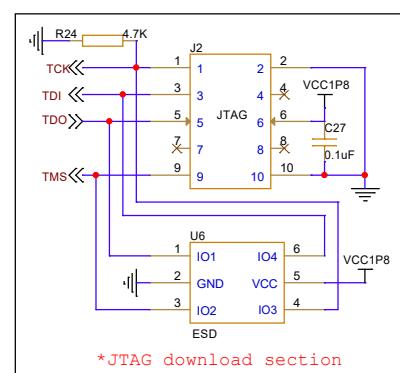
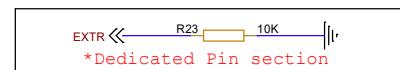
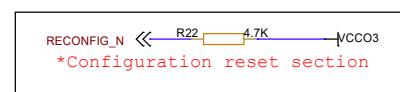
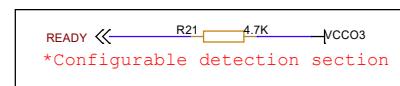
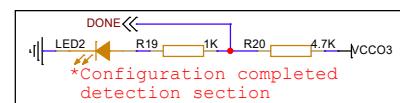
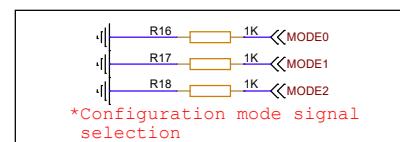
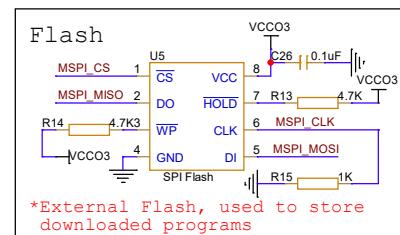
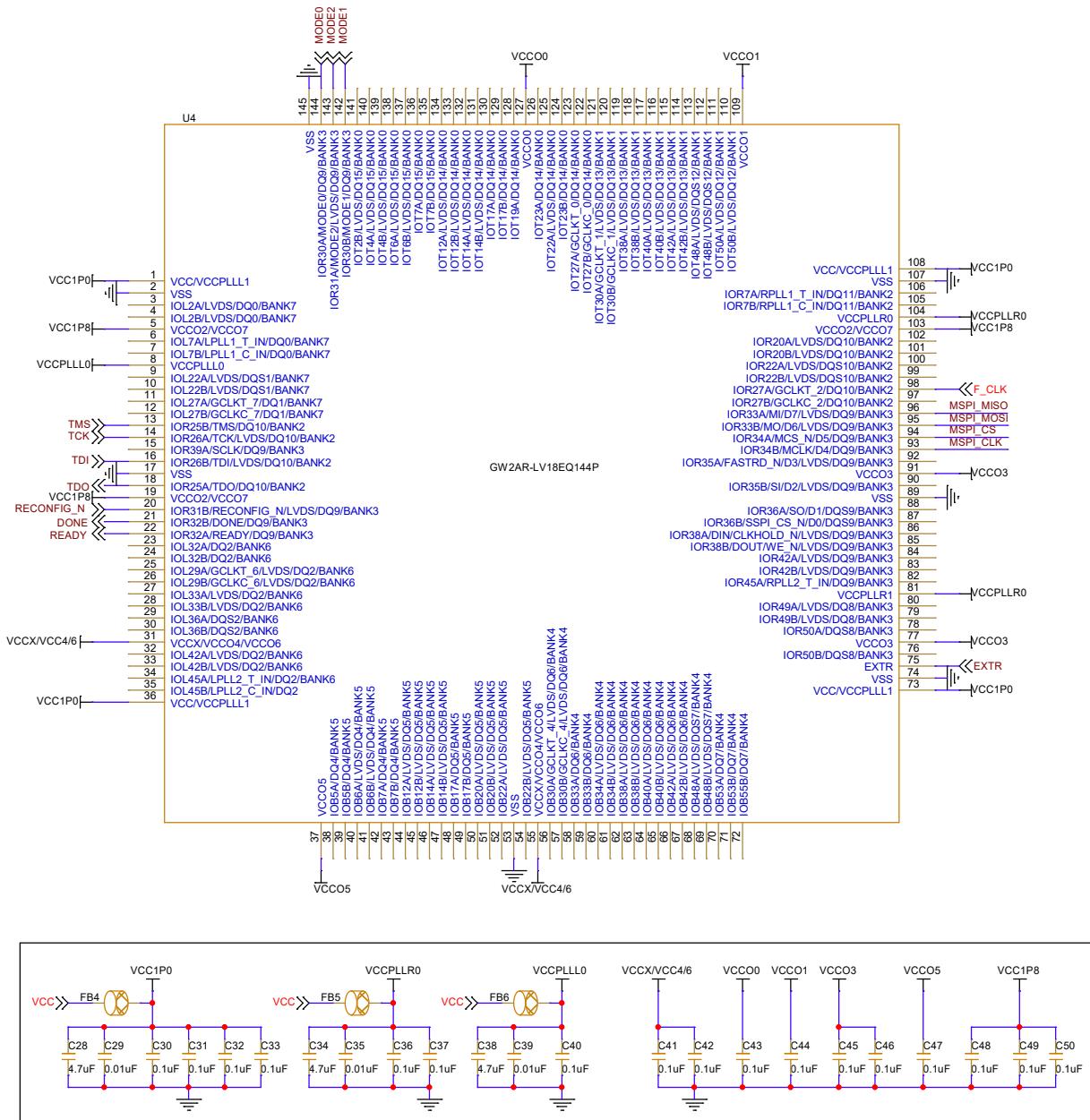


## Notes:

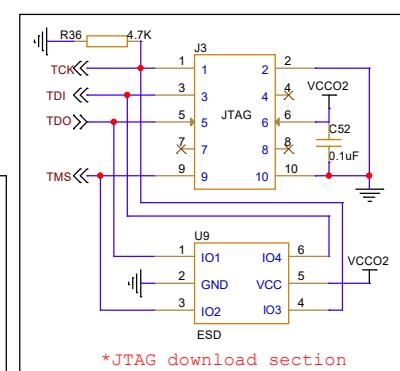
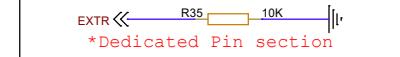
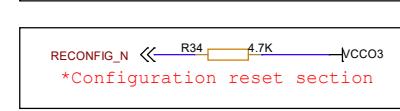
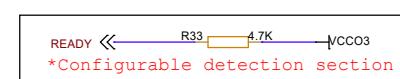
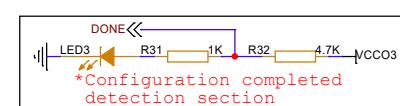
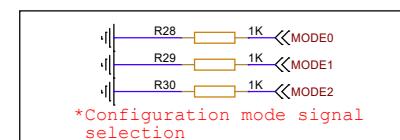
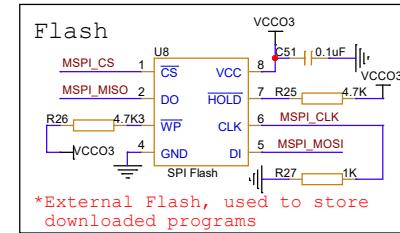
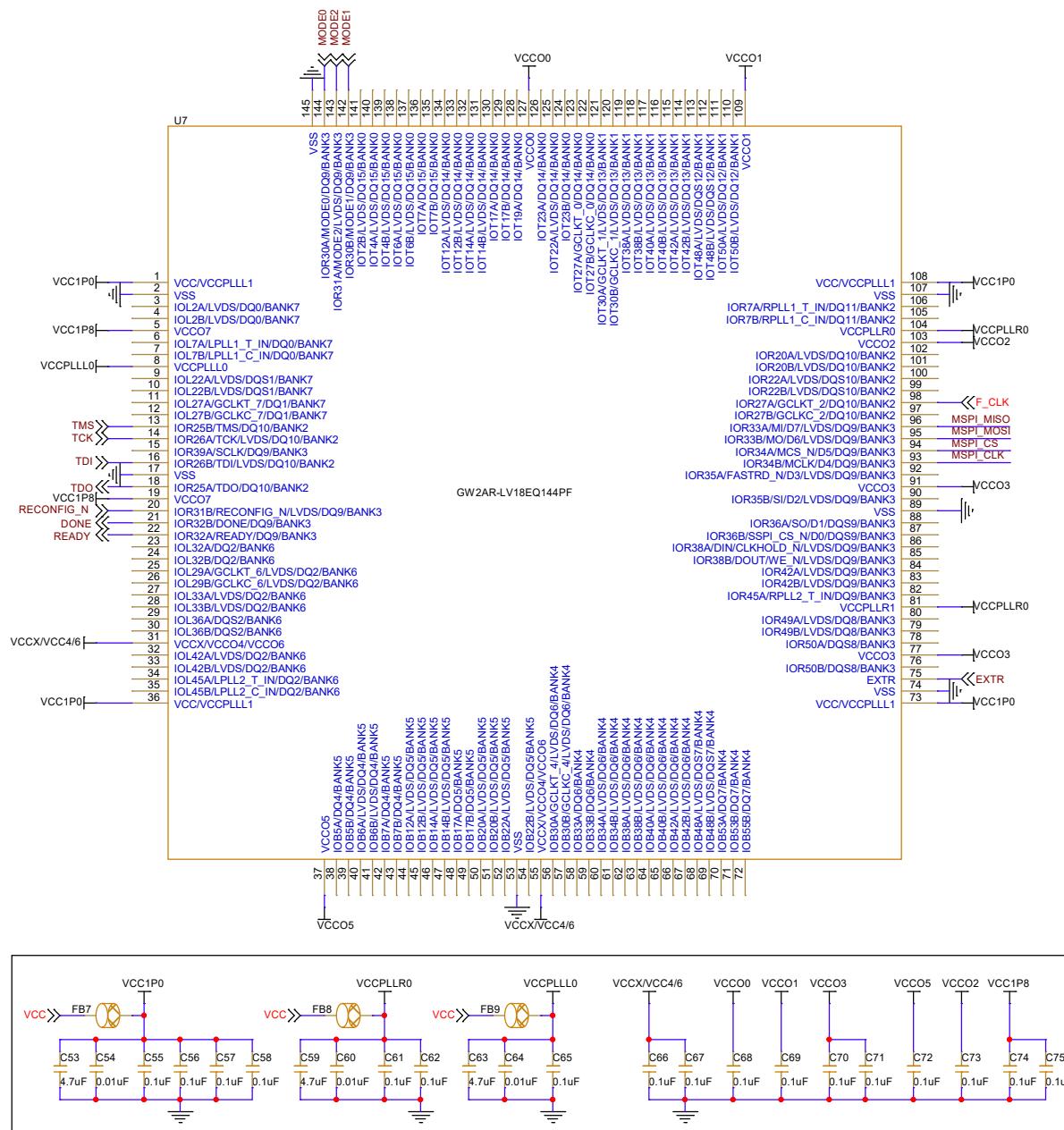
1. F\_CLK signal is an external input clock signal.  
It is recommended that F\_CLK signal be provided through an active oscillator crystal.
2. External Flash memory is used to store downloaded programs.  
For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290.
3. It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

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**Notes:**

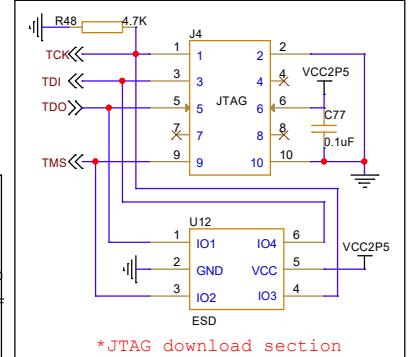
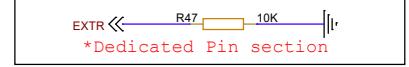
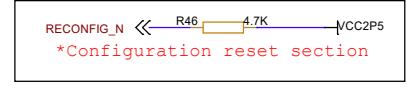
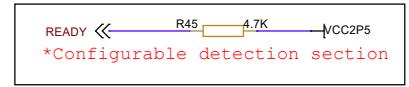
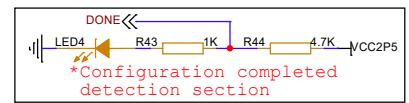
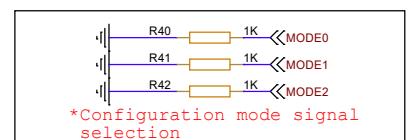
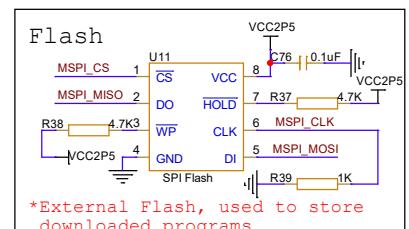
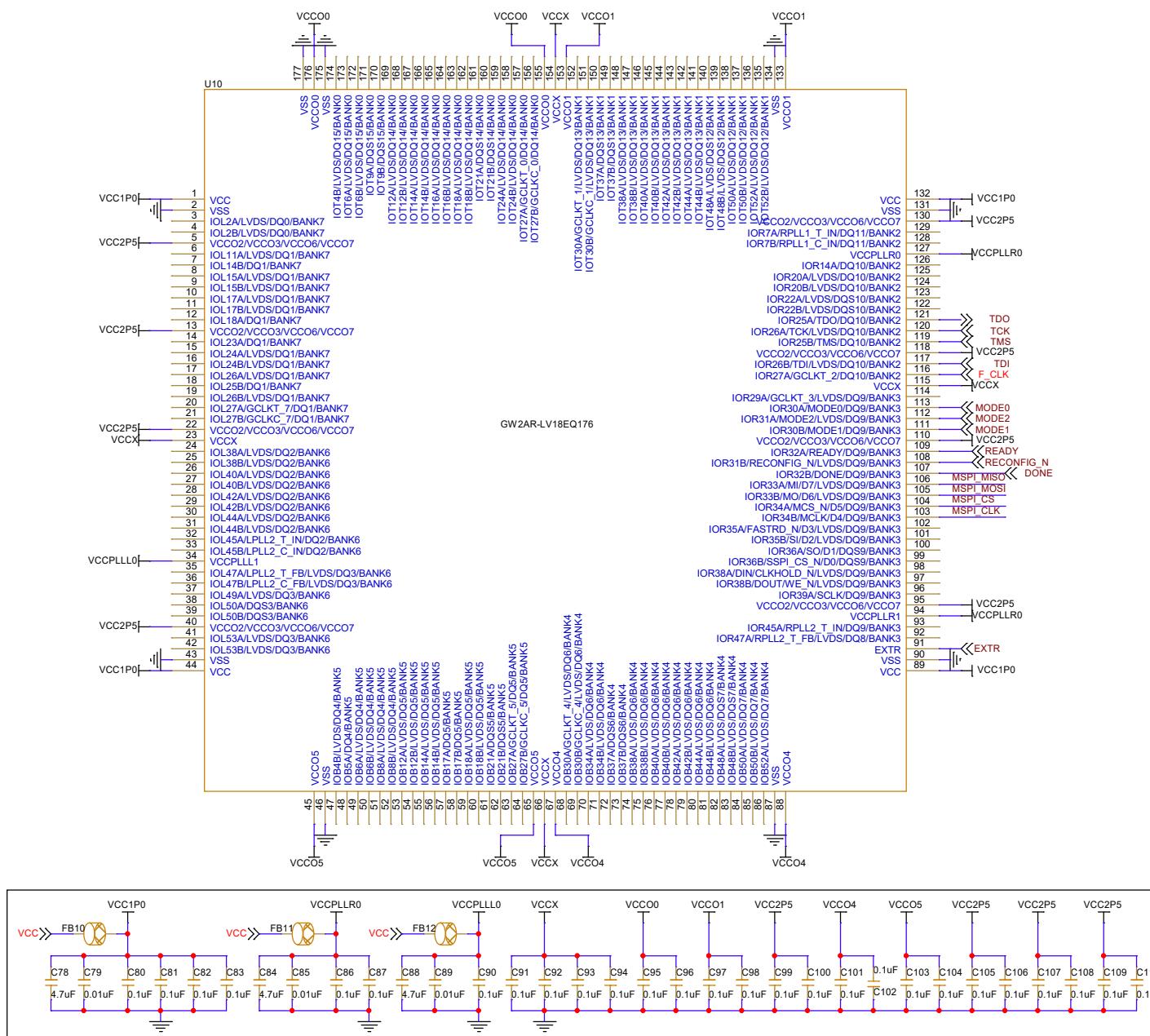
1. F\_CLK signal is an external input clock signal.  
It is recommended that F\_CLK signal be provided through an active oscillator crystal.
2. External Flash memory is used to store downloaded programs.  
For details about SPI Flash model selection, see Chapter 10 SPI Flash Selection in UG290.
3. It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

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**Notes:**

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

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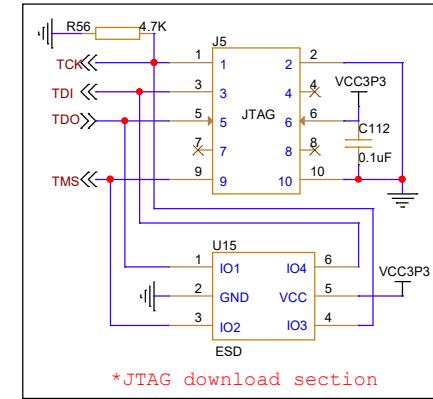
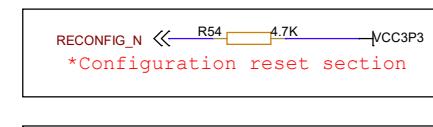
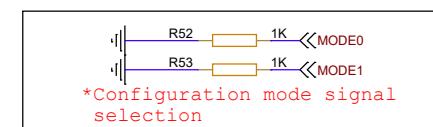
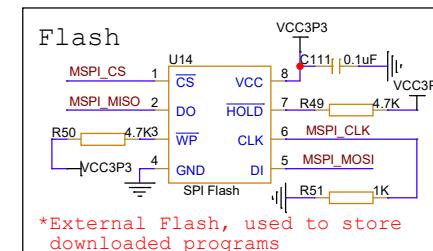
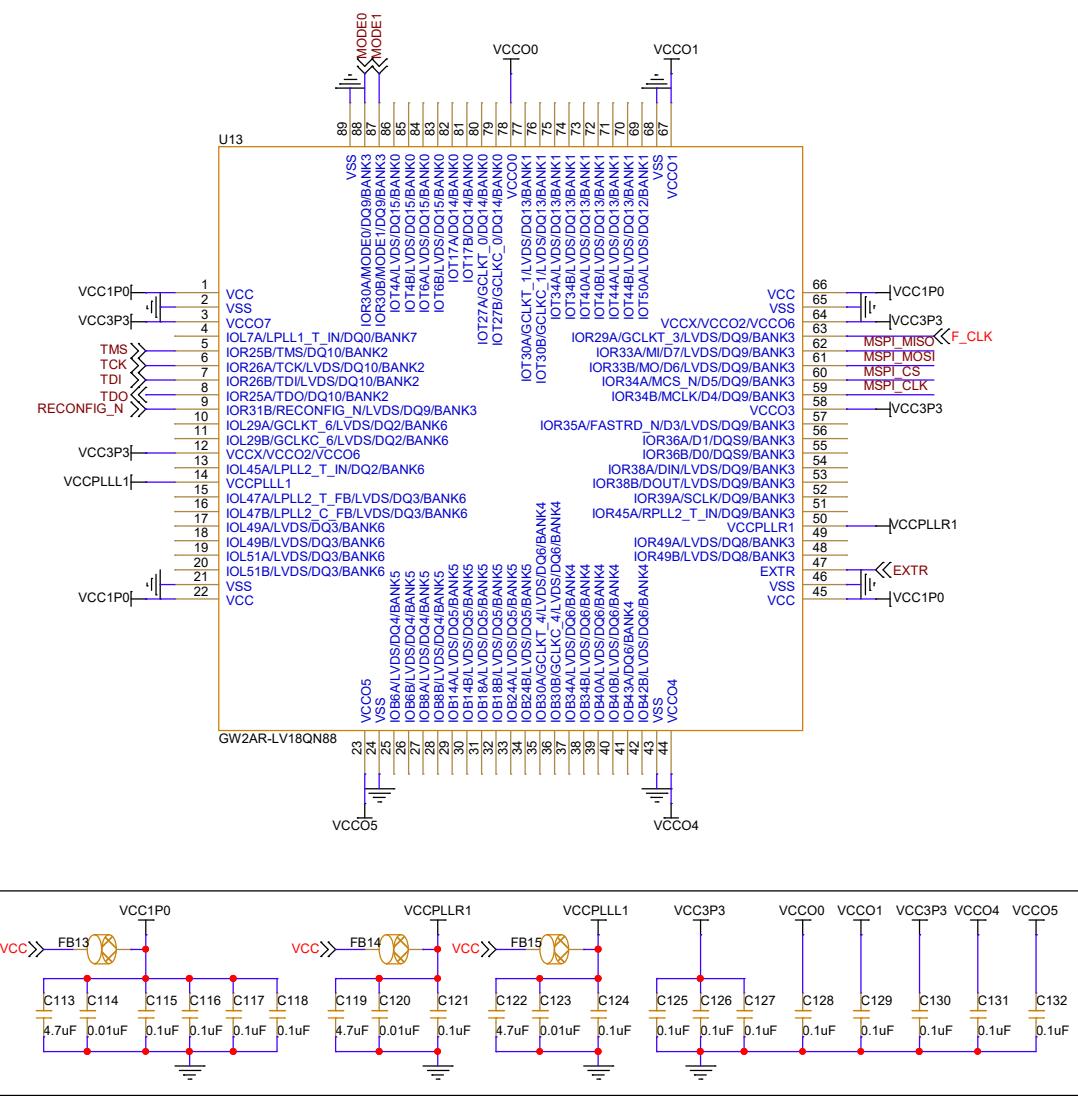


#### Notes:

- 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.
  - 3.It is recommended that add an ESD protection chip to the JTAG download circuit.

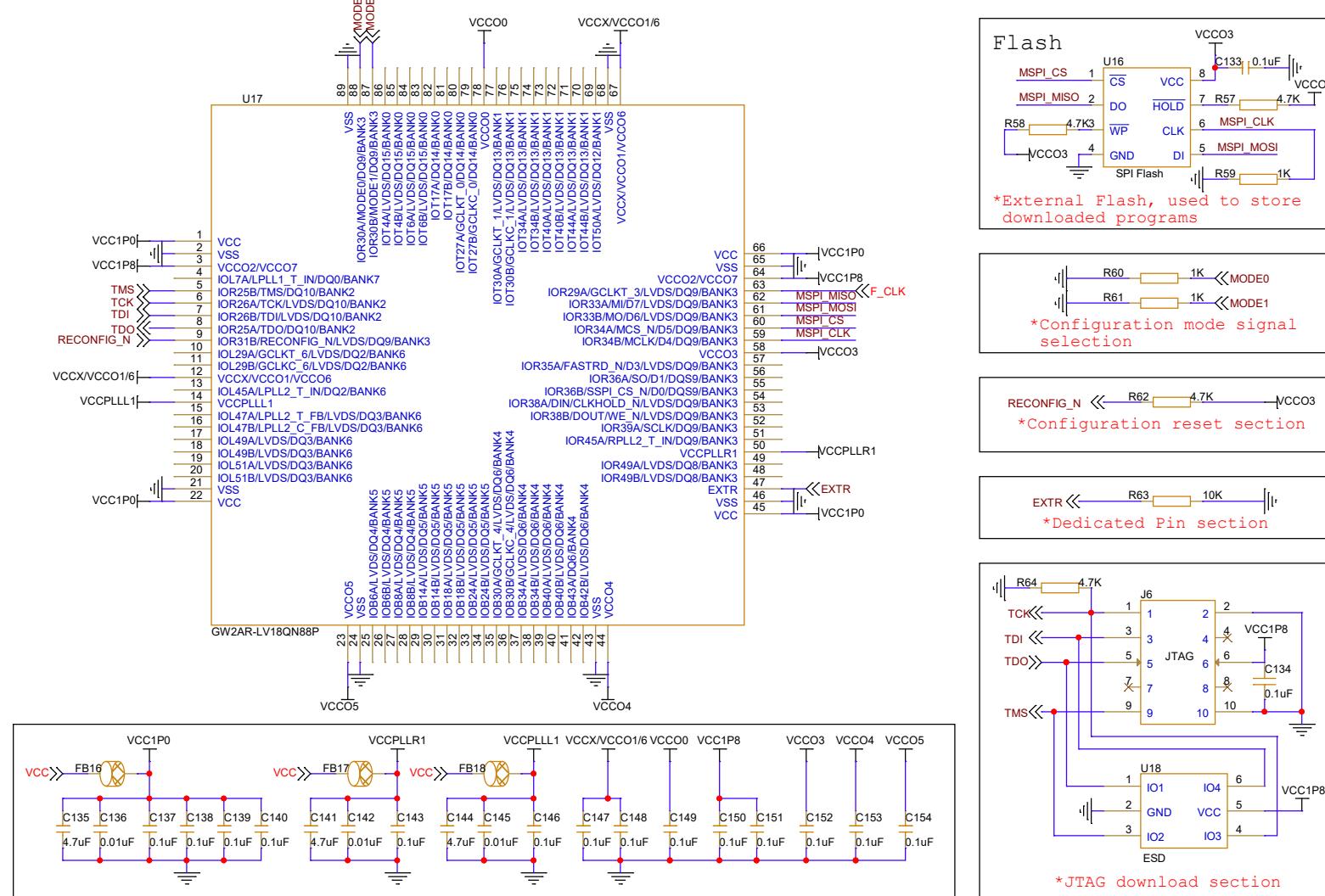
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**Notes:**

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.
3. It is recommended that add an ESD protection chip to the JTAG download circuit.

Title	
GOWIN Minimum System Diagram	
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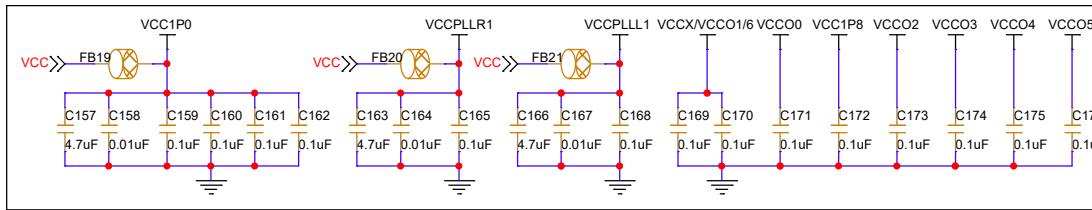
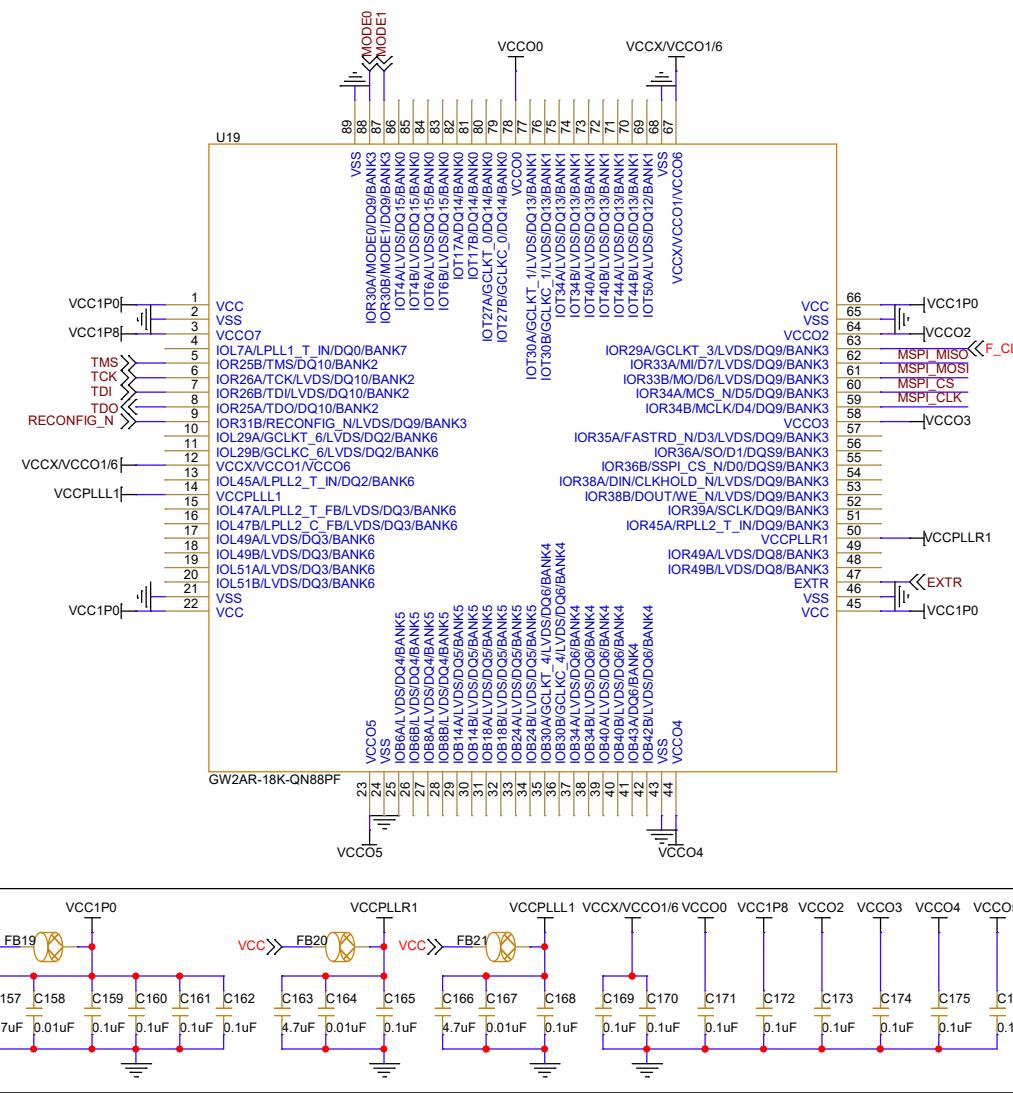
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**Notes:**

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.
3. It is recommended that add an ESD protection chip to the JTAG download circuit.

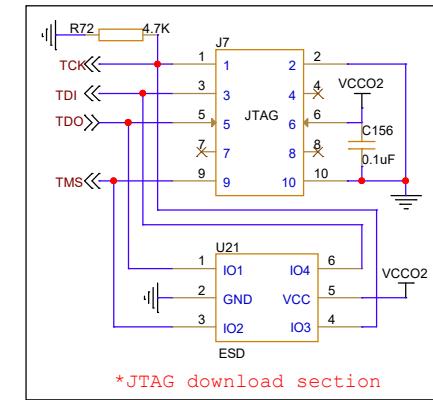
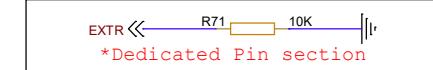
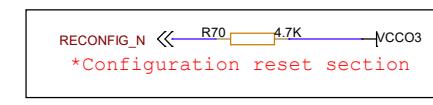
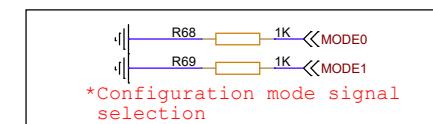
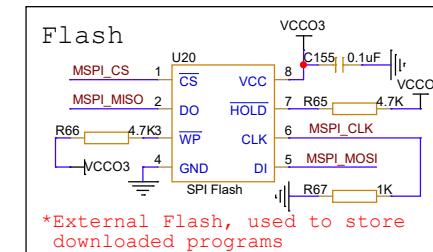
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GOWIN Minimum System Diagram	
Size	Document Number GW2AR-LV18QN88P
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## Notes:

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.
3. It is recommended that add an ESD protection chip to the JTAG download circuit.



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