

WM8199 Differential Mode

July 2001, Rev 1.0

INTRODUCTION

Some higher performance CCD sensors have differential outputs in order to improve the analogue quality of the device. This applications note suggests a mode of operation for the WM8199 that is suitable for such CCDs.

2-CHANNEL MODE DESCRIPTION

The WM8199 Analogue Front End has an additional input mode which allows it to accept differential input signals which must be applied to the RINP and GINP pins. Setting the DIFFINP register bit high accesses this mode and disables the green and blue channel SHPGAs. Figure 1 shows the input configuration when using this mode. The DIFFINP register bit is located in register address 001100bin, bit 0 (all other register bits in this register must be set to zero).

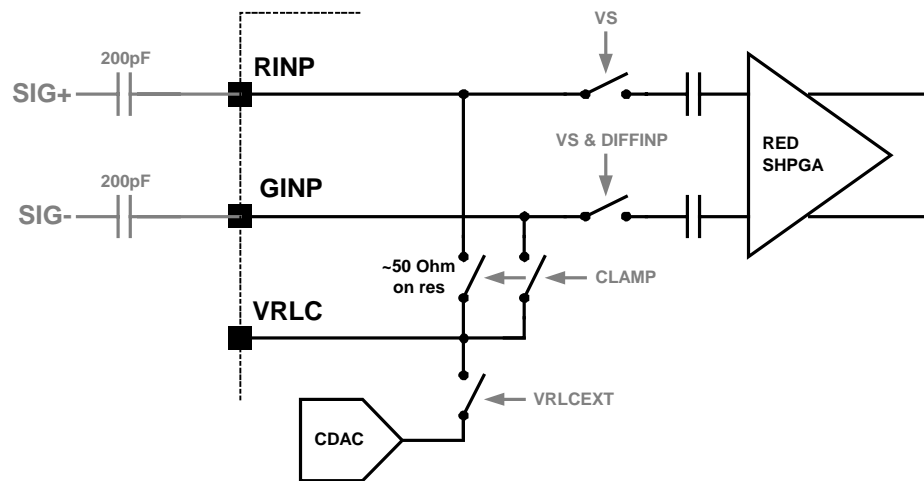


Figure 1: Differential Input Configuration

To ensure correct operation the following must be observed:

1. Green and Blue SHPGA's are disabled when DIFFINP is set.
2. BINP should be left floating (since it will still be clamped to VRLC) during the clamp period.
3. RLC pin should be tied high.
4. CDSREF[1:0] should be set to 01 if in mode 4.
5. MONO bit should be set high.
6. CDS bit should be set low.

Figure 2 shows some typical timings associated with differential input mode. The device is running in monochrome mode 4 (MCLK:VSMP ratio of 2:1). There are two phases, clamping and tracking. During the clamping period the RINP and GINP (and BINP) are clamped to VRLC, effectively storing the reset level on the external input capacitors. During the tracking phase the RINP and GINP pins are connected to the SHPGA input capacitors allowing the differential video signal to be sampled.

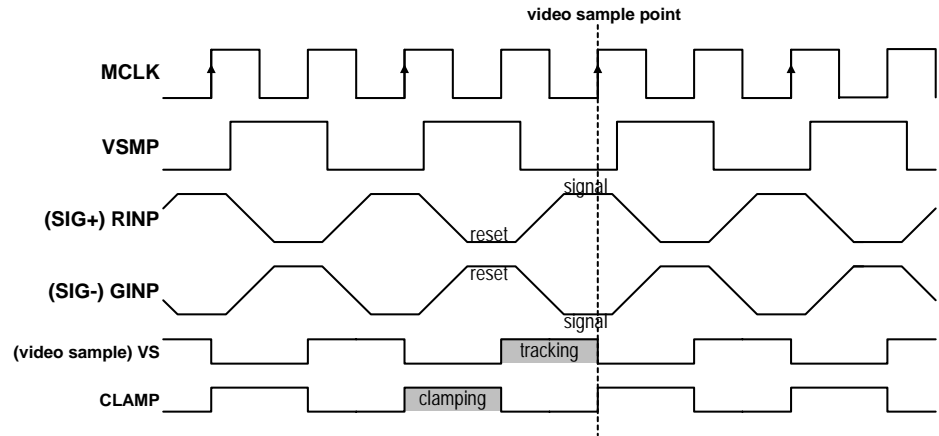


Figure 2: Differential Input Mode Timing (Mono Mode 4)

SUMMARY

The above describes how to operate the WM8199 Analogue Front End device in Differential Mode. However should any further assistance be required please contact the applications group (See below) who will be happy to answer any questions you may have.

APPLICATION SUPPORT

If you require more information or require technical support please contact Wolfson Microelectronics Applications group through the following channels:

Email: apps@wolfsonmicro.com
 Telephone: (+44) 131 667 9386
 Fax: (+44) 131 667 5176
 Mail: Applications at the address on the final page.

or contact your local Wolfson representative.

Additional information may be made available from time to time on our web site at <http://www.wolfsonmicro.com>

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ADDRESS:

Wolfson Microelectronics Ltd
20 Bernard Terrace
Edinburgh
EH8 9NX
United Kingdom

Tel :: +44 (0)131 667 9386

Fax :: +44 (0)131 667 5176

Email :: apps@wolfsonmicro.com