

HUMUSOFT MF604

Synopsis:

```
rtload( 'mf604', addr, opt )
```

Parameter Description:

It is highly recommended to use the driver GUI together with rtscript to select correct driver parameters. Otherwise a mistake can easily be made.

`addr` specifies I/O address of the board. Its value must be given as decimal, not hexadecimal, number.

`opt` is a vector of hardware specific options.

`opt(1)` specifies digital I/O options. It is bit-oriented and therefore shows as a sum of numbers corresponding to individual bit weights. These numbers are summarized in the table below.

<i>Parameter</i>	<i>Option</i>	<i>Value</i>
digital input mode	bit	0
	byte	1
digital output mode	bit	0
	byte	2

`opt(2)` to `opt(9)` specify analog input ranges for channels 1 to 8. The input ranges are coded by numbers listed in the table below.

When using GUI to specify channel gains, the columns correspond to channels and the rows correspond to

<i>Range</i>	<i>Code</i>
0...5V	0
±5V	1
0...10V	2
±10V	3

gain values. Select a gain for a single channel by clicking the radio button at the appropriate position. Select a gain for all the channels at once by clicking the push button labeled by the gain value, left to the corresponding row of the radio button array.

opt(10) to opt(13) specify lowpass filter frequency for encoder inputs.

opt(14) to opt(17) specify timer/counter mode for timers 1 to 4. The timer modes are coded by numbers listed in the table below.

<i>Mode</i>	<i>Code</i>
Counter with reset on read	0
Counter without reset	1
Chained counter	2
Frequency generator	3
Delayed pulse	4

In mode 0 counter counts input pulses. Read operation from such channel returns current pulse count and resets the counter.

In mode 1 counter counts input pulses. Read operation from such channel returns current pulse count and does not reset the counter.

In mode 2 counter is chained with previous counter using the same mode. Read operation from previous channel returns 32 bit values instead of 16 bit values.

In mode 3 counter works as frequency generator with variable frequency and duty cycle. Two output channels are assigned to one counter in this mode. First one (TimerxA) frequency, second (TimerxB) represents duty cycle (-1 to 1).

In mode 4 counter works as delayed pulse generator. Two output channels are assigned to one counter in this mode. First one (TimerxA) represents pulse width, second (TimerxB) represents pulse delay. Each write operation to TimerxB channel generates one delayed pulse.

Both `addr` and `opt` are optional. The defaults are:

`addr`: 768

`opt (1)`: [0].

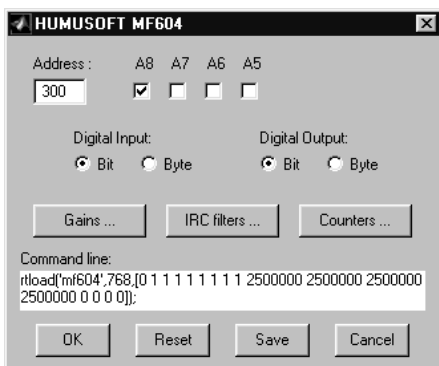
Also the channel gains are optional and default are 1 (range $\pm 5V$).

Channel Assignment:

Both input and output hardware channels are assigned to channel numbers starting with analog channels, then following with digital channels. This is summarized in the table below.

<i>HUMUSOFT MF604</i>	<i>Real Time Toolbox</i>
AD0 .. AD7	Inputs 1 .. 8
IRC0 .. IRC3	Inputs 9 .. 12
Count0 .. Count3	Inputs 13 .. 16
DIN0 .. DIN7	Inputs 17 .. 24 in bit mode Input 17 in byte mode
DA0 .. DA3	Outputs 1 .. 4
Timer0A .. Timer0B	Outputs 5 .. 6
Timer1A .. Timer1B	Outputs 7 .. 8
Timer2A .. Timer2B	Outputs 9 .. 10
Timer3A .. Timer3B	Outputs 11 .. 12
DOUT0 .. DOUT7	Outputs 13 .. 20 in bit mode Output 13 in byte mode

GUI Window:

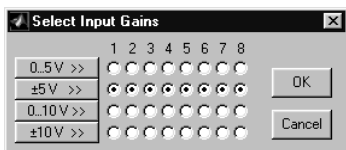


HUMUSOFT MF604

Address : A8 A7 A6 A5
 ☒ ☐ ☐ ☐

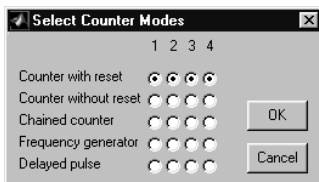
Digital Input: Digital Output:
☒ Bit ☐ Byte ☒ Bit ☐ Byte

Command line:
rtload("mf604",768,[0 1 1 1 1 1 1 1 1 1 2500000 2500000 2500000
2500000 0 0 0 0]);



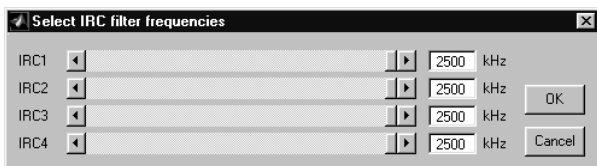
Select Input Gains

	1	2	3	4	5	6	7	8
0..5 V >>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
±5 V >>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0..10 V >>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
±10 V >>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Select Counter Modes

	1	2	3	4
Counter with reset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Counter without reset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chained counter	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Frequency generator	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Delayed pulse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Select IRC filter frequencies

IRC1	<input type="text" value="2500"/> kHz
IRC2	<input type="text" value="2500"/> kHz
IRC3	<input type="text" value="2500"/> kHz
IRC4	<input type="text" value="2500"/> kHz

Input Scan:

Input scan is not supported for any input channel.

Output Waveform:

Waveform generation is not supported for any output channel.

Switch and Jumper Settings:

Base Address (switch SW1):

The selected address must match the **Address** field of the GUI.