

# Tap Adapter

## Installation Manual

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vidicode

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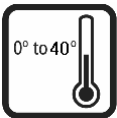


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**Care and Maintenance**

	Keep the Tap adapter dry. If it gets wet, wipe it dry immediately with a soft, clean cloth. Liquids might contain minerals that corrode the electronic circuits.
	Use and store the Tap adapter only in temperature conditions between 0 and 40 degrees Celsius. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.
	Keep the Tap adapter away from excessive dust and dirt.
	Do not use aggressive chemicals, cleaning solvents or strong detergents to clean the Tap adapter.

# 1 Introduction

This TAP Adapter allows high impedance connections to analog telephone lines as used for tapping purposes.

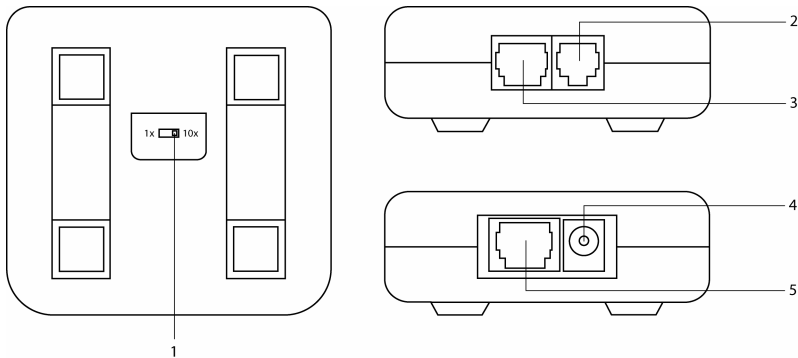
The Tap Adapter will make it virtually impossible to detect the recorder on the lines that are being recorded. This makes this unit suitable for official tapping purposes.

The Tap Adapter also signals the line voltage for off-hook detection, and forwards it to the call recorder OCTO or QAURO to start and stop the recording.



## 2 Connection

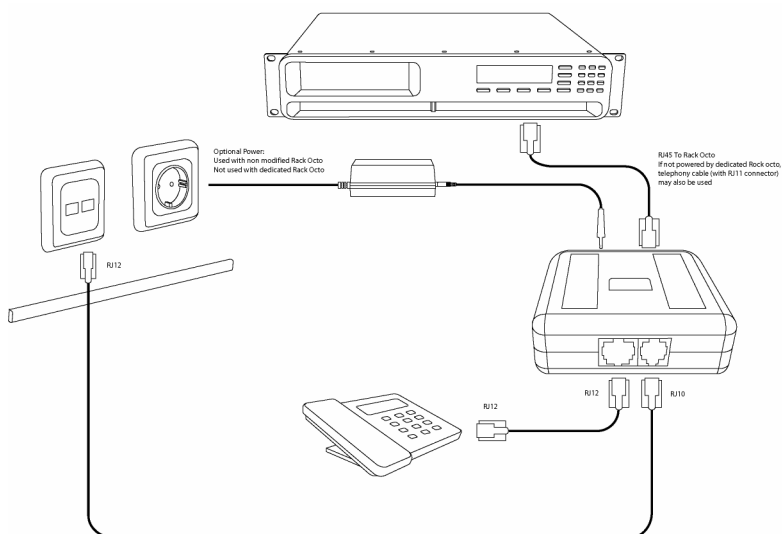
### 2.1 Location of the connectors / switch



1. Switch (recording level 1x or 10x )
2. To tapped Line (RJ10 alternative)
3. To tapped Line (RJ11 primary)
4. Power supply or battery (if not powered from recorder)
5. RJ45 to recorder (YELLOW LED / GREEN LED)

### 2.2 Wiring

The adapter is plugged into any line input of the recorder, using a RJ45 cable (a RJ11 cable can also be used in case the adapter is not powered by the recorder, connector 5 can accept both types).



On the call recorder OCTO or QUARTO there are two RJ45 connectors per channel. Connect the Tap Adapter to the RIGHT connector and cover the LEFT connector with the RJ45-blindplate.

**Note:** It does not matter which input connector (the RJ11 or the RJ10) is used to connect to the line, in both cases only the inner two contacts are used, the connectors are looped through internally.

## 2.3 Power supply

When using the Tap Adapter on a specifically internally strapped call recorder OCTO/QUARTO line input port, the Tap Adapter is powered by the call recorder. Contact Vidicode for the port strapping.

Alternatively, a 9 – 12Vdc power supply or 12V battery can be connected to the power port of the tap adapter. A YELLOW LED on the Tap Adapters RJ45 port will light up when power is applied. The GREEN LED will light up when the adapter detects an off-hook situation. Power is internally galvanic isolated from the tap adapter circuitry.

The unit can be used in combination with a Call Recorder OCTO or QUARTO without the need for an external power supply.

If used with other recorders the Tap Adapter must be powered externally with an optional power supply or battery. In that case a suitable 9 – 12Vdc power supply is needed, or for best result, a 12V battery. On the power connector, the center pin carries the '+'. The Tap Adapter is protected against polarity reversal.

**NOTE:**

The power supply plays an important role in the quality of the recording. If the power supply leaks current between primary and secondary side, a humming sound can be heard in the recording. We advise to use a linear power supply because this type offers the lowest leakage current.

When the adapter is powered by the Octo (and the Octo is grounded sufficiently) this will normally result in a recording with a relatively low amount of hum.


For the lowest amount of hum in the recording powering the adapter by a discrete 12V battery is recommended. The adapter draws very little power, just 10mA typically (when recording).

### 3 Setup

(Setup example for OCTO or QUARTO call recorders)

The Tap Adapter will convert the tapped line signal to a balanced audio signal and “on/off-hook voltage signaling” suitable for the recorder. When connected to a Call recorder OCTO or QAUARTO, you can configure the recorder to use the normal “line” and “off-hook detect” settings, as you would have when using it directly for a POTS telephone line.

The Call Recorder features line options to be set for each individual line. The following line options can be set: Start Method, Fax Recording, Automatic Gain Control, Speech Compression, Notification and Caller ID.

- Press the  key.
- Press **SYSTEM** to move to the SYSTEM settings menu's.
- Press Next until you reach the Start method.

The **Start method** refers to the condition the Call Recorder uses to determine how and when to start recording. the display will show:

Install Line 1

Start method:            Off-Hook

NEXT                            CHANGE            BACK

- Press **CHANGE** to select Voice.

In the Voice mode the Call Recorder monitors the input source for audio signals and recordings are started accordingly.



## 3.1 Starting a recording

When the Tap Adapter senses a drop of line voltage, it will report this to the recorder by adding a DC voltage corresponding to a voltage that the recorder will interpret as an “off-hook” voltage, so that a recording will be started. The tapped audio is superimposed on this DC voltage.

**NOTE:** The adapter has two LEDs on its RJ45 connector. The YELLOW LED will light up when power is applied. The GREEN LED will light up when the adapter detects an “off-hook” situation.

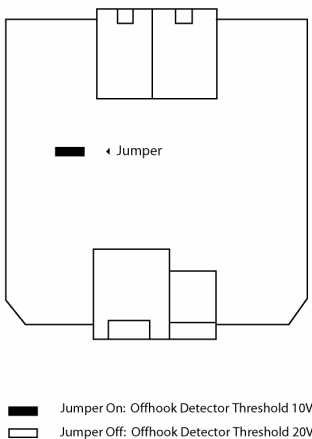
## 4 Switch

The Tap Adapter has a switch to control the gain, which is normally set to 1x, if switched to 10x this will result in an additional 10dB gain of the tapped line signal.

## 5 Setting the OFF-HOOK detector

The adapter will see an “off-hook” when the line is not connected to the adapter, as the adapter considers any voltage below a threshold as an “off-hook” situation. The threshold is normally 10 Volt, but can be raised to 20Volt if needed, by pulling a jumper inside the adapter.

Carefully open the adapter by inserting a screw driver into the space between the RJ-45 connector and the enclosure, then turn it in the seam between the two halves of the enclosure.



Locate the jumper to the upper left side and pull it to increase the threshold from 10 to 20 Volt.

## 6 Technical specification

### **Input impedances of Tap Adapter.**

For AC, (300Hz.....3KHz) and ringing signals:

Input impedance is  $> 2 \text{ M}\Omega$

For DC input impedance is  $> 4 \text{ M}\Omega$

### **Max input voltage**

Between tip and ring  $> 500\text{V}$

Between line and ground  $> 1000\text{V}$

Transfer gains (300..3000Hz) with linearity within 1.5dB

If switch on 1 X position 0 dB gain.

If switch on 10 X position 10 dB gain.

Hum suppression, isolating DC/DC converter for power supply plus high pass filter with 24 dB per octave @ 150Hz

Suppression of common mode signals relative to earth  $> 50\text{dB}$

If the power supply leaks AC mains to the adapter this can still negatively effect the recording, so it is important to use the right kind of power supply, or even better, a 12V Battery. The Tap Adapter draws only 10mA so a medium sized battery can power the Tap Adapter for a long time.

### **Off-hook detection threshold**

Jumper set ca 10V

jumper pulled ca 20V

The presence of a voltage higher than the threshold turns off-hook-signaling off.

**Note :**

The absence of a DC level (when the Tap Adapter not connected to a telephone line) will trigger the OFF HOOK detector and a recording will start.