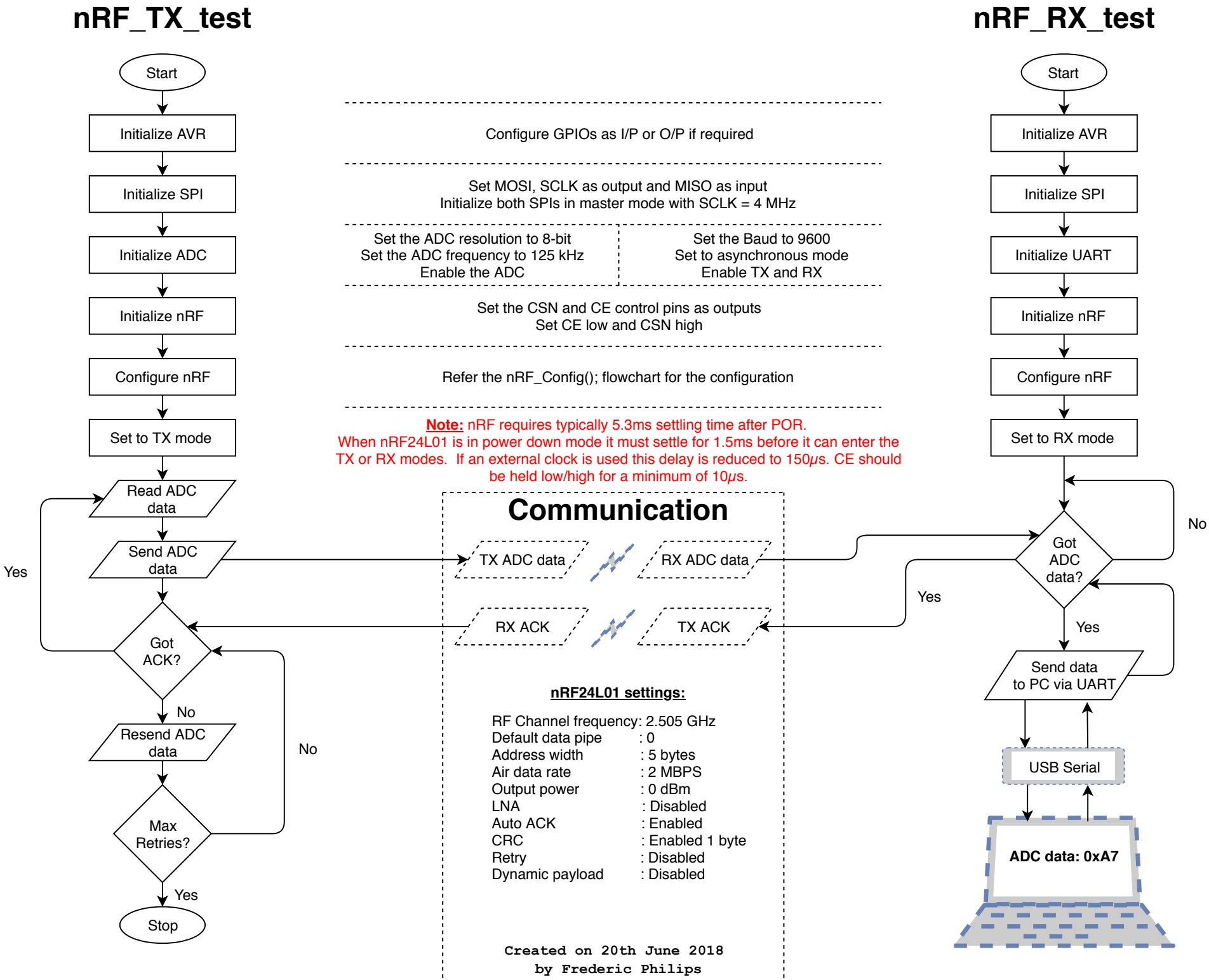
nRF_TX_test
Start
Initialize AVR
Initialize SPI
Initialize ADC
Initialize nRF
Configure nRF
Set to TX mode
Read ADC data
Send ADC data
Got ACK?
Yes
No
Resend ADC data
No
Max Retries?
Yes
Stop
Configure GPIOs as I/P or O/P if required
Set MOSI, SCLK as output and MISO as input
Initialize both SPIs in master mode with SCLK = 4 MHz
Set the ADC resolution to 8-bit
Set the ADC frequency to 125 kHz
Enable the ADC
Set the Baud to 9600
Set to asynchronous mode
Enable TX and RX
Set the CSN and CE control pins as outputs
Set CE low and CSN high
Refer the nRF_Config(); flowchart for the configuration
Note: nRF requires typically 5.3ms settling time after POR.
When nRF24L01 is in power down mode it must settle for 1.5ms before it can enter the TX or RX modes. If an external clock is used this delay is reduced to 150μs. CE should be held low/high for a minimum of 10μs.
Communication
TX ADC data
RX ADC data
RX ACK
TX ACK
nRF24L01 settings:
RF Channel frequency: 2.505 GHz
Default data pipe : 0
Address width : 5 bytes
Air data rate : 2 MBPS
Output power : 0 dBm
LNA : Disabled
Auto ACK : Enabled
CRC : Enabled 1 byte
Retry : Disabled
Dynamic payload : Disabled
Created on 20th June 2018
by Frederic Philips
nRF_RX_test
Start
Initialize AVR
Initialize SPI
Initialize UART
Initialize nRF
Configure nRF
Set to RX mode
Got ADC data?
No
Yes
Yes
Send data to PC via UART
USB Serial
ADC data: 0xA7