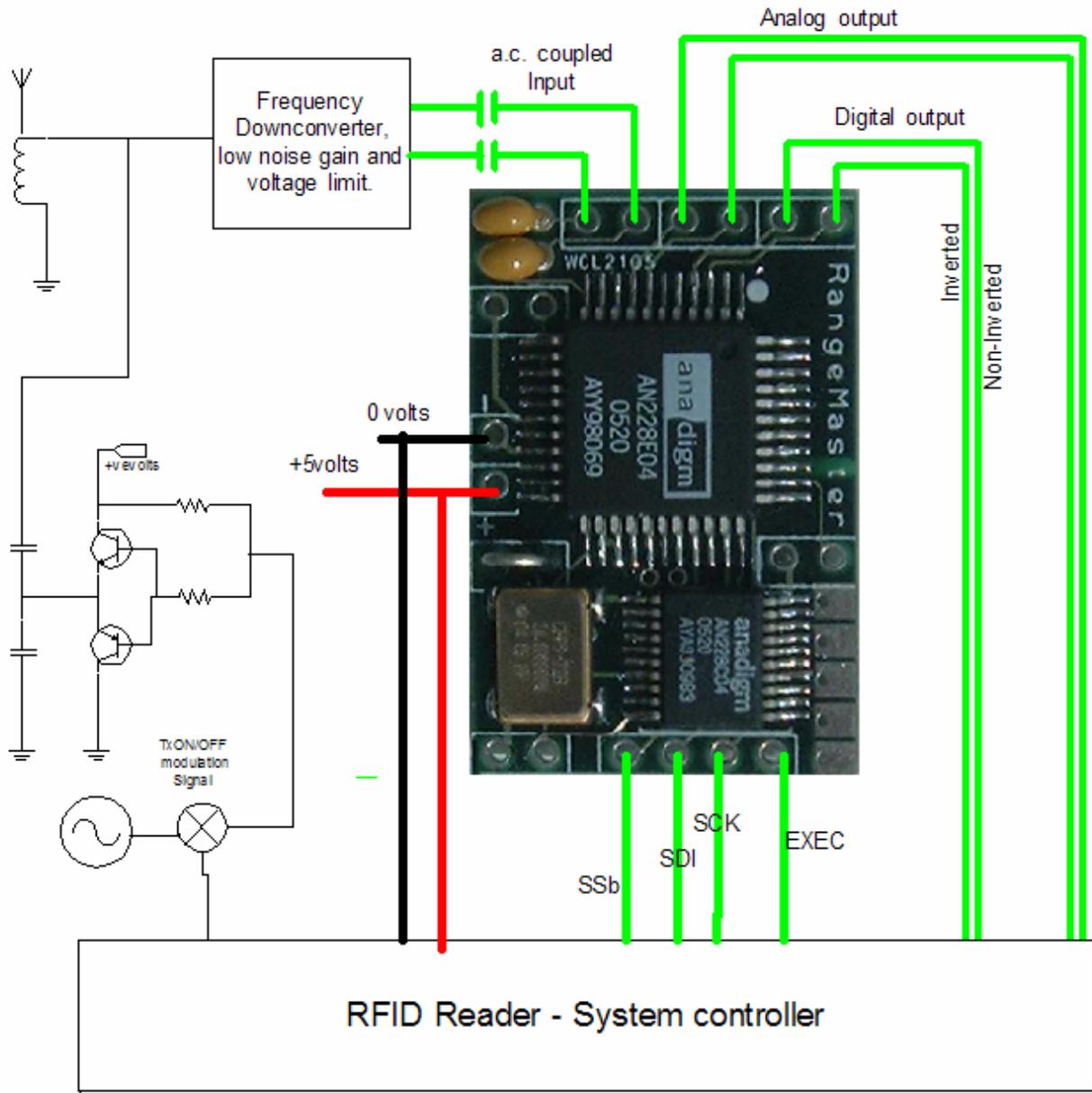


RangeMaster Evaluation Board Quick Start User Guide

Connecting the RangeMaster board into an existing RFID reader - to replace the sub-carrier filters, see figure1 below.

The connections can be made by directly soldering wires to the RangeMaster board or by first adding single in line 1mm header pins (2.54mm spacing).



RFIDREADER

Figure 1.

RangeMaster Evaluation board – Quick start Guide

Quick start instructions:

1. The initial state of the digital inputs should be as follows:

Input	Initial state	Comments
EXEC	low	This pin has no pull-down and must be driven low.
SCK	low	This pin has no pull-down and must be driven low.
SDI	high or low	This pin has no pull-up or pull-down so should be driven, but which state is not important.
SSb	high	This pin has no pull-up and must be driven high.
RSTb	high	This pin has a pull-up so can be left open or driven high.

2. Power up the board to +5V. The RangeMaster board will take about 75ms to configure itself before going into standby mode. A control word should not be entered during this period.
3. To wake the board from standby mode, input any control word. The contents of this control word will be ignored. The control word is entered using SCK, SDI and SSb, and must be entered as 2 bytes according to the timing diagram in figure 4, page16 of the RangeMaster datasheet. There must be a delay of at least 1ms after the wake-up control word has been entered before another control word can be entered.
4. To put the board into the required configuration now requires entering the appropriate control word, again entered as 2 bytes and conforming to the timings given in the datasheet. The RangeMaster control byte is detailed on page 15 of the RangeMaster datasheet, the meaning of each bit in the control word is define. Note that the time taken for the board to reconfigure itself after a new control word can be anything from 1 to 60ms, so the time between control words should be at least 60ms, unless the first control word is a wake-up in which case there should be a delay of 1ms minimum before the next control word is entered.
5. If the board is functioning correctly, then in normal operation the Osc En pin should be high and the VMR pin should be at +2V. In standby mode both these pins should be at 0V.
6. The differential input signal should be connected to IN+ and IN-. The differential amplitude of this signal should not exceed +/-4V (minimum 5mV).
7. If the input signal is single ended, connect it to IN+ and connect IN- to VMR by shorting the VMR hole to the hole above it (a jumper can be fitted if required). See figure2.
8. The output will appear as a differential signal with +2V common mode voltage on AOUT+ and AOUT-. A digitized version of this signal will appear on DOUT+ and DOUT-.
9. If a singled ended output signal is required connect to AOUT+ or DOUT+ and ignore the –ve output, the amplitude of the output signal will be half that of a differential output and will have a d.c. offset of +2volts. (figure3)
10. The board can be put back into standby mode by entering a zero control word i.e. 0x0000. Note that any control word will wake the board from standby, so repeated inputting of a zero control word will cause the board to toggle in and out of standby.
11. The board can be reset either by power cycling it or by pulsing RSTb low for a minimum of 30ms. There is a hole next to RSTb which is connected to ground. This allows a jumper to be fitted if required.

RangeMaster Evaluation board – Quick start Guide

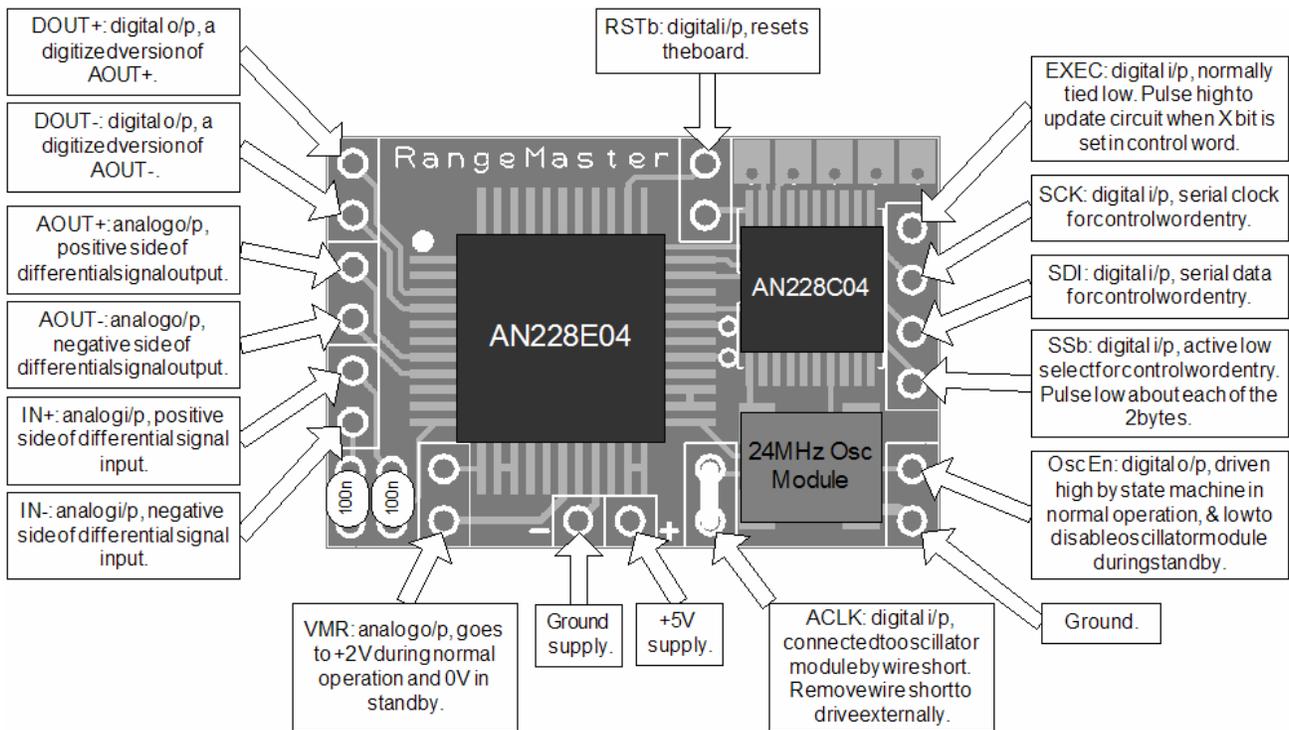
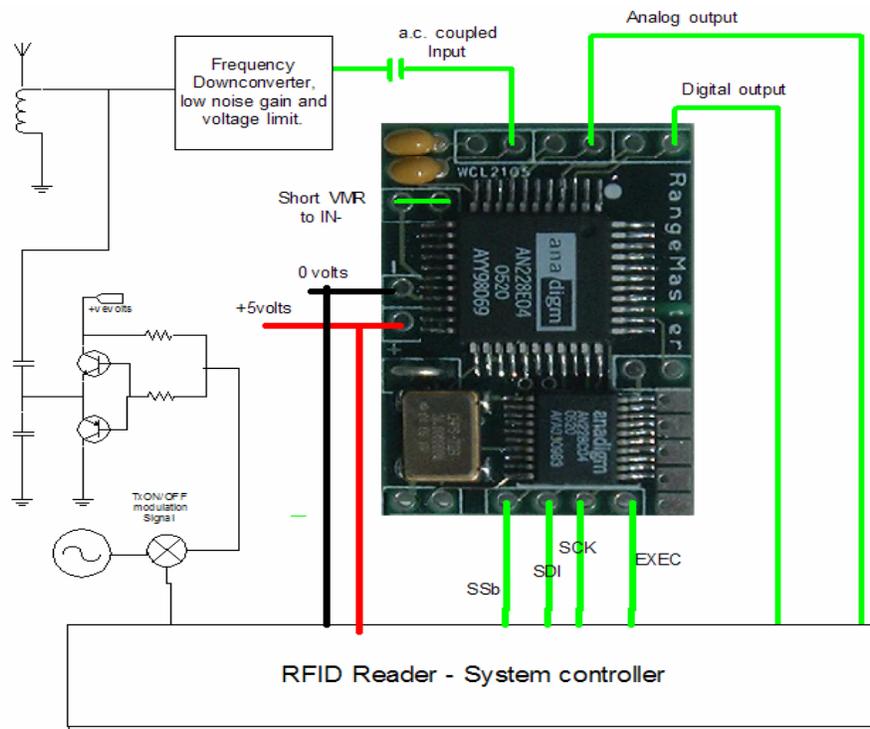


Figure 2, Pictorial Pin description



RFID READER

Figure 3, Single-ended set-up

