11



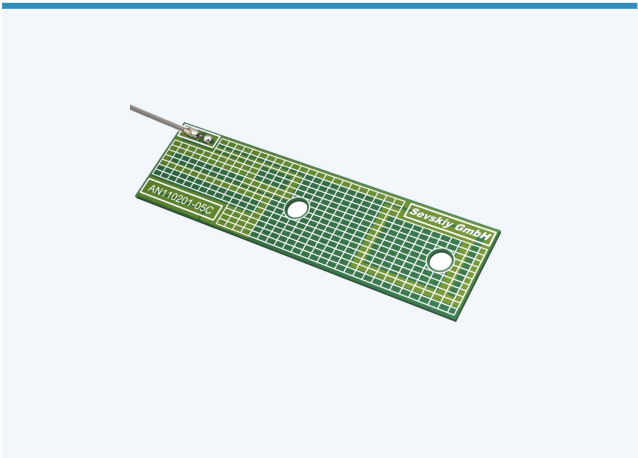
Radiation pattern

**Customisable:** Dimensions and tuning in the installed state; available with connector and pre-assembled cable on request.

# Cellular and LoRa/Sigfox, dual-band

800–960 MHz

1.71–2.17 GHz



Embedded antenna for GSM, UMTS, LTE, NB-IoT and LTE-M – the classic combination for connected industrial equipment.

Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900, GSM/LTE 1800, UMTS/LTE 2100

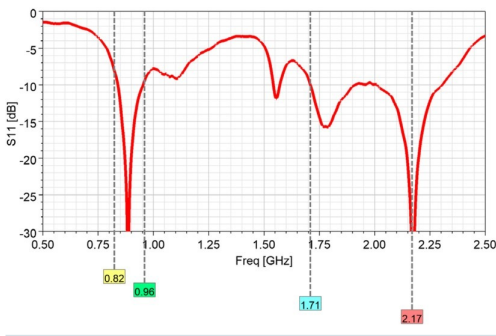
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.92 ... 2.10        |
| Gain       | +2.0 ... +4.5 dBi    |
| Dimensions | 70.0 × 19.0 × 0.8 mm |
| Versions   | 1                    |

Versions

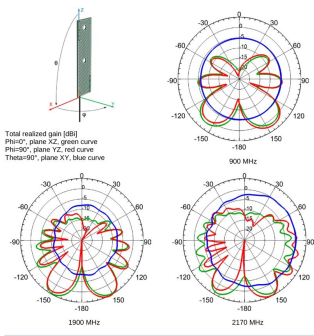
| PART NUMBER           | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|-----------------------|----------------------------------|------------|--------------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN110201-05C-175-MHF1 | RF ANT 824-960, 1710-2170MHZ PCB | 175        | U.FL / MHF1, cable | 1.92 ... 2.10 | +2.0 ... +4.5 |  |



Drawing (mm)



Input matching S11



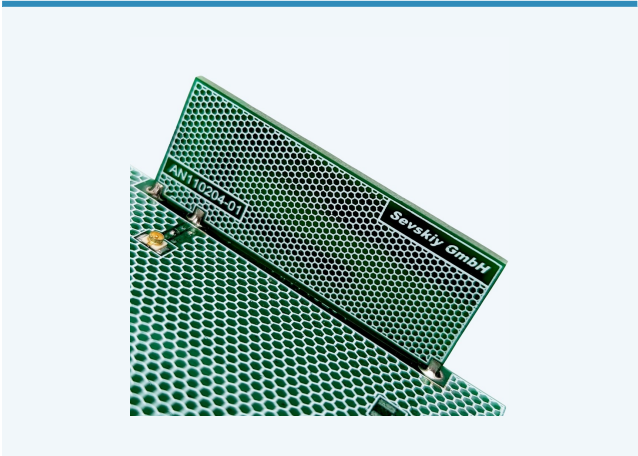
Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular and LoRa/Sigfox, dual-band

824–960 MHz

1.71–2.17 GHz



High-performance dual-band antenna for stable links across 5G, LTE, GSM, UMTS and CDMA.

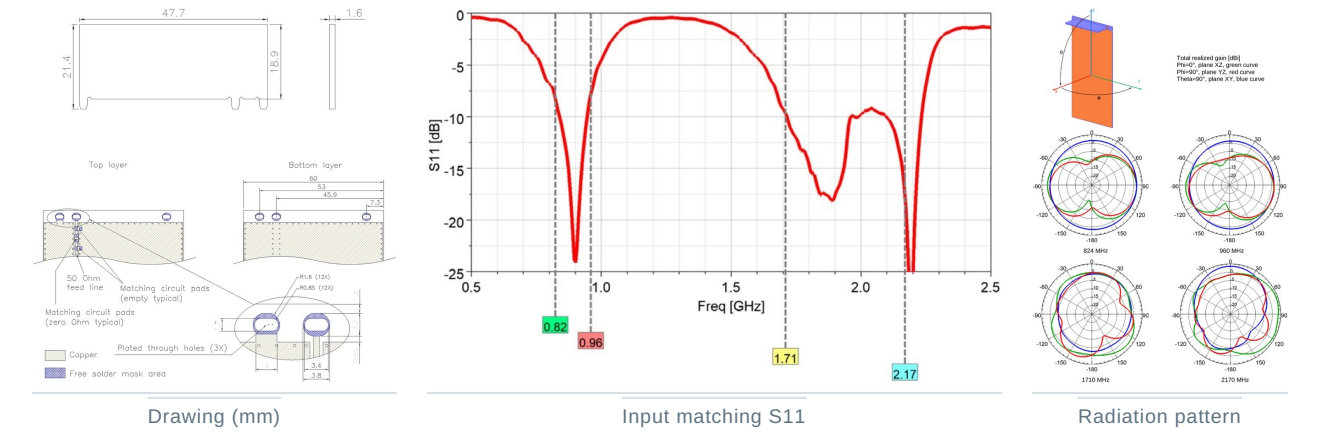
Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, GSM/LTE 1800, UMTS/LTE 2100

|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.92 ... 2.32        |
| Gain       | +1.9 ... +3.6 dBi    |
| Dimensions | 47.7 × 18.9 × 1.6 mm |
| Versions   | 1                    |

Versions

| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR  | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|----------------------------------|------------|------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN110204-01S | RF ANT UMTS/LTE PCB SOLDER MOUNT | none       | Solder pad | 1.92 ... 2.32 | +1.9 ... +3.6 |  |

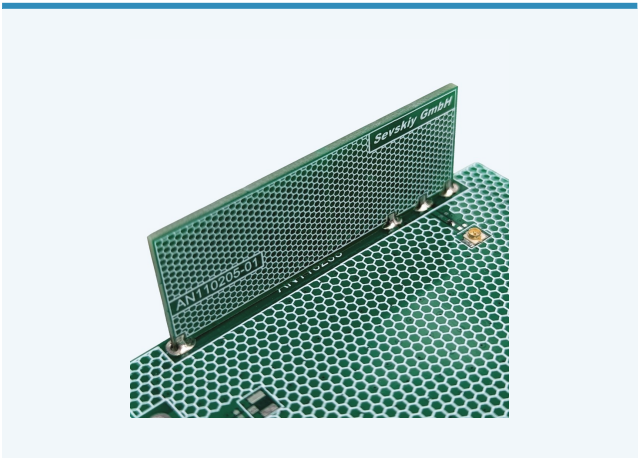


**Customisable:** Dimensions and tuning in the installed state; available with connector and pre-assembled cable on request.

# Cellular, WLAN/Bluetooth and LoRa/Sigfox, dual-band

698–960 MHz

1.695–2.7 GHz



Wideband antenna whose broad coverage allows one device design to serve different markets and network operators.

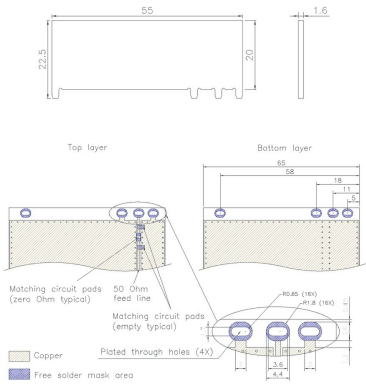
### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox)

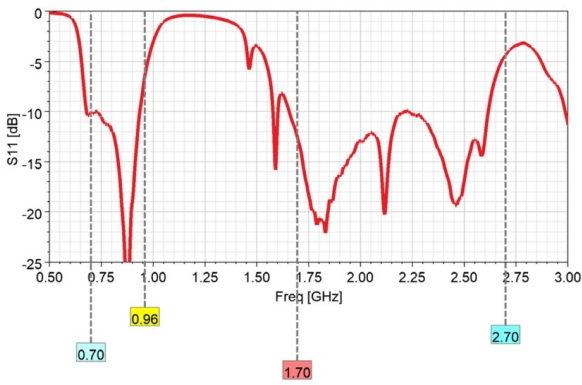
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.92 ... 2.32        |
| Gain       | +1.5 ... +3.4 dBi    |
| Dimensions | 55.0 × 20.0 × 1.6 mm |
| Versions   | 1                    |

### Versions

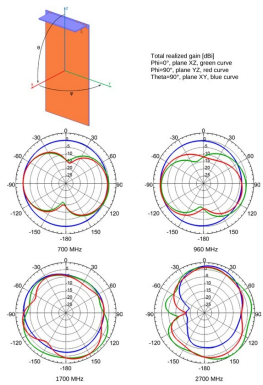
| PART NUMBER  | SHORT DESCRIPTION             | CABLE [MM] | CONNECTOR  | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|-------------------------------|------------|------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN110205-01S | RF ANT UMTS/LTE/5G PCB SOLDER | none       | Solder pad | 1.92 ... 2.32 | +1.5 ... +3.4 |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Dimensions and tuning in the installed state; available with connector and pre-assembled cable on request.

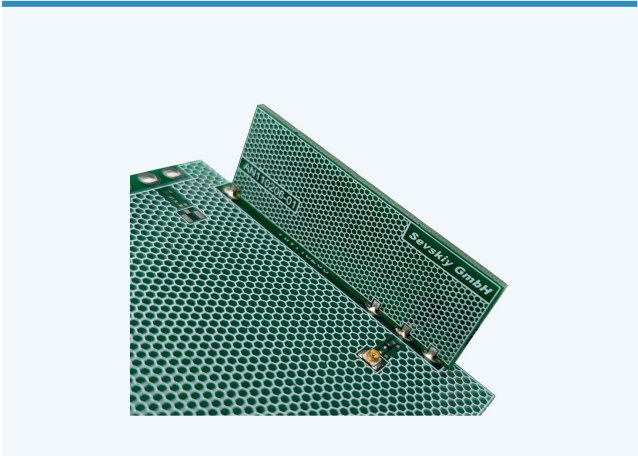
# Cellular, WLAN/Bluetooth and LoRa/Sigfox, quad-band

698–960 MHz

1.695–2.7 GHz

3.3–3.8 GHz

4.4–6.0 GHz



Wideband antenna for devices that must handle 5G, LTE, WLAN and IoT communication at the same time.

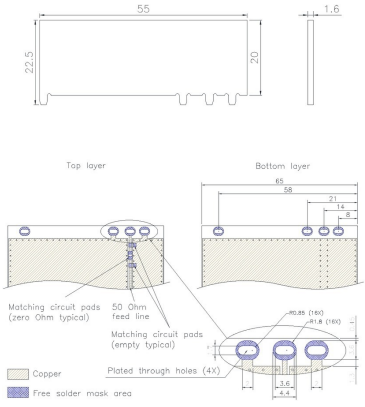
### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox)

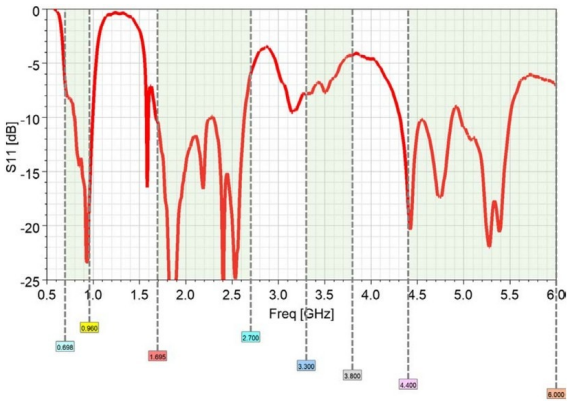
|            |                      |
|------------|----------------------|
| Bands      | 4                    |
| VSWR       | 1.92 ... 3.01        |
| Gain       | +0.8 ... +3.7 dBi    |
| Dimensions | 55.0 × 20.0 × 1.6 mm |
| Versions   | 1                    |

### Versions

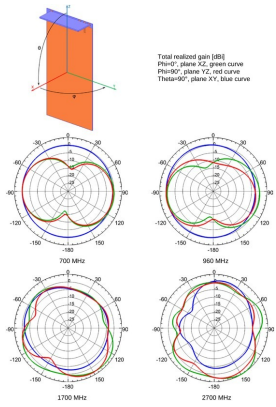
| PART NUMBER  | SHORT DESCRIPTION               | CABLE [MM] | CONNECTOR  | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|---------------------------------|------------|------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN110206-01S | RF ANT 3G/4G/5G WLAN PCB SOLDER | none       | Solder pad | 1.92 ... 3.01 | +0.8 ... +3.7 |  |



Drawing (mm)



Input matching S11



Radiation pattern

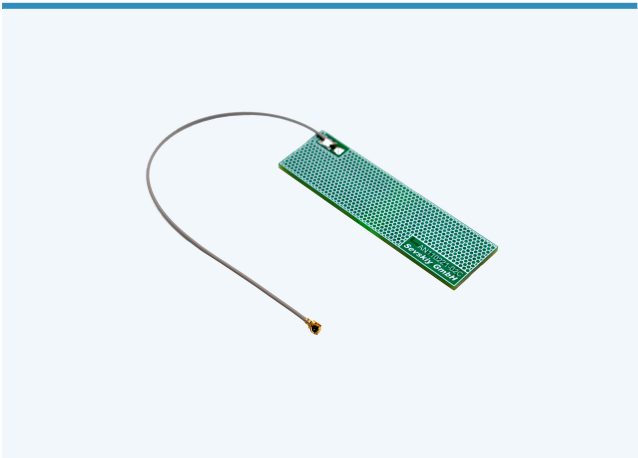
**Customisable:** Dimensions and tuning in the installed state; available with connector and pre-assembled cable on request.



# Cellular, WLAN/Bluetooth and LoRa/Sigfox, dual-band

698–960 MHz

1.695–2.7 GHz



Compact wideband antenna with factory-assembled cable. For LTE, 5G sub-6, GSM and UMTS in cellular IoT applications.

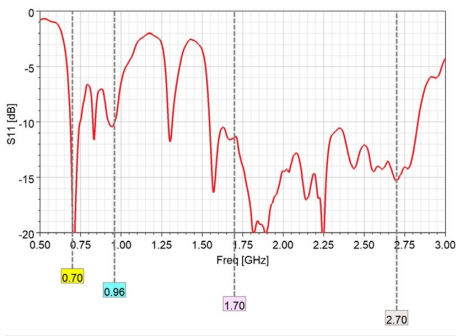
### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox)

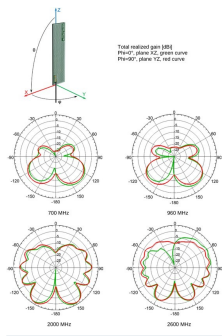
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.92 ... 2.61        |
| Gain       | +0.6 ... +2.4 dBi    |
| Dimensions | 70.0 × 20.0 × 1.6 mm |
| Versions   | 1                    |

### Versions

| PART NUMBER           | SHORT DESCRIPTION               | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|---------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110221-02C-175-MHF1 | RF ANT GSM LTE<br>5G UMTS CABLE | 175        | U.FL / MHF1,<br>cable | 1.92 ...<br>2.61 | +0.6<br>...<br>+2.4 |  |



Input matching S11



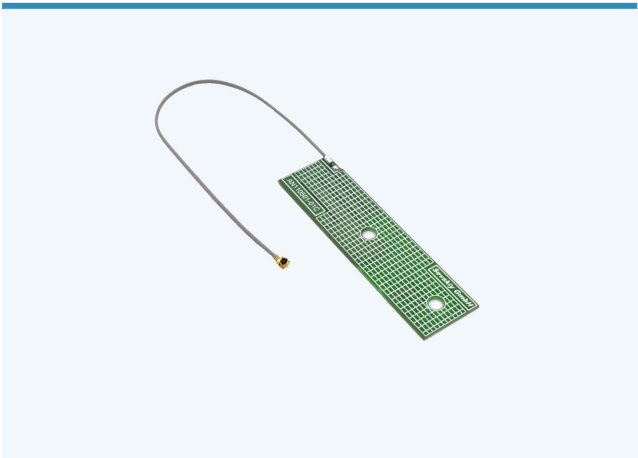
Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular and LoRa/Sigfox, dual-band

750–960 MHz

1.71–2.17 GHz



Embedded antenna covering the main LTE and UMTS allocations as well as GSM – designed for installation inside the device.

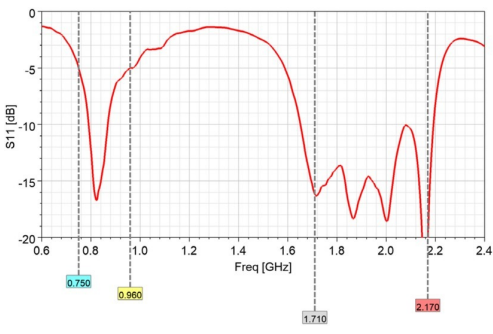
Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900, GSM/LTE 1800, UMTS/LTE 2100

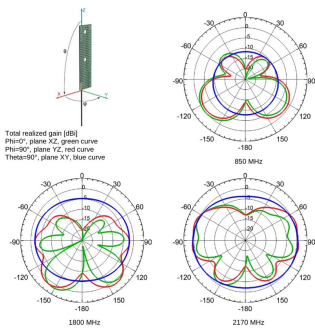
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.92 ... 3.57        |
| Gain       | +1.5 ... +3.0 dBi    |
| Dimensions | 70.0 × 19.0 × 0.8 mm |
| Versions   | 1                    |

Versions

| PART NUMBER           | SHORT DESCRIPTION                    | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|--------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110501-01C-175-MHF1 | RF ANT ISM<br>CBRS 3G 4G 5G<br>U.FL. | 175        | U.FL / MHF1,<br>cable | 1.92 ...<br>3.57 | +1.5<br>...<br>+3.0 |  |



Input matching S11



Radiation pattern

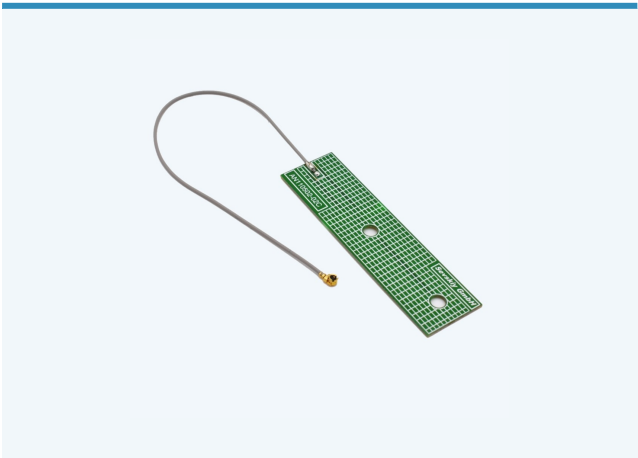
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular, WLAN/Bluetooth, LoRa/Sigfox +, triple-band

750–960 MHz

1.559–2.7 GHz

4.4–6.0 GHz



Multi-band antenna from sub-GHz to 6 GHz. The middle band includes GNSS L1 – cellular and positioning without a second antenna.

### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS

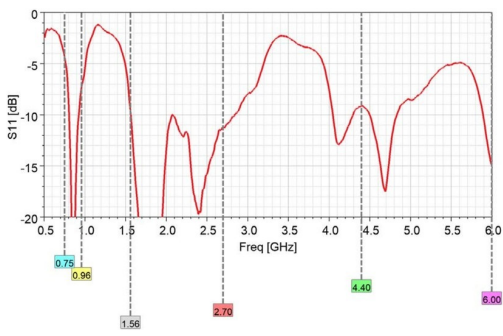
|            |                      |
|------------|----------------------|
| Bands      | 3                    |
| VSWR       | 1.92 ... 3.57        |
| Gain       | -0.6 ... +4.0 dBi    |
| Dimensions | 70.0 × 19.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

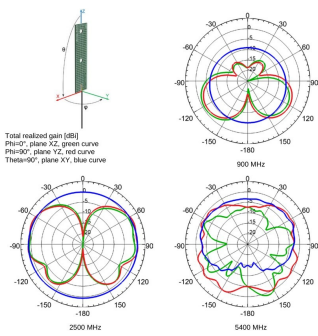
| PART NUMBER           | SHORT DESCRIPTION                   | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|-------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110502-02C-175-MHF1 | RF ANT WiFi 2.4/5<br>GNSS 4G 5G PCB | 175        | U.FL / MHF1,<br>cable | 1.92 ...<br>3.57 | -0.6<br>...<br>+4.0 |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

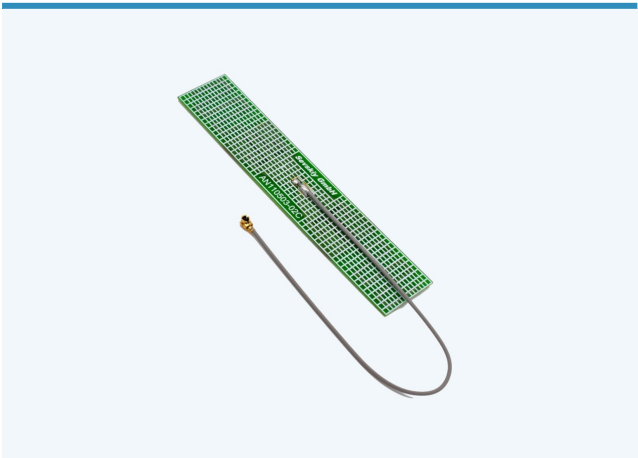


# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

850–960 MHz

1.71–2.7 GHz

5.15–6.0 GHz



Wideband embedded antenna for devices serving cellular networks and 5 GHz WLAN at the same time.

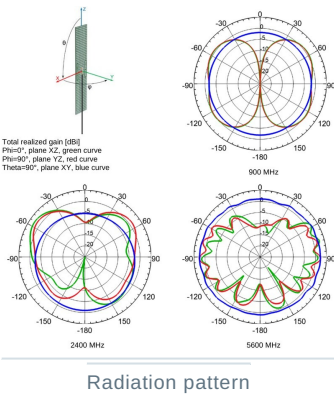
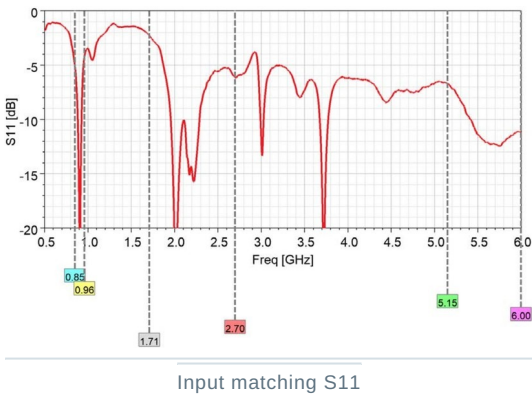
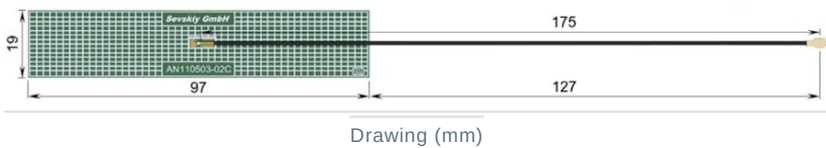
### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox)

|            |                      |
|------------|----------------------|
| Bands      | 3                    |
| VSWR       | 2.32 ... 3.57        |
| Gain       | +1.2 ... +5.0 dBi    |
| Dimensions | 97.0 × 19.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

| PART NUMBER           | SHORT DESCRIPTION                   | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|-------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110503-02C-175-MHF1 | RF ANT WiFi 2.4/5<br>CBRS 4G 5G PCB | 175        | U.FL / MHF1,<br>cable | 2.32 ...<br>3.57 | +1.2<br>...<br>+5.0 |  |



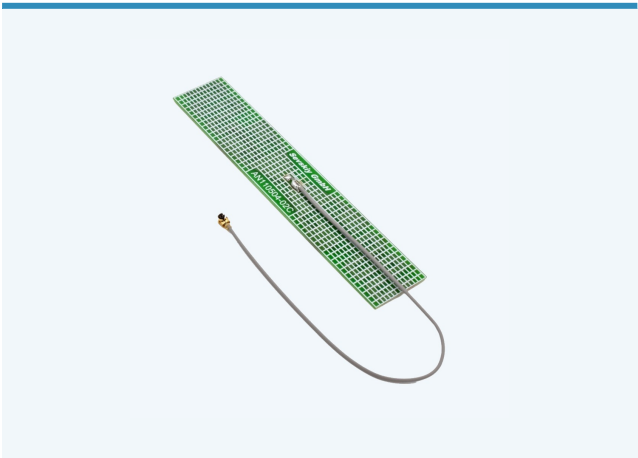
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

850–960 MHz

1.71–2.7 GHz

4.4–6.0 GHz



Multi-band antenna with extended coverage up to 6 GHz in a compact footprint.

### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox)

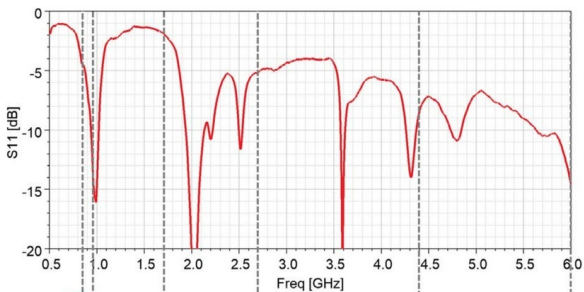
|            |                      |
|------------|----------------------|
| Bands      | 3                    |
| VSWR       | 2.61 ... 3.57        |
| Gain       | +1.2 ... +4.0 dBi    |
| Dimensions | 97.0 × 19.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

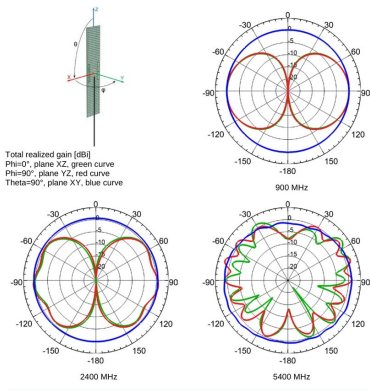
| PART NUMBER           | SHORT DESCRIPTION                   | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|-------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110504-02C-175-MHF1 | RF ANT WiFi 2.4/5<br>CBRS 4G 5G PCB | 175        | U.FL / MHF1,<br>cable | 2.61 ...<br>3.57 | +1.2<br>...<br>+4.0 |  |



Drawing (mm)



Input matching S11



Radiation pattern

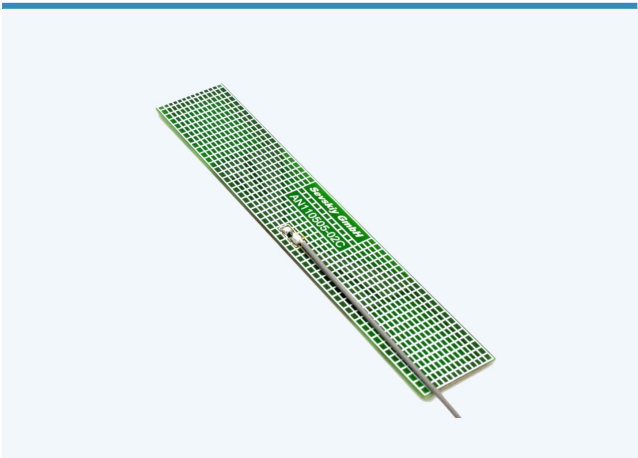
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

860–960 MHz

1.71–2.17 GHz

5.15–6.0 GHz



Wideband antenna for GSM, UMTS, LTE and selected 5G NR allocations.

### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, GSM/LTE 1800, UMTS/LTE 2100, WLAN 5, ISM 5,8

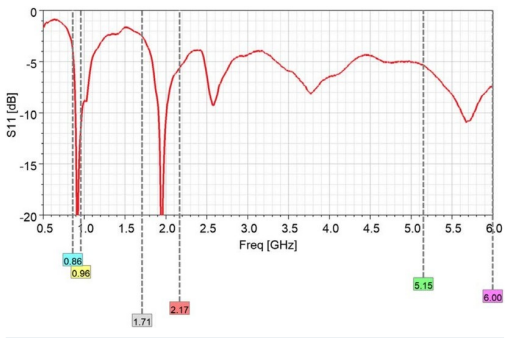
|            |                       |
|------------|-----------------------|
| Bands      | 3                     |
| VSWR       | 3.01 ... 3.57         |
| Gain       | +2.2 ... +5.0 dBi     |
| Dimensions | 100.0 × 19.0 × 0.8 mm |
| Versions   | 1                     |

### Versions

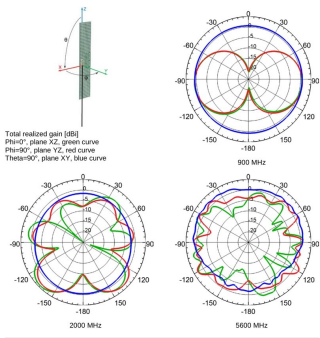
| PART NUMBER           | SHORT DESCRIPTION                      | CABLE [MM] | CONNECTOR             | VSWR        | GAIN [DBI]  | DATASHEET                                                                             |
|-----------------------|----------------------------------------|------------|-----------------------|-------------|-------------|---------------------------------------------------------------------------------------|
| AN110505-02C-175-MHF1 | RF ANT<br>ISM915/2400/5800<br>3G 4G 5G | 175        | U.FL / MHF1,<br>cable | 3.01<br>... | +2.2<br>... |  |



Drawing (mm)



Input matching S11



Radiation pattern

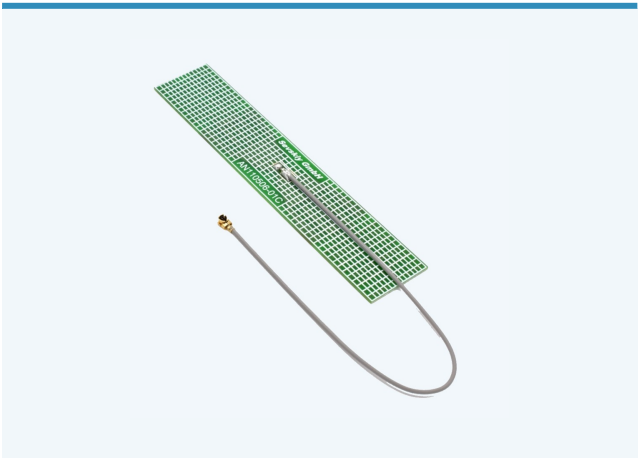
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

824–960 MHz

2.4–2.5 GHz

5.15–6.0 GHz



Multi-band antenna combining cellular connectivity with Bluetooth and WLAN in one part.

### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, WLAN 2,4 · Bluetooth · Zigbee, WLAN 5, ISM 5,8

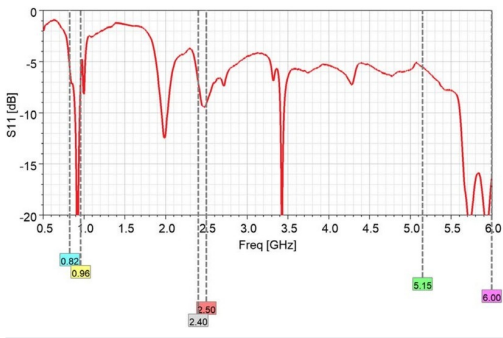
|            |                      |
|------------|----------------------|
| Bands      | 3                    |
| VSWR       | 2.32 ... 3.01        |
| Gain       | +0.8 ... +4.8 dBi    |
| Dimensions | 97.0 × 19.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

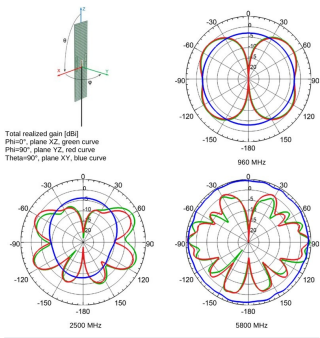
| PART NUMBER           | SHORT DESCRIPTION                      | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|----------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110506-01C-175-MHF1 | RF ANT ISM<br>WiFi2.4/5 CBR5<br>LTE 5G | 175        | U.FL / MHF1,<br>cable | 2.32 ...<br>3.01 | +0.8<br>...<br>+4.8 |  |



Drawing (mm)



Input matching S11



Radiation pattern

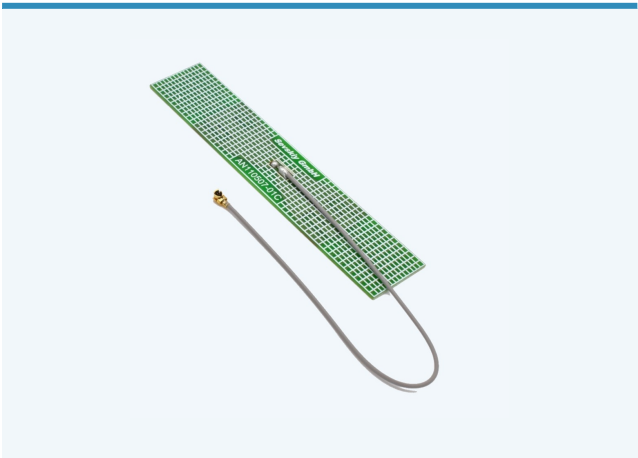
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

824–960 MHz

1.88–2.17 GHz

5.15–6.0 GHz



Multi-band antenna providing dependable connectivity from sub-GHz up to 6 GHz.

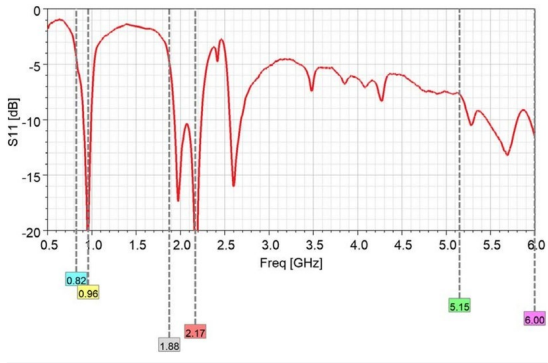
### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, UMTS/LTE 2100, WLAN 5, ISM 5,8

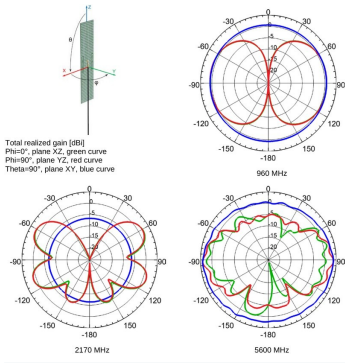
|            |                      |
|------------|----------------------|
| Bands      | 3                    |
| VSWR       | 2.32 ... 3.57        |
| Gain       | +1.2 ... +4.3 dBi    |
| Dimensions | 97.0 × 19.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

| PART NUMBER           | SHORT DESCRIPTION                     | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|---------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110507-01C-175-MHF1 | RF ANT ISM WiFi<br>CELLULAR LTE<br>5G | 175        | U.FL / MHF1,<br>cable | 2.32 ...<br>3.57 | +1.2<br>...<br>+4.3 |  |



Input matching S11



Radiation pattern

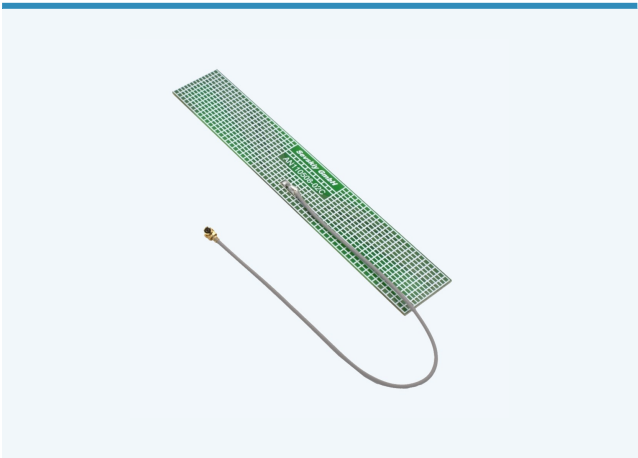
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

850–960 MHz

2.4–2.7 GHz

4.4–6.0 GHz



Wideband antenna: the sub-GHz band secures cellular range, the upper band local connectivity.

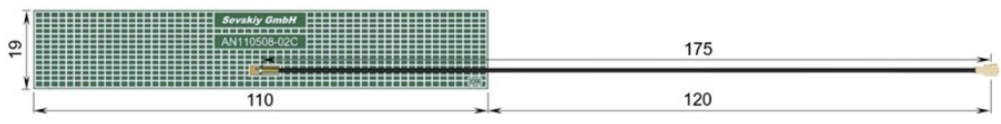
### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, WLAN 2,4 · Bluetooth · Zigbee, LTE 2600, WLAN 5, ISM 5,8

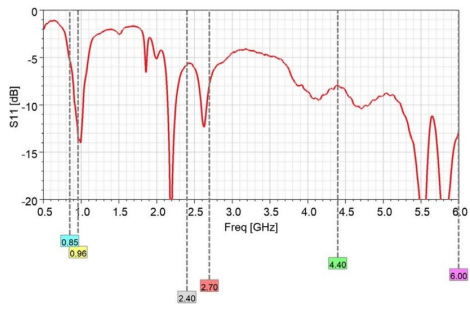
|            |                       |
|------------|-----------------------|
| Bands      | 3                     |
| VSWR       | 2.32 ... 3.57         |
| Gain       | +0.8 ... +4.7 dBi     |
| Dimensions | 110.0 × 19.0 × 0.8 mm |
| Versions   | 1                     |

### Versions

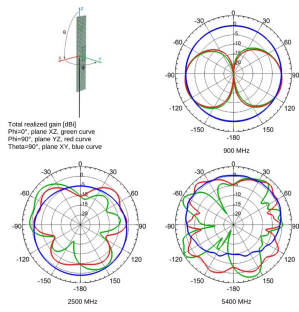
| PART NUMBER           | SHORT DESCRIPTION                      | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|----------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN110508-02C-175-MHF1 | RF ANT ISM WiFi<br>GSM 3G LTE 4G<br>5G | 175        | U.FL / MHF1,<br>cable | 2.32 ...<br>3.57 | +0.8<br>...<br>+4.7 |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.



# Wideband UWB dipole for cellular, WLAN/Bluetooth, LoRa/ Sigfox +, directional

- 800–960 MHz
- 1.427–10.0 GHz



Planar ultra-wideband Vivaldi antenna with directional radiation – for measurement, spectrum monitoring and RF testing.

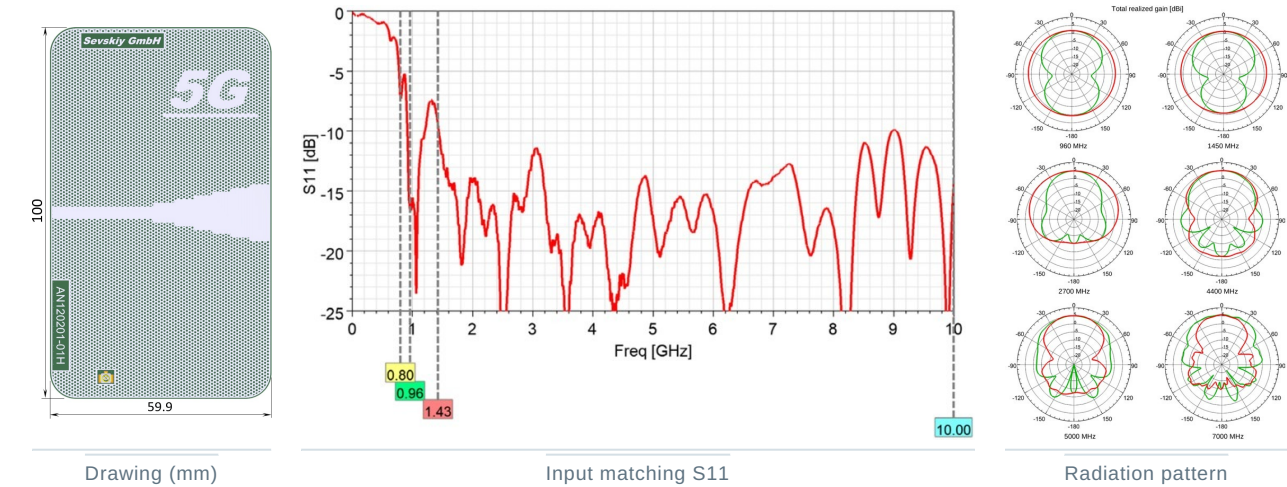
### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS, UWB

|            |                       |
|------------|-----------------------|
| Bands      | Wideband              |
| VSWR       | 1.92 ... 3.01         |
| Gain       | +1.0 ... +5.0 dBi     |
| Dimensions | 100.0 × 59.9 × 0.8 mm |
| Versions   | 1                     |

### Versions

| PART NUMBER  | SHORT DESCRIPTION             | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    | DATASHEET |
|--------------|-------------------------------|------------|--------------------|---------------|---------------|-----------|
| AN120201-01H | RF ANT 5G/LTE BROADBAND U.FL. | none       | U.FL (UMCC) / MHF1 | 1.92 ... 3.01 | +1.0 ... +5.0 |           |



**Customisable:** Connector type and mounting; available with pre-assembled cable on request.



# Antenna for cellular, WLAN/Bluetooth, LoRa/Sigfox +, UWB, directional

600–960 MHz

1.4–10.0 GHz



Planar Vivaldi antenna for broadband communication and laboratory use where one part has to cover the entire spectrum.

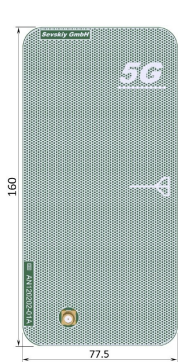
### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS, UWB

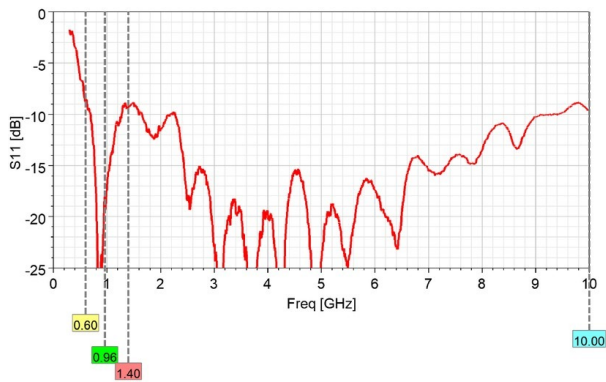
|            |                       |
|------------|-----------------------|
| Bands      | Wideband              |
| VSWR       | 1.78 ... 1.92         |
| Gain       | +4.0 ... +5.0 dBi     |
| Dimensions | 160.0 × 77.5 × 0.8 mm |
| Versions   | 2                     |

### Versions

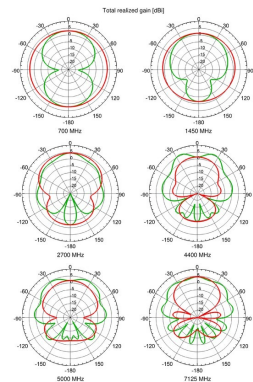
| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]       | DATASHEET                                                                             |
|--------------|----------------------------------|------------|-----------------------|------------------|------------------|---------------------------------------------------------------------------------------|
| AN120202-01A | RF ANT 5G/LTE<br>0.6-10GHZ U.FL. | none       | SMA jack              | 1.78 ...<br>1.92 | +4.0 ...<br>+5.0 |  |
| AN120202-01H | RF ANT 5G/LTE<br>0.6-10GHZ U.FL. | none       | U.FL (UMCC) /<br>MHF1 | 1.58 ...<br>1.92 | +3.0 ...<br>+5.0 |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Wideband UWB dipole for cellular, WLAN/Bluetooth, LoRa/ Sigfox +

700–960 MHz

1.427–8.0 GHz



Large symmetrical UWB dipole for multi-standard systems with high demands on bandwidth and gain.

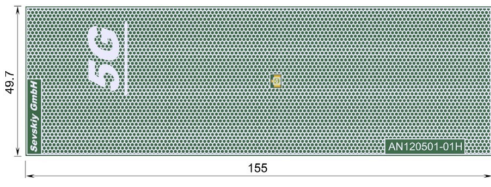
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS, UWB

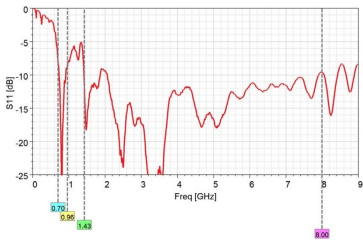
|            |                       |
|------------|-----------------------|
| Bands      | Wideband              |
| VSWR       | 1.92 ... 2.32         |
| Gain       | +2.0 ... +4.5 dBi     |
| Dimensions | 155.0 × 49.7 × 0.8 mm |
| Versions   | 1                     |

Versions

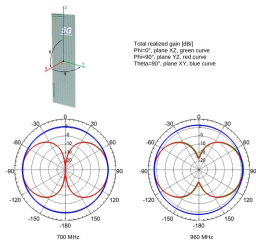
| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|----------------------------------|------------|--------------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN120501-01H | RF ANT 5G WLAN 2.4/5/6 PCB U.FL. | none       | U.FL (UMCC) / MHF1 | 1.92 ... 2.32 | +2.0 ... +4.5 |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Wideband UWB dipole for cellular, WLAN/Bluetooth, LoRa/ Sigfox +

700–960 MHz

1.427–7.125 GHz



Dual-band wideband antenna for devices sold worldwide – no antenna change per target market.

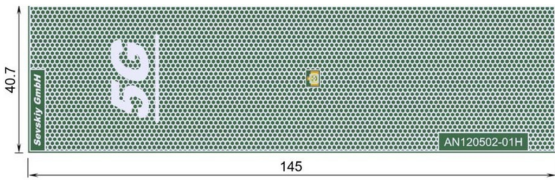
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS

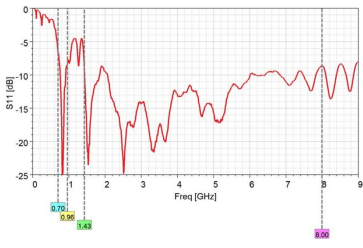
|            |                       |
|------------|-----------------------|
| Bands      | Wideband              |
| VSWR       | 1.92 ... 2.32         |
| Gain       | +2.0 ... +5.0 dBi     |
| Dimensions | 145.0 × 40.7 × 0.8 mm |
| Versions   | 1                     |

Versions

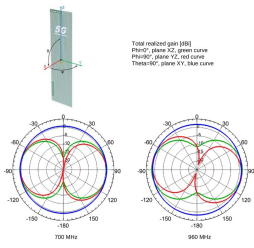
| PART NUMBER  | SHORT DESCRIPTION             | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|-------------------------------|------------|--------------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN120502-01H | RF ANT 5G/LTE BROADBAND U.FL. | none       | U.FL (UMCC) / MHF1 | 1.92 ... 2.32 | +2.0 ... +5.0 |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Wideband UWB dipole for cellular, WLAN/Bluetooth, LoRa/ Sigfox +

0.6–7.125 GHz



Symmetrical dipole with true multi-standard behaviour in a single part, from 5G NR down to legacy cellular generations.

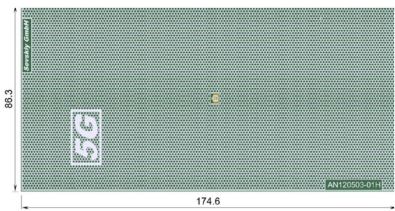
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS

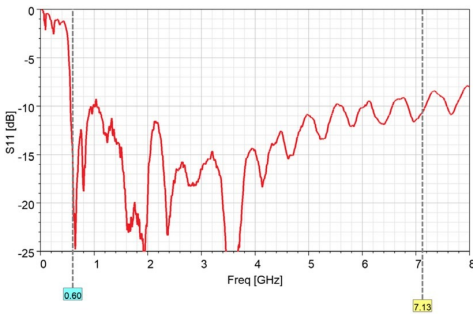
|            |                       |
|------------|-----------------------|
| Bands      | Wideband              |
| VSWR       | 1.92                  |
| Gain       | +5.0 dBi              |
| Dimensions | 174.5 × 86.3 × 0.8 mm |
| Versions   | 1                     |

Versions

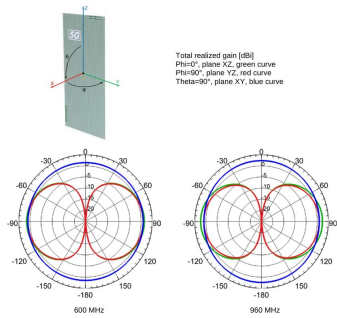
| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR          | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|----------------------------------|------------|--------------------|------|------------|---------------------------------------------------------------------------------------|
| AN120503-01H | RF ANT 5G WLAN 2.4/5/6 PCB U.FL. | none       | U.FL (UMCC) / MHF1 | 1.92 | +5.0       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

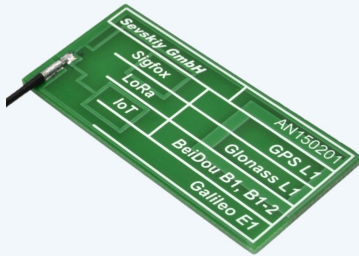


# Embedded PCB antenna for cellular, WLAN/Bluetooth, LoRa/Sigfox +, triple-band

791–924 MHz

1.559–1.61 GHz

2.41–2.485 GHz



Compact multi-band antenna for IoT terminals, GNSS trackers, routers and telemetry – data link and positioning on one board.

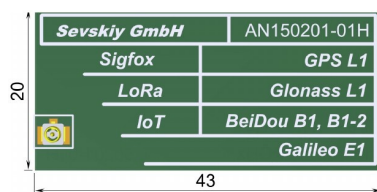
## Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GNSS L1 (GPS, Galileo, GLONASS, BeiDou), WLAN 2,4 · Bluetooth · Zigbee

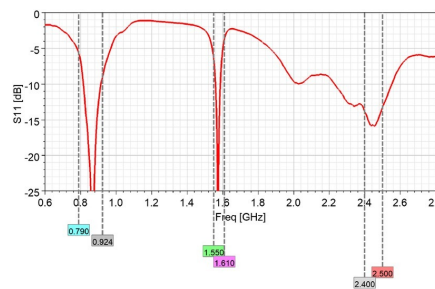
|            |                    |
|------------|--------------------|
| Bands      | 3                  |
| VSWR       | 2.32 ... 3.01      |
| Gain       | -1.0 ... +3.0 dBi  |
| Dimensions | 43.0 × 20.0 × 1 mm |
| Versions   | 3                  |

## Versions

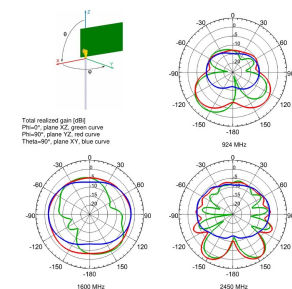
| PART NUMBER           | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    |
|-----------------------|----------------------------------|------------|--------------------|---------------|---------------|
| AN150201-01C-175-MHF1 | RF ANT ISM GNSS GSM WiFi 2.4 LTE | 175        | U.FL / MHF1, cable | 2.32 ... 3.01 | -1.0 ... +3.0 |
| AN150201-01H          | RF ANT 915MHZ/ 1575MHZ/2GHZ PCB  | none       | U.FL (UMCC) / MHF1 | 1.58 ... 3.01 | -1.4 ... +3.0 |
| AN150201-03H          | RF ANT 868/915MHZ GPS WLAN2.4    | none       | U.FL (UMCC) / MHF1 | 1.67 ... 3.01 | -1.5 ... +3.2 |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

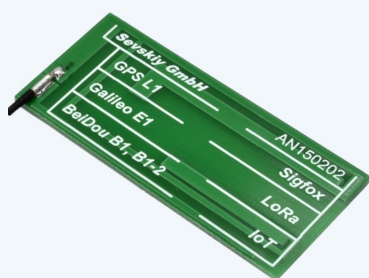




# Embedded PCB antenna for cellular, LoRa/Sigfox and GNSS, dual-band

850–924 MHz

1.559–1.61 GHz



Embedded antenna combining LP-WAN communication with GNSS reception – the standard pairing for tracking devices.

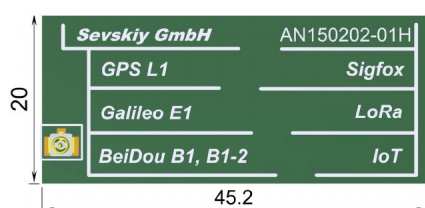
## Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, GNSS L1 (GPS, Galileo, GLONASS, BeiDou)

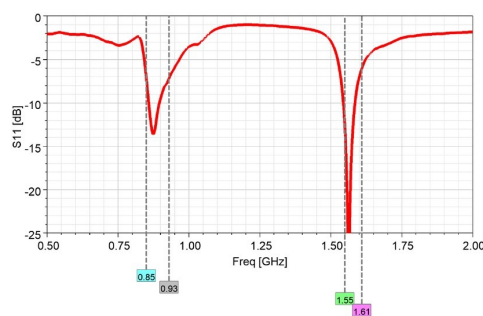
|            |                    |
|------------|--------------------|
| Bands      | 2                  |
| VSWR       | 2.61               |
| Gain       | +1.6 ... +2.1 dBi  |
| Dimensions | 45.2 × 20.0 × 1 mm |
| Versions   | 3                  |

## Versions

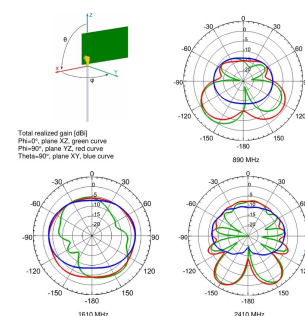
| PART NUMBER           | SHORT DESCRIPTION                  | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]       |
|-----------------------|------------------------------------|------------|-----------------------|------------------|------------------|
| AN150202-01C-175-MHF1 | RF ANT 868/915MHZ<br>GNSS PCB      | 175        | U.FL / MHF1,<br>cable | 2.61             | +1.6 ...<br>+2.1 |
| AN150202-01H          | RF ANT 868/915/5800MHZ<br>GPS U.FL | none       | U.FL (UMCC) /<br>MHF1 | 2.61 ...<br>3.01 | +1.5 ...<br>+2.3 |
| AN150202-03H          | RF ANT SRD860 ISM915<br>GNSS U.FL  | none       | U.FL (UMCC) /<br>MHF1 | 2.32 ...<br>2.61 | +1.5 ...<br>+2.0 |



Drawing (mm)



Input matching S11



Radiation pattern

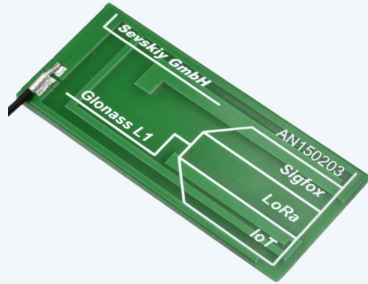
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.



# Embedded PCB antenna for cellular, LoRa/Sigfox and GNSS, dual-band

850–960 MHz

1.559–1.61 GHz



Embedded antenna for data communication and positioning with a single antenna, without additional board space.

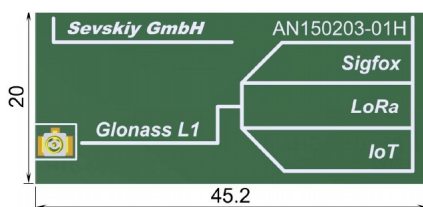
## Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), GSM/LTE 900, GNSS L1 (GPS, Galileo, GLONASS, BeiDou)

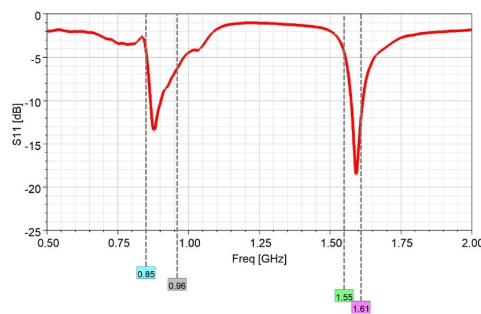
|            |                    |
|------------|--------------------|
| Bands      | 2                  |
| VSWR       | 2.61 ... 3.01      |
| Gain       | +1.8 ... +2.0 dBi  |
| Dimensions | 45.2 × 20.0 × 1 mm |
| Versions   | 3                  |

## Versions

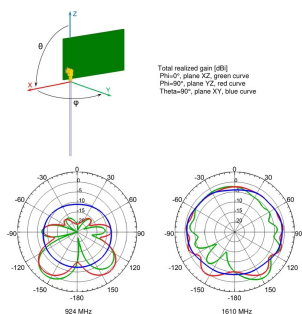
| PART NUMBER           | SHORT DESCRIPTION             | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    |
|-----------------------|-------------------------------|------------|--------------------|---------------|---------------|
| AN150203-01C-175-MHF1 | RF ANT ISM915 GNSS PCB CABLE  | 175        | U.FL / MHF1, cable | 2.61 ... 3.01 | +1.8 ... +2.0 |
| AN150203-01H          | RF ANT ISM915 GNSS PCB U.FL.  | none       | U.FL (UMCC) / MHF1 | 3.01          | +2.0 ... +2.1 |
| AN150203-03H          | RF ANT 868/915 GNSS PCB U.FL. | none       | U.FL (UMCC) / MHF1 | 2.61 ... 3.01 | +2.0 ... +2.1 |



Drawing (mm)



Input matching S11



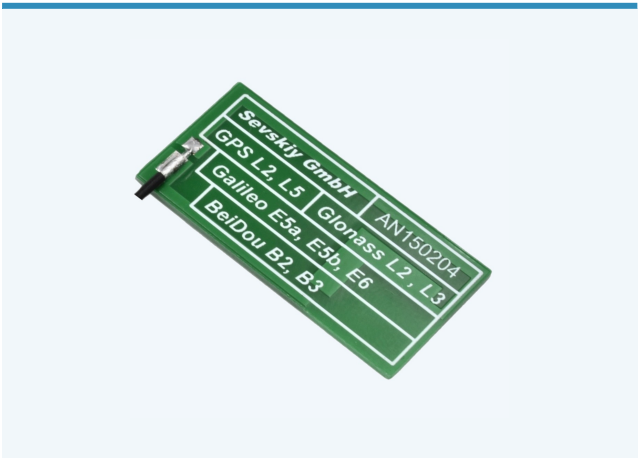
Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.



# Embedded PCB antenna for GNSS

1.164–1.3 GHz



Embedded antenna for the lower GNSS range – GPS L5, Galileo E5 and GLONASS L2. For dual-frequency receivers.

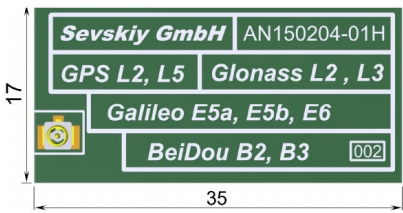
Wireless standards

GNSS L2/L5

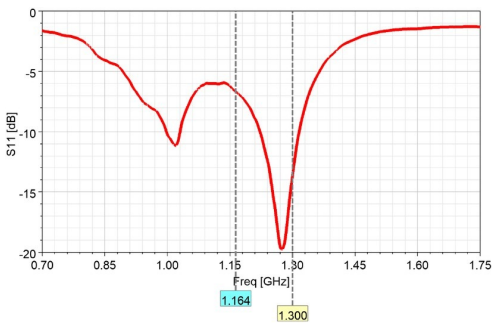
|            |                    |
|------------|--------------------|
| Bands      | 1                  |
| VSWR       | 2.32               |
| Gain       | +1.4 dBi           |
| Dimensions | 35.0 × 17.0 × 1 mm |
| Versions   | 2                  |

Versions

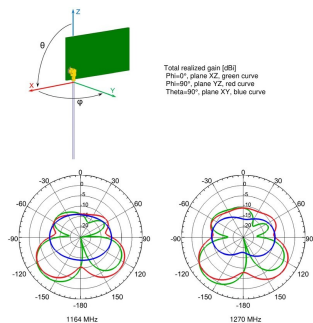
| PART NUMBER           | SHORT DESCRIPTION                     | CABLE [MM] | CONNECTOR             | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|-----------------------|---------------------------------------|------------|-----------------------|------|------------|---------------------------------------------------------------------------------------|
| AN150204-01C-175-MHF1 | RF ANT 1.2GHZ/<br>5.5GHZ PCB<br>CABLE | 175        | U.FL / MHF1,<br>cable | 2.32 | +1.4       |  |
| AN150204-01H          | RF ANT 1.2GHZ/<br>5.8GHZ PCB U.FL.    | none       | U.FL (UMCC) /<br>MHF1 | 2.32 | +1.5       |  |



Drawing (mm)



Input matching S11

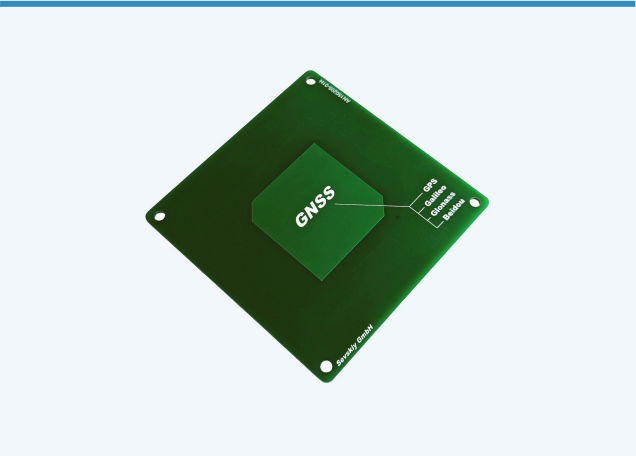


Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# Patch antenna for GNSS, directional, circular (RHCP)

1.559–1.61 GHz



Patch antenna for precise GNSS reception. Right-hand circular polarisation suppresses multipath – decisive for stable position data.

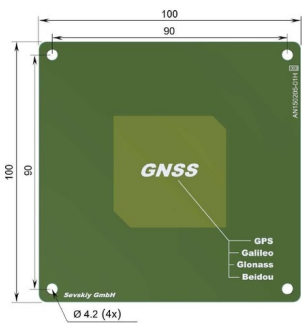
Wireless standards

GNSS L1 (GPS, Galileo, GLONASS, BeiDou)

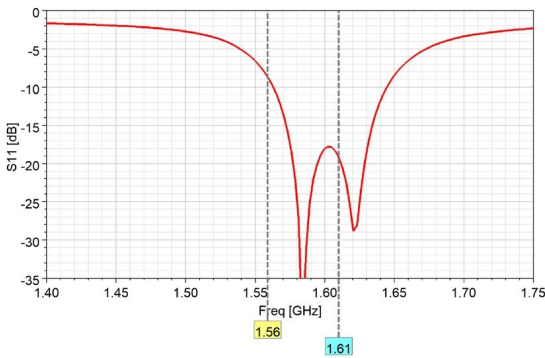
|            |                        |
|------------|------------------------|
| Bands      | 1                      |
| VSWR       | 2.32                   |
| Gain       | +1.4 dBi               |
| Dimensions | 100.0 × 100.0 × 1.6 mm |
| Versions   | 1                      |

Versions

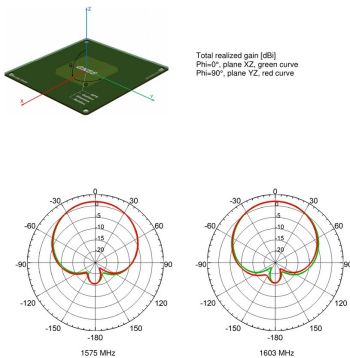
| PART NUMBER  | SHORT DESCRIPTION                 | CABLE [MM] | CONNECTOR             | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|-----------------------------------|------------|-----------------------|------|------------|---------------------------------------------------------------------------------------|
| AN150205-01H | RF PATCH ANT GNSS<br>1559-1610MHZ | none       | U.FL (UMCC) /<br>MHF1 | 2.32 | +1.4       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Embedded PCB antenna for GNSS

1.164–1.3 GHz



Embedded antenna for the lower GNSS range. Complements an L1 antenna to form a dual-frequency system and improves accuracy.

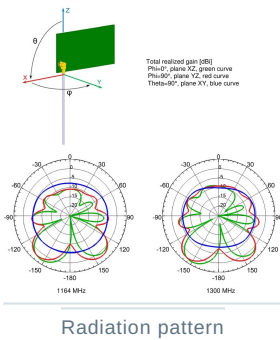
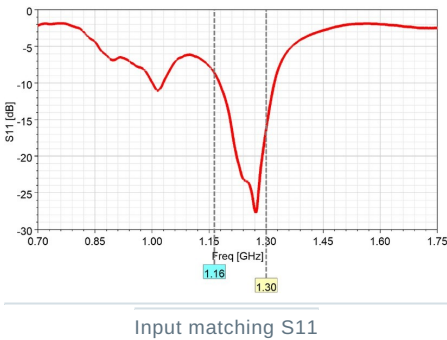
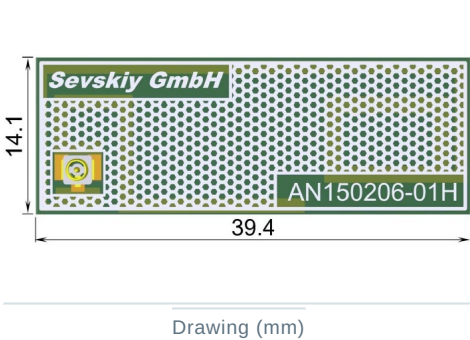
### Wireless standards

GNSS L2/L5

|            |                    |
|------------|--------------------|
| Bands      | 1                  |
| VSWR       | 1.92               |
| Gain       | +3.5 dBi           |
| Dimensions | 39.4 × 14.1 × 1 mm |
| Versions   | 1                  |

### Versions

| PART NUMBER  | SHORT DESCRIPTION            | CABLE [MM] | CONNECTOR          | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|------------------------------|------------|--------------------|------|------------|---------------------------------------------------------------------------------------|
| AN150206-01H | RF ANT 1.232GHZ PCB U.FL ADH | none       | U.FL (UMCC) / MHF1 | 1.92 | +3.5       |  |



**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Log-periodic antenna for cellular, WLAN/Bluetooth, LoRa/ Sigfox +, UWB, directional

0.75–9.0 GHz



Planar log-periodic antenna with uniformly directional radiation across the whole band – for the test bench and field use.

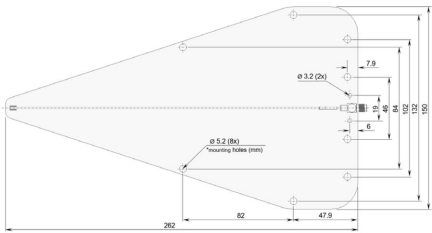
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS, UWB

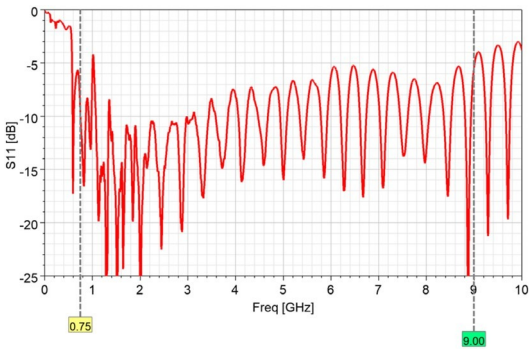
|            |                        |
|------------|------------------------|
| Bands      | Wideband               |
| VSWR       | 2.32                   |
| Gain       | +5.0 dBi               |
| Dimensions | 262.0 × 150.0 × 1.6 mm |
| Versions   | 1                      |

Versions

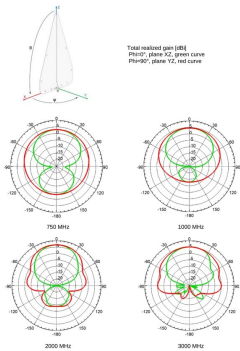
| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|----------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220201-03C | RF ANT 0.79-9GHZ<br>Directed SMA | none       | Cable     | 2.32 | +5.0       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Log-periodic antenna for cellular, WLAN/Bluetooth, LoRa/ Sigfox +, UWB, directional

0.75–9.0 GHz



Planar log-periodic antenna with uniformly directional radiation across the whole band – for the test bench and field use.

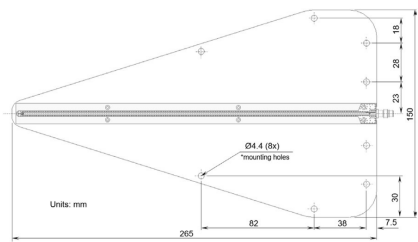
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS, UWB

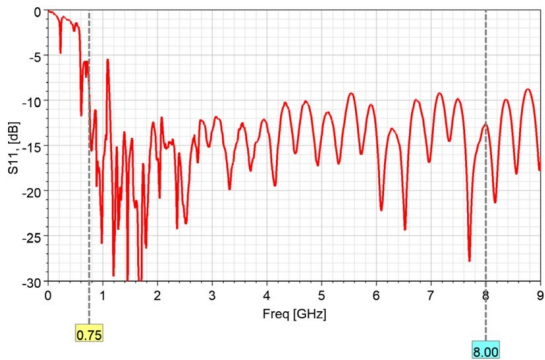
|            |                        |
|------------|------------------------|
| Bands      | Wideband               |
| VSWR       | 1.92                   |
| Gain       | +5.0 dBi               |
| Dimensions | 262.0 × 150.0 × 1.6 mm |
| Versions   | 1                      |

Versions

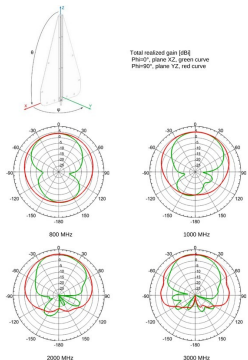
| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|----------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220201-04A | RF ANT 0.75-9GHZ<br>Directed SMA | none       | SMA jack  | 1.92 | +5.0       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Vivaldi antenna for cellular, WLAN/Bluetooth, GNSS +, UWB, directional

1.2–9.0 GHz



Planar ultra-wideband Vivaldi antenna for laboratory measurement, spectrum monitoring, remote sensing and control.

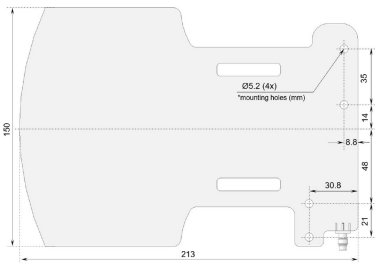
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, GNSS, UWB

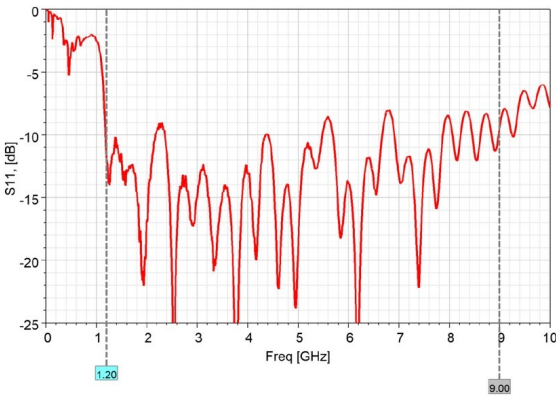
|            |                      |
|------------|----------------------|
| Bands      | Wideband             |
| VSWR       | 1.92                 |
| Gain       | +8.0 dBi             |
| Dimensions | 213.0 × 150.0 × 1 mm |
| Versions   | 1                    |

Versions

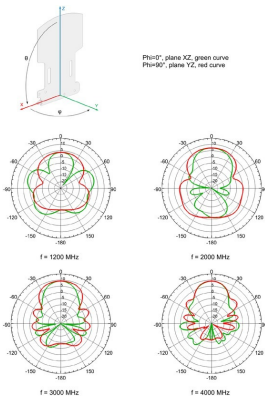
| PART NUMBER  | SHORT DESCRIPTION               | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|---------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220202-01A | RF ANT VIVALDI 1.2-9GHZ 4-10dBi | none       | SMA jack  | 1.92 | +8.0       |  |



Drawing (mm)



Input matching S11



Radiation pattern

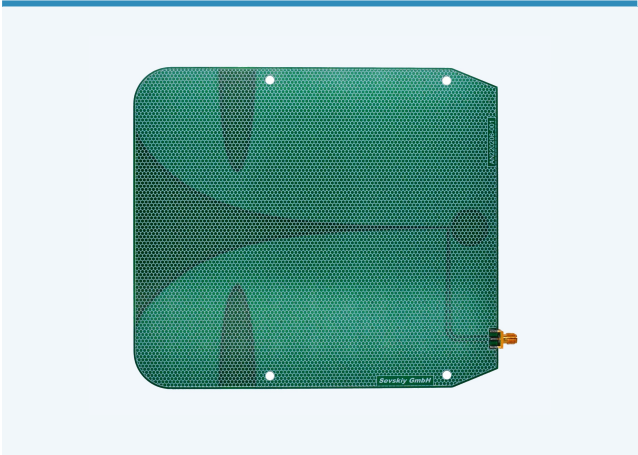
**Customisable:** Connector type and mounting; available with pre-assembled cable on request.





# Vivaldi antenna for cellular, WLAN/Bluetooth, LoRa/ Sigfox +, UWB, directional

0.7–9.0 GHz



Ultra-wideband Vivaldi antenna with stable matching and consistent radiation characteristics.

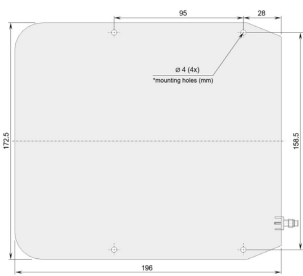
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS, UWB

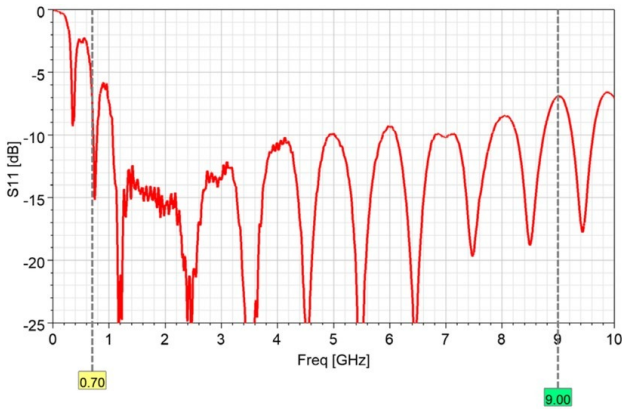
|            |                        |
|------------|------------------------|
| Bands      | Wideband               |
| VSWR       | 1.92                   |
| Gain       | +8.0 dBi               |
| Dimensions | 196.0 × 172.5 × 1.6 mm |
| Versions   | 1                      |

Versions

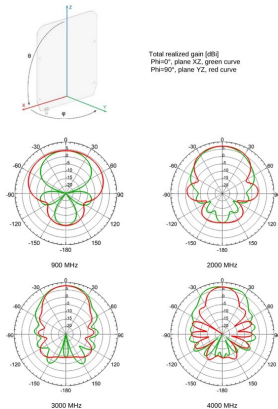
| PART NUMBER  | SHORT DESCRIPTION                   | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|-------------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220206-001 | RF ANT VIVALDI UWB<br>1.2-9GHZ 8dBi | none       | SMA jack  | 1.92 | +8.0       |  |



Drawing (mm)



Input matching S11

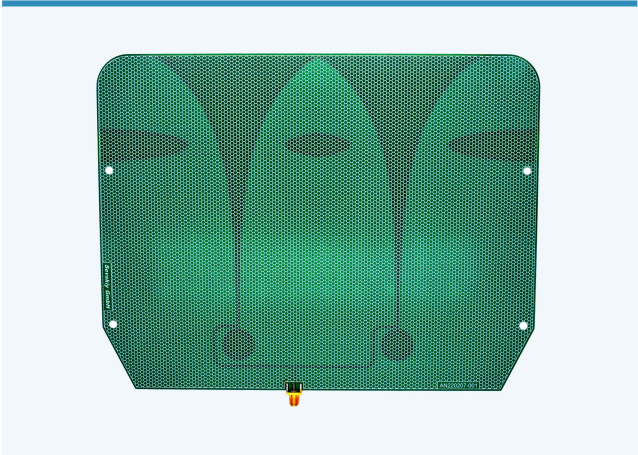


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Vivaldi antenna for cellular, WLAN/Bluetooth, LoRa/ Sigfox +, UWB, directional

0.7–9.0 GHz



Vivaldi array in the E-plane. The array configuration increases gain and directivity over the single element.

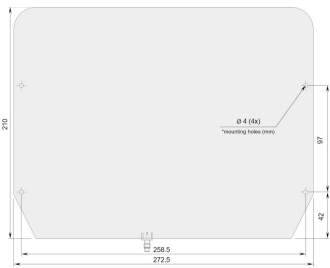
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS, UWB

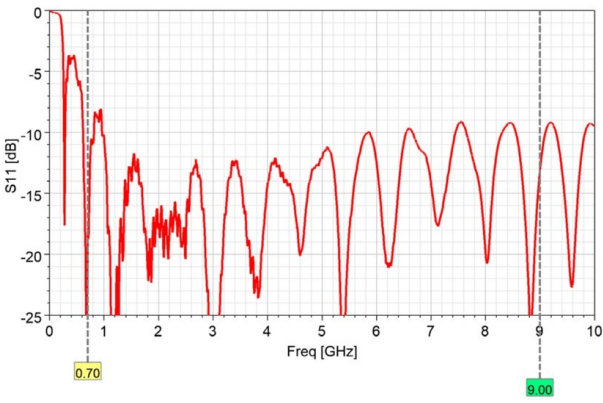
|            |                        |
|------------|------------------------|
| Bands      | Wideband               |
| VSWR       | 1.92                   |
| Gain       | +9.0 dBi               |
| Dimensions | 272.5 × 210.0 × 1.6 mm |
| Versions   | 1                      |

Versions

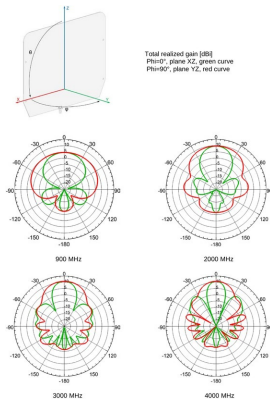
| PART NUMBER  | SHORT DESCRIPTION              | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|--------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220207-001 | RF ANT DIRECTED UWB<br>7-11dBi | none       | SMA jack  | 1.92 | +9.0       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Log-periodic antenna for cellular and LoRa/Sigfox, UWB, directional

0.37–1.0 GHz



Planar log-periodic antenna with uniform matching and radiation characteristics across the entire band.

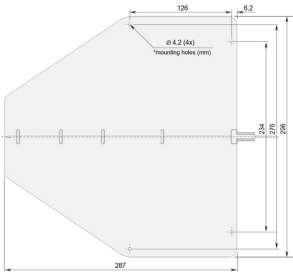
Wireless standards

ISM 433, SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900

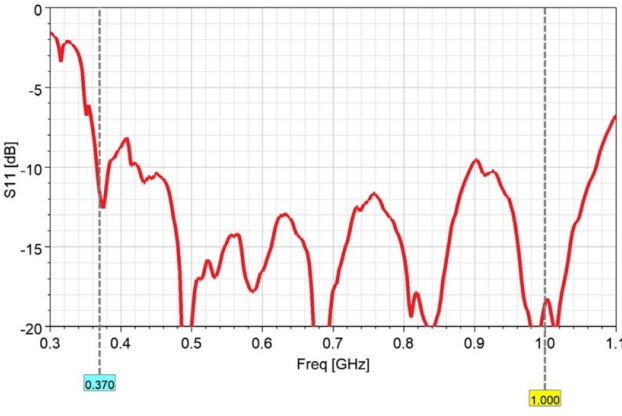
|            |                        |
|------------|------------------------|
| Bands      | Wideband               |
| VSWR       | 1.92                   |
| Gain       | +5.0 dBi               |
| Dimensions | 287.0 × 296.0 × 1.6 mm |
| Versions   | 1                      |

Versions

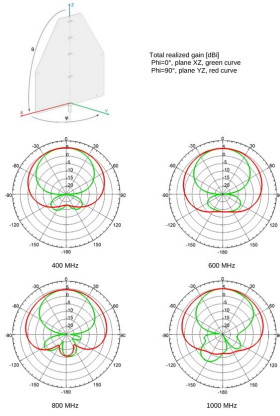
| PART NUMBER  | SHORT DESCRIPTION            | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220208-01C | RF ANT DIRECTED LOW BAND SMA | none       | Cable     | 1.92 | +5.0       |  |



Drawing (mm)



Input matching S11

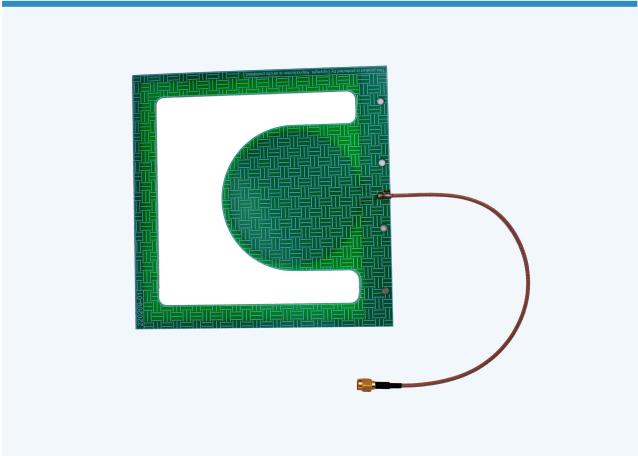


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Embedded PCB antenna for cellular and LoRa/Sigfox

400–900 MHz



Planar wideband antenna suitable both for installation inside the device and for external mounting in sub-GHz radio systems.

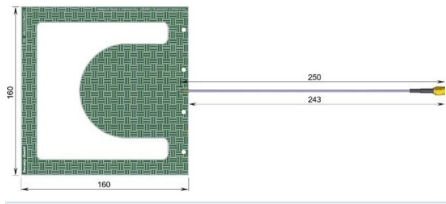
Wireless standards

ISM 433, SRD 868 (LoRa, Sigfox, mioty), LTE 800

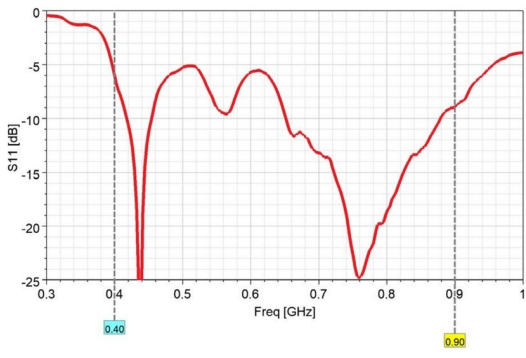
|            |                      |
|------------|----------------------|
| Bands      | 1                    |
| VSWR       | 2.61                 |
| Gain       | +3.0 dBi             |
| Dimensions | 160.0 × 160.0 × 1 mm |
| Versions   | 1                    |

Versions

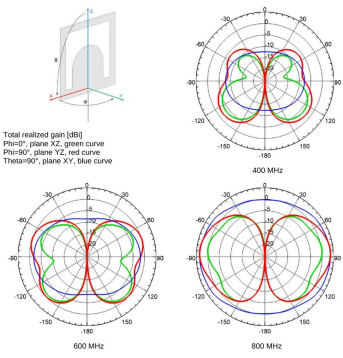
| PART NUMBER  | SHORT DESCRIPTION             | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|-------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220209-01C | RF ANT OMNI<br>400-900MHZ SMA | none       | Cable     | 2.61 | +3.0       |  |



Drawing (mm)



Input matching S11

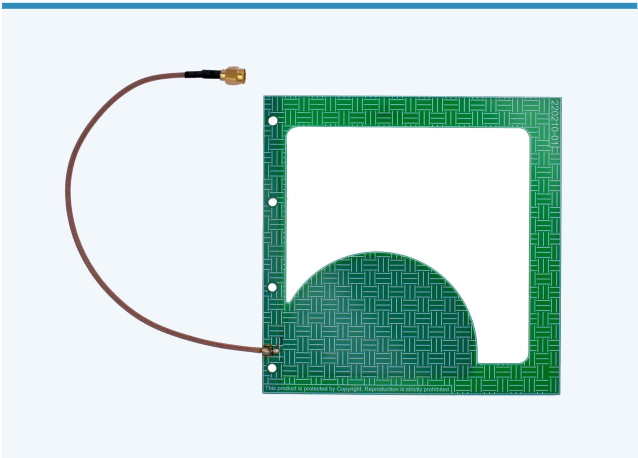


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Embedded PCB antenna for cellular and LoRa/Sigfox

400–900 MHz



Planar wideband antenna with SMA connector – for internal integration as well as external use.

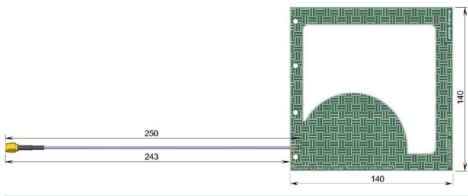
Wireless standards

ISM 433, SRD 868 (LoRa, Sigfox, mioty), LTE 800

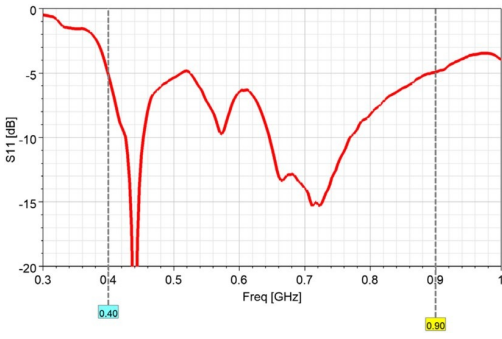
|            |                      |
|------------|----------------------|
| Bands      | 1                    |
| VSWR       | 2.61                 |
| Gain       | +0.5 dBi             |
| Dimensions | 140.0 × 140.0 × 1 mm |
| Versions   | 1                    |

Versions

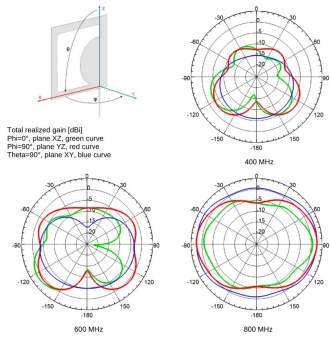
| PART NUMBER  | SHORT DESCRIPTION              | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|--------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220210-01C | RF ANT OMNIDIRECTIONAL PCB SMA | none       | Cable     | 2.61 | +0.5       |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.



# Spiral antenna for cellular and LoRa/Sigfox, directional, circular (RHCP)

0.8–1.0 GHz



Right-hand circularly polarised helical antenna with directional radiation – typical for UHF RFID reader stations.

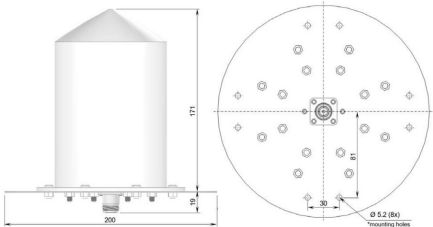
Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900

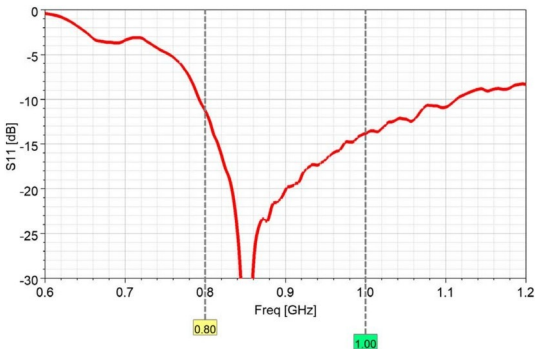
|            |                        |
|------------|------------------------|
| Bands      | 1                      |
| VSWR       | 1.50                   |
| Gain       | +9.0 dBi               |
| Dimensions | 200.0 × 200.0 × 181 mm |
| Versions   | 2                      |

Versions

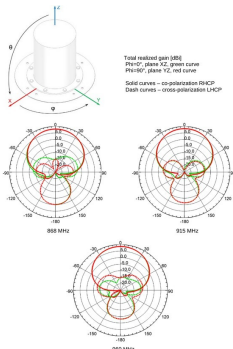
| PART NUMBER  | SHORT DESCRIPTION            | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220211-02N | DRONE JAMMER antenna 900MHZ  | none       | N jack    | 1.50 | +9.0       |  |
| AN220211-03N | DRONE JAMMING ANTENNA 900MHZ | none       | N jack    | 1.50 | +9.0       |  |



Drawing (mm)



Input matching S11

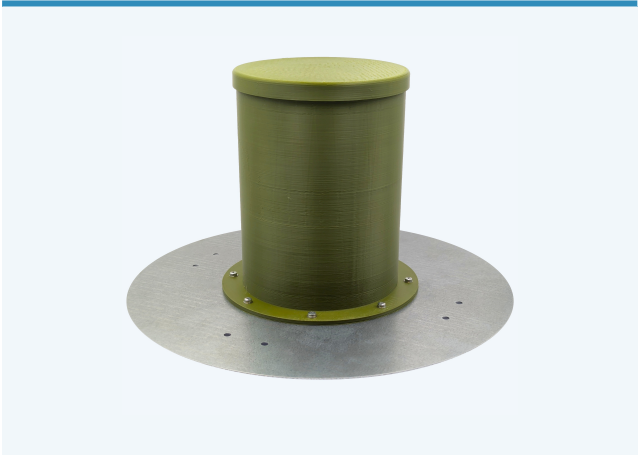


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Spiral antenna for cellular and LoRa/Sigfox, directional, circular (RHCP)

0.68–1.15 GHz



Wideband helical antenna with RHCP polarisation covering several RFID and telemetry bands with one part.

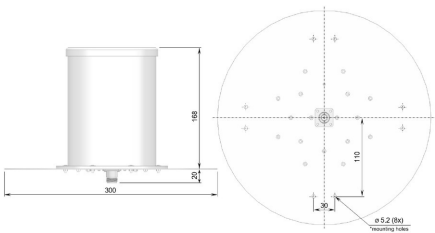
Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900

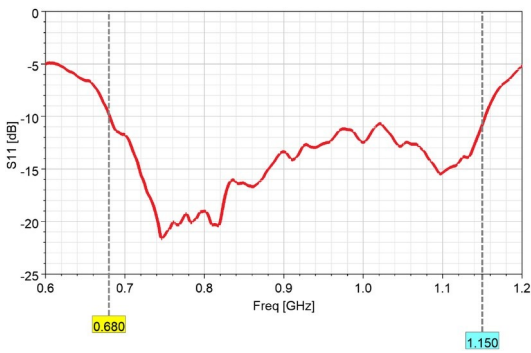
|            |                        |
|------------|------------------------|
| Bands      | 1                      |
| VSWR       | 1.92                   |
| Gain       | +10.0 dBi              |
| Dimensions | 300.0 × 300.0 × 188 mm |
| Versions   | 1                      |

Versions

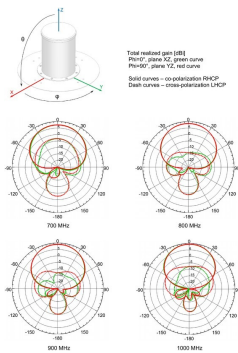
| PART NUMBER  | SHORT DESCRIPTION           | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|-----------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220212-02N | DRONE JAMMER ANTENNA 900MHZ | none       | N jack    | 1.92 | +10.0      |  |



Drawing (mm)



Input matching S11

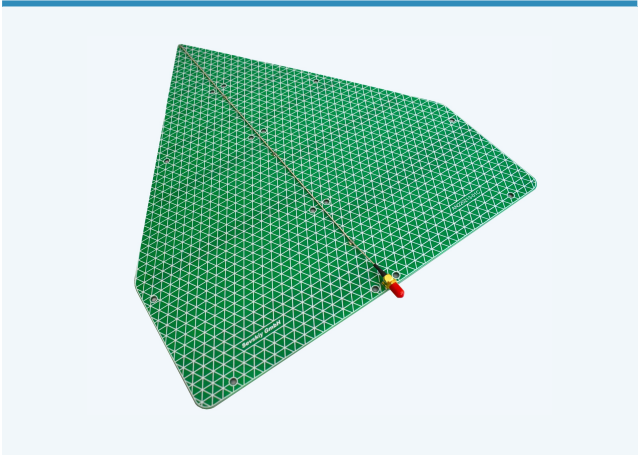


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Log-periodic antenna for cellular, WLAN/Bluetooth, LoRa/ Sigfox +, UWB, directional

0.37–6.0 GHz



Log-periodic antenna, directional and uniformly matched across the whole range – one antenna instead of a whole set.

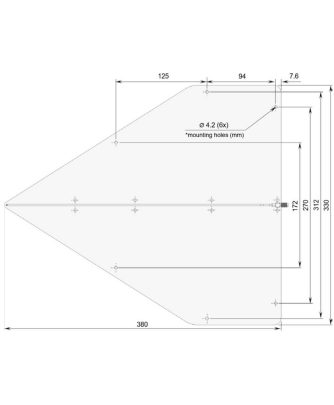
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS

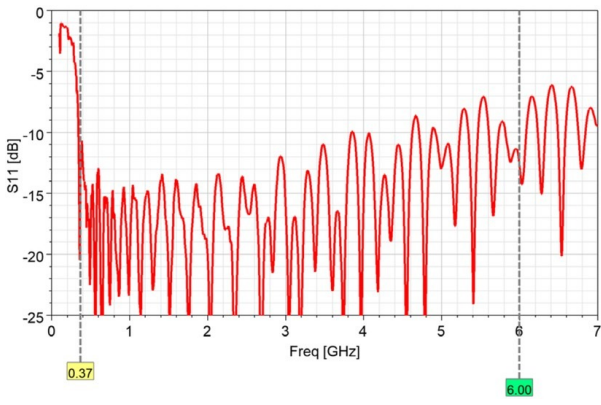
|            |                        |
|------------|------------------------|
| Bands      | Wideband               |
| VSWR       | 1.92                   |
| Gain       | +5.0 dBi               |
| Dimensions | 380.0 × 330.0 × 1.6 mm |
| Versions   | 1                      |

Versions

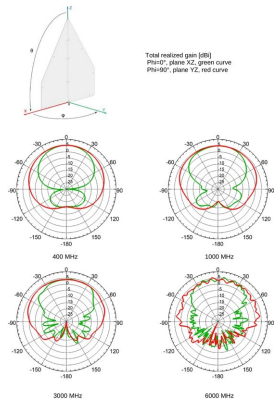
| PART NUMBER  | SHORT DESCRIPTION             | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|-------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220213-01C | RF ANT 0.37-6GHZ DIRECTED SMA | none       | Cable     | 1.92 | +5.0       |  |



Drawing (mm)



Input matching S11

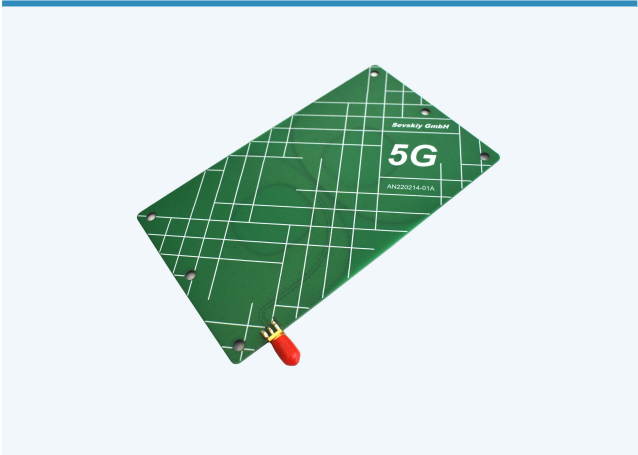


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Embedded PCB antenna for cellular, WLAN/Bluetooth, LoRa/Sigfox +, UWB

0.6–7.2 GHz



Planar ultra-wideband dipole, suitable for integration into compact devices as well as for external mounting.

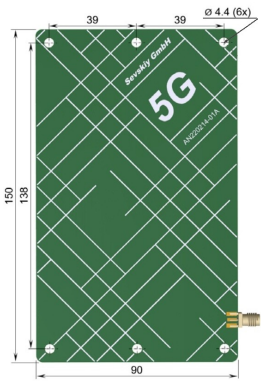
### Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS

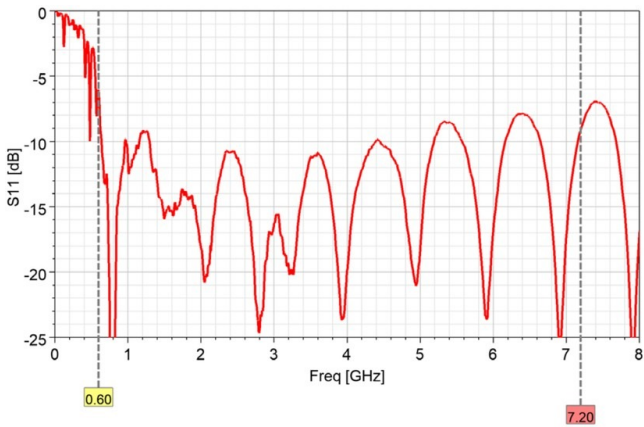
|            |                     |
|------------|---------------------|
| Bands      | Wideband            |
| VSWR       | 1.92                |
| Gain       | +4.0 dBi            |
| Dimensions | 150.0 × 90.0 × 1 mm |
| Versions   | 1                   |

### Versions

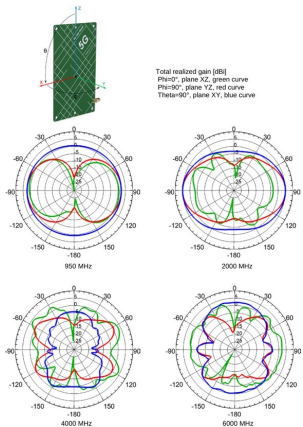
| PART NUMBER  | SHORT DESCRIPTION               | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|---------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN220214-01A | RF ANT Omni 0.6-8GHz 5G/LTE SMA | none       | SMA jack  | 1.92 | +4.0       |  |



Drawing (mm)



Input matching S11



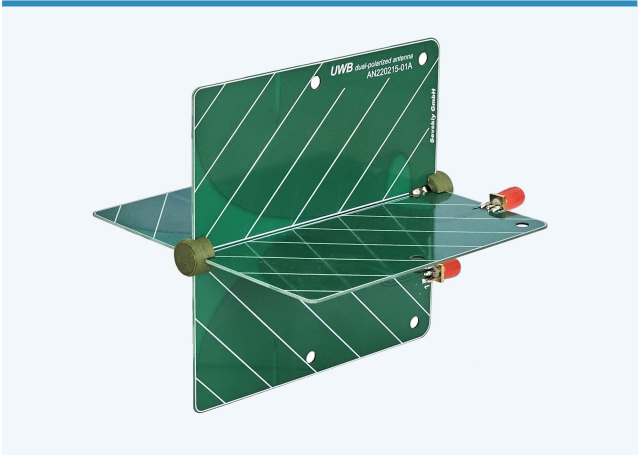
Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Embedded PCB antenna for cellular, WLAN/Bluetooth, LoRa/Sigfox +, UWB, cross-polarised

0.7–1.5 GHz

1.5–7.5 GHz



Compact dual-polarised Vivaldi antenna – polarisation diversity in a small footprint, with two separate SMA connectors.

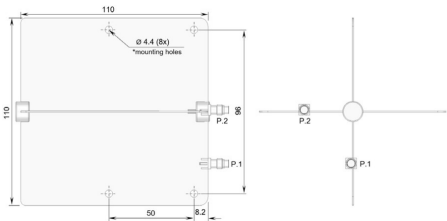
Wireless standards

Cellular 2G–5G, WLAN 2.4 / 5 / 6 and Bluetooth, ISM and SRD bands (LoRa, Sigfox), GNSS

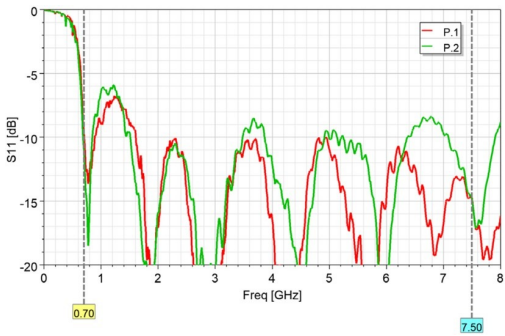
|            |                        |
|------------|------------------------|
| Bands      | Wideband               |
| VSWR       | 1.92 ... 2.61          |
| Gain       | +4.0 ... +8.0 dBi      |
| Dimensions | 110.0 × 110.0 × 110 mm |
| Versions   | 1                      |

Versions

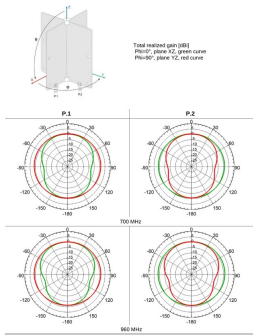
| PART NUMBER  | SHORT DESCRIPTION               | CABLE [MM] | CONNECTOR | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|---------------------------------|------------|-----------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN220215-01A | RF ANT UWB DUAL POLARIZED 2xSMA | none       | SMA jack  | 1.92 ... 2.61 | +4.0 ... +8.0 |  |



Drawing (mm)



Input matching S11



Radiation pattern

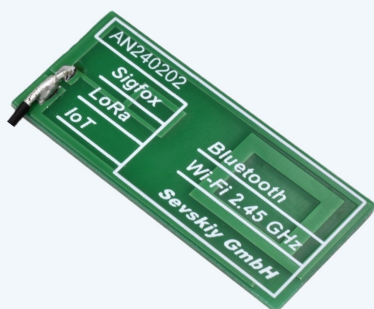
**Customisable:** Connector type and mounting; available with pre-assembled cable on request.



# Embedded PCB antenna for cellular, WLAN/Bluetooth and LoRa/Sigfox, dual-band

790–924 MHz

2.41–2.485 GHz



Wideband embedded antenna covering ISM and SRD applications as well as Bluetooth and WLAN.

## Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, WLAN 2,4 · Bluetooth · Zigbee

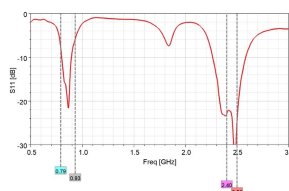
|            |                    |
|------------|--------------------|
| Bands      | 2                  |
| VSWR       | 1.22 ... 2.61      |
| Gain       | +2.0 ... +5.0 dBi  |
| Dimensions | 38.0 × 17.0 × 1 mm |
| Versions   | 4                  |

## Versions

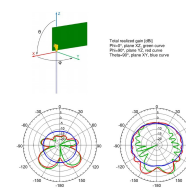
| PART NUMBER           | SHORT DESCRIPTION                 | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    |
|-----------------------|-----------------------------------|------------|--------------------|---------------|---------------|
| AN240202-01C-175-MHF1 | RF ANT ISM CBRS 5G/ LTE PCB CABLE | 175        | U.FL / MHF1, cable | 1.22 ... 2.61 | +2.0 ... +5.0 |
| AN240202-01H          | RF ANT Sigfox LoRa 5G/ LTE U.FL.  | none       | U.FL (UMCC) / MHF1 | 1.22 ... 2.61 | +2.0 ... +5.5 |
| AN240202-03H          | RF IOT ANT LoRa ISM915/2400 PCB   | none       | U.FL (UMCC) / MHF1 | 1.78 ... 3.57 | +2.1 ... +8.0 |
| AN240202-04H          | RF ANT Sigfox ISM915/2400 U.FL.   | none       | U.FL (UMCC) / MHF1 | 1.92 ... 2.61 | +2.0 ... +9.0 |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

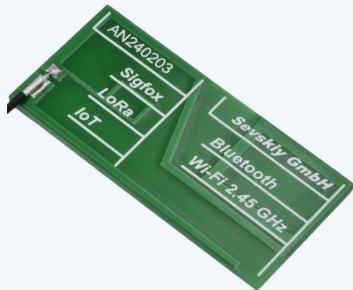




# Embedded PCB antenna for cellular, WLAN/Bluetooth and LoRa/Sigfox, dual-band

750–960 MHz

2.41–2.485 GHz



Wideband antenna for mobile devices, IoT platforms, industrial communication units and telemetry.

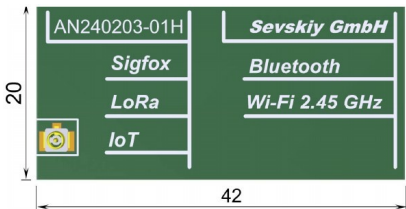
### Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900, WLAN 2,4 · Bluetooth · Zigbee

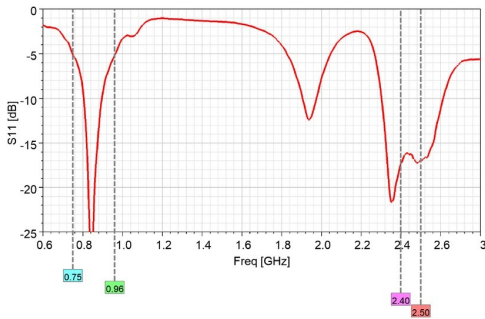
|            |                    |
|------------|--------------------|
| Bands      | 2                  |
| VSWR       | 1.43 ... 3.01      |
| Gain       | +1.7 ... +5.0 dBi  |
| Dimensions | 42.0 × 20.0 × 1 mm |
| Versions   | 3                  |

### Versions

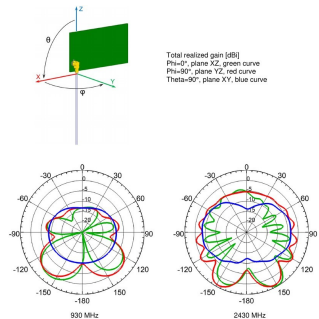
| PART NUMBER           | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    |
|-----------------------|----------------------------------|------------|--------------------|---------------|---------------|
| AN240203-01C-175-MHF1 | RF ANT 5G/LTE/ WiFi 2.4 PCB CABL | 175        | U.FL / MHF1, cable | 1.43 ... 3.01 | +1.7 ... +5.0 |
| AN240203-01H          | RF ANT 0.915/2.45GHZ PCB U.FL.   | none       | U.FL (UMCC) / MHF1 | 1.43 ... 2.61 | +1.5 ... +5.0 |
| AN240203-03H          | RF ANT 868/915MHZ WLAN2.4 PCB    | none       | U.FL (UMCC) / MHF1 | 1.92 ... 2.32 | +1.0 ... +4.8 |



Drawing (mm)



Input matching S11



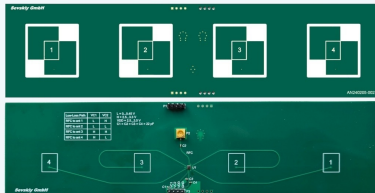
Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.



# Patch array, 4 elements for WLAN/Bluetooth, directional, circular (RHCP)

2.4–2.5 GHz



Planar 4×1 patch array for direction finding to Bluetooth LE AoA – a kit for operation with an external switching matrix.

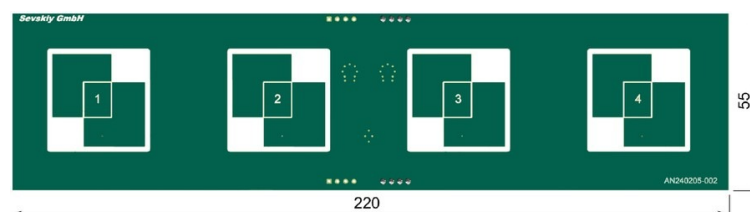
## Wireless standards

WLAN 2,4 · Bluetooth · Zigbee

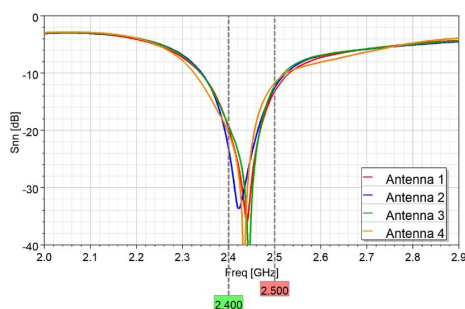
|            |                       |
|------------|-----------------------|
| Bands      | 1                     |
| VSWR       | 1.67                  |
| Gain       | +1.5 dBi              |
| Dimensions | 220.0 × 55.0 × 1.6 mm |
| Versions   | 1                     |

## Versions

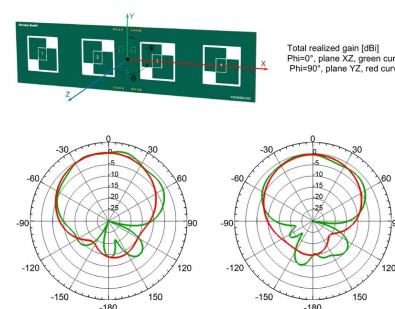
| PART NUMBER  | SHORT DESCRIPTION            | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] |
|--------------|------------------------------|------------|-----------|------|------------|
| AN240205-002 | RF ANT 4x1 ARRAY 2.45GHz AoA | none       | SMA jack  | 1.67 | +1.5       |



Drawing (mm)



Input matching S11

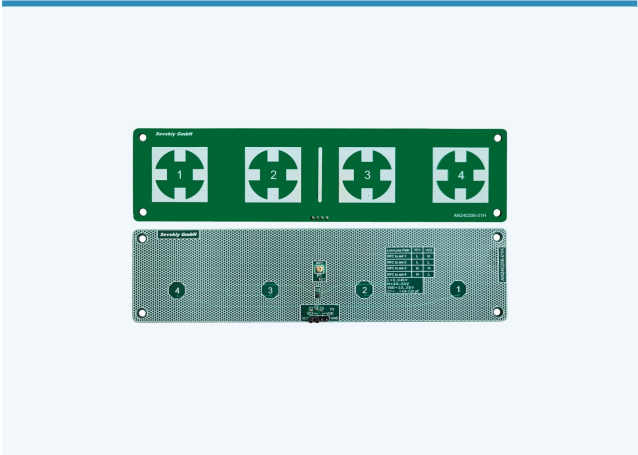


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Patch array, 4 elements for WLAN/Bluetooth, directional, circular (RHCP)

2.4–2.5 GHz



Planar 4×1 patch array with integrated RF switch for BLE direction finding. One transceiver port serves all four elements in sequence.

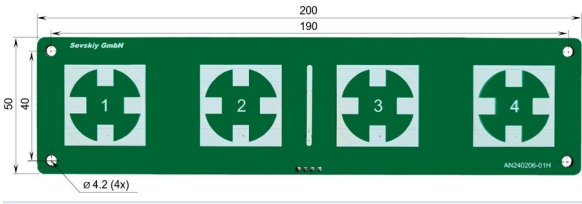
Wireless standards

WLAN 2,4 · Bluetooth · Zigbee

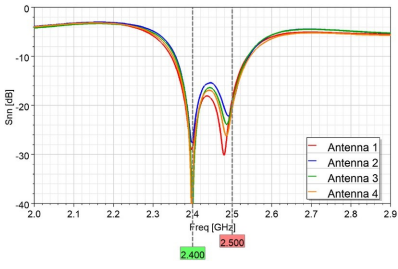
|            |                     |
|------------|---------------------|
| Bands      | 1                   |
| VSWR       | 1.43                |
| Gain       | +2.2 dBi            |
| Dimensions | 200.0 × 50.0 × 2 mm |
| Versions   | 1                   |

Versions

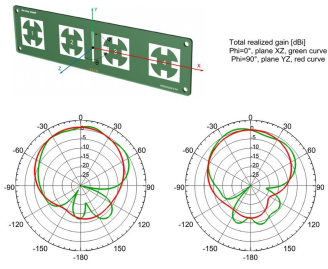
| PART NUMBER  | SHORT DESCRIPTION                  | CABLE [MM] | CONNECTOR             | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|------------------------------------|------------|-----------------------|------|------------|---------------------------------------------------------------------------------------|
| AN240206-01H | PATCH ARRAY<br>2400MHZ with Switch | none       | U.FL (UMCC) /<br>MHF1 | 1.43 | +2.2       |  |



Drawing (mm)



Input matching S11

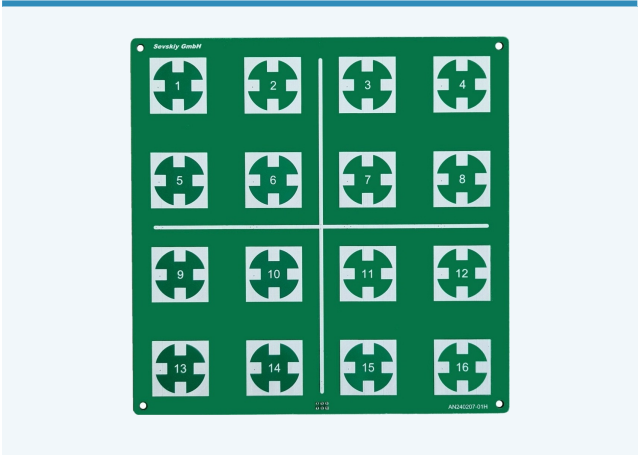


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Patch array, 16 elements for WLAN/Bluetooth, directional, circular (RHCP)

2.4–2.5 GHz



Planar 4×4 patch array for two-dimensional direction finding: determines azimuth and elevation – the basis for indoor positioning.

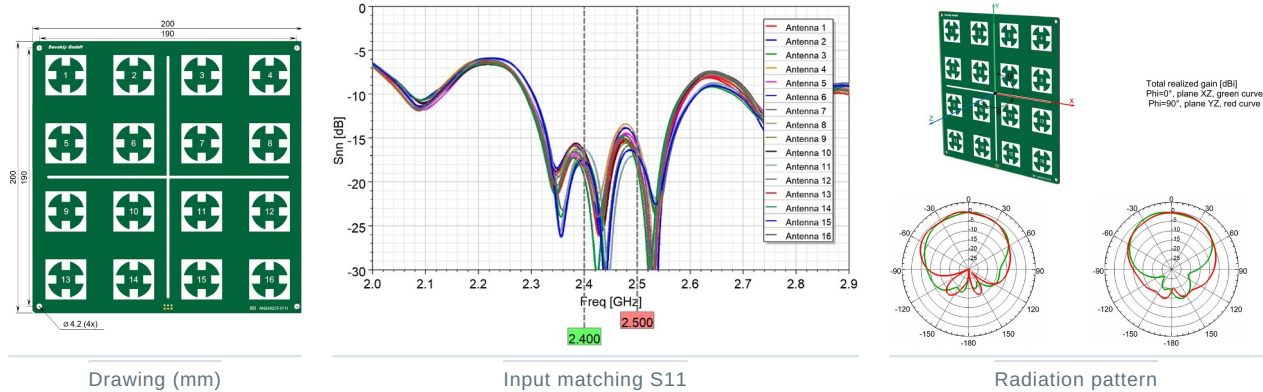
Wireless standards

WLAN 2,4 · Bluetooth · Zigbee

|            |                      |
|------------|----------------------|
| Bands      | 1                    |
| VSWR       | 1.43                 |
| Gain       | +0.7 dBi             |
| Dimensions | 200.0 × 200.0 × 2 mm |
| Versions   | 1                    |

Versions

| PART NUMBER  | SHORT DESCRIPTION              | CABLE [MM] | CONNECTOR          | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|--------------------------------|------------|--------------------|------|------------|---------------------------------------------------------------------------------------|
| AN240207-01H | 4x4 PATCH ARRAY RF ANT 2.45GHZ | none       | U.FL (UMCC) / MHF1 | 1.43 | +0.7       |  |



**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Patch array, 4 elements for WLAN/Bluetooth, directional, circular (RHCP)

2.4–2.5 GHz



Circularly polarised patch array with high gain and stable RHCP – for reader stations and point-to-point links.

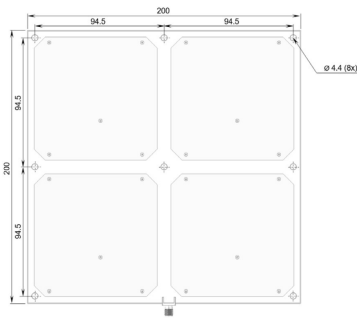
Wireless standards

WLAN 2,4 · Bluetooth · Zigbee

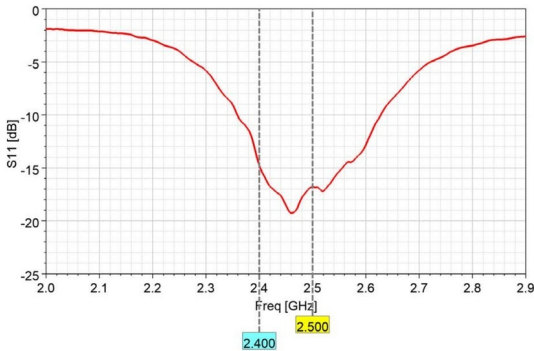
|            |                      |
|------------|----------------------|
| Bands      | 1                    |
| VSWR       | 1.43                 |
| Gain       | +14.5 dBi            |
| Dimensions | 200.0 × 200.0 × 5 mm |
| Versions   | 1                    |

Versions

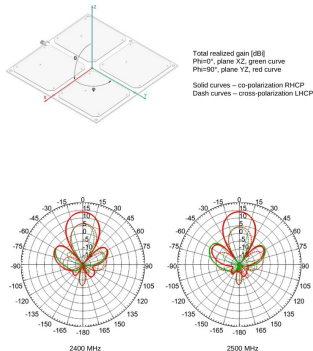
| PART NUMBER  | SHORT DESCRIPTION                | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|----------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN240208-01A | RF ANT 2x2 ARRAY<br>2.45GHz RHCP | none       | SMA jack  | 1.43 | +14.5      |  |



Drawing (mm)



Input matching S11

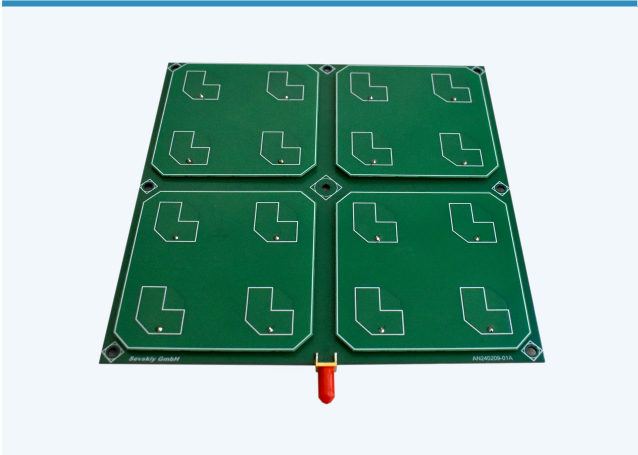


Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.

# Patch array, 16 elements for WLAN/Bluetooth, directional, circular (RHCP)

4.9–6.0 GHz



Circularly polarised patch array with high gain, combining directivity with stable RHCP polarisation.

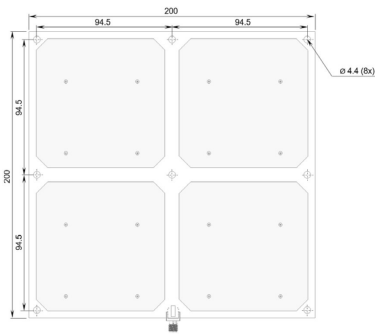
Wireless standards

WLAN 5, ISM 5,8

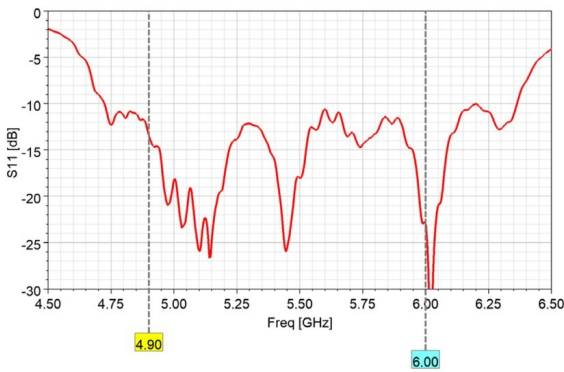
|            |                      |
|------------|----------------------|
| Bands      | 1                    |
| VSWR       | 1.92                 |
| Gain       | +20.0 dBi            |
| Dimensions | 200.0 × 200.0 × 5 mm |
| Versions   | 1                    |

Versions

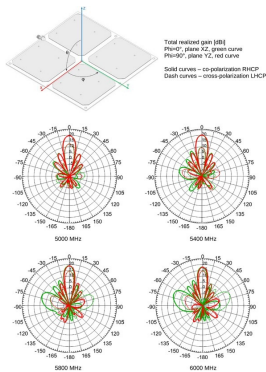
| PART NUMBER  | SHORT DESCRIPTION                 | CABLE [MM] | CONNECTOR | VSWR | GAIN [DBI] | DATASHEET                                                                             |
|--------------|-----------------------------------|------------|-----------|------|------------|---------------------------------------------------------------------------------------|
| AN240209-01A | RF ANT 4.9-6GHz RHCP<br>20dBi SMA | none       | SMA jack  | 1.92 | +20.0      |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Connector type and mounting; available with pre-assembled cable on request.



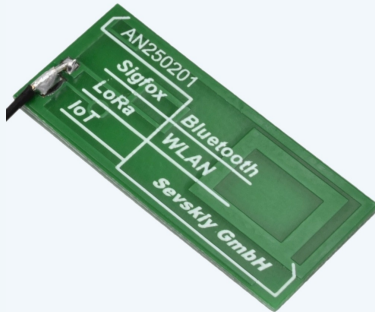


# Cellular, WLAN/Bluetooth and LoRa/Sigfox, triple-band

824–924 MHz

2.4–2.5 GHz

4.4–6.0 GHz



Compact wideband antenna, omnidirectional and linearly polarised – for devices needing sub-GHz, Bluetooth and WLAN at once.

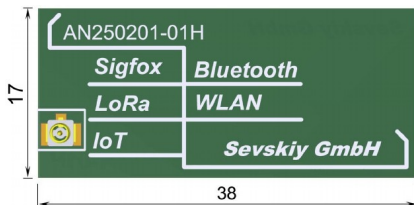
## Wireless standards

SRD 868 (LoRa, Sigfox, mioty), ISM 915 (LoRa), LTE 800, GSM/LTE 900, WLAN 2,4 · Bluetooth · Zigbee, WLAN 5, ISM 5,8

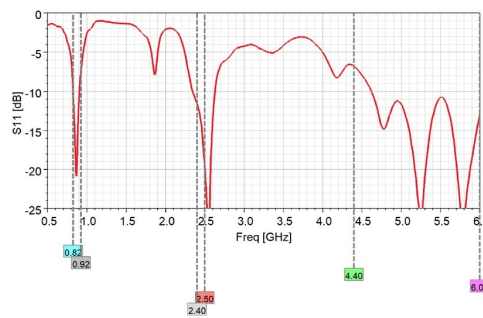
|            |                    |
|------------|--------------------|
| Bands      | 3                  |
| VSWR       | 1.22 ... 2.32      |
| Gain       | +0.7 ... +4.4 dBi  |
| Dimensions | 38.0 × 17.0 × 1 mm |
| Versions   | 3                  |

## Versions

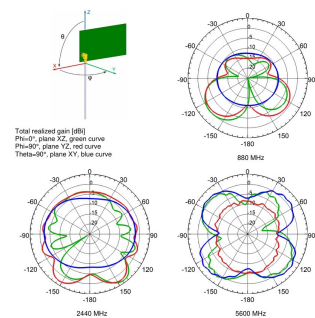
| PART NUMBER           | SHORT DESCRIPTION                  | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]       |
|-----------------------|------------------------------------|------------|-----------------------|------------------|------------------|
| AN250201-01C-175-MHF1 | RF ANT ISM WiFi<br>2.4/5/6E 5G PCB | 175        | U.FL / MHF1,<br>cable | 1.22 ...<br>2.32 | +0.7 ...<br>+4.4 |
| AN250201-01H          | RF ANT 915MHZ/<br>2.45GHZ/5GHz PCB | none       | U.FL (UMCC) /<br>MHF1 | 1.67 ...<br>2.61 | +0.5 ...<br>+4.2 |
| AN250201-03H          | RF ANT ISM915<br>WLAN2.4/5 U.FL.   | none       | U.FL (UMCC) /<br>MHF1 | 1.92 ...<br>3.01 | +0.7 ...<br>+4.3 |



Drawing (mm)



Input matching S11



Radiation pattern

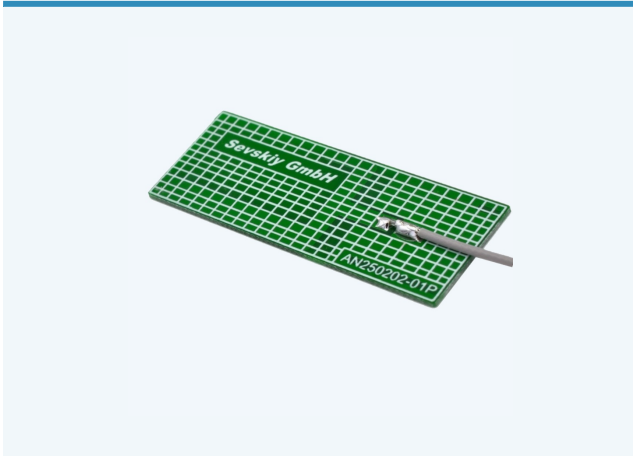
**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.



# WLAN/Bluetooth and UWB, dual-band

2.4–2.5 GHz

4.4–7.125 GHz



Dual-band embedded antenna for the ISM band and the extended 5/6 GHz spectrum. Designed for Wi-Fi 6E and Wi-Fi 7.

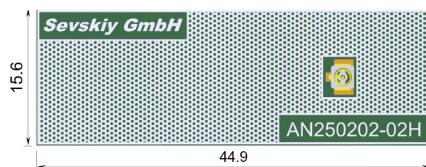
## Wireless standards

WLAN 2,4 · Bluetooth · Zigbee, WLAN 5, ISM 5,8, WLAN 6E / 7, UWB

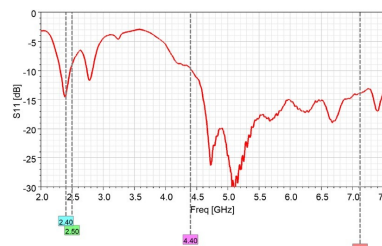
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.67 ... 2.32        |
| Gain       | +1.8 ... +4.2 dBi    |
| Dimensions | 45.8 × 17.4 × 0.8 mm |
| Versions   | 4                    |

## Versions

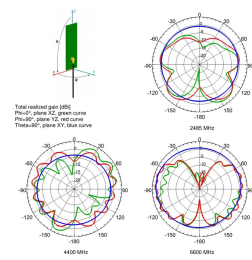
| PART NUMBER           | SHORT DESCRIPTION                 | CABLE [MM] | CONNECTOR          | VSWR          | GAIN [DBI]    |
|-----------------------|-----------------------------------|------------|--------------------|---------------|---------------|
| AN250202-01P-175-MHF1 | RF ANT 2.45GHZ/5.5GHZ/ 6.5GHZ PCB | 175        | U.FL / MHF1, cable | 1.67 ... 2.32 | +1.8 ... +4.2 |
| AN250202-02H          | RF ANT WLAN2.4/5/6GHZ PCB U.FL.   | none       | U.FL (UMCC) / MHF1 | 1.43 ... 2.10 | +2.4 ... +5.2 |
| AN250202-03C-175-MHF1 | RF ANT ISM WiFi 2.4/5/6E 5G PCB   | 175        | U.FL / MHF1, cable | 1.29 ... 1.78 | +2.0 ... +4.6 |
| AN250202-04C-175-MHF1 | RF ANT ISM WiFi 2.4/5/6E 5G PCB   | 175        | U.FL / MHF1, cable | 1.29 ... 1.92 | +2.8 ... +5.4 |



Drawing (mm)



Input matching S11



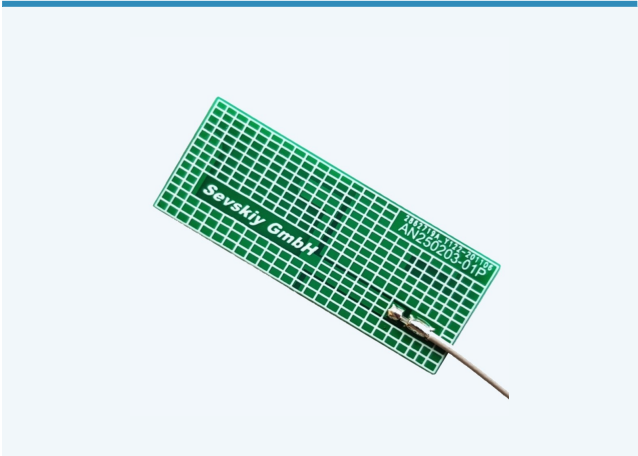
Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# WLAN/Bluetooth and UWB, dual-band

2.4–2.5 GHz

4.4–7.125 GHz



Dual-band internal antenna for compact WLAN equipment of the latest generation.

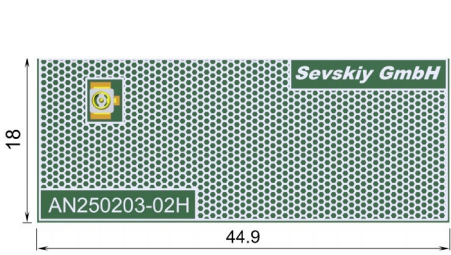
### Wireless standards

WLAN 2,4 · Bluetooth · Zigbee, WLAN 5, ISM 5,8, WLAN 6E / 7, UWB

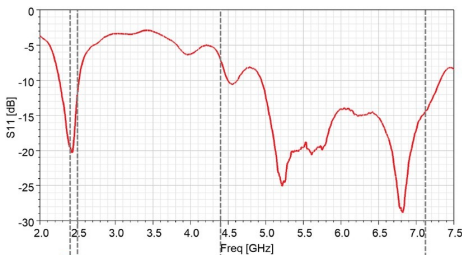
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.78 ... 2.32        |
| Gain       | +1.5 ... +5.0 dBi    |
| Dimensions | 44.9 × 18.0 × 0.8 mm |
| Versions   | 2                    |

### Versions

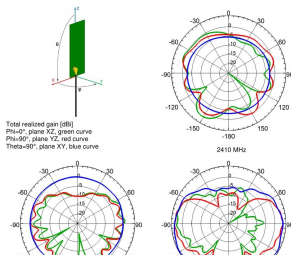
| PART NUMBER           | SHORT DESCRIPTION                     | CABLE [MM] | CONNECTOR             | VSWR             | GAIN [DBI]          | DATASHEET                                                                             |
|-----------------------|---------------------------------------|------------|-----------------------|------------------|---------------------|---------------------------------------------------------------------------------------|
| AN250203-01P-175-MHF1 | RF ANT<br>ISM2400/5800<br>WLAN2.4/5/6 | 175        | U.FL / MHF1,<br>cable | 1.78 ...<br>2.32 | +1.5<br>...<br>+5.0 |  |
| AN250203-02H          | RF ANT<br>ISM2400/5800<br>WLAN2.4/5/6 | none       | U.FL (UMCC) /<br>MHF1 | 1.67 ...<br>1.92 | +2.3<br>...<br>+6.0 |  |



Drawing (mm)



Input matching S11



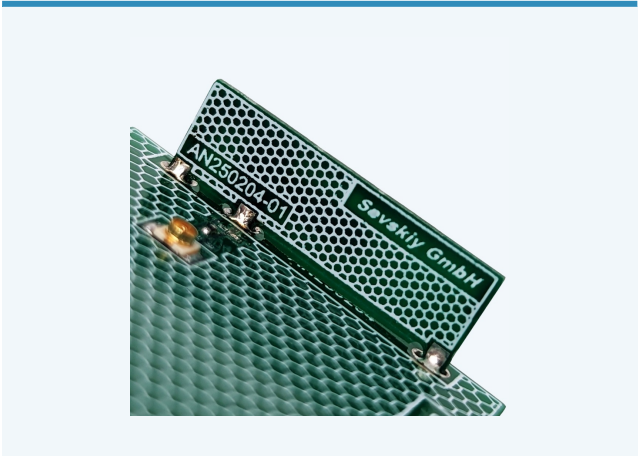
Radiation pattern

**Customisable:** Cable length – 175 mm as standard, other lengths on request – as well as connector type and mounting.

# WLAN/Bluetooth, dual-band

2.4–2.5 GHz

5.15–5.85 GHz



Compact dual-band antenna for routers, access points and connected devices with WLAN and Bluetooth. Solder pad, no cable.

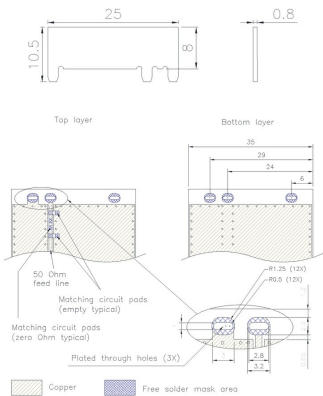
### Wireless standards

WLAN 2,4 · Bluetooth · Zigbee, WLAN 5, ISM 5,8

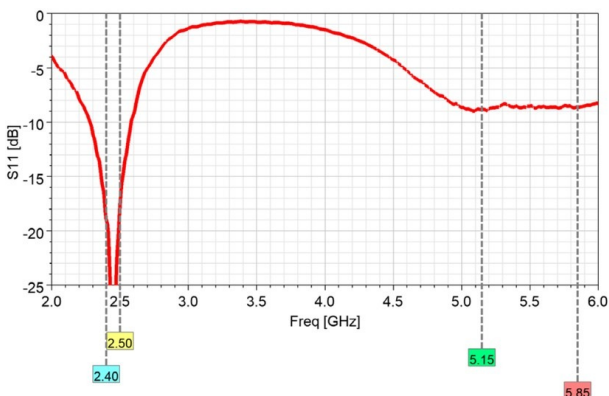
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.43 ... 2.32        |
| Gain       | +2.6 ... +3.5 dBi    |
| Dimensions | 25.0 × 10.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

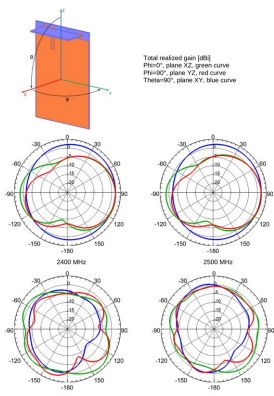
| PART NUMBER  | SHORT DESCRIPTION              | CABLE [MM] | CONNECTOR  | VSWR          | GAIN [DBI]    | DATASHEET                                                                             |
|--------------|--------------------------------|------------|------------|---------------|---------------|---------------------------------------------------------------------------------------|
| AN250204-01S | RF ANT WLAN2.4/5 BT PCB SOLDER | none       | Solder pad | 1.43 ... 2.32 | +2.6 ... +3.5 |  |



Drawing (mm)



Input matching S11



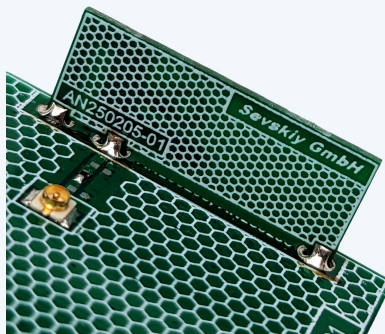
Radiation pattern

**Customisable:** Dimensions and tuning in the installed state; available with connector and pre-assembled cable on request.

# WLAN/Bluetooth and UWB, dual-band

2.4–2.5 GHz

5.15–7.125 GHz



Embedded antenna for ISM, Bluetooth and WLAN up to Wi-Fi 6E – one part for all three bands.

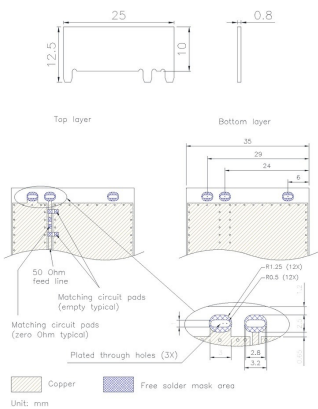
### Wireless standards

WLAN 2,4 · Bluetooth · Zigbee, WLAN 5, ISM 5,8, WLAN 6E / 7, UWB

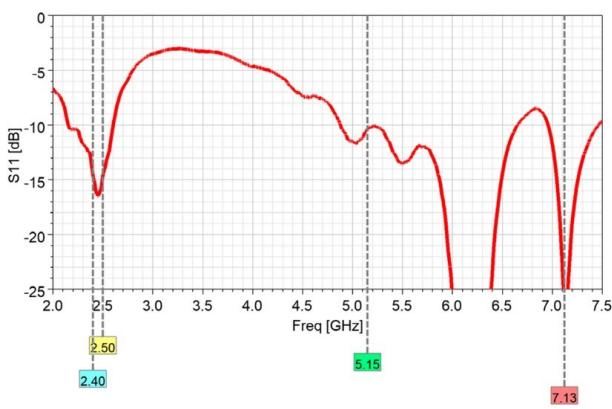
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.43 ... 1.92        |
| Gain       | +2.5 ... +4.0 dBi    |
| Dimensions | 25.0 × 10.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

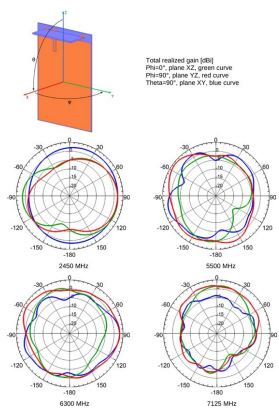
| PART NUMBER  | SHORT DESCRIPTION                  | CABLE [MM] | CONNECTOR  | VSWR             | GAIN [DBI]       | DATASHEET                                                                             |
|--------------|------------------------------------|------------|------------|------------------|------------------|---------------------------------------------------------------------------------------|
| AN250205-01S | RF ANT WLAN2.4/5/6<br>ISM2400/5800 | none       | Solder pad | 1.43 ...<br>1.92 | +2.5 ...<br>+4.0 |  |



Drawing (mm)



Input matching S11



Radiation pattern

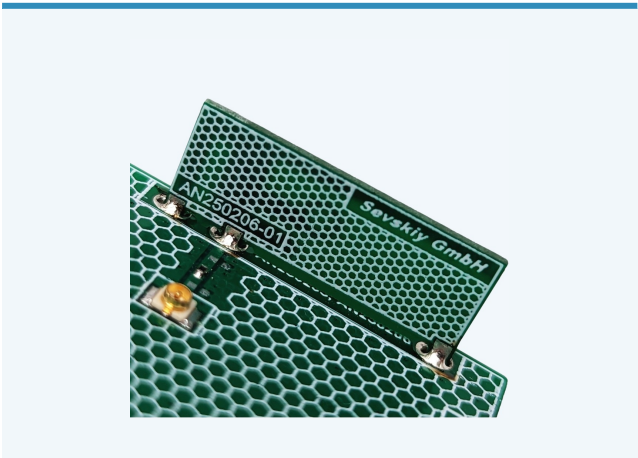
**Customisable:** Dimensions and tuning in the installed state; available with connector and pre-assembled cable on request.



# WLAN/Bluetooth, dual-band

2.4–2.5 GHz

5.15–5.85 GHz



Same as the AN250204, but tuned differently: more uniform matching in the upper band.

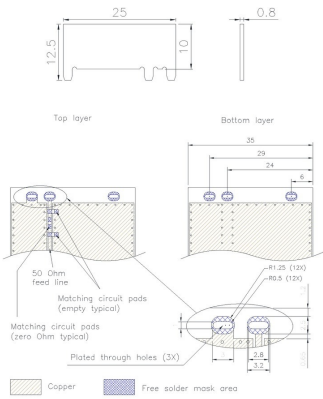
### Wireless standards

WLAN 2,4 · Bluetooth · Zigbee, WLAN 5, ISM 5,8

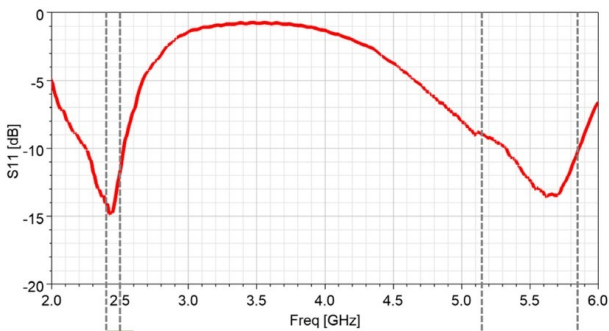
|            |                      |
|------------|----------------------|
| Bands      | 2                    |
| VSWR       | 1.67 ... 1.92        |
| Gain       | +2.6 ... +3.5 dBi    |
| Dimensions | 25.0 × 10.0 × 0.8 mm |
| Versions   | 1                    |

### Versions

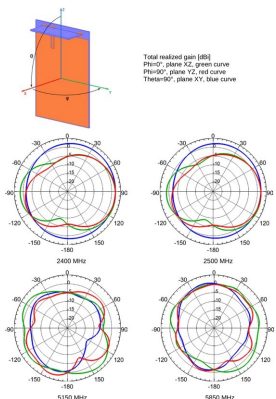
| PART NUMBER  | SHORT DESCRIPTION                   | CABLE [MM] | CONNECTOR  | VSWR             | GAIN [DBI]       | DATASHEET                                                                             |
|--------------|-------------------------------------|------------|------------|------------------|------------------|---------------------------------------------------------------------------------------|
| AN250206-01S | RF ANT 2.45GHZ/5.5GHZ<br>PCB SOLDER | none       | Solder pad | 1.67 ...<br>1.92 | +2.6 ...<br>+3.5 |  |



Drawing (mm)



Input matching S11



Radiation pattern

**Customisable:** Dimensions and tuning in the installed state; available with connector and pre-assembled cable on request.



# RF Filters.

Low-pass, bandpass and band-stop filters from 0.13 to 5.2 GHz – as PCB designs with SMD components or in ceramic technology. All with SMA or U.FL connectors and designed for 50  $\Omega$ .

|                         |       |            |
|-------------------------|-------|------------|
| <i>Low-pass filters</i> | 4 pcs | page 64–67 |
|-------------------------|-------|------------|

|                                  |       |            |
|----------------------------------|-------|------------|
| <i>Band-stop (notch) filters</i> | 2 pcs | page 68–69 |
|----------------------------------|-------|------------|

|                         |       |            |
|-------------------------|-------|------------|
| <i>Bandpass filters</i> | 6 pcs | page 70–75 |
|-------------------------|-------|------------|

# Low-pass filter 0.136–0.174 GHz

cut-off 174 MHz



Low-loss low-pass filter with low ripple, designed for 50 Ω.

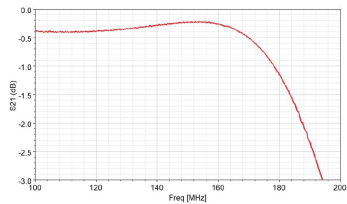
### Typical applications

RF low-pass filter for telecommunications and remote control systems. Effective suppression of signals from long-range radio control links (TBS Crossfire, ELRS, FrSky R9, DragonLink).

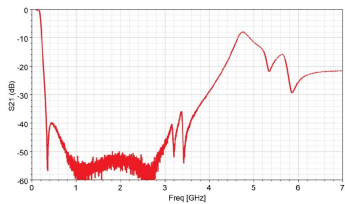
|                       |                                 |
|-----------------------|---------------------------------|
| Filter type           | PCB low-pass filter, SMD design |
| Passband              | 0 – 174 MHz                     |
| Ripple                | 0.5 dB                          |
| VSWR                  | 1.7                             |
| Max. input power      | 2 W                             |
| Dimensions            | 13.2 × 26 × 1 mm                |
| Operating temperature | -40 – +85 °C                    |

### Version

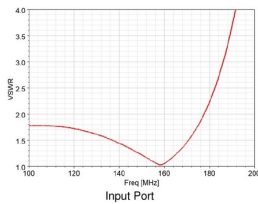
| PART NUMBER  | SHORT DESCRIPTION               | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|---------------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220412-01A | PCB low-pass filter, SMD design | SMA (plug / jack) | 13.2 × 26 × 1   |  |



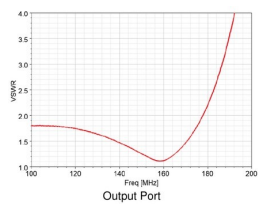
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR



**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Low-pass filter 0.3–0.58 GHz

cut-off 580 MHz



Low-loss low-pass filter with low ripple, designed for 50 Ω.

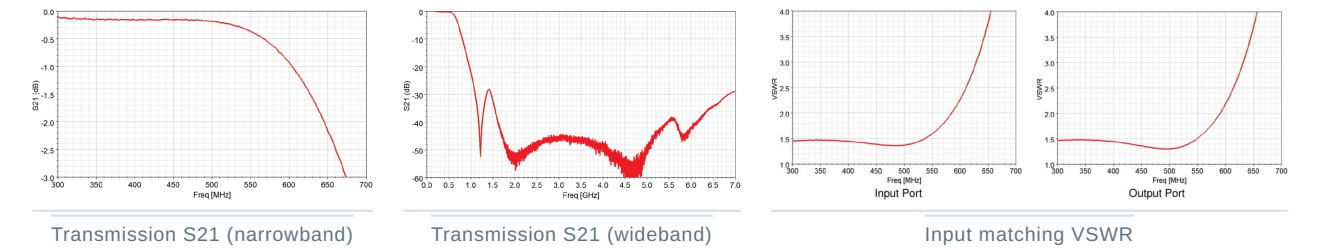
### Typical applications

RF low-pass filter for telecommunications and remote control systems. Effective suppression of signals from long-range radio control links (TBS Crossfire, ELRS, FrSky R9, DragonLink).

|                       |                                 |
|-----------------------|---------------------------------|
| Filter type           | PCB low-pass filter, SMD design |
| Passband              | 0 – 580 MHz                     |
| Ripple                | 0.6 dB                          |
| VSWR                  | 1.6                             |
| Max. input power      | 2 W                             |
| Dimensions            | 13.2 × 26 × 1 mm                |
| Operating temperature | -40 – +85 °C                    |

### Version

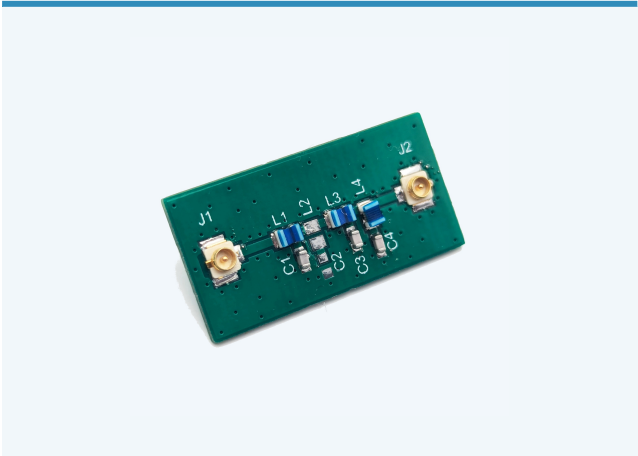
| PART NUMBER  | SHORT DESCRIPTION               | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|---------------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220411-01A | PCB low-pass filter, SMD design | SMA (plug / jack) | 13.2 × 26 × 1   |  |



**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Low-pass filter 915 MHz

cut-off 915 MHz



Low-loss low-pass filter with a 915 MHz cut-off frequency and low ripple, designed for 50 Ω.

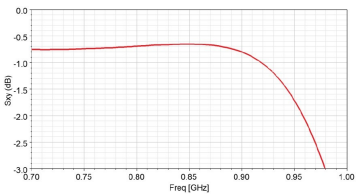
### Typical applications

RF filter for telecommunications, FPV equipment, remote controls, TBS Crossfire

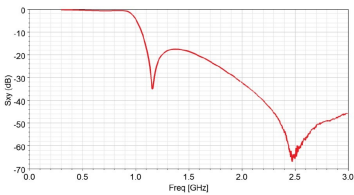
|                       |                        |
|-----------------------|------------------------|
| Filter type           | PCB filter, SMD design |
| Ripple                | 0.5 dB                 |
| VSWR                  | 1.3 2                  |
| Max. input power      | - W                    |
| Dimensions            | 13.2 × 26 × 1 mm       |
| Operating temperature | -40 – +85 °C           |

### Version

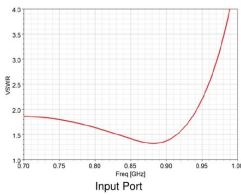
| PART NUMBER  | SHORT DESCRIPTION      | CONNECTOR   | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|------------------------|-------------|-----------------|---------------------------------------------------------------------------------------|
| FT220404-01H | PCB filter, SMD design | U.FL / MHF1 | 13.2 × 26 × 1   |  |



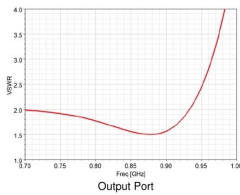
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR



**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.



# Band-stop filter 433–915 MHz (SMA)

stopband 433–915 MHz



Band-stop filter for 433–915 MHz. Suppresses signals between 433 and 915 MHz and passes everything below 300 MHz and above 1080 MHz. Particularly high rejection between 680 and 915 MHz with low insertion loss in the passband.

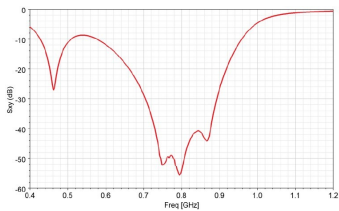
### Typical applications

Notch filter for telecommunications and remote control systems, in particular FPV video receivers. Effective suppression of signals from long-range radio control links (TBS Crossfire, ELRS, FrSky R9, DragonLink) for better electromagnetic compatibility.

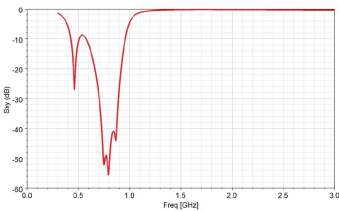
|                       |                              |
|-----------------------|------------------------------|
| Filter type           | PCB notch filter, SMD design |
| Stopband              | 433 – 915 MHz                |
| Max. input power      | 2 W                          |
| Dimensions            | 13.2 × 26 × 1 mm             |
| Operating temperature | -40 – +85 °C                 |

### Version

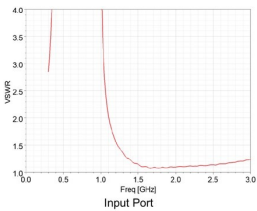
| PART NUMBER  | SHORT DESCRIPTION            | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|------------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220403-01A | PCB notch filter, SMD design | SMA (plug / jack) | 13.2 × 26 × 1   |  |



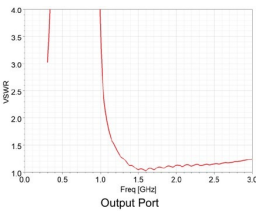
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input Port



Output Port

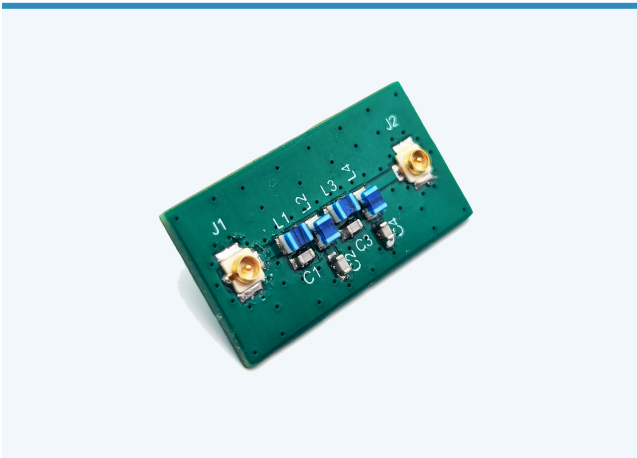
Input matching VSWR

**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.



# Band-stop filter 433–915 MHz (U.FL)

stopband 433–915 MHz



Band-stop filter for 433–915 MHz. Suppresses signals between 433 and 915 MHz and passes everything below 300 MHz and above 1080 MHz. Particularly high rejection between 680 and 915 MHz with low insertion loss in the passband.

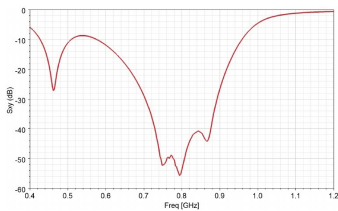
### Typical applications

Notch filter for telecommunications and remote control systems, in particular FPV video receivers. Effective suppression of signals from long-range radio control links (TBS Crossfire, ELRS, FrSky R9, DragonLink) for better electromagnetic compatibility.

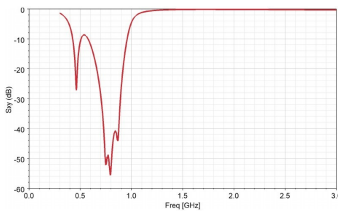
|                       |                              |
|-----------------------|------------------------------|
| Filter type           | PCB notch filter, SMD design |
| Stopband              | 433 – 915 MHz                |
| Max. input power      | 2 W                          |
| Dimensions            | 13.2 × 26 × 1 mm             |
| Operating temperature | -40 – +85 °C                 |

### Version

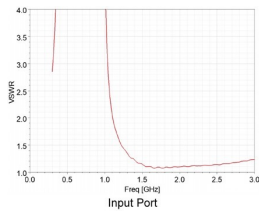
| PART NUMBER  | SHORT DESCRIPTION            | CONNECTOR   | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|------------------------------|-------------|-----------------|---------------------------------------------------------------------------------------|
| FT220403-01H | PCB notch filter, SMD design | U.FL / MHF1 | 13.2 × 26 × 1   |  |



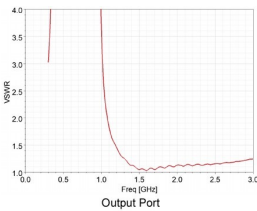
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR

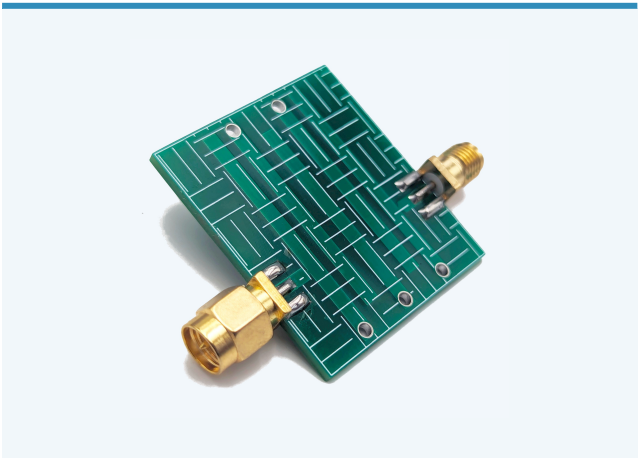


Output Port

**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Bandpass filter 1.11–1.32 GHz

1.11–1.32 GHz



Low-loss bandpass filter with low amplitude ripple, designed for 50  $\Omega$  source and load impedance.

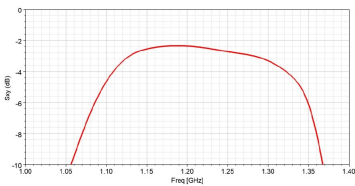
### Typical applications

RF filter for telecommunications, FPV equipment, remote controls, TBS Crossfire

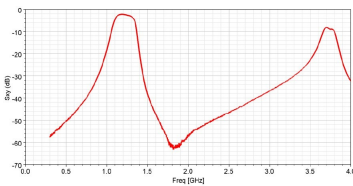
|                       |                        |
|-----------------------|------------------------|
| Filter type           | PCB filter, SMD design |
| Ripple                | 1.6 dB                 |
| VSWR                  | 1.1 1.1 2.3            |
| Max. input power      | 10 W                   |
| Dimensions            | 38 × 34 × 1.6 mm       |
| Operating temperature | -40 – +85 °C           |

### Version

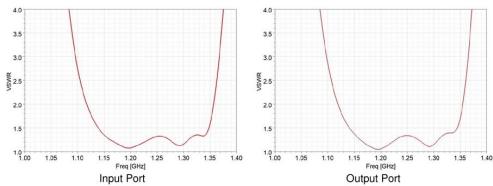
| PART NUMBER | SHORT DESCRIPTION      | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|-------------|------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220401-2  | PCB filter, SMD design | SMA (plug / jack) | 38 × 34 × 1.6   |  |



Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR

**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Bandpass filter 1.4–2.32 GHz

1.4–2.32 GHz



Low-loss bandpass filter with low amplitude ripple, designed for 50 Ω source and load impedance.

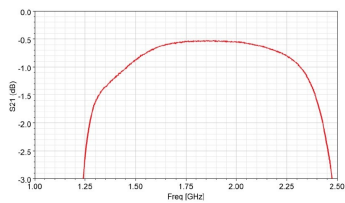
### Typical applications

Harmonic rejection, telemetry, transmitters and receivers, defence

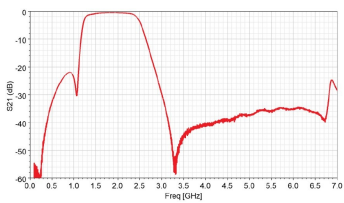
|                       |                         |
|-----------------------|-------------------------|
| Filter type           | Ceramic bandpass filter |
| Passband              | 1400 – 2320 MHz         |
| Ripple                | 0.6 dB                  |
| VSWR                  | 1.7                     |
| Max. input power      | 1.5 W                   |
| Dimensions            | 8 × 16 × 1 mm           |
| Operating temperature | -40 – +85 °C            |

### Version

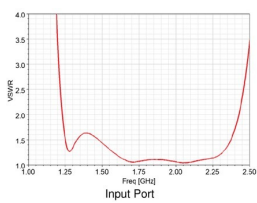
| PART NUMBER  | SHORT DESCRIPTION       | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|-------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220408-01A | Ceramic bandpass filter | SMA (plug / jack) | 8 × 16 × 1      |  |



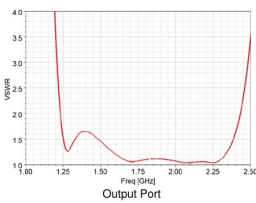
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR



**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Bandpass filter 1.58–2.2 GHz

1.58–2.2 GHz



Low-loss bandpass filter with low amplitude ripple, designed for 50 Ω source and load impedance.

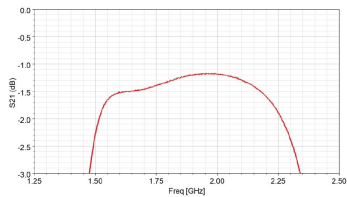
### Typical applications

Harmonic rejection, telemetry, transmitters and receivers, defence

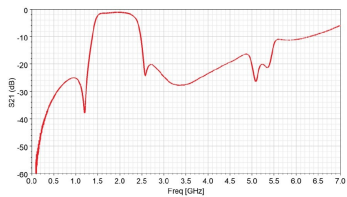
|                       |                         |
|-----------------------|-------------------------|
| Filter type           | Ceramic bandpass filter |
| Passband              | 1580 – 2200 MHz         |
| Ripple                | 0.5 dB                  |
| VSWR                  | 2                       |
| Max. input power      | 1.5 W                   |
| Dimensions            | 8 × 16 × 1 mm           |
| Operating temperature | -40 – +85 °C            |

### Version

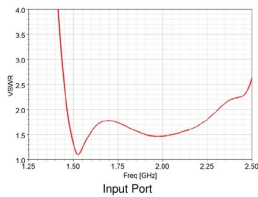
| PART NUMBER  | SHORT DESCRIPTION       | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|-------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220406-01A | Ceramic bandpass filter | SMA (plug / jack) | 8 × 16 × 1      |  |



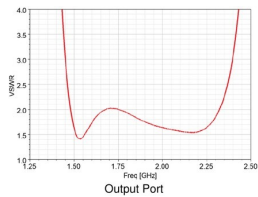
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR



**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Bandpass filter 2.8–3.4 GHz

2.8–3.4 GHz



Low-loss bandpass filter with low amplitude ripple, designed for 50 Ω source and load impedance.

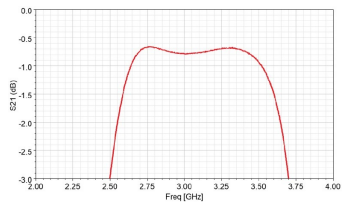
### Typical applications

Harmonic rejection, telemetry, transmitters and receivers, defence

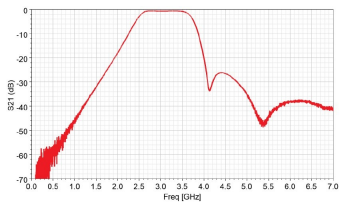
|                       |                         |
|-----------------------|-------------------------|
| Filter type           | Ceramic bandpass filter |
| Passband              | 2800 – 3400 MHz         |
| Ripple                | 0.2 dB                  |
| VSWR                  | 1.7                     |
| Max. input power      | 1.5 W                   |
| Dimensions            | 8 × 16 × 1 mm           |
| Operating temperature | -40 – +85 °C            |

### Version

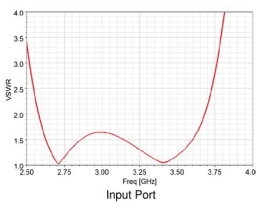
| PART NUMBER  | SHORT DESCRIPTION       | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|-------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220409-01A | Ceramic bandpass filter | SMA (plug / jack) | 8 × 16 × 1      |  |



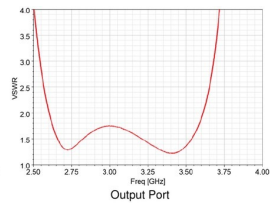
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR



**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Bandpass filter 2.72–3.57 GHz

2.72–3.57 GHz



Low-loss bandpass filter with low amplitude ripple, designed for 50 Ω source and load impedance.

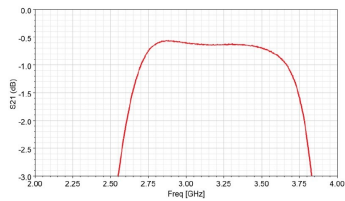
### Typical applications

Harmonic rejection, telemetry, satellite, mobile, defence and commercial

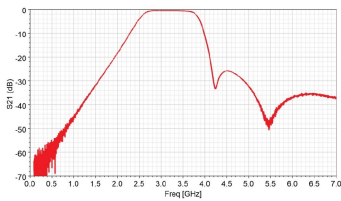
|                       |                         |
|-----------------------|-------------------------|
| Filter type           | Ceramic bandpass filter |
| Passband              | 2720 – 3570 MHz         |
| Ripple                | 0.4 dB                  |
| VSWR                  | 1.5                     |
| Max. input power      | 1.5 W                   |
| Dimensions            | 8 × 16 × 1 mm           |
| Operating temperature | -40 – +85 °C            |

### Version

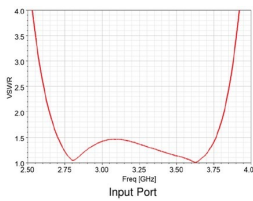
| PART NUMBER  | SHORT DESCRIPTION       | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|-------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220407-01A | Ceramic bandpass filter | SMA (plug / jack) | 8 × 16 × 1      |  |



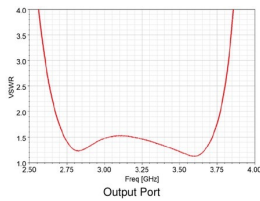
Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR



**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.



# Bandpass filter 4.4–5.2 GHz

4.4–5.2 GHz



Low-loss bandpass filter with low amplitude ripple, designed for 50 Ω source and load impedance.

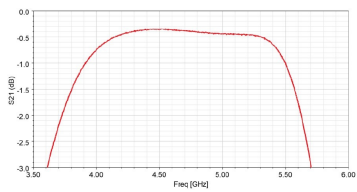
### Typical applications

Harmonic rejection, telemetry, satellite, mobile, defence and commercial

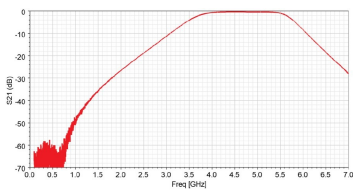
|                       |                         |
|-----------------------|-------------------------|
| Filter type           | Ceramic bandpass filter |
| Passband              | 4400 – 5200 MHz         |
| Ripple                | 0.25 dB                 |
| VSWR                  | 1.5                     |
| Max. input power      | 1.5 W                   |
| Dimensions            | 8 × 16 × 1 mm           |
| Operating temperature | -40 – +85 °C            |

### Version

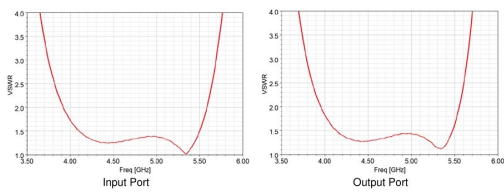
| PART NUMBER  | SHORT DESCRIPTION       | CONNECTOR         | DIMENSIONS [MM] | DATASHEET                                                                             |
|--------------|-------------------------|-------------------|-----------------|---------------------------------------------------------------------------------------|
| FT220410-01A | Ceramic bandpass filter | SMA (plug / jack) | 8 × 16 × 1      |  |



Transmission S21 (narrowband)



Transmission S21 (wideband)



Input matching VSWR

**Customisable:** Connector type, cut-off or centre frequency and stopband; redesign for a specific interference scenario on request.

# Cable Assemblies.

Micro-coaxial cable assemblies with MHF1 and MHF4 connectors, 50  $\Omega$ , up to 6 GHz. Four designs, length freely selectable from 30 to 500 mm.

*MHF1 → MHF1,  $\varnothing$   
1,13 mm*

page 77

*MHF1 → MHF1,  $\varnothing$   
0,81 mm*

page 78

*MHF1 → MHF4,  $\varnothing$   
1,13 mm*

page 79

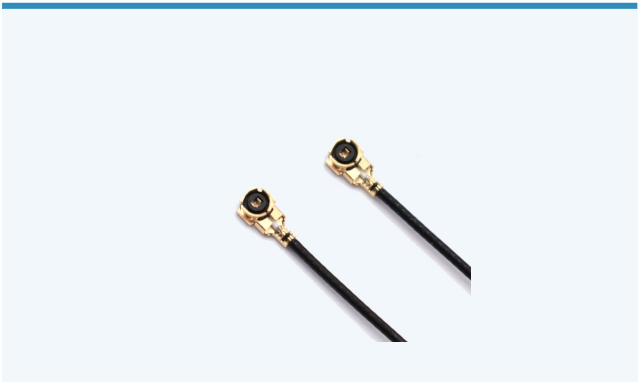
*MHF4 → MHF4,  $\varnothing$   
1,13 mm*

page 80



# Cable assembly MHF1 to MHF1, coaxial cable Ø 1.13 mm

up to 6 GHz · 50 Ω



Micro-coaxial cable assembly with MHF1 plugs (U.FL, UMCC gen 2) at both ends.

### Typical applications

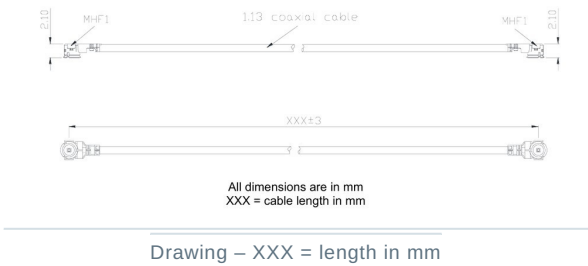
High-frequency signal transmission in compact assemblies where miniaturised RF connections are essential. Typically found in WLAN, Bluetooth, LTE and 5G modules – both for connecting the antenna and as an adapter between different connector generations.

|                       |                                          |
|-----------------------|------------------------------------------|
| Connector 1           | U.FL (UMCC), IPEX MHF1 Plug, Right Angle |
| Connector 2           | U.FL (UMCC), IPEX MHF1 Plug, Right Angle |
| Cable impedance       | 50 Ω                                     |
| Maximum frequency     | 6 GHz                                    |
| Cable diameter        | 1.13 mm                                  |
| Operating temperature | -40 – +85 °C                             |

### Stock lengths

40, 50, 75, 100, 125, 150, 175, 200, 250, 300 mm

Part number: CA-MHF1-MC1.13-XXX-MHF1 – XXX denotes the length in millimetres, e.g. CA-MHF1-MC1.13-040-MHF1.



### Cable attenuation

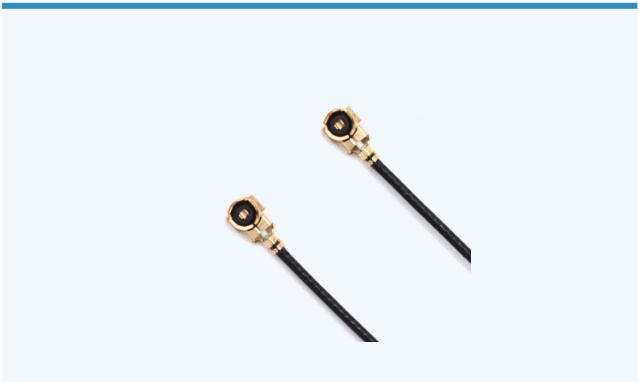
| FREQUENCY [GHZ]    | 0.1   | 1     | 2     | 3     | 4     | 5     | 6     |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Attenuation [dB/m] | -0.62 | -1.94 | -2.88 | -3.95 | -4.54 | -5.40 | -6.64 |

**Customisable:** Cable length freely selectable from 30 – 500 mm. Black as standard, white available on request.



# Cable assembly MHF1 to MHF1, coaxial cable Ø 0.81 mm

up to 6 GHz · 50 Ω



Particularly thin micro-coaxial cable assembly with MHF1 plugs – for the tightest spaces and small bend radii.

### Typical applications

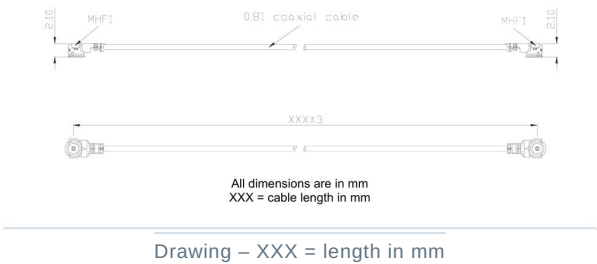
High-frequency signal transmission in compact assemblies where miniaturised RF connections are essential. Typically found in WLAN, Bluetooth, LTE and 5G modules – both for connecting the antenna and as an adapter between different connector generations.

|                       |                                          |
|-----------------------|------------------------------------------|
| Connector 1           | U.FL (UMCC), IPEX MHF1 Plug, Right Angle |
| Connector 2           | U.FL (UMCC), IPEX MHF1 Plug, Right Angle |
| Cable impedance       | 50 Ω                                     |
| Maximum frequency     | 6 GHz                                    |
| Cable diameter        | 0.81 mm                                  |
| Operating temperature | -40 – +85 °C                             |

### Stock lengths

40, 50, 75, 100, 125, 150, 175, 200, 250, 300 mm

Part number: CA-MHF1-MC0.81-XXX-MHF1 – XXX denotes the length in millimetres, e.g. CA-MHF1-MC0.81-040-MHF1.



### Cable attenuation

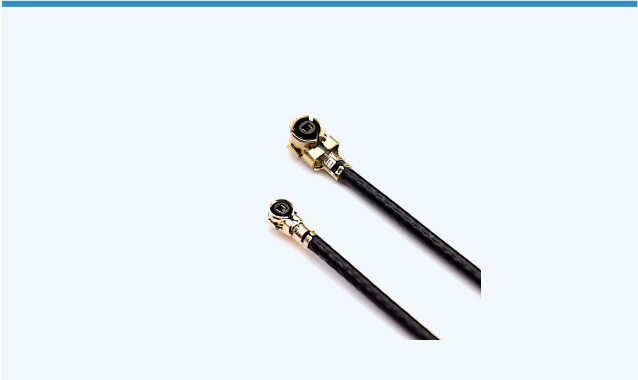
| FREQUENCY [GHZ]    | 0.1   | 1     | 2     | 3     | 4     | 5     | 6     |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Attenuation [dB/m] | -0.96 | -2.96 | -4.39 | -5.56 | -6.62 | -7.54 | -7.88 |

**Customisable:** Cable length freely selectable from 30 – 500 mm. Black as standard, white available on request.



# Cable assembly MHF1 to MHF4, coaxial cable Ø 1.13 mm

up to 6 GHz · 50 Ω



Micro-coaxial cable assembly from MHF1 (U.FL, UMCC gen 2) to MHF4 (UMCC gen 4).

### Typical applications

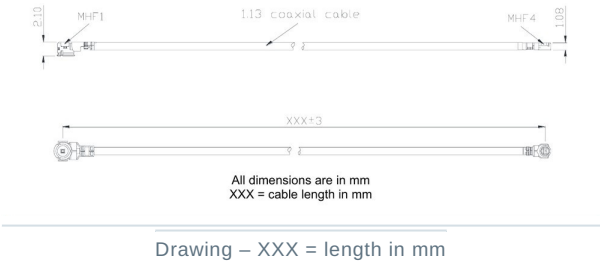
High-frequency signal transmission in compact assemblies where miniaturised RF connections are essential. Typically found in WLAN, Bluetooth, LTE and 5G modules – both for connecting the antenna and as an adapter between different connector generations.

|                       |                                          |
|-----------------------|------------------------------------------|
| Connector 1           | U.FL (UMCC), IPEX MHF1 Plug, Right Angle |
| Connector 2           | MHF4 Plug, Right Angle                   |
| Cable impedance       | 50 Ω                                     |
| Maximum frequency     | 6 GHz                                    |
| Cable diameter        | 1.13 mm                                  |
| Operating temperature | -40 – +85 °C                             |

### Stock lengths

40, 50, 75, 100, 125, 150, 175, 200, 250, 300 mm

Part number: CA-MHF1-MC1.13-XXX-MHF4 – XXX denotes the length in millimetres, e.g. CA-MHF1-MC1.13-040-MHF4.



### Cable attenuation

| FREQUENCY [GHZ]    | 0.1   | 1     | 2     | 3     | 4     | 5     | 6     |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Attenuation [dB/m] | -0.62 | -1.94 | -2.88 | -3.95 | -4.54 | -5.40 | -6.64 |

**Customisable:** Cable length freely selectable from 30 – 500 mm. Black as standard, white available on request.

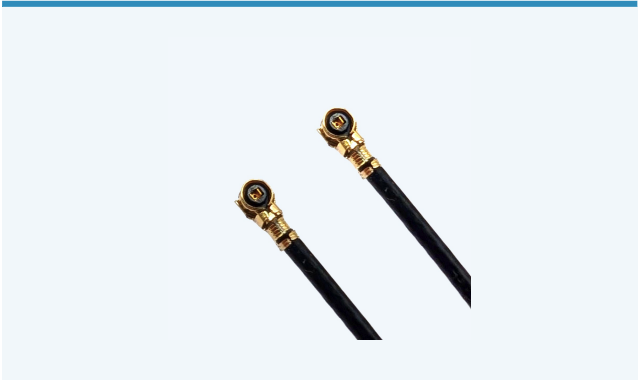


DATASHEET

CABLE ASSEMBLIES — CA-MHF4-MC1.13-XXX-MHF4

# Cable assembly MHF4 to MHF4, coaxial cable Ø 1.13 mm

up to 6 GHz · 50 Ω



Micro-coaxial cable assembly with MHF4 plugs (UMCC gen 4) at both ends.

### Typical applications

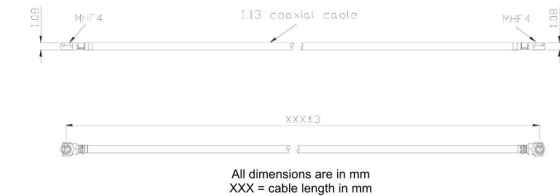
High-frequency signal transmission in compact assemblies where miniaturised RF connections are essential. Typically found in WLAN, Bluetooth, LTE and 5G modules – both for connecting the antenna and as an adapter between different connector generations.

|                       |                        |
|-----------------------|------------------------|
| Connector 1           | MHF4 Plug, Right Angle |
| Connector 2           | MHF4 Plug, Right Angle |
| Cable impedance       | 50 Ω                   |
| Maximum frequency     | 6 GHz                  |
| Cable diameter        | 1.13 mm                |
| Operating temperature | -40 – +85 °C           |

### Stock lengths

40, 50, 75, 100, 125, 150, 175, 200, 250 mm

Part number: CA-MHF4-MC1.13-XXX-MHF4 – XXX denotes the length in millimetres, e.g. CA-MHF4-MC1.13-040-MHF4.



Drawing – XXX = length in mm

### Cable attenuation

| FREQUENCY [GHZ]    | 0.1   | 1     | 2     | 3     | 4     | 5     | 6     |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Attenuation [dB/m] | -0.62 | -1.94 | -2.88 | -3.95 | -4.54 | -5.40 | -6.64 |

**Customisable:** Cable length freely selectable from 40 – 500 mm. Black as standard, white available on request.



# Instrumentation.

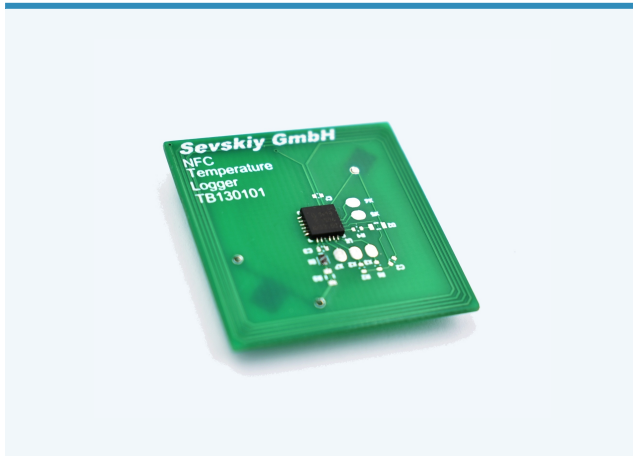
Besides passive RF components we also develop finished assemblies. The first is an NFC temperature logger – operable without a battery and designed for cold chains, medicine storage and smart packaging.



# NFC temperature logger

-40 to +85 °C

NFC / ISO 15693



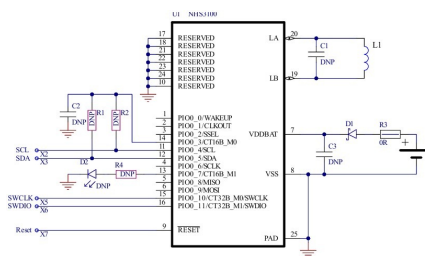
Compact NFC module for precise temperature measurement and long-term logging. Based on the NXS3100 with integrated sensor, NFC antenna and programmable memory.

## Typical applications

- Cold-chain monitoring
- Storage of medicines and laboratory samples
- Temperature control in production
- IoT and smart packaging
- Environmental and agricultural sensing

## Technical data

|                  |                                             |
|------------------|---------------------------------------------|
| Chip             | NXS3100 (NFC tag with temperature sensor)   |
| Power supply     | CR2032 coin cell or NFC field               |
| Memory           | 11,300 records                              |
| Logging interval | configurable via software                   |
| Battery life     | ≥ 5 years at 1 reading/hour (22 °C)         |
| Accuracy         | ±0.3 °C from 0 to +45 °C, otherwise ±0.5 °C |
| Measuring range  | -40 to +85 °C                               |
| Dimensions       | 29 × 29 × 0.8 mm (5.5 mm with cell)         |
| Weight           | 5 g with cell                               |



Schematic

**Special feature:** The kit also runs completely without a battery – powered solely by the NFC field. In this configuration the overall height is only about 1.65 mm. Configuration and read-out are handled by the free software from the manufacturer; a 3D-printed housing is available on request.