

## Product Anomaly Notification (PAN)

<b>Device affected</b> (product name): nRF24AP2-1CH nRF24AP2-8CH	<b>Device version(s) affected:</b> Build code AX and A
<b>Date (YYYY-MM-DD):</b> 2009-07-08	<b>PAN no.:</b> PAN-014
<b>Nordic Semiconductor reference:</b> Thomas Embla Bonnerud	<b>Document version:</b> 1.1

### Summary

**Anomalies:**

1. Clock drift corrections are not being made for slave channel transmissions.
2. When exiting the sleep state RTS scan be lowered before the baud rate clock is stable enough to receive in asynchronous serial mode

**Marking / tracing:**

Affected devices:

N	R	F		A	X
2	4	A	P	2	O
0	9	-	-	-	-

N	R	F		A	X
2	4	A	P	2	E
0	9	-	-	-	-

N	R	F		A	
2	4	A	P	2	O
0	9	-	-	-	-

N	R	F		A	
2	4	A	P	2	E
0	9	-	-	-	-

**Authorization for Nordic Semiconductor**

Product Manager  
 Thomas Embla Bonnerud

Date  
 2009.07.08

Sign:



## Detailed Description

<b>Anomaly #1</b>
<b>Symptoms:</b>  A slave channel is able to receive from a channel master, but is unable to transmit successfully back to the channel master.
<b>Conditions:</b>  A combination of slow channel rate and high differential clock error between the master and slave device is required. The slave channel rate must be 0.75Hz or slower. At 0.75Hz the differential clock error must be at the maximum allowed clock error specified of 100ppm, which would arise from a +50ppm error on one device and -50ppm on the other. At 0.5Hz, the slowest possible channel rate, a differential clock error of 60ppm or greater is required to cause this problem.
<b>Consequences:</b>  Loss of backchannel communication from the channel slave to the channel master
<b>Workaround:</b>  Using a message rate of faster than 0.75 Hz, or ensuring a differential clock error of less than 60ppm, will ensure proper operation.  A differential clock of less than 60ppm can be achieved by using a 16MHz crystal with $\pm 30$ ppm tolerance.

<b>Anomaly #2</b>
<b>Symptoms:</b>  When waking up the AP2 in asynchronous serial mode, the first message sent to the AP2 after the RTS line is lowered may not be successfully received.
<b>Conditions:</b>  The first time that the RTS line is lowered after the SLEEP enable line is transitioned from HIGH to LOW, while in asynchronous serial mode, the AP2 parts can take up to 600us after the RTS line is lowered before it is able to correctly receive asynchronous serial data.
<b>Consequences:</b>  The first asynchronous serial message sent after transitioning the SLEEP enable line can be lost.
<b>Workaround:</b>  Either wait 600us after the RTS line is lowered immediately following a wake up of the AP2 before sending the first message, or ensure that a valid response is received and if not resend the message.