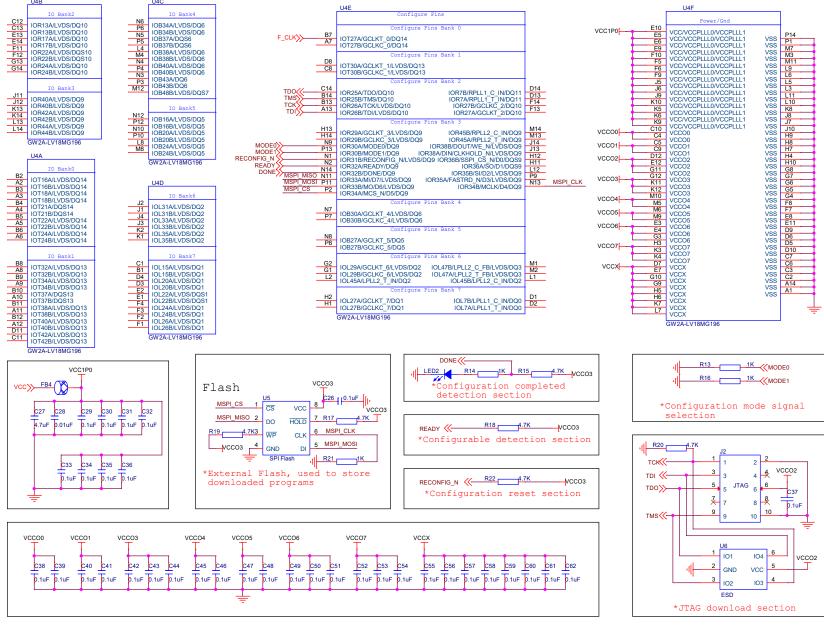
GW2A-LV18EQ144 VCC00 VCCO1 VCCO3 Flash C1 [0.1uF MSPI CS —4.7K Ţ DO MSPI_CLK MODEOR MODEZA MO 4.7K3 WP CLK VCCO3 4 GND SPI Flash *External Flash, used downloaded programs VCC1P0 VCC/VCCPLLL1 VCC/VCCPLLL1 VCC1P0 VSS VSS IOL2A/LVDS/DQ0/BANK7 IOR7A/RPLL1_T_IN/DQ11/BANK2 IOL2B/LVDS/DQ0/BANK7 IOR7B/RPLL1_C_IN/DQ11/BANK2 <mark>1K </mark>≪MODE0 VCCO7 VCCO7 VCCPLLR0 VCCPIII0 VCCX/VCCO2/VCCO6 IOL7A/LPLL1_T_IN/DQ0/BANK7 VCCXV/CCO2/VCCO6 IOL7B/LPLL1_C_IN/DQ0/BANK7 IOR20A/LVDS/DQ10/BANK2 VCCPLLL0 VCCPLLL0 IOL22A/LVDS/DQS1/BANK7 IOR20B/I VDS/DQ10/BANK2 IOR22A/LVDS/DQS10/BANK2 IOL22B/LVDS/DQS1/BANK7 IOL27A/GCLKT 7/DQ1/BANK7 IOR22B/LVDS/DQS10/BANK2 *Configuration mode signal IOR27A/GCLKT 2/DQ10/BANK2 -</F_CLK IOL27B/GCLKC_7/DQ1/BANK7 IOR25B/TMS/DQ10/BANK2 IOR27B/GCLKC_2/DQ10/BANK2 IOR33A/MI/D7/LVDS/DQ9/BANK3 MSPL MISO TCK IOR26A/TCK/LVDS/DQ10/BANK2 IOR33B/MO/D6/LVDS/DQ9/BANK3 IOR34A/MCS N/D5/DQ9/BANK3 GW2A-LV18EQ144 MSPL CS IOR39A/SCLK/DO9/BANK3 TDI 🥎 IOR34B/MCLK/D4/DQ9/BANK3 IOR35A/FASTRD_N/D3/LVDS/DQ9/BANK3 DONE (IOR26B/TDI/LVDS/DQ10/BANK2 VSS IOR25A/TDO/DQ10/BANK2 VCCO3 VCC07 IOR35B/SI/D2/LVDS/DQ9/BANK3 VCCO7 Configuration completed RECONFIG_N IOR31B/RECONFIG_N/LVDS/DQ9/BANK3 IOR32B/DONE/DQ9/BANK3 IOR32A/READY/DQ9/BANK3 IOR36A/SO/D1/DQS9/BANK3 DONE detection section IOR36B/SSPI_CS_N/D0/DQS9/BANK3 READY IOL32A/DQ2/BANK6 IOL32B/DQ2/BANK6 IOR38A/CLKHOLD_N/DIN/LVDS/DQ9/BANK3 IOR38B/DOUT/WE N/LVDS/DQ9/BANK3 IOL29A/GCLKT_6/LVDS/DQ2/BANK6 IOL29B/GCLKC_6/LVDS/DQ2/BANK6 IOR42A/LVDS/DQ9/BANK3 IOR42B/LVDS/DQ9/BANK3 IOL33A/LVDS/DQ2/BANK6 IOL33B/LVDS/DQ2/BANK6 IOR45A/RPLL2_T_IN/DQ9/BANK3 *Configurable detection section VCCPLLR1 VCCPLLR1 IOL36A/DQS2/BANK6 IOR49A/LVDS/DQ8/BANK3 IOR49B/LVDS/DQ8/BANK3 IOI 36B/DOS2/BANK6 VCCX/VCCO2/VCCO6 VCCX/VCCO2/VCCO6 IOR50A/DQS8/BANK3 IOI 42A/I VDS/DO2/BANK6 VCCO3 IOR50B/DQS8/BANK3 IOL42B/LVDS/DQ2/BANK6 R10 4.7K IOL45A/LPLL2_T_IN/DQ2/BANK6 EXTR **KEXTR** RECONFIG_N <<-VCC1P0 36 *Configuration reset section VCC1P0 VCC/VCCPLLL1 VCC/VCCPLLL1 R11 10K *Dedicated Pin section R12 VCC05 VCCO2 JTAG VCCPLLL0 VCCPLLR1 VCCX/VCCO2/VCCO6 VCCO0 VCCO1 VCCO3 VCCO4 VCCO5 VCCO7 VCC>> FB1 FB3 / 101 104 VCCO2 GND VCC СЗ C14 C24 C25 C9 C12 C13 C17 C20 C21 C22 C23 103 102 0.1uF 0.1uF .1uF 0.1uF ESD *JTAG download section Notes: 1.F CLK signal is an external input clock signal. $\overline{\text{IT}}$ is recommended that F_CLK signal be provided through an active oscillator crystal. 2.External Flash memory is used to store downloaded programs. For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290. GOWIN Minimum System Diagram 3.It is recommended that add an ESD protection chip to the JTAG download circuit. Document Number Rev 2.0 ize A3 GW2A-LV18EQ144

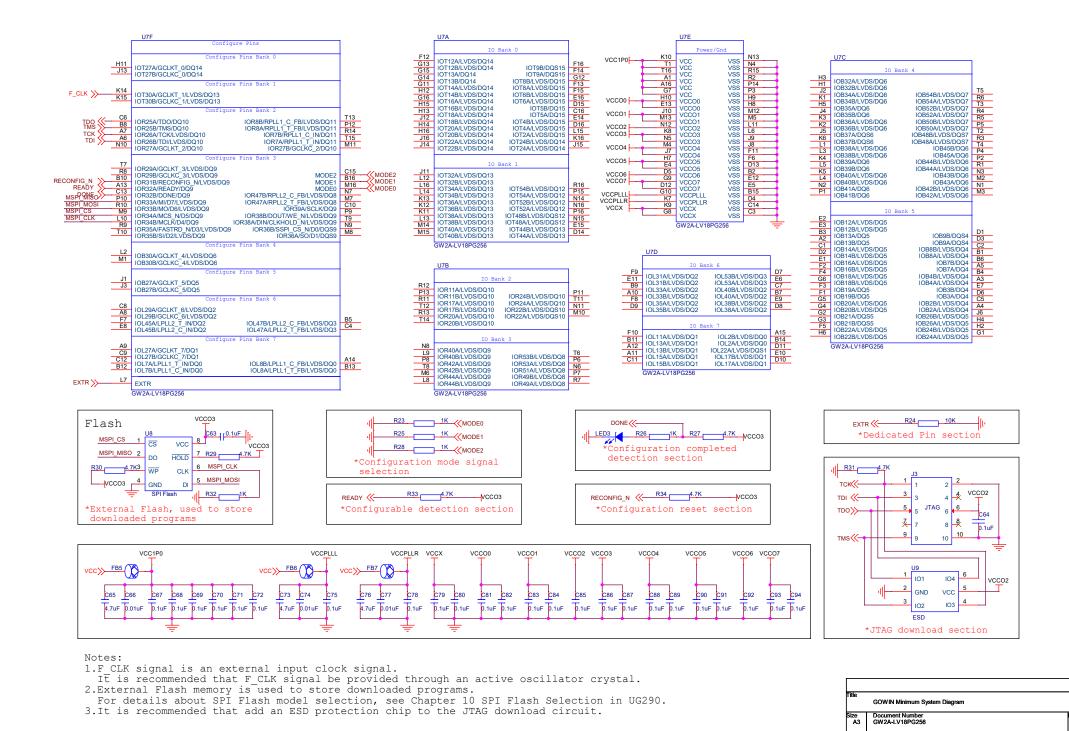
5 4 3 2 1 GW2A-LV18MG196



Notos.

- 1.F CLK signal is an external input clock signal.
- It is recommended that F CLK signal be provided through an active oscillator crystal.
- 2.External Flash memory is used to store downloaded programs.
 For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290.
- 3.It is recommended that add an ESD protection chip to the JTAG download circuit.

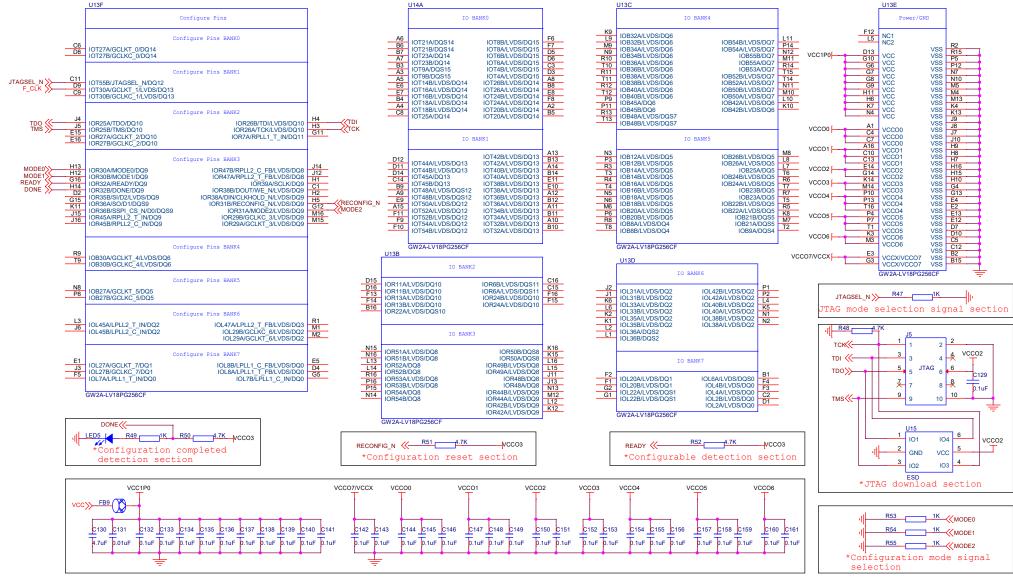
5 4 3 2 1 GW2A-LV18PG256



Rev 2.0 GW2A-LV18PG256C IO BANKO IO BANK2 Configure Pins U10E IOR11A/LVDS/DQ10 IOR11B/LVDS/DQ10 IOR6B/LVDS/DQS11 IOR6A/LVDS/DQS11 IOT21A/DOS14 IOT8B/I VDS/DQ15 Power/GND F7 D5 D6 C3 D3 A8 B8 E8 IOR24B/LVDS/DQ10 F15 IOT21B/DQS14 IOT8A/LVDS/DQ15 IOR13A/LVDS/DQ10 F14 B16 Configure Pine BANKO B7 A7 B3 A3 A5 E6 E7 IOT6B/LVDS/DQ15 IOR13B/LVDS/DQ10 IOR24A/LVDS/DQ10 IOT23A/DQ14 L5 F12 IOT27A/GCLKT_0/DQ14 IOT27B/GCLKC 0/DQ14 IOT23B/DQ14 IOT6A/LVDS/DQ15 IOR22A/LVDS/DQS10 NC1 NC2 VSS IOT9A/DOS15 IOT4B/I VDS/DQ15 VSS IOT9B/DQS15 IOT4A/LVDS/DQ15 P12 N7 VCC1P0L VCCVCCPLLLVCCPLLR VSS IOT14B/LVDS/DO14 IOT26B/LVDS/DO14 Configure Pins BANK1 IOT16A/LVDS/DQ14 IOT26A/LVDS/DQ14 VCC/VCCPLLL/VCCPLLR VSS N10 JTAGSEL_N >> IOT55B/JTAGSEL_N/DQ12 IOT30A/GCLKT_1/LVDS/DQ13 VCC/VCCPLLL/VCCPLLR VSS VCC/VCCPLLL/VCCPLLR VSS IOT16B/I VDS/DQ14 IOT2/IB/LVDS/DO1/ D9 C9 B4 A4 C8 F8 H6 M5 IOT18A/LVDS/DQ14 IOT24A/LVDS/DQ14 IOR50A/DQS8 IOR48B/DQ8 IOR48A/DQ8 IOR53B/LVDS/DQ8 IOR53A/LVDS/DQ8 R16 IOR48B/DQ8 IOT18B/LVDS/DQ14 IOT37A/DQS13 IOT20B/LVDS/DQ14 IOT20A/LVDS/DQ14 IOR50B/DQS8 IOR52A/DQ8 VCC/VCCPLLL/VCCPLLR VSS VCC/VCCPLLL/VCCPLLR VSS IOT30B/GCLKC_1/LVDS/DQ13 P15 N14 IOR52B/DO8 IOR53A/LVDS/DO8 VCC/VCCPLLL/VCCPLLR VSS Configure Pine BANK? K13 IOR54A/DQ8 VCC/VCCPLLL/VCCPLLR VSS G10 N4 J4 J5 E15 IOR25A/TDO/DQ10 IOR26B/TDI/LVDS/DQ10 IOR54B/DQ8 IOR42A/LVDS/DQ9 VCC/VCCPLLL/VCCPLLR VSS K12 L12 IOR26A/TCK/LVDS/DQ10 G11 IOR25B/TMS/DQ10 VCC/VCCPLLL/VCCPLLR VSS A1 C4 C7 IO BANK1 VCCOn L IOR27A/GCLKT_2/DQ10 IOR7A/RPLL1_T_IN/DQ11 IOR42B/LVDS/DQ9 VCC00 VSS IOR27B/GCLKC 2/DQ10 VCCCO VSS IOR44A/LVDS/DQ9 VCC00 VCCO1 |-VSS H8 H7 VSS H16 VSS H15 VSS H10 VCCO1 Configure Pins BANK3 2ins BANK3

| ORATRIPRIL2_C_FBILVDS/DO8 | 112 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | 115 | IOT/24/LVDS/DO13 IOTARR/LVDS/DO13 A13 D12 D11 B9 B14 C10 C13 IOT42B/LVDS/DQ13 IOT40A/LVDS/DQ13 GW2A-LV18PG2560 IOR30A/MODE0/DQ9 IOT44A/I VDS/DQ13 IOT38B/I VDS/DQ13 VCCO1 MODE IOR30B/MODE1/DQ9 IOT44B/LVDS/DQ13 VCCO2 IOT38A/LVDS/DQ13 U10C READY IOR32A/READY/DO9 IOT48A/LVDS/DQS12 IOT36B/LVDS/DO13 VCCO2 A9 E9 G4 G13 E4 H14 B12 A11 K14 DONE IOR32B/DONE/DQ9 IOT48B/LVDS/DQS12 IOT36A/LVDS/DQ13 VCCO3 VCCO3 MSPI CS D2 IOR33B/MI/D7/LVDS/DQ9 H5
IOR31B/RECONFIG_N/LVDS/DQ9 G12 IOR34A/MCS_N/D5/DQ9 IOT50A/LVDS/DQ12 IOT34B/LVDS/DQ13 VCCO3 R11 IOR34B/MCLK/D4/DQ9 VCCO4 IOT52A/I VDS/DQ12 IOT34A/I VDS/DQ13 P13 T16 P4 F11 VCCO4 E2 A10 K11 K9 L9 M9 N9 R10 T10 R11 T11 R12 T12 P9 IOR36A/SO/D1/DQS9 IOR31A/MODE2/LVDS/DQ9 M16 → MODE2 IOT52B/LVDS/DQ12 IOT32B/LVDS/DQ13 IOB32A/LVDS/DQ6 VCCO4 E12 D7 D10 C5 C12 B2 B10 C14 D14 IOR29B/GCLKC_3/LVDS/DQ9 M15 L11 P14 IOR54R/LVDS/DO7 IOR45A/RPLL2 T IN/DO9 IOT32A/LVDS/DO13 IOB32B/LVDS/DO6 IOT54A/I VDS/DO12 VCCO4 VCCO5 OR45B/RPLL2_C_IN/DQ9 IOR29A/GCLKT_3/LVDS/DQ9 IOT54B/LVDS/DQ12 IOT45B/DQ13 IOB34A/LVDS/DQ6 IOB54A/LVDS/DQ7 VCCO5 N12 P7 IOT45A/DQ13 IOB34B/LVDS/DQ6 IOB55B/DQ7 VCCO₅ M11 R14 T15 T14 N11 VSS VSS VSS VSS IOB36A/LVDS/DQ6 IOB55A/DQ7 VCCO₅ K3 M3 VCCO6 IOB36B/I VDS/DQ6 IOB53A/DQ7 VCCO6 Configure Pins BANK4 IOB38A/LVDS/DQ6 IOB52B/LVDS/DQ7 VCCO6 GW2A-LV18PG256C VCC07/VCCX IOB30A/GCLKT 4/LVDS/DO6 IOB38B/LVDS/DO6 IOB52A/LVDS/DO7 VCCX/VCCO7 G3 B15 IOB30B/GCLKC_4/LVDS/DQ6 IOB40A/LVDS/DQ6 IOB50B/LVDS/DQ7 VSS M10 L10 VCCX/VCCO7 U10D IOB40B/LVDS/DQ6 IOB45A/DQ6 IOB50A/LVDS/DQ7 IOB42A/LVDS/DQ6 P9 | IOB45A/DQ6 | IOB45B/DQ6 | IOB45A/LVDS/DQS7 | IOB48A/LVDS/DQS7 | IOB48B/LVDS/DQS7 Configure Pins BANK5 IO BANK6 GW2A-LV18PG256C K10 IOB42B/LVDS/DQ6 IOB27A/GCLKT 5/DQ5 L2 L1 IOB27B/GCLKC 5/DQ5 IOL36A/DQS2 IOL42B/LVDS/DQ2 IOB48B/LVDS/DQS7 P2 L4 IOL36B/DQS2 IOL42A/LVDS/DQ2 IOL31A/LVDS/DQ2 IOL40B/LVDS/DQ2 Configure Pins BANK6 IO BANK5 IOI 31B/I VDS/DQ2 IOI 40A/I VDS/DQ2 VCCO3 Flash IOL45A/LPLL2_T_IN/DQ2 IOL45B/LPLL2_C_IN/DQ2 IOL33A/LVDS/DQ2 IOL38B/LVDS/DQ2 N2 K1 L6 IOB8A/LVDS/DQ4 IOR26R/LVDS/DO5 IOL33B/LVDS/DO2 IOL38A/LVDS/DO2 78 N3 P3 R3 T3 R4 C95 0.1uF IOL35B/LVDS/DQ2 IOB8B/LVDS/DQ4 IOB26A/LVDS/DQ5 cs IOL35A/LVDS/DQ2 IOB12A/LVDS/DQ5 IOB12B/LVDS/DQ5 IOR24R/LV/DS/DOS VCC **VCCO3** IOB24A/LVDS/DQ5 MSPI_MISO 2 7 R35 4.7K IOB14A/LVDS/DQ5 IOB14B/LVDS/DQ5 IOB22B/LVDS/DQ5 IOB22A/LVDS/DQ5 HOLD DO IOL27A/GCLKT 7/DQ1 MSPI CLK IO BANK7 4.7K3 IOL27B/GCLKC_7/DQ1 IOL7A/LPLL1 T IN/DQ0 IOB16A/LVDS/DQ5 IOB16B/LVDS/DQ5 IOB20B/LVDS/DQ5 M6 N6 N5 L7 T4 M7 IOB20A/LVDS/DQ5 MSPI_MOSI F2 F1 G2 VCCO3 IOL20A/LVDS/DQ1 IOL6A/LVDS/DQS0 IOB21A/DQS5 IOB18B/LVDS/DQ5 GND DI F4 F3 K8 R7 IOI 20B/I VDS/DQ1 IOI 4B/I VDS/DQ0 IOB21B/DQS5 IOB18A/I VDS/DQ5 GW2A-LV18PG256C SPI Flash R37 IOB25A/DQ5 T2 IOB23A/DQ5 G1 T7 IOB9A/DOS4 IOL 22B/LVDS/DOS IOL2B/LVDS/DO0 IOR23R/DO5 *External Flash, used to store IOL2A/LVDS/DQ0 downloaded programs VCC1P0 GW2A-I V18PG2560 GW2A-I V18PG2560 VCC>> FB8 R38 4.7K VCC03 DONE (R39 LED4 R40 _1K R41 __ *Configurable detection section C96 C99 C100 C101 C102 C103 C104 C105 C106 C107 Configuration completed VCCO2 4 TDI ((detection section RECONFIG_N
R42 4.7K C108 *Configuration reset section 8 0.1uF JTAGSEL_N >> R43 10 TMS TAG mode selection signal section VCCO7/VCCX VCC00 VCC01 VCCO2 VCCO4 VCC05 VCC06 VCCO3 U12 101 104 VCCO2 R44 -1K ((MODE0 GND VCC C109 C110 C111 C112 C113 C114 C115 C116 C117 C118 C119 C120 C121 C122 C123 C124 C125 C126 C127 C128 R45 1K (MODE1 102 103 R46 1K (MODE2 *Configuration mode signal *JTAG download section selection 1.F CLK signal is an external input clock signal. $\overline{\text{It}}$ is recommended that F CLK signal be provided through an active oscillator crystal. 2.External Flash memory is used to store downloaded programs. GOWIN Minimum System Diagram For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290. 3.It is recommended that add an ESD protection chip to the JTAG download circuit. ize A3 Rev 2.0 GW2A-I V18PG256C

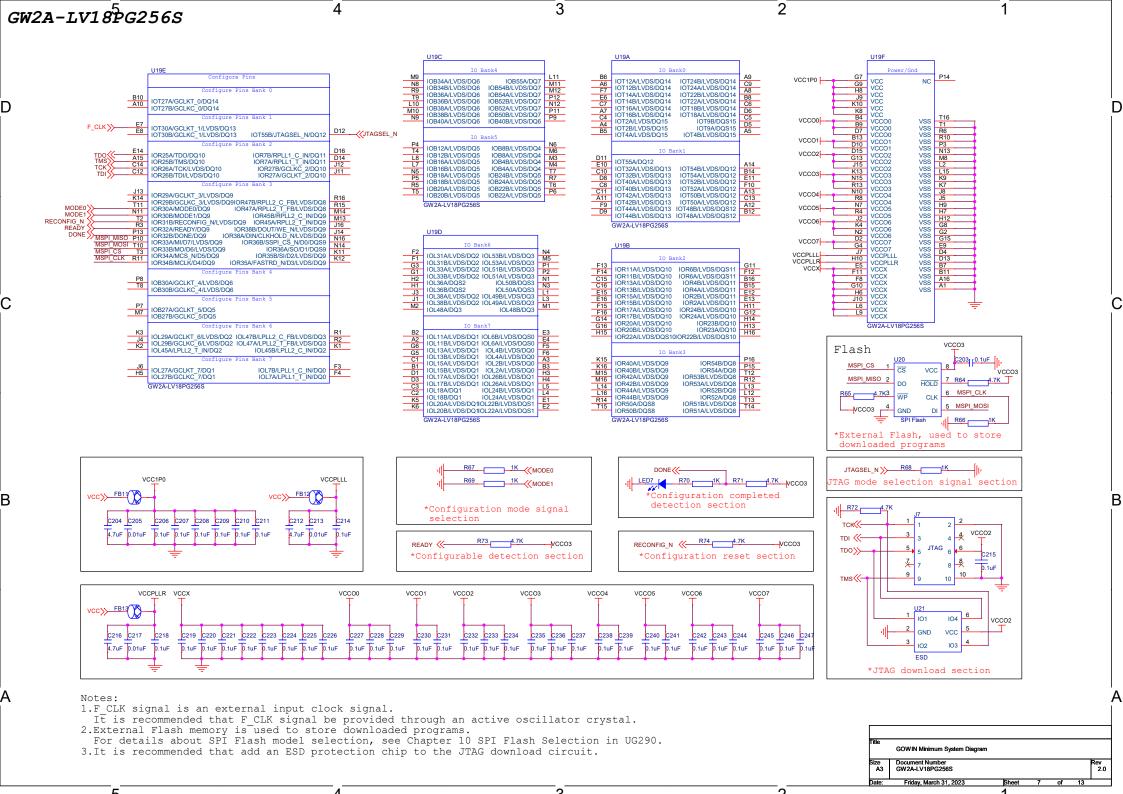
5 4 3 2 7 GW2A-LV18PG256CF

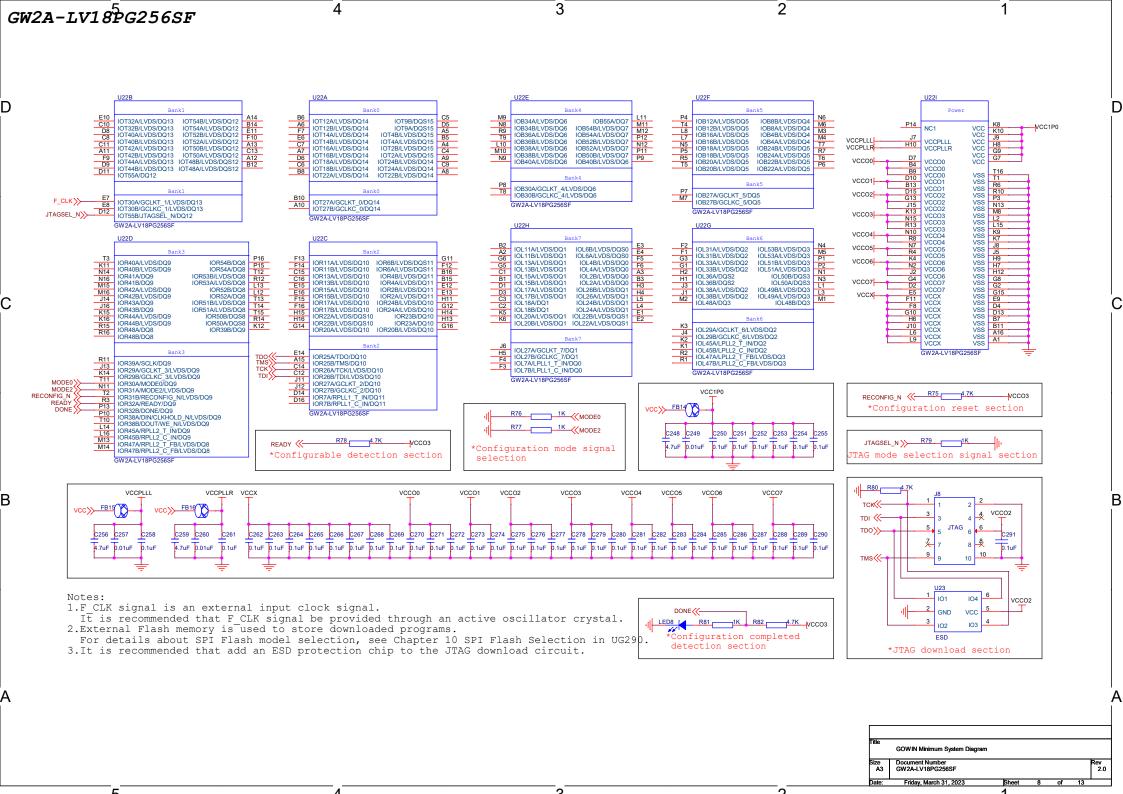


Notos

- 1.F CLK signal is an external input clock signal.
- It is recommended that F CLK signal be provided through an active oscillator crystal.
- 2. External Flash memory is used to store downloaded programs.
 - For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290.
- 3.It is recommended that add an ESD protection chip to the JTAG download circuit.

3 5 GW2A-LV18PG256E 11161 1116A U16F II16B Power IOT21A/DQS14/BANK0 IOT21B/DQS14/BANK0 IOT37A/DQS13/BANK1 IOR21A/DQ10/BANK2 IOB33A/DQ6/BANK4 B10 C11 B11 A10 J15 J13 D8 P15 IOR21B/DQ10/BANK2 IOB33B/DQ6/BANK4 IOT37B/DQS13/BANK1 VSS R7 VSS F11 IOR24A/LVDS/DQ10/BANK2 IOR24B/LVDS/DQ10/BANK2 NC1 NC2 IOT23A/DQ14/BANK0 IOR35A/DO6/BANK4 IOT38A/LVDS/DQ13/BANK1 IOT23B/DQ14/BANK0 IOB35B/DQ6/BANK4 IOT38B/I VDS/DQ13/BANK1 NC3 VSS VSS IOT24A/LVDS/DQ14/BANK0 IOB37A/DQS6/BANK4 OT41A/DQ13/BANK1 A7 B6 A6 C6 A11 D10 E11 C8 B9 K6 M11 N15 IOT24B/LVDS/DQ14/BANK0 IOB37B/DQS6/BANK4 IOT41B/DQ13/BANK1 NC4 Bank2 VSS IOT25A/DQ14/BANK0 IOB38A/LVDS/DQ6/BANK4 IOT43A/DQ13/BANK1 IOR25A/TDO/DQ10/BANK2 VCC1P0 VCC/VCCPLLL/VCCPLLR VSS IOT25B/DQ14/BANK0 IOB38B/I VDS/DO6/BANK4 IOT43B/DQ13/BANK1 J16 K16 R14 TMS IOR25B/TMS/DQ10/BANK2 VCC/VCCPLLL/VCCPLLR VSS IOT26A/LVDS/DQ14/BANK0 IOB43A/DQ6/BANK4 IOT45A/DQ13/BANK1 TCK IOR26A/TCK/LVDS/DO10/BANK2 VCC/VCCPLLL/VCCPLLR VSS IOT26B/LVDS/DQ14/BANK0 IOR43B/DO6/BANK4 IOT45B/DO13/BANK1 IOR26B/TDI/LVDS/DQ10/BANK2 VCC/VCCPLLL/VCCPLLR IOT3A/DQ15/BANK0 IOB49A/DQ7/BANK4 IOT54A/LVDS/DQ12/BANK1 IOR27A/GCLKT_2/DQ10/BANK2 IOR27B/GCLKC_2/DQ10/BANK2 IOR7A/RPLL1_T_IN/DQ11/BANK2 IOR7B/RPLL1_C_IN/DQ11/BANK2 VCC/VCCPLLL/VCCPLLR VSS VSS IOT3R/DO15/RANKO IOB49B/DQ7/BANK4 IOT54B/LVDS/DQ12/BANK1 H7 M6 A2 R16 VCC/VCCPLLL/VCCPLLR IOT4A/LVDS/DQ15/BANK0 IOB52A/LVDS/DQ7/BANK4 VCC/VCCPLLL/VCCPLLR VCC/VCCPLLL/VCCPLLR IOT4B/LVDS/DQ15/BANK0 IOT5A/DQ15/BANK0 VSS VSS IOR52B/I VDS/DO7/BANK4 IOB53A/DQ7/BANK4 IOT30A/GCLKT_1/LVDS/DQ13/BANK1 IOT30B/GCLKC 1/LVDS/DQ13/BANK VCC/VCCPLLL/VCCPLLR VSS IOT5B/DO15/BANKO IOB53B/DO7/BANK4 C9 GW2A-LV18PG256E M15 D4 C4 C5 VCC/VCCPLLL/VCCPLLR VSS IOT6A/LVDS/DQ15/BANK0 VCC/VCCPLLL/VCCPLLR VSS IOT6B/LVDS/DQ15/BANK0 GW2A-LV18PG256E VSS IOT7A/DQ15/BANK0 F10 B5 VSS VSS IOB30A/GCLKT_4/LVDS/DQ6/BANK4 IOB30B/GCLKC_4/LVDS/DQ6/BANK4 vccx IOT7B/DQ15/BANK0 VCCX IOT8A/I V/DS/DO15/BANKO IOR40A/LVDS/DQ9/BANK3 VCCX IOT8B/LVDS/DQ15/BANK0 GW2A-LV18PG256E U16H IOR/14/DOQ/RANK3 VCCY VSS VSS VSS IOTQA/DOS15/BANKO A13 C12 C13 E16 K5 E5 IOR41B/DQ9/BANK3 VCCX IOT9B/DQS15/BANKO IOR43A/DQ9/BANK3 VCCX IOR43B/DQ9/BANK3 VSS IOL11A/LVDS/DQ1/BANK7 U16G IOR48A/DO8/BANK3 vccon VSS IOL11B/LVDS/DQ1/BANK7 G15 F16 F7 H15 F2 F1 G4 IOT27A/GCLKT_0/DQ14/BANK0 IOT27B/GCLKC_0/DQ14/BANK0 IOR48B/DQ8/BANK3 VCC00 VSS IOL12A/DQ1/BANK7 IOR49A/LVDS/DQ8/BANK3 IOR49B/LVDS/DQ8/BANK3 VSS IOL12B/DQ1/BANK7 IOL14A/DQ1/BANK7 IOL30A/DQ2/BANK6 G16 B15 C14 A14 H4 G2 H2 H3 VCCO1 VSS GW2A-I V18PG256F K2 L2 M2 M1 L6 E10 IOR50A/DQS8/BANK3 VCC01 VSS VSS IOL30B/DQ2/BANK6 IOL14B/DQ1/BANK7 IOR51A/I VDS/DO8/BANK3 IOL32A/DO2/BANK6 IOI 16A/DO1/BANK7 U16F VCCO2 VSS VSS IOL32B/DQ2/BANK6 IOL16B/DQ1/BANK7 G12 IOL33A/LVDS/DQ2/BANK6 IOL22A/LVDS/DQS1/BANK7 IOR52A/DQ8/BANK3 VCCO2 A15 B13 B14 Bank5 T13 M3 N3 IOR52B/DQ8/BANK3 VSS VSS IOL33B/LVDS/DQ2/BANK6 IOL22B/LVDS/DQS1/BANK7 VCCO3 IOB14A/I VDS/DQ5/BANK5 VCCO3 IOR54A/DO8/BANK3 IOI 35A/I VDS/DQ2/BANK6 IOI 2A/I VDS/DQ0/BANK7 IOR54B/DQ8/BANK3 VSS VSS IOB14B/LVDS/DQ5/BANK5 IOL35B/LVDS/DQ2/BANK6 IOL2B/LVDS/DQ0/BANK7 VCCO3 L4 L5 P1 R1 N8 VCCO3 IOB17A/DO5/BANK5 IOL36A/DOS2/BANK6 IOL3A/DO0/BANK7 R11 F4 VSS IOB17B/DQ5/BANK5 IOL36B/DQS2/BANK6 IOL3B/DQ0/BANK7 VCCO4 VSS VSS IOB19A/DQ5/BANK5 IOB19B/DQ5/BANK5 IOL4A/LVDS/DQ0/BANK7 IOL5A/DQ0/BANK7 VCCO4 IOL39A/DQ2/BANK6 M13 RECONFIG_N READY IOL39B/DQ2/BANK6 IOR31B/RECONFIG N/LVDS/DQ9/BANK3 P2 P3 T2 T3 D14 VCCO4 A16 M9 D2 IOR32A/READY/DQ9/BANK3 IOR32B/DONE/DQ9/BANK3 VSS VSS IOB21A/DQS5/BANK5 IOB21B/DQS5/BANK5 IOL41A/DQ2/BANK6 IOL41B/DQ2/BANK6 IOL5B/DQ0/BANK7 MSPI MISO H13 M8 T5 T6 VCCO5 IOR33A/MI/D7/LVDS/DQ9/BANK3 VCC05 VSS VSS IOB22A/LVDS/DQ5/BANK IOL48A/DQ3/BANK6 MSPI_MOSI_H14 MSPI_CS D16 N11 N5 N12 N6 IOR33B/MO/D6/LVDS/DQ9/BANK3 VCCO5 IOB22B/LVDS/DQ5/BANK5 IOL48B/DQ3/BANK6 R2 R3 IOR34A/MCS_N/D5/DQ9/BANK3 VCCO5 VSS VSS VSS VSS IOB25A/DQ5/BANK5 IOL51A/LVDS/DQ3/BANK6 IOL27A/GCLKT_7/DQ1/BANK7 MSPI_CLK E15 H9 B4 IOR34B/MCI K/D4/DQ9/BANK3 VCCO5 IOB25B/DQ5/BANK5 IOI 51B/I VDS/DQ3/BANK6 IOL27B/GCLKC_7/DQ1/BANK7 IOL7A/LPLL1 T IN/DQ0/BANK7 IOR35A/FASTRD N/D3/LVDS/DQ9/BANK3 VCC05 IOB2A/LVDS/DQ4/BANK5 T4 IOR36A/SO/D1/DOS9/BANK3 IOB2B/LVDS/DO4/BANKS IOL7B/LPLL1_C_IN/DQ0/BANK7 IOL8A/LPLL1_T_FB/LVDS/DQ0/BANK7 M5 VSS VSS VSS IOR36B/SSPI_CS_N/D0/DQS9/BANK3 VCCO6 IOB5A/DQ4/BANK5 IOL29A/GCLKT_6/LVDS/DQ2/BANK6 IOL29B/GCLKC_6/LVDS/DQ2/BANK6 IOR38A/DIN/CLKHOLD_N/LVDS/DQ9/BANK IOR38B/DOUT/WE_N/LVDS/DQ9/BANK3 VCC06 N2 IOBSB/DOJ/BANKS IOL8B/LPLL1_C_FB/LVDS/DQ0/BANK7 D13 E14 C16 IOB8A/LVDS/DQ4/BANK5 T11 GW2A-LV18PG256E IOR39A/SCLK/DQ9/BANK3 IOR45A/RPLL2 T IN/DQ9/BANK3 VCCO7 VSS VSS VCCO7 IOB8B/LVDS/DQ4/BANK5 GW2A-I V18PG256F VCC07 GW2A-LV18PG256E IOR47A/RPLL2 T FB/LVDS/DQ8/BANK3 GW2A-I V18PG256F GW2A-I V18PG256F VCCO3 R56 4.7K DONE (Flash C162 0.1uF R57 -1K R58 *Configurable detection section VCC1P0 MSPL CS CS VCC VCC03 Configuration completed MSPLMISO 2 VCC>> FB10 7 R59 HOLD DO detection section MSPI CLK R61 -WP CLE C163 C164 C165 C166 C167 C168 C169 C170 C171 C172 C173 C174 C175 MSPL MOS VCCO3 GND D 0.1uF 0.1uF 0.1uF VCCO2 SPI Flash RECONFIG_N (R63 4.7K R62 TDI <<-*External Flash, used to store *Configuration reset section TDO >> C176 downloaded programs TMS VCC00 VCCO1 VCCO2 VCC03 VCCO4 VCC05 VCCX VCC06 VCCO7 U18 101 104 VCC02 VCC GND C177 C178 C179 C180 C181 C182 C183 C184 C185 C186 C187 C189 C190 C191 C192 C193 C194 C195 C196 C197 C198 C199 C200 C201 C202 C188 102 103 0.1uF *JTAG download section 1.F CLK signal is an external input clock signal. It is recommended that F CLK signal be provided through an active oscillator crystal. 2.External Flash memory is used to store downloaded programs. GOWIN Minimum System Diagram For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290. 3.It is recommended that add an ESD protection chip to the JTAG download circuit. ize A3 Rev 2.0 GW2A-LV18PG256E



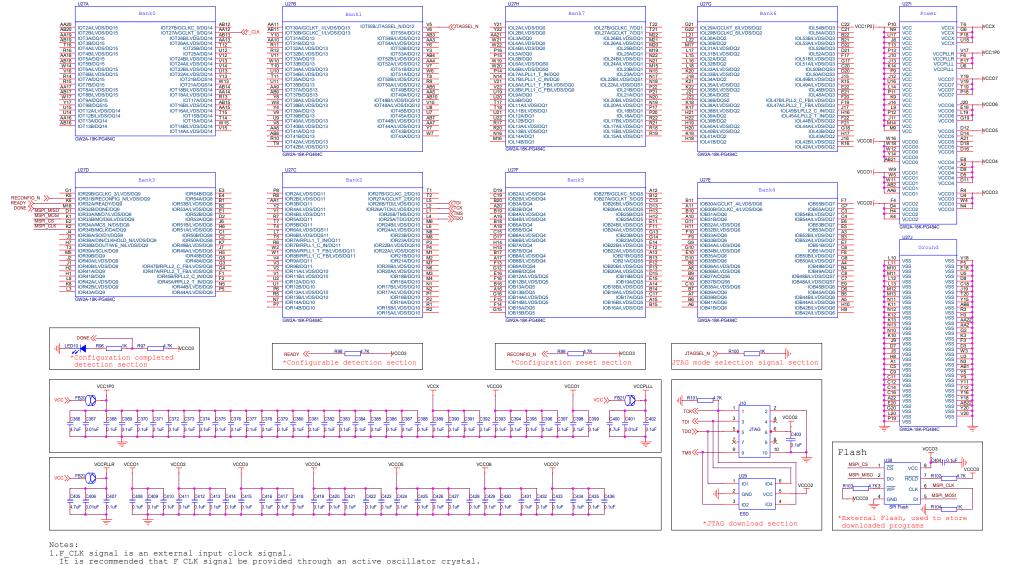


3 2 GW2A-LV18PG484 4 U24E Y12 V13 IOB31A/DQ6 VSS D8 IOT13A/DQ14
A2 IOT13B/DD14
A3 IOT14A/LVDS/DD14
C3 IOT14A/LVDS/DD14
C6 IOT16A/LVDS/DD14
A4 IOT16A/LVDS/DD14
A5 IOT17A/DQ14
B6 IOT17B/DD14 IOT134/DO1/ | Y13 | IOB31A/DQ6 | | W12 | IOB31B/DQ6 | | W13 | IOB32A/LVDS/DQ6 | | AB13 | IOB32A/LVDS/DQ6 | | AB14 | IOB33A/DQ6 | | AB15 | IOB33A/DQ6 | | AB15 | IOB34A/LVDS/DQ6 | | AB15 | IOB34A/LVDS/DQ6 | | AB15 | IOB34A/LVDS/DQ6 | | AB16 | IOB34B/LVDS/DQ6 | | AB17 | IOB34B/LVDS/DQ6 | | AB18 | IOB34B/LVDS/DQ6 | B11 IOT27A/GCLKT_0/DQ14 IOT27B/GCLKC 0/DQ14 IOT9B/DOS15 IOB55B/DQ7 IOT9A/DQS15 IOT7B/DQ15 IOT7A/DQ15 IORSSA/DO IOB54B/LVDS/DQ7 IOT30A/GCLKT 1/LVDS/DQ13 IOB54A/LVDS/DQ7 E18 IOT30B/GCLKC_1/LVDS/DQ13 IOT55B/JTAGSEL N/DQ12 IOT6B/LVDS/DQ15 IOT6A/LVDS/DQ15 IOB34A/LVDS/DQ6 IOB34B/LVDS/DQ6 IOB53B/DQ7 IOB53A/DQ7 IOT18A/LVDS/DQ14 IOT18B/LVDS/DQ14 IOT19A/DQ14 IOT4B/LVDS/DQ15 IOB51B/DQ7 IOT4A/LVDS/DQ15 IOT3B/DQ15 IOB51A/DQ IOB50B/LVDS/DQ7 H16 H7 J16 VSS VSS VSS VSS VSS IOT3A/DQ15 IOT2B/LVDS/DQ15 IOT2A/LVDS/DQ15 IOR25B/TMS/DQ10 IOR26A/TCK/LVDS/DQ10 IOB50A/LVDS/DQ7 IOR8B/RPLL1_C_FB/LVDS/DQ11 IOR8A/RPLL1_T_FB/LVDS/DQ11 IOR26B/TDI/LVDS/DQ10 IOB48A/LVDS/DQS7 IOT26B/LVDS/DQ14 IOT26A/LVDS/DQ14 AB20 AB19 IOT25B/DQ14 IOT25B/DQ14 IOT25A/DQ14 IOT24B/LVDS/DQ14 IOT24A/LVDS/DQ14 IOB43B/DQ6 IOB43A/DQ6 IOB41B/DQ6 IOB41A/DQ6 W15 W14 IOR29A/GCLKT_3/LVDS/DQ9 IOR29B/GCLKC_3/LVDS/DQ9 IOR31B/RECONFIG_N/LVDS/DQ9 IOR32A/READY/DQ9 MODE2 -MODE1 -MODE0 U21 U22 T22 AA21 Y21 T18 RECONFIG. N 15 INALESTATION OF THE READY NEW MEST OF THE READY NEW RECONFIG_N >>-C11 IOT31A/DQ13 IOT31B/DQ13 IOT31B/DQ13 IOT32A/LVDS/DQ13 IOT32B/LVDS/DQ13 AB1 | IOB13A/DQ5 | IOB13B/DQ5 | IOB13B/DQ5 | IOB14A/LVDS/DQ5 | IOB14B/LVDS/DQ5 | IOB | OT55A/DO12 | E17 | B22 | C154B/LVDS/DO12 | F17 | B22 | C154B/LVDS/DO12 | F16 | C154B/LVDS/DO12 | C15 IORGR/DOS4 IOR38A/DINICLKHODE_NLVDS/DQ9 AA6 W7 W8 IORGA/DOS4 VSS VSS VSS VSS VSS VSS VSS IOR35A/FASTRD_N/D3/LVDS/DQ9 IOR35B/SI/D2/LVDS/DQ9 IOR36A/SO/D1/DQS9 IOT33A/DQ13 IOT33B/DQ13 IOT34A/LVDS/DQ13 IOB7B/DQ4 IOB7A/DQ4 T16 T7 IOB6B/I VDS/DQ4 IOR36B/SSPI CS N/D0/DQS9 IOT34B/LVDS/DQ13 IOB6A/LVDS/DQ4 IOT35A/DQ13 IOT35B/DQ13 IOB4B/LVDS/DQ4 IOB4A/LVDS/DQ4 VCC00 VCC00 VCC00 VCC01 VCC01 IOT51ADQ12 IOT50B/LVDS/DQ12 IOT50A/LVDS/DQ12 IOT48B/LVDS/DQS12 IOT48A/LVDS/DQS12 IOT44B/LVDS/DQ13 IOB3B/DQ4 IOB3A/DQ4 IOB3A/DQ4 IOB2B/LVDS/DQ4 IOB2A/LVDS/DQ4 IOB30A/GCLKT_4/LVDS/DQ6 IOB30B/GCLKC_4/LVDS/DQ6 IOT36A/LVDS/DQ13 IOT36B/LVDS/DQ13 IOT37A/DQS13 | B16 | Ol3/ADUS13 | A17 | Ol3/ADUS13 | A17 | Ol3/ADUS13 | Ol3/ADUS10 VCCO1 IOB26B/LVDS/DQ5 IOT44B/LVDS/IQ13 IOT44A/LVDS/IQ13 IOT43B/IDQ13 IOT43A/IDQ13 IOT41B/IDQ13 IOT41A/IDQ13 VCCO1 VCCO2 VCCO2 VCCO3 VCCO3 VCCO3 VCCO4 VCCO4 VCCO4 VCCO4 IOB26A/LVDS/DQ5 IOB25B/DQ5 IOB25A/DQ5 IOB24B/LVDS/DQ5 IOB24A/LVDS/DQ5 M4 | M3 | IOL29A/GCLKT_6/LVDS/DQ2 | AA2 | IOL29B/GCLKC_6/LVDS/DQ2 | IOL45B/LPLL2_C_IN/DQ2 | IOL45B/LPL VCCO3 IOL47B/LPLL2_C_FB/LVDS/DQ3 P5
IOL47A/LPLL2_T_FB/LVDS/DQ3 GW2A-I V18PG484 GW2A-I V18PG484 VCCO4 AA18 U12 AA4 AA9 U11 R1 | IOL27A/GCLKT_7/DQ1 | F4 | IOL27B/GCLKC_7/DQ1 | IOL7B/LPLL1_C_IN/DQ0 | IOL7B/LPLL1_C_IN/DQ0 R83 4.7K VCCO3 VCCO5 *Configurable detection section IOL8B/LPLL1_C_FB/LVDS/DQ0 F3
IOL8A/LPLL1_T_FB/LVDS/DQ0 VCCO6 VCCO6 VCCO6 VCCO6 N17 EXTR IOI 30A/DO2 RECONFIG N K R84 4.7K IOL30B/DQ2 GW2A-I V18PG484 VCCO7 VCCO7 VCCO7 IOL31A/LVDS/DQ IOI 54B/DQ3 IOL54B/DQ3 T5 IOL54A/DQ3 U5 IOL53B/LVDS/DQ3 V5 IOL53A/LVDS/DQ3 W4 *Configuration reset section IOL31B/LVDS/DQ2 IOL32A/DQ2 VCCPLLI IOL32B/DQ2 VCCPLLL VCCPLLR IOL33A/LVDS/DQ2 IOL33B/LVDS/DQ2 IOL50B/DQS3 IOL50A/DQS3 IOL50B/DQS3 IOL50A/DQS3 IOL48B/DQ3 IOL48B/DQ3 IOL44B/LVDS/DQ2 V3 IOL44A/L/DS/DQ2 IOL44A/L/DS/DQ2 EXTR (R85 10K IO Bank 2 VCCPLLR VCCX IOL34A/DQ2 IOL34B/DQ2 *Dedicated Pin section VCCX G19 G20 F20 F21 C22 D22 IOR11A/LVDS/DQ10 IOR9B/DQ1 | IORTHALVDS/DQ10 | IORTHALVDS/DQ10 | IORTHALVDS/DQ10 | IORTHALD/DQ10 | IORTHA VCCX IOR9A/DQ11 IOL35A/LVDS/DQ: IOL39B/DQ2 IOL38B/LVDS/DQ2 IOL38B/LVDS/DQ2 IOL35B/LVDS/DQ2 IOL36A/DQS2 IOREALLVOS/DOS11
IORES/DO11
IOREA/DO11
IOREA/DO11
IOREA/LVOS/DO11
IOREA/LVOS/DO11
IOREA/LVOS/DO11
IOREA/LVOS/DO11
IOREA/LVOS/DO11
IOREA/LVOS/DO10
IOREA/LVOS/DO10
IOREA/LVOS/DO10
IOREA/LVOS/DO10
IOREA/LVOS/DO10 R86 1K (MODE0 IOL36B/DQS2 IOL38A/LVDS/DQ2 H20 H21 J19 J20 F22 E22 G21 G22 H22 J22 K22 R87 1K (MODE1 R88 1K (MODE2 C2 C1 IOL11A/L/DS/DQ1 D1 IOL118/L/DS/DQ1 E1 IOL12A/DQ1 IOL12A/DQ1 IOL12A/DQ1 IOL14A/DQ1 IOL14A/DQ1 IOL14A/DQ1 IOL16A/DQ1 IOL9B/DQ0 J5 H5 *Configuration mode signal IOL9A/DQ0 E3
IOL6B/LVDS/DQS0 E4
IOL6A/LVDS/DQS0 selection IOL5B/DQ0 IOL5A/DQ0 Flash J22 IOR208/LVDS/DQ10 K22 IOR208/LVDS/DQ10 IOR21A/DQ10 IOR21B/DQ10 IOR23A/DQ10 IOR22B/LVDS/DQS10 IOL4B/LVDS/DQ0 IOL4A/LVDS/DQ0 K19 IOL3B/DQ0 B2 IOL3B/DQ0 B3 IOL3A/DQ0 E6 C292 0.1uF IOR22A/LVDS/DQS10 VCC 8 CS IOL2B/LVDS/DQ0 DO HOLD 7 R89 MSPI_MISO 2 J3 H2 H1 | R19 | Y22 | IOR39B/IDQ9 | AA22 | IOR44A/LVDS/IDQ9 | W20 | IOR44B/LVDS/IDQ9 | V20 | IOR44B/ILVDS/IDQ9 | IOR4BB/IDQ8 | AB21 | IOR50B/IDQS8 | 4.7K IOL17B/LVDS/DQ CLK 6 MSPI_CLK IOL18A/DQ1 IOL18B/DQ1 R90 4.7K3 WP DI 5 MSPI_MOSI IOR54B/DQ8 IOR54A/DQ8 IOL20A/LVDS/DQ1 VCCO3 4 GND IOL20B/LVDS/DQ IOL21A/DQ1 IOL21B/DQ1 IOL21B/DQ1 IOL22A/LVDS/DQS1 IOL22B/LVDS/DQS1 SPI Flash IOR53B/LVDS/DQ8 IOR53A/LVDS/DQ8 R91 1K DONE << IED9 R92 1K R93 4.7K vcco3 *External Flash, used to store downloaded programs onfiguration completed JTAGSEL_N >> R94 PAG mode selection signal section VCC1P0 VCCPLLL vcc>> FB18 vcc>> FB17 R95 4 VCCO2 C293 C294 285 2266 227 2286 229 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2301 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 C327 C328 C329 TDI 《 0.1uF 4.7uF 0.01uF JTAG C330 8 & 10 10 VCC00 VCCPLLR VCCX VCC01 VCCO2 VCCO3 VCCO4 VCC05 VCC06 VCC07 vcc >> FB19 101 104 VCC02 VCC 5 2 GND C331 C332 C334 C335 C336 C337 C338 C339 C340 C341 C342 C343 C344 C345 C346 C347 C348 C349 C350 C351 C352 C353 C354 C355 C356 C357 C358 C359 C360 C361 C362 C363 C364 C365 103 4 7uF 0.01uF 0.1uF TO THE TO THE TO THE 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF ESD *JTAG download section 1.F_CLK signal is an external input clock signal. It is recommended that F_CLK signal be provided through an active oscillator crystal.

2.External Flash memory is used to store downloaded programs.

For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290. 3.It is recommended that add an ESD protection chip to the JTAG download circuit.

3 2 4 GW2A-LV18PG484C



- 2.External Flash memory is used to store downloaded programs.

C

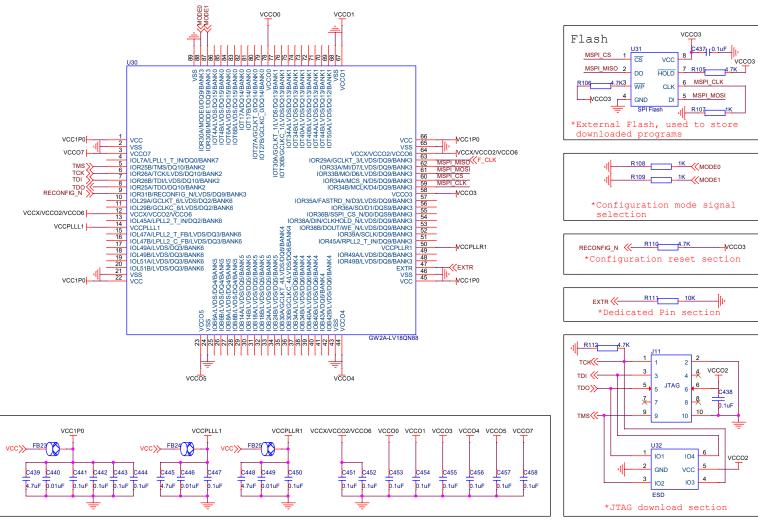
- For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290.
- 3.It is recommended that add an ESD protection chip to the JTAG download circuit.

GOWIN Minimum System Diagram

D

В

GW2A-LV18QN88



- 1.F CLK signal is an external input clock signal.
- $\overline{\text{It}}$ is recommended that F CLK signal be provided through an active oscillator crystal.
- 2.External Flash memory is used to store downloaded programs.
- For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290.
- 3.It is recommended that add an ESD protection chip to the JTAG download circuit.

GOWIN Minimum System Diagram Document Number GW2A-LV18QN88 Rev 2.0 ize A3

3 5 GW2A-LV18UG324 иззн VCC00 IOR39B/DQ9 IOR2A/LVDS/DQ11 IOB32A/LVDS/DQ6 IOL31A/LVDS/DQ2 IOL2A/LVDS/DQ0 VCCO IOR40A/LVDS/DQ9 IOR40B/LVDS/DQ9 IOR2B/LVDS/DQ11 IOR4A/LVDS/DQ11 IOL31B/LVDS/DQ2 IOL33A/LVDS/DQ2 IOL2B/LVDS/DQ0 IOL6A/LVDS/DQS0 VCCO0 IOB32B/LVDS/DQ6 D8 C8 B6 A6 V/7 U15 V15 KΔ D14 J14 IOB33A/DQ6 VCCOT IOR41A/DQ9 IOR41B/DQ9 IOB33B/DQ6 IOB34A/LVDS/DQ6 IOL33B/LVDS/DQ2 IOL35A/LVDS/DQ2 IOR4B/LVDS/DQ11 IOL6B/LVDS/DQS0 IOR11A/LVDS/DQ10 VCCO1 IOI 9A/DO0 B14 IOL11A/LVDS/DQ1 IOR42A/LVDS/DQ9 IOR42B/LVDS/DQ9 IOR11B/LVDS/DQ10 IOB34B/LVDS/DQ6 OL35B/LVDS/DQ2 VCCO1 V6 R7 T7 N6 P7 VCC1P0 R11 T11 E8 E7 C7 A7 R17 IOR13A/LVDS/DQ10 IOB36A/LVDS/DQ6 IOL36A/DQS2 VCCO2 IOR44A/LVDS/DQ9 IOR13B/LVDS/DQ10 IOB36B/LVDS/DQ6 IOL36B/DQS2 C13 | IOL11B/LVDS/DQ1 | IOL13B/LVDS/DQ1 | IOL13B IOL11B/LVDS/DQ1 VCC/VCCPLLL/VCCPLLR L4 L3 P2 P1 M3 P9 R12 T12 V12 IOR44B/I VDS/DQ9 IOR17A/I VDS/DQ10 IOB37A/DQS6 IOI 38A/I VDS/DQ2 VCCO2 VCC/VCCPLLL/VCCPLLR IOR48A/DQ8 IOR17B/LVDS/DQ10 IOB37B/DQS6 IOL38B/LVDS/DQ2 VCCO2 VCC/VCCPLLL/VCCPLLR U14 IOR48B/DO8 IOR20A/LVDS/DO10 IOB38A/LVDS/DO6 IOL40A/LVDS/DO2 VCCO3 VCCO2 VCC/VCCPLLL/VCCPLLB C12 IOL14A/DQ1 B12 IOL14B/DQ1 IOR50A/DQS8 IOR20B/LVDS/DQ10 IOB38B/LVDS/DQ6 IOL40B/LVDS/DQ2 VCC/VCCPLLL/VCCPLLR R6 VCC/VCCPLLL/VCCPLLR VCC/VCCPLLL/VCCPLLR IOR50B/DOS8 IOR214/DO10 IORANA/LV/DS/DOR E6 C5 A5 D6 IOI 42A/I VDS/DQ2 IOL 154/LVDS/DO: N5 P6 T4 N11 M10 M1 A12 U4 U9 IOR51A/LVDS/DQ8 IOR21B/DQ10 IOB40B/LVDS/DQ6 IOL42B/LVDS/DQ2 IOL15B/LVDS/DQ1 VCCO3 IOR22A/LVDS/DQS10 IOR22B/LVDS/DQS10 IOL44A/LVDS/DQ2 IOL44B/LVDS/DQ2 IOL17A/LVDS/DQ1 IOR51B/LVDS/DO8 IOB42A/LVDS/DO6 VCCO3 VCC/VCCPLLL/VCCPLLR VCCO4 IOR53A/LVDS/DQ8 VCC/VCCPLLL/VCCPLLR IOB42B/LVDS/DQ6 G9 F9 G11 F10 VCCO4 IOR53B/LVDS/DO8 IOR24A/LVDS/DO10 IOR44A/LVDS/DO6 IOL48A/DO3 IOL20A/LVDS/DO: VCC/VCCPLLL/VCCPLLB T10 C6 B2 A2 M4 R2 IOR24B/LVDS/DQ10 IOB44B/LVDS/DQ6 IOL48B/DQ3 IOL20B/LVDS/DQ1 VCC/VCCPLLL/VCCPLLR VCCO₄ IOB48A/I VDS/DQS IOL51A/LVDS/DQ3 IOL22A/LVDS/DQS1 VCCO4 VCC05 Configure Pins IOB48B/LVDS/DQS3 IOL51B/LVDS/DQ3 C10 A10 F11 IOI 22B/I VDS/DQS1 D4 E2 Configure Pins L6 M5 P4 P3 F CLK >> IOR29A/GCLKT_3/LVDS/DQ9 IOB50A/LVDS/DQ7 IOL53A/LVDS/DQ3 IOL24A/LVDS/DQ1 VCCO5 G4 IOR7A/RPLL1_T_IN/DQ11 IOR7B/RPLL1_C_IN/DQ11 IOR8A/RPLL1_T_FB/LVDS/DQ11 IOR8B/RPLL1_C_FB/LVDS/DQ11 IOL53B/LVDS/DQ3 IOL24B/LVDS/DO1 IOR29B/GCLKC 3/LVDS/DO9 JOBSOB/LVDS/DO7 VCCO5 VCCX E11 IOL25A/DQ1 MODEO IOR30A/MODE0/MODE1/DQ9 IOB52A/LVDS/DQ VCCO5 VCCX VCCOF MODE2 VCCX IOR31A/MODE2/LVDS/DOG IORS2R/LV/DS/DO7 D11 IOL25B/DQ1 IOL26A/LVDS/DQ1 IOL26B/LVDS/DQ1 IOI 25B/DO1 Configure Pins B10 V13 D16 N4 N3 RECONEIG N IOR31B/RECONFIG_N/LVDS/DQ9 VCCO6 READY IOL29A/GCLKT 6/LVDS/DQ2 IOR32A/READY/DO9 IOR25A/TDO/DOT0 IOB54B/I VDS/DQ3 VCCOR VCCX DONE IOL29B/GCLKC_6/LVDS/DQ2 IOL45A/LPLL2_T_IN/DQ2 IOR32B/DONE/DQ9 IOR25B/TMS/DQ10 VCC06 vcco TCK IOR33A/MI/D7/LVDS/DO9 IOR26A/TCK/LVDS/DO10 B15 D13 E10 VCCX MSPI_MOSI_T13 MSPI_CS V3 MSPI_CLK R15 TCK D15 TDI U10 V10 Configure Pins A4 Configure Pins IOL45B/LPLL2_C_IN/DQ2 IOR33B/MO/D6/LVDS/DQ9 IOR26B/TDI/LVDS/DQ10 VCCO7 VCCX IOB30A/GCLKT_4/LVDS/DQ6 IOB30B/GCLKC_4/LVDS/DQ6 IOR34A/MCS_N/D5/DQ9 IOR34B/MCLK/D4/DQ9 IOR27A/GCLKT_2/DQ10 IOL47A/LPLL2_T_FB/LVDS/DQ3 IOL47B/LPLL2_C_FB/LVDS/DQ3 IOL7A/LPLL1_T_IN/DQ0 VCCO7 VCCX IOL7B/LPLL1_C_IN/DQ0 IOL8A/LPLL1_T_FB/LVDS/DQ0 IOR27B/GCLKC 2/DQ10 F13 VCCX IOR35A/FASTRD_N/D3/LVDS/DQ9 E13 B9 A9 GW2A-I V18UG324 GW2A-I V18UG324 GW2A-I V18UG324 IOL8B/LPLL1_C_FB/LVDS/DQ0 IOR35B/SI/D2/I VDS/DO9 Gnd IOR36A/SO/D1/DQS9 IOR36B/SSPI CS N/D0/DQS9 IOL27A/GCLKT_7/DQ1 IOL27B/GCLKC_7/DQ1 VSS U8 V8 P12 1133A U33F A18 B13 B7 1133B IOR38A/DIN/CLKHOLD_N/LVDS/DQ9 vss VSS VSS GW2A-LV18UG324 V1 U6 VSS IOR38B/DOUT/WE N/I VDS/DQ9 TO Bank VSS VSS VSS VSS VSS VSS IOR39A/SCLK/DQ9 VSS VSS VSS VSS VSS VSS VSS VSS U5 V5 R3 T3 C16 C3 D10 D5 E15 G12 G17 G2 G5 H10 U12 | 10R45A/RCLL/T_IN/DQ9 | 10R45A/RPLL2_T_IN/DQ9 | 10R45B/RPLL2_C_IN/DQ9 | 10R47A/RPLL2_T_FB/LVDS/DQ8 | 10R47B/RPLL2_C_FB/LVDS/DQ8 IOT31A/DQ13 IOT2A/LVDS/DQ15 C2 C1 F6 F5 E4 D3 H7 G6 D2 D1 F4 IOB2A/LVDS/DQ4 H18 F16 C17 C18 IOT31B/DQ13 IOT2B/LVDS/DQ15 IOB2B/LVDS/DQ4 R9 R4 R113 4.7K IOT32A/LVDS/DQ13 IOT32B/LVDS/DQ13 IOB4A/LVDS/DQ4 IOB4B/LVDS/DQ4 IOT4A/I VDS/DQ15 READY << C18 F14 G14 D17 D18 H12 G13 E16 IOT4B/LVDS/DQ15 L17 *Configurable detection section IOT34A/LVDS/DQ13 IOT34B/LVDS/DQ13 IOT6A/LVDS/DQ15 IOT6B/LVDS/DQ15 IOB6A/LVDS/DQ4 IOB6B/LVDS/DQ4 GW2A-LV18UG324 VSS VSS IOT35A/DQ13 IOT8A/LVDS/DQ15 IOB8A/LVDS/DQ4 VSS VSS IOT35B/DQ13 IOT8B/LVDS/DQ15 IOB8B/LVDS/DQ4 RECONFIG_N
R114
4.7K IOT36A/LVDS/DQ13 IOT12A/LVDS/DQ14 IOB12A/LVDS/DQ5 VSS VSS VSS VSS VSS VSS M2 M17 IOT36B/LVDS/DQ13 IOT12B/I VDS/DQ14 IOB12B/I VDS/DQ5 VCC>> FB26 *Configuration reset section IOT37A/DQS13 E18 K12 K13 F17 IOT14A/LVDS/DQ14 F3 E3 E1 H6 H5 F2 IOB14A/LVDS/DQ5 VSS VSS N16 N17 IOT37B/DOS13 IOT14B/LVDS/DO14 IOB14B/LVDS/DOS IOT38A/LVDS/DQ13 IOT16A/LVDS/DQ14 IOB16A/LVDS/DQ5 vss VSS VSS VSS C461 C462 C463 C464 IOT38B/I V/DS/DO13 IOT16B/I VDS/DQ14 IOB16B/I VDS/DQ5 VSS VSS C459 C460 R115 1K ((MODEO IOT40A/LVDS/DQ13 F18 H13 H14 IOT18A/LVDS/DQ14 IOB18A/LVDS/DQ5 P17 P18 U17 U18 IOT18B/LVDS/DQ14 IOT20A/LVDS/DQ14 IOB18B/LVDS/DQ5 IOB20A/LVDS/DQ5 IOT40B/LVDS/DO13 0.1uF 0.1uF 0.1uF GW2A-LV18UG324 4.7uF 0.01uF IOT42A/LVDS/DQ13 IOT42B/LVDS/DQ13 IOT20B/LVDS/DQ14 IOT21A/DQS14 IOB20B/LVDS/DQ5 IOB21A/DQS5 T17 T18 H15 H16 J7 J6 G3 G1 *Configuration mode signal IOT44A/LVDS/DQ13 DONE ((-IOT44B/LVDS/DQ13 IOT21B/DQS14 IOB21B/DQS5 selection M14 N14 G16 G18 C465 C466 C467 C468 C469 C470 C47 IOT48A/I VDS/DOS12 IOT22A/I VDS/DQ14 IOB22A/I VDS/DO5 -1K ↓ R118 G1 L7 IOB22B/LVDS/DQ5 K6 IOB24B/LVDS/DQ5 IOB26B/LVDS/DQ5 IOB26B/LVDS/DQ5 IOT48B/LVDS/DQS12 IOT22B/LVDS/DQ14 L14 M13 P15 P16 J13 K14 IOT52A/LVDS/DO12 IOT24A/I VDS/DO14 Configuration completed IOT52B/LVDS/DQ12 IOT24B/LVDS/DQ14 VCCO3 L12 L13 Flash detection section IOT5/4/LVDS/DO12 IOT26A/LVDS/DO1/ IOT26B/LVDS/DQ14 C472 0.1uF CS VCC VCCO3 onfigure Pins R119 VCC07 MSPI MISO 2 7 R120-IOT30A/GCLKT_1/LVDS/DQ13 IOT27A/GCLKT_0/DQ14 IOB27A/GCLKT_5/DQ5 DO IOT30B/GCLKC_1/LVDS/DQ13 IOT55B/JTAGSEL_N/DQ12 IOT27B/GCLKC_0/DQ14 IOB27B/GCLKC_5/DQ5 6 MSPI CLK JTAGSEL N > VCCO2 GW2A-LV18UG324 C473 C474 C475 GW2A-I V18UG324 5 MSPI MOSI VCC03 DI GND JTAG 0.1uF 0.1uF SPI Flash JTAGSEL_N >> R123 1K 8 *External Flash, used to store TAG mode selection signal section downloaded programs VCCX VCC00 VCC01 VCCO2 VCCO3 VCCO4 VCCO5 VCCO6 U35 101 104 VCCO2 GND VCC C489 C490 C491 C477 C478 C479 C480 C481 C482 C483 C484 C485 C486 C487 C488 C492 C493 C494 C495 C496 C497 C498 C499 C500 C502 C503 C507 C508 C509 C501 C504 C505 C506 103 102 0.1uF .1uF 0.1uF 0.1uF 0.1uF 0.1uF 0.1uF .1uF 0.1uF 0.1uF).1uF 0.1uF 0.1uF .1uF 0.1uF 0.1uF 0.1uF 0.1uF ESD *JTAG download section Notes: 1.F CLK signal is an external input clock signal. It is recommended that F CLK signal be provided through an active oscillator crystal. 2. External Flash memory is used to store downloaded programs. For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290. GOWIN Minimum System Diagram 3.It is recommended that add an ESD protection chip to the JTAG download circuit. Document Number GW2A-LV18UG324 ize A3 Rev 2.0

