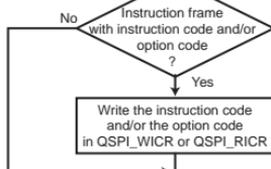
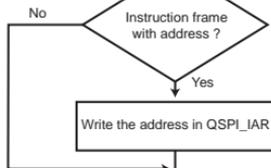


START

## QSPI Configuration



Configure QSPI\_IFR according to targeted memory

Wait QSPI\_SR.SYNCBSY = 0  
write QSPI\_CR.UPDCFG  
Wait QSPI\_SR.SYNCBSY = 0

No

Yes

Instruction frame with data ?

```
graph TD; Q3{Instruction frame with data?}; Q3 -- No --> W4[Write QSPI_CR.STTFR]; W4 --> Q4{Read Frame (APBTFRTYP = 1)?}; Q3 -- Yes --> Q4; Q4 -- No --> W5[Wait QSPI_ISR.TDRE flag by polling or interrupt.]; Q4 -- Yes --> W6[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.STTFR]; W6 --> W7[Wait QSPI_ISR.RDRF flag by polling or interrupt.]; W7 --> Q5{Last data to read?}; Q5 -- No --> W8[Wait QSPI_SR.SYNCBSY = 0 then Read QSPI_RDR]; W8 --> W5; Q5 -- Yes --> W9[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.LASTXFER]; W9 --> W10[Wait QSPI_SR.SYNCBSY = 0 then Read QSPI_RDR]; W10 --> W11[Wait for flag QSPI_ISR.CSRA to rise by polling or interrupt.]; W11 --> END([END]); W5 --> W12[Write QSPI_TDR]; W12 --> Q6{Last data to write?}; Q6 -- No --> W5; Q6 -- Yes --> W13[Wait QSPI_ISR.TXEMPTY flag by polling or interrupt.]; W13 --> W14[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.LASTXFER]; W14 --> W11;
```

## Data Read / Write

Write QSPI\_CR.STTFR

No

Yes

Read Frame (APBTFRTYP = 1) ?

```
graph TD; Q4{Read Frame (APBTFRTYP = 1)?}; Q4 -- No --> W5[Wait QSPI_ISR.TDRE flag by polling or interrupt.]; Q4 -- Yes --> W6[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.STTFR]; W6 --> W7[Wait QSPI_ISR.RDRF flag by polling or interrupt.]; W7 --> Q5{Last data to read?}; Q5 -- No --> W8[Wait QSPI_SR.SYNCBSY = 0 then Read QSPI_RDR]; W8 --> W5; Q5 -- Yes --> W9[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.LASTXFER]; W9 --> W10[Wait QSPI_SR.SYNCBSY = 0 then Read QSPI_RDR]; W10 --> W11[Wait for flag QSPI_ISR.CSRA to rise by polling or interrupt.]; W11 --> END([END]); W5 --> W12[Write QSPI_TDR]; W12 --> Q6{Last data to write?}; Q6 -- No --> W5; Q6 -- Yes --> W13[Wait QSPI_ISR.TXEMPTY flag by polling or interrupt.]; W13 --> W14[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.LASTXFER]; W14 --> W11;
```

Wait QSPI\_SR.SYNCBSY = 0  
then write QSPI\_CR.STTFR

Wait QSPI\_ISR.RDRF flag  
by polling or interrupt.

No

Yes

Last data to read ?

```
graph TD; Q5{Last data to read?}; Q5 -- No --> W8[Wait QSPI_SR.SYNCBSY = 0 then Read QSPI_RDR]; W8 --> W5; Q5 -- Yes --> W9[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.LASTXFER]; W9 --> W10[Wait QSPI_SR.SYNCBSY = 0 then Read QSPI_RDR]; W10 --> W11[Wait for flag QSPI_ISR.CSRA to rise by polling or interrupt.]; W11 --> END([END]);
```

Wait QSPI\_SR.SYNCBSY = 0  
then write QSPI\_CR.LASTXFER

Wait QSPI\_SR.SYNCBSY = 0  
then Read QSPI\_RDR

Wait for flag QSPI\_ISR.CSRA  
to rise by polling or interrupt.

END

Wait QSPI\_ISR.TDRE flag  
by polling or interrupt.

Write QSPI\_TDR

No

Yes

Last data to write ?

```
graph TD; Q6{Last data to write?}; Q6 -- No --> W5[Wait QSPI_ISR.TDRE flag by polling or interrupt.]; Q6 -- Yes --> W13[Wait QSPI_ISR.TXEMPTY flag by polling or interrupt.]; W13 --> W14[Wait QSPI_SR.SYNCBSY = 0 then write QSPI_CR.LASTXFER]; W14 --> W11[Wait for flag QSPI_ISR.CSRA to rise by polling or interrupt.]; W11 --> END([END]);
```

Wait QSPI\_ISR.TXEMPTY flag  
by polling or interrupt.

Wait QSPI\_SR.SYNCBSY = 0  
then write QSPI\_CR.LASTXFER

End of Frame