

Broadcast Radio SmartSign Lite device: Using The Built-in GPIO Connection

One of the most common uses for a SmartSign Lite Device is to act as an alternative to the traditional Mic Live or Phone Call warning light in a Studio, and fortunately, the Raspberry Pi on which it is based includes a built-in hardware interface in the form of a GPIO header.

To connect wiring the GPIO header you will need to open the case, but don't worry, they are just clipped together, so can be popped apart simply. If you have the small case designed to work with separate monitor, you can either remove the side panel opposite the HDMI and Power connector, or the full top of the case to gain access. If you opted for the integrated touch screen model, you simply need to pop the back centre panel off.

For simplicity, we have included a ribbon cable with push fit connectors, but the layout of the GPIO header is a little unusual, so you will need to be careful which pins you use. (see Figure 1)

Raspberry Pi 3 GPIO Header				
Pin#	NAME		NAME	Pin#
01	3.3v DC Power		DC Power 5v	02
03	GPIO02 (SDA1 , I ² C)		DC Power 5v	04
05	GPIO03 (SCL1 , I ² C)		Ground	06
07	GPIO04 (GPIO_GCLK)		(TXD0) GPIO14	08
09	Ground		(RXD0) GPIO15	10
11	GPIO17 (GPIO_GEN0)		(GPIO_GEN1) GPIO18	12
13	GPIO27 (GPIO_GEN2)		Ground	14
15	GPIO22 (GPIO_GEN3)		(GPIO_GEN4) GPIO23	16
17	3.3v DC Power		(GPIO_GEN5) GPIO24	18
19	GPIO10 (SPI_MOSI)		Ground	20
21	GPIO09 (SPI_MISO)		(GPIO_GEN6) GPIO25	22
23	GPIO11 (SPI_CLK)		(SPI_CE0_N) GPIO08	24
25	Ground		(SPI_CE1_N) GPIO07	26
27	ID_SD (I ² C ID EEPROM)		(I ² C ID EEPROM) ID_SC	28
29	GPIO05		Ground	30
31	GPIO06		GPIO12	32
33	GPIO13		Ground	34
35	GPIO19		GPIO16	36
37	GPIO26		GPIO20	38
39	Ground		GPIO21	40

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www.element14.com/RaspberryPi

FIGURE 1

Notes:

GPIO pins 02 and 03 are used by the touchscreen interface, so will not be available on the version of SmartSign Lite in the Touchscreen unit.

The Raspberry Pi is a low voltage device, and as such is not designed to handle much power through the GPIO connectors. Please see the Raspberry Pi website for more details on the GPIO Specification.

<https://www.raspberrypi.org/documentation/hardware/raspberrypi/gpio/README.md>