TI-Innovator Quick Start Guide
TI-Nspire CX

Important TI-Basic commands:

Send(string**)**   Sends a *string* (literal or variable) to the Innovator

Get(var**)**   Gets a value from the Innovator output buffer and puts the value into a specified **var**iable.

Wait n   Pauses the TI-Basic program for a specified amount of time (n sec).

eval( )   Used within a Send(*string* to evaluate an expression using the handheld's variables.

Step 1: Plug USB-B of unit-to-unit cable into TI-Innovator
Step 2: Plug USB-A of unit-to-unit cable into handheld
Note: The order matters for the pre-production units.

BRIGHTNESS is the name given to the internal light level sensor. BRIGHTNESS is automatically connected during power-up/boot-up of the TI-Innovator.

LIGHTLEVEL is the name of the light level sensor that you connect to the input port.

Similar for SOUND (built-in) vs. SPEAKER (external), LIGHT (built-in) vs. LED (external) and COLOR (internal) vs. RGB (external).

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SET Commands

LIGHT – the RED-only LED – only on or off

Send "SET LIGHT ON/OFF/1/0 [BLINK FREQ] [TIME DURATION]"

Send "SET LIGHT ON"

Send "SET LIGHT OFF"

Send "SET LIGHT 1"

Send "SET LIGHT 0"

Send "SET LIGHT ON TIME 10"

Send "SET LIGHT 1 BLINK 20 TIME 10"

COLOR –the RGB LED (256^3 colors!)

Send "SET COLOR ON/OFF/0-255 ON/OFF/0-255 ON/OFF/0-255 [BLINK FREQ] [TIME DURATION]"

Send "SET COLOR ON ON OFF"

Send "SET COLOR 255 128 0"

Send "SET COLOR 255 128 0 TIME 10"

Send "SET COLOR 255 128 0 BLINK 20 TIME 10"

Send "SET COLOR.RED 0"

Send "SET COLOR.GREEN 128 BLINK 20 TIME 10"

SOUND *(FREQUENCY in Hz, TIME in sec)*

Send "SET SOUND FREQUENCY [TIME DURATION]"

Send "SET SOUND 261"

Send "SET SOUND eval(list1(a))"

Send "SET SOUND 261 TIME .25"

Send "SET SOUND eval(list1(a)) TIME eval(t/List2(a))"

Send "SET SOUND OFF"

READ Commands

BRIGHTNESS of the onboard light sensor (no need to CONNECT)

Send "READ BRIGHTNESS" - *brightness at the time that the READ command is received. Value is stored in an onboard buffer and is available to Get until the next Read command is executed.*

Get(b) *Gets value from buffer and puts in variable b.*

For an external light sensor… (Example to show process for an external device-set up a connection)

Send "CONNECT LIGHTLEVEL 1 to IN 1" -*set up a connection*

In a loop you can do this…

Send "READ LIGHTLEVEL 1"

Get(a)

Example Programs

```
Define blink()=
Prgm
:For n,1,10
:Send "SET LIGHT ON"
:Wait 1
:Send "SET LIGHT OFF"
:Wait 1
:EndFor
:EndPrgm
```

```
Define rbfade()=
Prgm
:255→r
:0→g
:0→b
:1→s
:
:While r>0
:Send "SET COLOR.RED eval(r)"
:Send "SET COLOR.BLUE eval(b)"
:Wait 0.1
:r-s→r
:b+s→b
:EndWhile
:Wait 5
:Send "SET LIGHT ON BLINK 10 TIME 3"
:Send "SET COLOR 0 0 0"
:EndPrgm
```

Define **song()**=
Prgm
:{260,262,294,262,349,330,260,262,294,262,392,349,260,262,523,
440,349,348,330,294,466,465,440,349,392,349}→list1
:{4,4,2,2,2,1,4,4,2,2,2,1,4,4,2,2,4,4,2,1,4,4,2,2,2,1}→list2
:
:0→k
:1→t
:
:For n,1,dim(list1)
:Send "SET SOUND eval(2^(k/12)*list1[n]) TIME eval(t/list2[n])"
:Wait ((t)/(list2[n]))+0.05
:EndFor
:EndPrgm

Troubleshooting:

- ## If you get into an infinite loop in one of your trial programs:
  - HH, hold HOME and press Enter repeatedly. Or on HH hold ESC for more than 5 seconds.
  - Windows, hold F12 and press Enter repeatedly.
  - Mac, hold F5 and press Enter repeatedly.