SerialRx

This is a CFunction module which can add any number od serial input ports to the Micromite. The SerialRx module has the following features:

- It is a receive only function (a SerialTx function is separately available).
- Will receive at any baudrate from 110 bps to 38400 bps.
- Will work with any I/O pin.
- Can terminate the receive function based on the number of characters received, a timeout or one or more terminating characters.

NOTE: This is an updated version of the original SerialRx CFunction. It required MMBasic 4.7 or later and its usage and parameters have changed

Adding the Function to MMBasic

To add the SerialRx 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 SerialRx
   00000008
   40024800 00442021 40024800 0044102b 1440fffd 00000000 03e00008 00000000
   27bdffb8 afb00020 3c109d00 8e020000 afb20028 8cb20000 8c420000 00129040
   0052001b 024001f4 afb40030 3c141062 26944dd3 8ce70000 8e030010 afb10024
   00808821 8c840000 afbf0044 afb7003c afb60038 afb50034 afb3002c afbe0040
   00c0a821 24050002 00003021 8fb60058 8fb3005c 00009012 00540019 2652fffb
   00001010 000211c2 0060f809 7047a002 8e240000 8e020024 0040f809 00002821
   0040b821 8e020028 0040f809 8e240000 afa20010 00001021 40824800 8fa20010
   241e0001 00121842 005ef004 afa30018 afa00014 8ee20000 005e1024 50400014
   8fa40018 40024800 0054102b 1440fff9 8fbf0044 24040001 00002821 00801021
   00a01821 8fbe0040 8fb7003c 8fb60038 8fb50034 8fb40030 8fb3002c 8fb20028
   8fb10024 8fb00020 03e00008 27bd0048 0411FFAB 00000000 8ee20000 03c21024
   1440ffe4 00008021 00008821 0411FFA4 02402021 8ee20000 8fa30010 00621006
   30420001 02021004 02228825 26100001 24020008 1602fff5 323100ff 02402021
   0411FF97 00000000 8ee20000 03c21024 1040ffd0 8fa30014 24630001 02a31021
   afa30014 a0510000 12c00005 a2a30000 8ec20000 0062102b 10400017 24040002
   12600011 8fa30014 82650000 18a0000f 286200ff 82620001 12220011 00001021
   10000005 24420001 80830001 1071000d 24040003 24420001 0045182a 1460fffa
   02622021 8fa30014 286200ff 1440ffb1 00000000 24040002 10000003 00002821
   24040003 00002821 8fbf0044 00801021 00a01821 8fbe0040 8fb7003c 8fb60038
   8fb50034 8fb40030 8fb3002c 8fb20028 8fb10024 8fb00020 03e00008 27bd0048
End CFunction
```

Parameters

The SerialRx function (created by adding the above code) takes four to six parameters:

r = SerialRx(pin, baud-rate, string$, timeout, maxchars, termchars)

Where *pin* is the input I/O pin's number
baud-rate is the desired receive speed
string$ is the string where the received characters will be stored.
timeout is the maximum time (in milliseconds) to wait before returning with whatever has been received.
maxchars is the number of characters to wait for (optional)
termchars is a string and capture will be terminated if a character received matches any character in the string (optional).

Notes:

- The maximum workable *baud-rate* ranges from 38400 at 40MHz to 9600 at 10MHz.
- Both *maxchars* and *termchars* are optional and can be omitted if not required.

The return value will be the number 1, 2 or 3 where:

1 a timeout occurred and *string$* contains the characters received up to then.
2 the number of characters specified in *maxchars* had been received.
3 the last character received matched a character in the argument *termchars*.

Using the Function

You receive data simply by using the SerialRx function. For example:

```
r = SerialRx( 2,  19200,  s$,  1000 )
```

This will wait for one second (1000mS) and return with whatever was received during that time. The received characters will be saved to the string *s$*.

As another example, the following will wait for ten seconds or five characters (whichever occurred first) and print the received data:

```
r = SerialRx( 2,  19200,  s$,  10000 , 5)
print s$
```

This example will wait for thirty seconds, or for 200 characters, or for a carriage return character (whichever occurred first) and print the received data:

```
r = SerialRx( 2,  19200,  s$,  30000 , 200, chr$(13))
print s$
```

You can receive data from as many I/O pins as you want simply by changing *port* and *baud-rate* as required every time the function is used. But note that the function will only return characters received while the function is waiting for input.