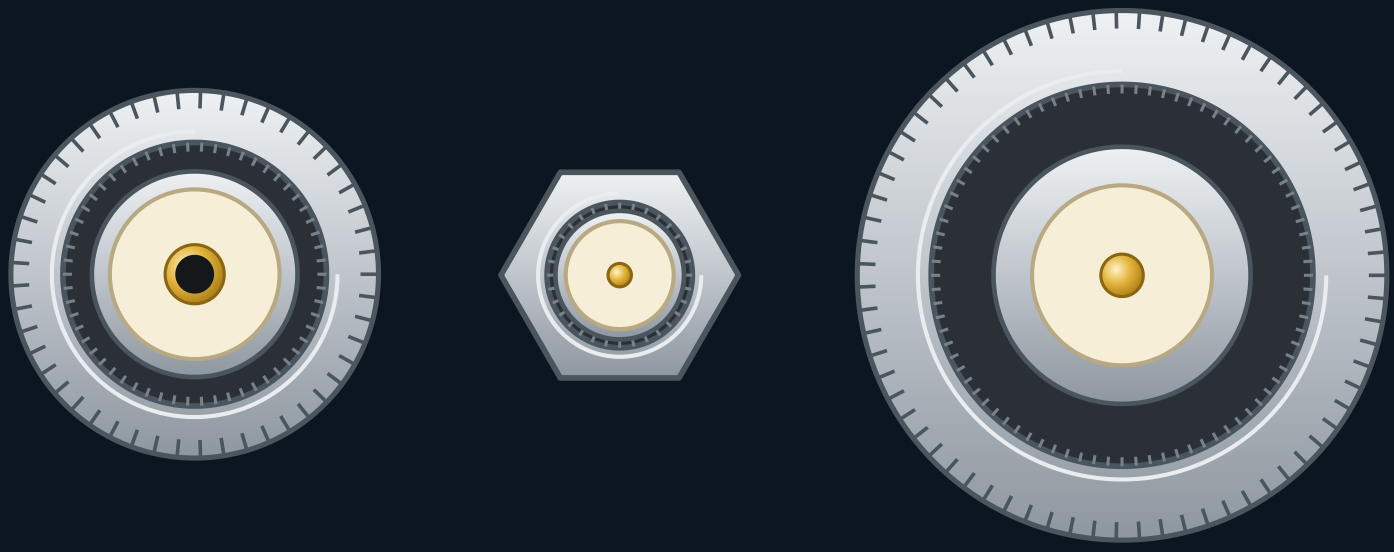
identix

PRACTICAL GUIDE · IDENTIX RF CABLES

How to identify the connectors on your cables

SMA, RP-SMA, RP-TNC and N, male and female, with drawings and 3D views of each end. Written for people who do not work with RF.



November 2026

How to use this guide

Every antenna cable has a connector on each end. To know whether two parts mate, answer three questions while looking at the end of the connector.

1

How big is the thread?

It tells you the **family**. Measure the thread diameter with a ruler:

≈ 6 mm (1/4″)	**SMA**	smallest
≈ 11 mm (7/16″)	**TNC**	medium
≈ 16 mm (5/8″)	**N**	largest

2

Is the thread inside or outside?

It tells you whether it is **male** or **female**.

Male: has a **nut** that turns, with the thread on the **inside**.
Female: the body has the thread on the **outside** and does not turn.

3

Pin or socket in the center?

It tells you whether it is **standard** or **reverse polarity (RP)**.

Standard: male with a **pin**, female with a **socket**.
RP: the opposite, male with a **socket**, female with a **pin**.

Golden rule: only parts of the **same family**, of **opposite genders** (male with female) and of the **same polarity** (standard with standard, RP with RP) mate. If you force a standard SMA onto an RP-SMA, the thread goes on, but no signal gets through: both sides have a socket (or both have a pin), so there is no center contact.

Terms used in this guide

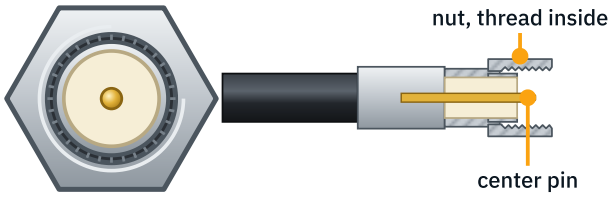
Connector	The metal part at the end of the cable, or the “socket” on the antenna or reader.
Male / female	At Identix (and in most of the RF market), gender follows the **thread**: the part with the **nut threaded on the inside** is male (also called a *plug*); the part **threaded on the outside** is female (*jack*). Note: some sellers, mostly of Wi-Fi parts, name them by the pin. Always check the thread **and** the center.
Center pin	The gold needle in the middle of the connector.
Center socket	The small gold tube that takes the pin.
Reverse polarity (RP)	A version in which the pin and the socket swap places while the thread stays the same. Also written RP-TNC, TNC-RP, R-TNC, “reverse TNC” or “reverse-polarity TNC male”. It exists to keep an antenna that was not certified with a given reader from being connected by mistake.
Port	The connector fixed on the equipment (antenna, reader, splitter). On Identix antennas, every port is **SMA female**.
RG-58UF and RG316	Types of coaxial cable. Most Identix cables are RG-58UF (≈ 5 mm diameter, low loss; the catalog writes “R58UF”); a few are RG316, thinner (≈ 2.5 mm) and more flexible. The cable type does not change the connector, but the connector must be made for that diameter.

Male × female, standard × reverse polarity

This example uses the SMA, but the logic is the same for TNC and N. Note that the **thread** does not change between standard and RP: only the **center** changes. That is why the mistake is so common.

Standard male

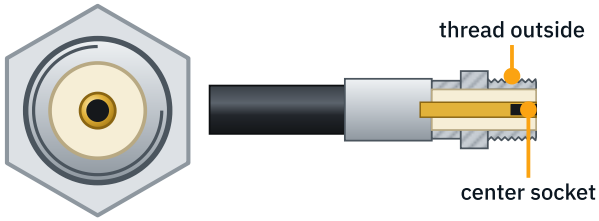
SMA male



Thread **inside (nut)** · **pin** in the center

Standard female

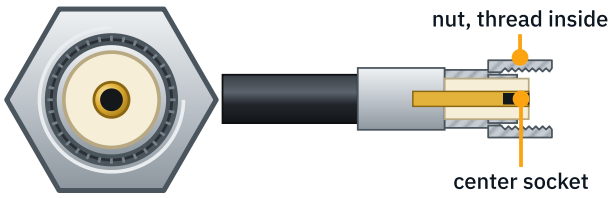
SMA female



Thread **outside** · **socket** in the center

RP male

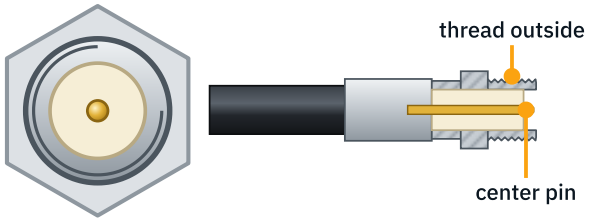
RP-SMA male



Thread **inside (nut)** · **socket** in the center

RP female

RP-SMA female



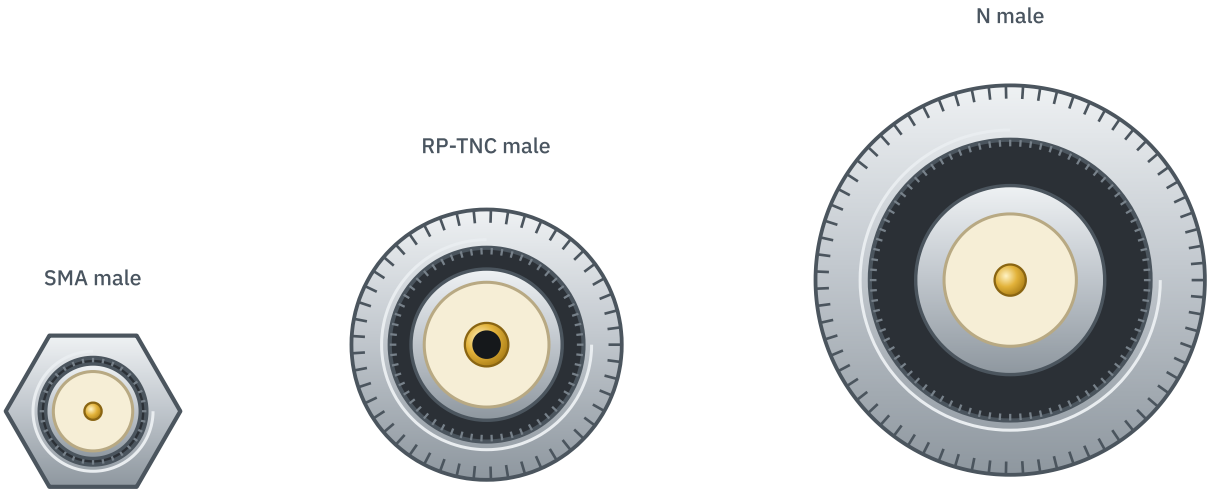
Thread **outside** · **pin** in the center

How to read the drawings. On the left of each box, the connector seen **from the front**, as you see it looking at the end. On the right, the connector **cut in half**, to show what is hidden inside the nut. Colors: gray = metal body, yellow = center contact, cream = plastic insulator (PTFE), black = cable.

Identix RF cables use standard SMA. RP-SMA is the most common mix-up, because Wi-Fi antennas and routers use it.

The three RF connector families on the cables

Same scale in all three drawings (front views of the males). Size is the first clue.



Family	Thread	Male nut	Center contact	How it locks
SMA	1/4″-36 UNS (≈ 6.35 mm)	hex, 8 mm	≈ 0.9 mm	thread; light torque with an 8 mm wrench
TNC and **RP-TNC**	7/16″-28 UNEF (≈ 11.1 mm)	≈ 14 mm, hex or knurled	≈ 1.4 mm	thread; hand-tight
N	5/8″-24 UNEF (≈ 15.9 mm)	≈ 20 mm, knurled or hex	≈ 1.7 mm	thread; hand-tight

Look alike, but different

TNC × BNC	Almost the same size. The TNC has a **thread**; the BNC has a **bayonet** lock (a ¼ turn locks it on two pins). They do not mix. Identix cables do not use BNC.
SMA × RP-SMA	Same thread, swapped center (see the previous page). Identix RF cables are standard **SMA**.
TNC × RP-TNC	Same thread, swapped center. Identix cables with TNC are **all RP-TNC**, like the ports on the EZ500 and EZ700 readers.
MMCX	A tiny (≈ 3.5 mm) snap-on connector with no thread. Found only on the MB300, MB500 and MB700 modules. There is no MMCX cable in the Identix catalog.

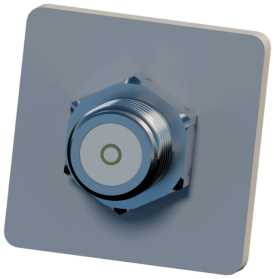
Typical market dimensions, to help you identify the part. They can vary slightly between manufacturers. Threads follow the usual standards for these connectors (SMA: IEC 61169-15; TNC: IEC 61169-17; N: IEC 61169-16).

3D views of each connector type

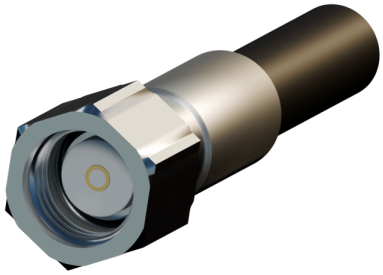
Isometric 3D renders, with the mating end facing you. Look at the center (pin or socket) and at where the thread is (inside the nut or outside the body).



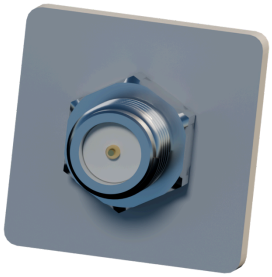
SMA male



SMA female (port)



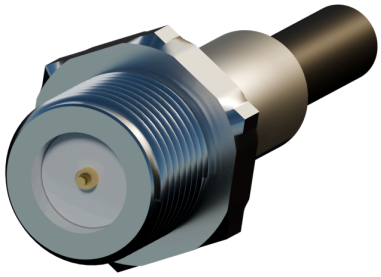
RP-SMA male



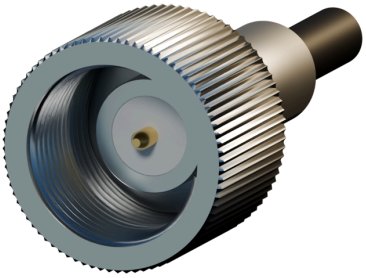
RP-SMA female (port)



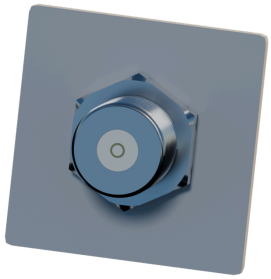
RP-TNC male



RP-TNC female (cable)



N male



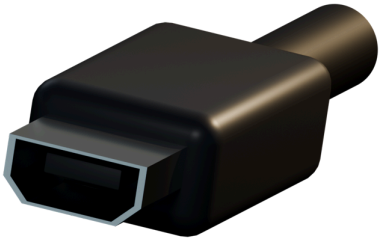
N female (port)



USB-A



USB-C



Mini-USB B

Models built from typical market dimensions, not from photos of Identix cables. Sizes are not to scale between boxes, and the finish (nickel-plated, gold contact) is illustrative.

Connector sheets

Each type of end found on Identix cables, and the port it connects to. Each sheet has a 3D view, a front view and a cutaway.

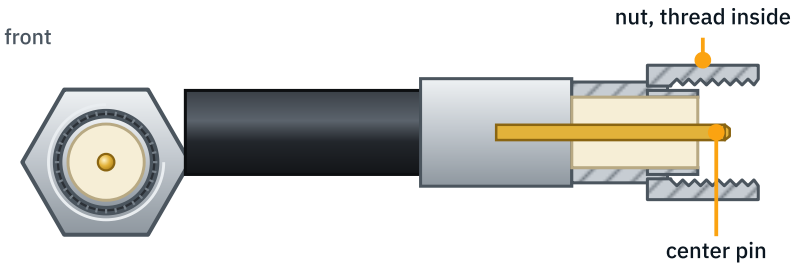
SMA male

SMA male

3D view



cutaway (inside)



- Small hex nut (8 mm wrench) with the thread on the **inside**.
- A thin gold **pin** in the center.
- The most common end on cables that run to Identix antennas.

Mates with: SMA female

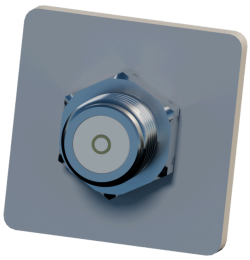
Where the SMA female is found in the Identix line: Antennas 75L9090, 85C7070, 85DL4090 (2 ports), 90C4090, 65C6095, ANTNF0, ANTNF1, SNFA, SFFA; CATENA and RF splitter; readers DR-mini, DR-max, EM300, EM300H; SAMDK-300/500/700 boards (4 ports each).

SMA female

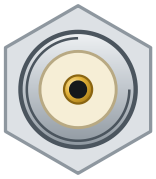
SMA female

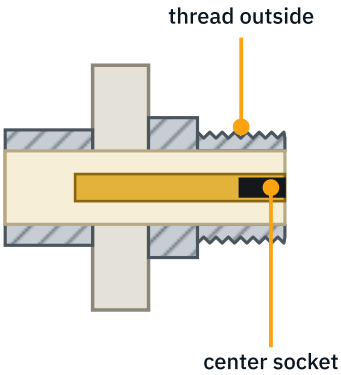
cutaway (inside)

3D view



front





- Body with the thread on the **outside** (≈ 6.35 mm).
- A **socket** (small gold tube) in the center.
- The port on Identix antennas, on the DR-mini, DR-max, EM300 and EM300H readers and on the SAMDK boards.

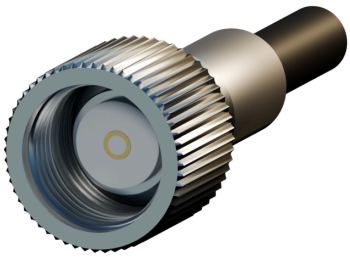
Mates with: SMA male

Where it is found in the Identix line: Antennas 75L9090, 85C7070, 85DL4090 (2 ports), 90C4090, 65C6095, ANTNF0, ANTNF1, SNFA, SFFA; CATENA and RF splitter; readers DR-mini, DR-max, EM300, EM300H; SAMDK-300/500/700 boards (4 ports each).

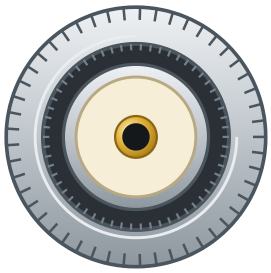
RP-TNC male

RP-TNC male

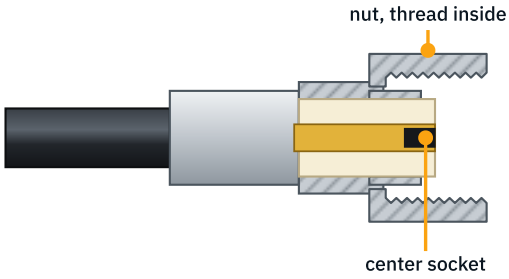
3D view



front



cutaway (inside)



- Large nut (≈ 14 mm), smooth or knurled, with the thread on the **inside**.
- A **socket** in the center: that is what makes it “reverse polarity”.
- If it has a pin in the center, it is a standard TNC, and it will not mate.

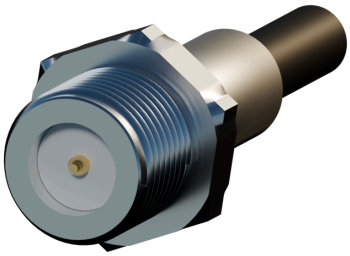
Mates with: RP-TNC female

Where the RP-TNC female is found in the Identix line: EZ500 and EZ700 readers (4 RP-TNC female ports each).

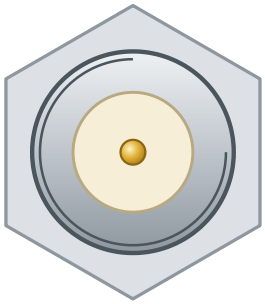
RP-TNC female

RP-TNC female

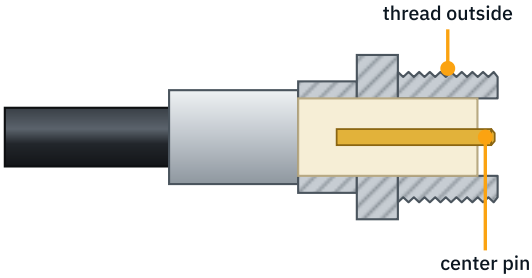
3D view



front



cutaway (inside)



- Body with the thread on the **outside** (≈ 11 mm).
- A **pin** in the center: that is what makes it “reverse polarity”.
- If it has a socket in the center, it is a standard TNC, and it will not mate.

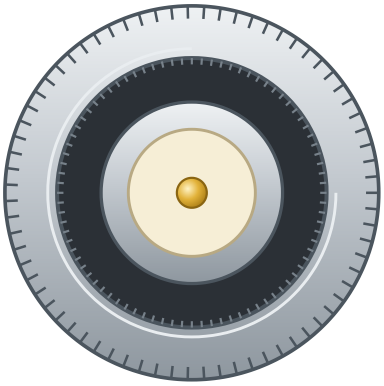
Mates with: RP-TNC male

Where it is found in the Identix line: EZ500 and EZ700 readers (4 RP-TNC female ports each).

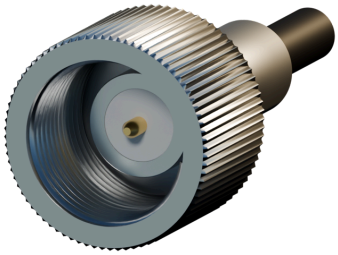
N male

N male

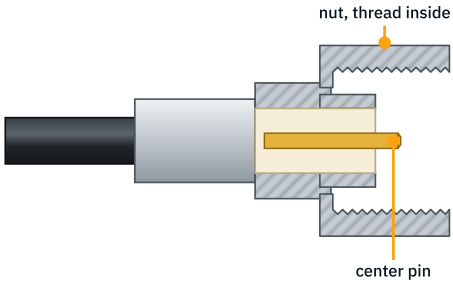
front



3D view



cutaway (inside)



- The largest of all: ≈ 20 mm nut with the thread on the **inside**.
- A thick **pin** in the center, set deep inside.
- Used on larger antennas and equipment.

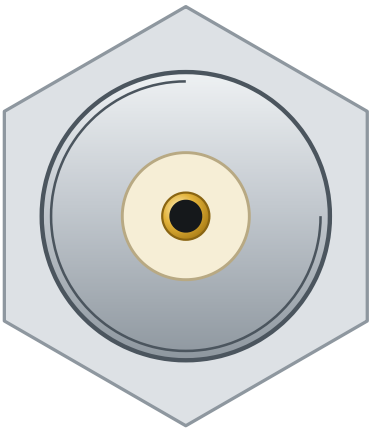
Mates with: N female

Where the N female is found in the Identix line: No Identix reader or antenna has an N port. The cables with an N male end are there to connect third-party equipment.

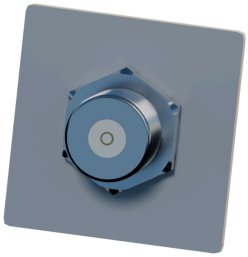
N female

N female

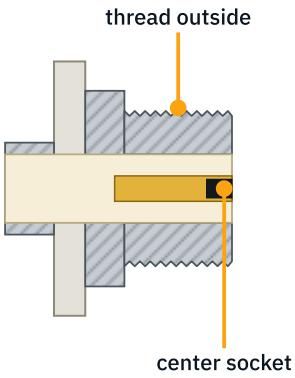
front



3D view



cutaway (inside)



- Body with the thread on the **outside** (≈ 16 mm).
- A **socket** in the center.
- Takes the N male.

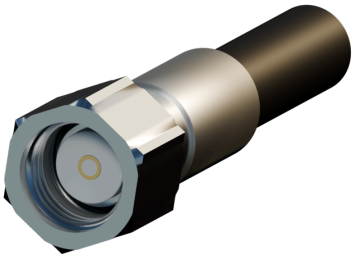
Mates with: N male

Where it is found in the Identix line: No Identix reader or antenna has an N port. The cables with an N male end are there to connect third-party equipment.

RP-SMA male

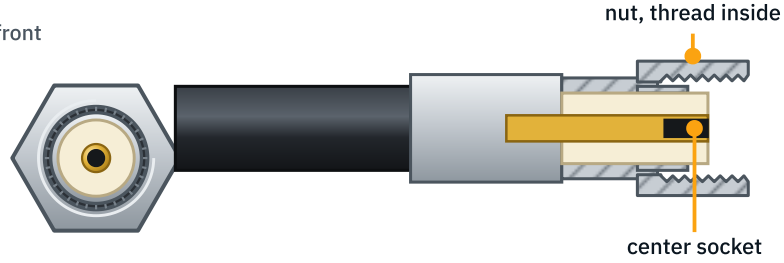
RP-SMA male

3D view



cutaway (inside)

front



- Same 8 mm hex nut as the SMA, with the thread on the **inside**.
- A **socket** in the center: that is what makes it “reverse polarity”.
- Common on Wi-Fi gear. Identix readers and antennas do not use it.

Mates with: RP-SMA female

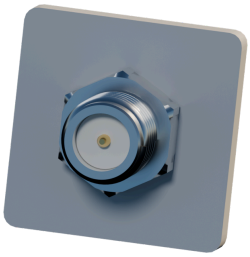
Where the RP-SMA female is found in the Identix line: No Identix reader or antenna has an RP-SMA port.

RP-SMA female

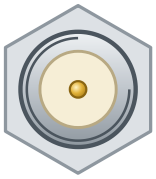
RP-SMA female

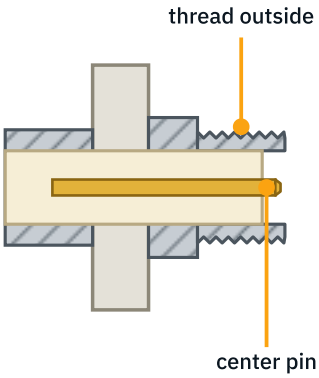
cutaway (inside)

3D view



front





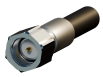
- Body with the thread on the **outside** (≈ 6.35 mm), same as the SMA female.
- A **pin** in the center.
- Very common on Wi-Fi routers and antennas.

Mates with: RP-SMA male

Where it is found in the Identix line: No Identix reader or antenna has an RP-SMA port.

Table: cable → connector A / connector B

Every Identix RF cable, the RF adapter and the two USB cables. Each end has a thumbnail of its 3D view.

Part number	Item	End A	End B
Identix RF cables			
`ID-TMR-SM-XS`	RG-58UF coax, 1.5 m	 RP-TNC male	 SMA male
`ID-TMR-SM-S`	RG-58UF coax, 3 m	 RP-TNC male	 SMA male
`ID-TMR-SM-L`	RG-58UF coax, 4 m	 RP-TNC male	 SMA male
`ID-TMR-TFR-XS`	RG-58UF coax, 1.5 m	 RP-TNC male	 RP-TNC female
`ID-TMR-TFR-S`	RG-58UF coax, 3 m	 RP-TNC male	 RP-TNC female
`ID-TMR-TFR-L`	RG-58UF coax, 4 m	 RP-TNC male	 RP-TNC female
`ID-TMR-NM-S`	RG-58UF coax, 3 m	 RP-TNC male	 N male
`ID-TMR-NM-L`	RG-58UF coax, 4 m	 RP-TNC male	 N male
`ID-SMA-SMA-XS`	RG-58UF coax, 1.2 m	 SMA male	 SMA male
`ID-SMA-SMA-S`	RG-58UF coax, 3 m	 SMA male	 SMA male
`ID-TMR-TMR-XL`	RG-58UF coax, 8 m	 RP-TNC male	 RP-TNC male
`ID-TFR-SM-XS`	RG-58UF coax, 1.5 m	 RP-TNC female	 SMA male
RF adapter			
`ID-RFADPT-1`	Adapter, no cable	 SMA male	 RP-TNC female
USB cables (not RF)			
`ID-USB-C-CBL`	USB, 1 m	 USB-C	 USB-C
`ID-USB-CBL`	USB, 1 m	 USB-A	 Mini-USB B

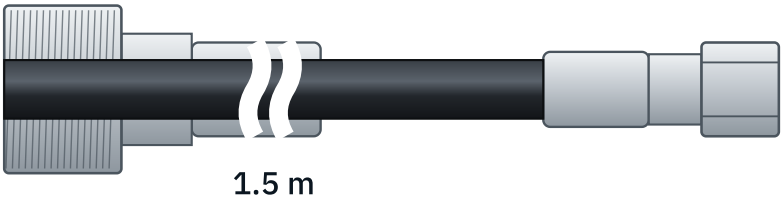
Reading the part number. In Identix RF cable part numbers, the code names the ends: **TMR** = RP-TNC male, **TFR** = RP-TNC female, **SM** or **SMA** = SMA male, **NM** = N male. The suffix gives the length: XS (1.2 to 1.5 m), S (3 m), L (4 m), XL (8 m).

Cable sheets

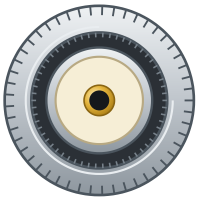
Outside view (true proportions between the connectors) and, below, each end seen from the front.

RP-TNC male → SMA male

`ID-TMR-SM-XS` (1.5 m), `ID-TMR-SM-S` (3 m), `ID-TMR-SM-L` (4 m)







End A
RP-TNC male
thread inside · socket in the center

End B
SMA male
thread inside · pin in the center





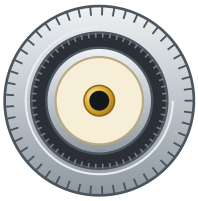
Connects equipment with an RP-TNC female port, such as the EZ500 and EZ700 readers, to an Identix antenna (SMA female port).

RP-TNC male → RP-TNC female

`ID-TMR-TFR-XS` (1.5 m), `ID-TMR-TFR-S` (3 m), `ID-TMR-TFR-L` (4 m)

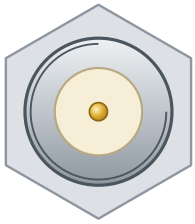






End A
RP-TNC male
thread inside · socket in the center

End B
RP-TNC female
thread outside · pin in the center

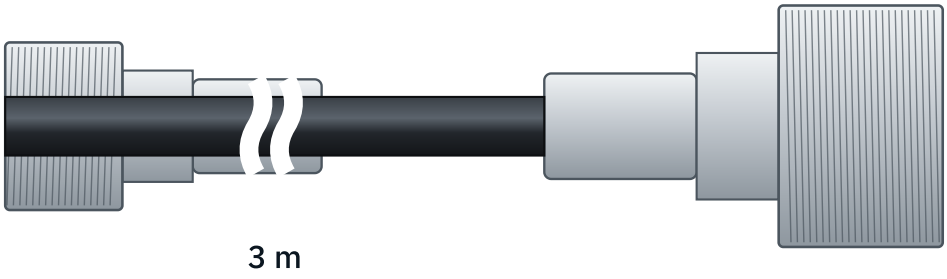


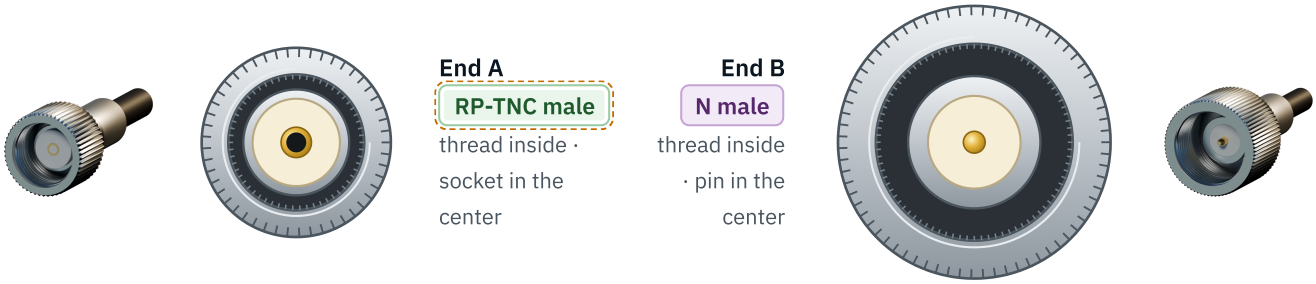


Extension: one end matches an RP-TNC male cable end and the other matches an RP-TNC equipment port.

RP-TNC male → N male

`ID-TMR-NM-S` (3 m), `ID-TMR-NM-L` (4 m)





End A
RP-TNC male
thread inside · socket in the center

End B
N male
thread inside · pin in the center

Connects equipment with an RP-TNC female port to equipment with an N female port.

SMA male → SMA male

`ID-SMA-SMA-XS` (1.2 m), `ID-SMA-SMA-S` (3 m)





End A
SMA male
thread inside · pin in the center

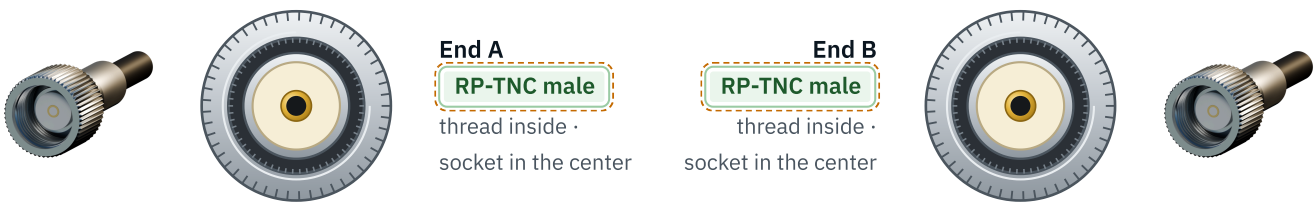
End B
SMA male
thread inside · pin in the center

Connects a reader with an SMA female port (DR-mini, DR-max, EM300, EM300H) to an Identix antenna (SMA female port).

RP-TNC male → RP-TNC male

`ID-TMR-TMR-XL` (8 m)





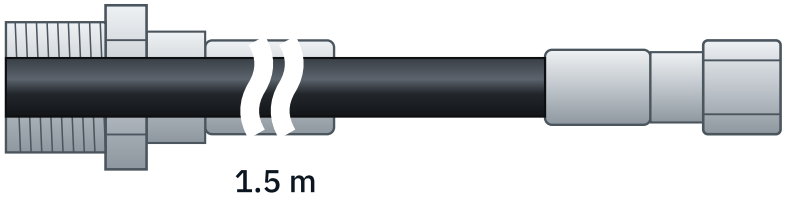
End A
RP-TNC male
thread inside · socket in the center

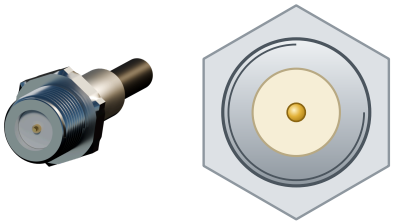
End B
RP-TNC male
thread inside · socket in the center

Both ends the same, 8 m long.

RP-TNC female → SMA male

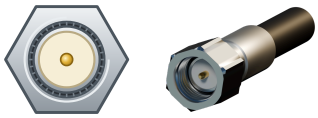
`ID-TFR-SM-XS` (1.5 m)





End A
RP-TNC female
thread outside · pin in the center

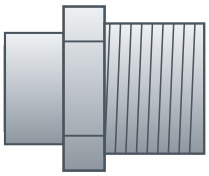
End B
SMA male
thread inside · pin in the center

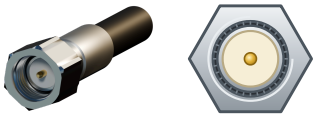


Takes the end of an RP-TNC male cable and connects it to an SMA female port, such as an Identix antenna.

Adapter, SMA male → RP-TNC female

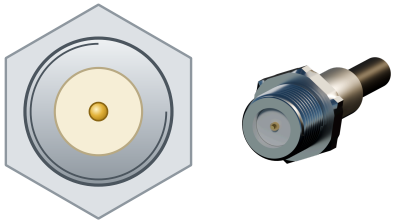
`ID-RFADPT-1`





End A
SMA male
thread inside · pin in the center

End B
RP-TNC female
thread outside · pin in the center



No cable. Turns an SMA female port (on a reader or antenna) into an RP-TNC female end.

USB cables

These are not RF cables: they power some readers and connect them to a computer. There is no thread and no center pin; the shape of the end identifies it.

USB-C → USB-C

`ID-USB-C-CBL` (1 m)



End A
USB-C

End B
USB-C



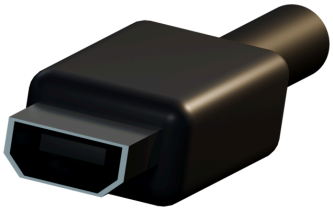
USB-A → Mini-USB B

`ID-USB-CBL` (1 m)



End A
USB-A

End B
Mini-USB B



Actual size (1:1 scale)

Print this page at **100 %** (“actual size”, not “fit to page”), on A4 or US Letter. Then hold the end of the connector against the drawings: the one with the same size is the right family.

Check the printout: the bar below must measure exactly 5 cm (about 2 in).





SMA male



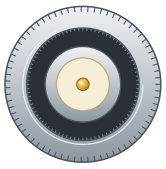
SMA female



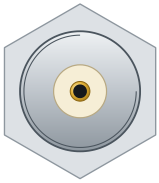
RP-TNC male



RP-TNC female



N male



N female

Still not sure which cable you need? Contact Identix support at **support.idntx.com**.