

SerialTx

This is a CFunction module which can add up to 8 serial output ports to the Micromite MkII running MMBasic 4.6 or later. The SerialTx module has the following features:

- It is a transmit only function (a SerialRx function is separately available).
- Will transmit at any baudrate from 110 bps to 76800 bps.
- Will work with up to four I/O pins on the 28-pin Micromite and eight on the 44-pin device.
- Can switch from I/O pin to I/O pin with each call, so the one function can be used to drive many different serial outputs at different baudrates.

Adding the Function to MMBasic

To add the SerialTx function to MMBasic you must insert the following code somewhere in your BASIC program (you can use copy and paste from this document). The exact spot is not important but at the end of the program is typical.

```
CFunction SerialTx
0000001C
00001021 40824800 40024800 0044102B 1440FFFD 00000000 03E00008 00000000
3C03BF81 8C65F000 3C02003D 24420900 7CA51400 70A23002 8C63F000 3C040393
34848700 7C6316C0 00C41021 00621007 3C03029F 24636300 50430003 3C0202DC
03E00008 00000000 03E00008 24426C00 27BDFFC0 AFB70034 AFB1001C AFB00018
00C0B821 AFA50010 AFBF003C AFBE0038 AFB60030 AFB5002C AFB40028 AFB30024
AFB20020 00808821 0411FFDD 00000000 8FA50010 82E30000 8CB00000 00108040
0050001B 020001F4 00008012 1860002E 2610FFFB 24160001 3C14BF88 3C15BF88
24120001 8E220000 02002021 00521004 AE826034 24020008 AFA20010 241E0001
0411FFBF 00000000 02F69821 1000000C 8FA20010 00721804 AEA36038 02002021
AFA20010 0411FFB6 00000000 8FA20010 001EF040 2442FFFF 10400009 33DE00FF
82630000 03C31824 1460FFF2 8E230000 00721804 AE836034 1000FFF1 02002021
8E220000 02002021 00521004 AEA26038 0411FFA3 00000000 82E20000 02C2102A
1440FFD8 26D60001 8FBF003C 00001021 00001821 8FBE0038 8FB70034 8FB60030
8FB5002C 8FB40028 8FB30024 8FB20020 8FB1001C 8FB00018 03E00008 27BD0040
End CFunction
```

Parameters

The SerialTx function (created by adding the above code) takes three parameters:

`r = SerialTx(port, baud-rate, string)`

Where *port* is a code for the I/O pin (see below for how to map this to an I/O pin)

baud-rate is the desired transmit speed

string is the string of characters to send

Note that the maximum workable *baud-rate* ranges from 76800 at 40MHz to 19200 at 10MHz. SerialTx always returns zero and this can be ignored although the returned value must still be assigned to a dummy variable.

The *port* argument is used to select the output pin for the data sent. Use this table to determine the value of *port*:

<i>port</i>	I/O pin on a 28-pin chip	I/O pin on a 44-pin chip
0	2	19
1	3	20
2	9	30
3	10	31
7		13
8		32
9		35
10		12

Using the Function

To send a string out of a serial port using SerialTx you must first prepare the I/O pin that you will use (this example uses I/O pin 30 on the 44-pin Micromite):

```
pin(30) = 1      ' set the output of the pin high when it is enabled
setpin 30, dout ' set the pin as an output
```

Once you have done this you can send data using the SerialTx function. For example:

```
r = SerialTx( 2, 19200, "Hello World" )
```

The function will not return until all of the characters in the string have been sent.

You can send data out of as many I/O pins as you want simply by changing *port* and *baud-rate* as required every time the function is used.