

# AriStim – ARINC 429 Stimulator

## Description

**AriStim** is an **ARINC 429** Bluetooth® **stimulator** for an Android Smartphone. It enables the acquisition and stimulation of each received bit of any label / SDI at both **High Speed** and **Low Speed** in **real time** on his RX line. **AriStim** then sends the modified labels on his TX line with a certified Holt® ARINC 429 output buffer.

The associated **AriStim** Android application from MEONYS decodes and displays each label, and provides an easy-to-use stimulation interface for each SDI (as SDI or as DATA).

There is no limit to the number of stimulated labels.

The battery powered device has a small size and is very simple to use (no cable). With the provided 18650 lithium battery, the runtime is over **40 hours** and 2 years in standby. **AriStim** is delivered with an 18650 charger.



## Features

### Interface with AriStim

- 2mm banana plugs for the ARINC 429 lines (hot: yellow plug, cold: green plug).
- Bluetooth® 3.0 interface with the Smartphone.
- One green LED (device status).
- Latency of only one label between RX and TX.

### Power Management

The electronic board is always powered by the battery.

There is no button on the **AriStim** device. An ARINC 429 line with at least one label wakes it up from sleep. Another way is to disconnect and reconnect the battery.

The blinking frequency of the LED indicates if the device is connected to the smartphone via Bluetooth®:

- **2 Hz** blinking frequency: device not connected.
- **1 Hz** blinking frequency: device connected.

If **AriStim** is not connected to the smartphone and no label is received, it will go to sleep after **2 minutes**, the LED is then switched OFF. The battery lasts more than **2 years** in this mode.



## Specifications

- Included battery: 18650 lithium cell
- Maximum line level: ±35V
- Line input impedance: 12 kΩ
- Line input high threshold: ±1.4V
- Bluetooth® RF power: 8 dBm
- AriStim size: 91mm - 30mm - 23mm
- Weight (with battery): 79g
- Temperature range: 0°C – 60°C

## Android Application

### Download

The **AriStim** application is freely available here:

[MEONYS AriStim Android Application](#)

The installation is automatic and creates a shortcut on the smartphone main page.



### [AriStim Application Information](#)

### Device Connection

Before using the application for the first time, **AriStim** needs to be paired with the smartphone. The Android Bluetooth® settings can be accessed from the application by clicking on “Click to connect” label, then “SETTINGS”. AriStim device has to be powered up to allow pairing (see “Power Management”).

**The Bluetooth® password is “0000”.**

When going back to the application, the device that has just been paired is visible with its serial number. It has to be selected before going back to the AriStim Home page.

**Home Page**

The **Home** page displays in real time the list of received labels, the detected line speed (HS or LS) and device information (serial number, connection status and battery charge). The checkboxes “TX” are set by default, which means **AriStim** does not modify the ARINC line by default. When unchecking the TX boxes, the corresponding labels disappear from **AriStim** TX line.

The same applies for the “STIM” checkboxes: stimulation of each label (with SDI as SDI or SDI as DATA interpretation) can be activated or de-activated from the Home Page:

LABEL	TX	STIM
L106	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDI_00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SDI_01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDI_10	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SDI_11	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDI_DD	<input checked="" type="checkbox"/>	<input type="checkbox"/>
L107	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDI_00	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDI_01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDI_10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SDI_11	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SDI_DD	<input checked="" type="checkbox"/>	<input type="checkbox"/>
L110	<input checked="" type="checkbox"/>	<input type="checkbox"/>
L111	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SDI_00	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SDI_01	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Home Page

**Stimulation Page**

When clicking on a label / SDI in the Home page, the **Stimulation page** is displayed, showing stimulation options of the selected label (and interpretation):

The Stimulation Page displays a bit stream (DATA) and stimulation options. The bit stream is: 0 1 0 0 0 1 1 1 1 0 1 1 0 1 0 0 1 1 1. Below the bit stream, there are four options: 0 Value forced to 0, 1 Value forced to 1, 1 Value reversed, and 0 Value not modified. There are CLEAR and UPDATE buttons at the bottom.

Stimulation Page

Actual raw data information is displayed, and each field / bit is clickable. The legend indicates stimulation options:

- Value forced to 0.
- Value forced to 1.
- Value reversed (0 -> 1, 1 -> 0 in real time).
- Value not modified.

It is possible to stimulate any field independently providing powerful stimulation options:

- Inverting parity bit on one label / SDI.
- Changing SSM.
- Modifying label number.
- Changing data of selected label / SDI...

The stimulation parameters can be saved in order to apply them on any other label / SDI:

The first screenshot shows a dialog box for saving stimulation parameters. The file name is "Stim\_L106\_SDI01\_23-01-2020-14h55m31s". There are CANCEL and OK buttons. The second screenshot shows a list of saved files with a "Selected" checkbox next to each file name. There are DELETE and LOAD buttons at the bottom.

Saving Stimulation Parameters

**Warnings**

This product shall only be used with the provided battery. The use of incompatible battery may affect compliance or may result in damage to the product and invalidate the warranty.

The provided battery shall only be charged with the provided Lithium-Ion charger. The use of incompatible battery charger may affect compliance or may result in damage to the battery and invalidate the warranty.

To avoid malfunction or damage to your AriStim product please observe the following:

- Do not expose to water or moisture.
- Do not expose to heat from any source; AriStim product is designed for reliable operation at the specified temperatures.
- Care must be taken when handling to avoid mechanical or electrical damage to the product and connectors.