



3GPP Frequency Transfer Data

Force Aiding Bit Use and Ignore TCXO Learning

Revision 1.00
12-Feb-2010

Author: Conrad Canderle

PROPRIETARY NOTE

This document contains proprietary information to SiRF Technology, Inc. and shall not be reproduced or transferred to other documents or disclosed to others or used for any purpose other than that for which it was obtained without expressed written consent of SiRF Technology, Inc.

Table of Contents

1. OVERVIEW	1
1.1. PURPOSE.....	1
1.2. SCOPE.....	1
2. FREQUENCY TRANSFER DATA	1
2.1. FORCE USE	1
2.2. AIDING BIT DESCRIPTION.....	4
3. REVISION HISTORY	5
3.1. REVISION HISTORY.....	5

1. OVERVIEW

This document will explain the use of forcing the aiding flags so that the receiver will use the frequency instead of allowing the receiver to decide whether to use the information or not, which is how it currently works with TCXO Learning.

1.1. Purpose

Sometimes the user may want to force the receiver to use the Frequency Transfer information that is set in the AutoReply Settings section of SiRFLive. Therefore this method was created so that the frequency is specifically used as set.

1.2. Scope

The steps on how to enable and disable the forcing of the frequency transfer aiding in SiRFLive will be covered.

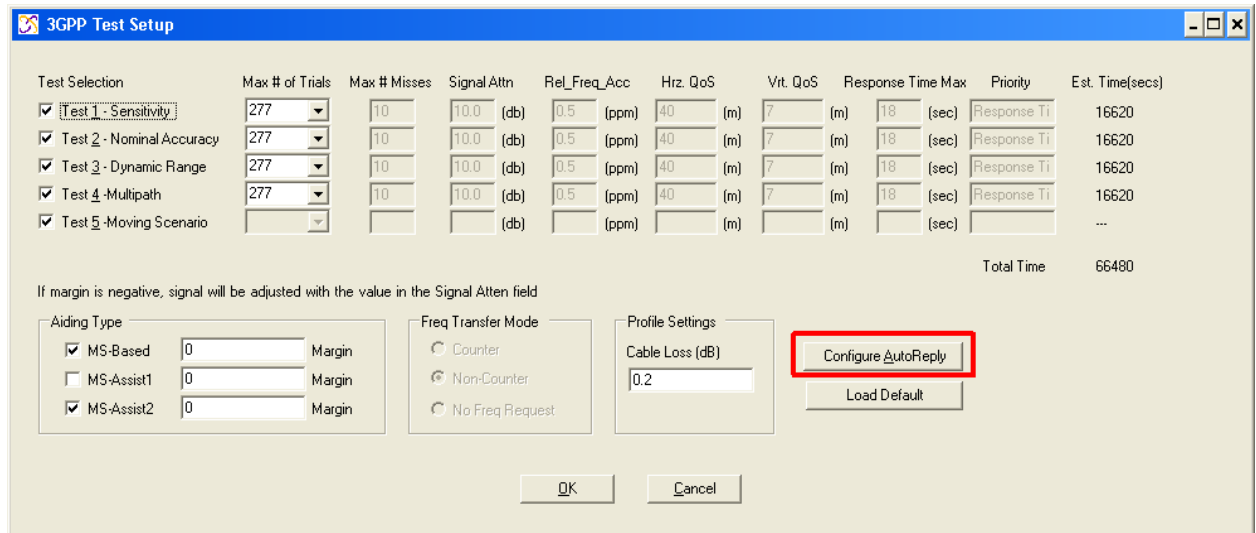
2. FREQUENCY TRANSFER DATA

2.1. Force Use

In order to force the use of the Frequency Transfer Request values for 3GPP testing:

Select the 3GPP test automation in SiRFLive – Action | Automation Test | 3GPP

Select the Configure AutoReply button in the 3GPP Test Setup dialog that appears



3GPP Test Setup

Test Selection	Max # of Trials	Max # Misses	Signal Attn	Rel_Freq_Acc	Hz. QoS	Vrt. QoS	Response Time Max	Priority	Est. Time(secs)
<input checked="" type="checkbox"/> Test 1 - Sensitivity	277	10	10.0 (db)	0.5 (ppm)	40 (m)	7 (m)	18 (sec)	Response Ti	16620
<input checked="" type="checkbox"/> Test 2 - Nominal Accuracy	277	10	10.0 (db)	0.5 (ppm)	40 (m)	7 (m)	18 (sec)	Response Ti	16620
<input checked="" type="checkbox"/> Test 3 - Dynamic Range	277	10	10.0 (db)	0.5 (ppm)	40 (m)	7 (m)	18 (sec)	Response Ti	16620
<input checked="" type="checkbox"/> Test 4 - Multipath	277	10	10.0 (db)	0.5 (ppm)	40 (m)	7 (m)	18 (sec)	Response Ti	16620
<input checked="" type="checkbox"/> Test 5 - Moving Scenario									...
Total Time									66480

If margin is negative, signal will be adjusted with the value in the Signal Attn field

Aiding Type

☒ MS-Based 0 Margin

☐ MS-Assist1 0 Margin

☒ MS-Assist2 0 Margin

Freq Transfer Mode

☐ Counter

☒ Non-Counter

☐ No Freq Request

Profile Settings

Cable Loss (dB) 0.2

Configure AutoReply

Load Default

OK Cancel

Navigate to the Freq Trans tab and then select the Force Freq Transfer Data Use (Ignore XO)

Press the Set button

Press the Done button

Continue with the 3GPP Test Selection and Setup as usual

AutoReply

HW Config

Freq Trans

Approx Pos

Time Trans

Position Request

Aiding...

RF Default Frequency Offset (Hz)

96250

SET

Specify Frequency Parameters

96250

Offset Freq(Hz)

0.2

Accuracy(ppm)

If TTB is used, it will substitute this value to Client in Counter method

Send Now

Use Receiver Reported Frequency Offset

96250

Offset(Hz)

0.5

Accuracy(ppm)

when no receiver info available, at 20ppm

Control

☒ AutoReply

Reject: Data Not Available

Reference Clock Info

☐ Use TTB Freq Aiding?

☒ Force Freq Transfer Data Use (Ignore XO)

Clock Source

SLC Clk (Non-Counter method)

Clock Source should match the Freq Transfer method in AutoReply HW Config Request

Reference Clock Is

Off

Ref Clock Request

None

Include Nominal Freq

No

External Clock Freq (Hz)

19200000

Skew(ppm)

0

Frequency should match the External Clock Frequency in AutoReply HW Config Request

Time Tag

valid fwd

Predefined config file

Selection:

Default

Load

Config File Path:

C:\STORM-Perforce\Source\SiRFLive\SiRFLive\bin\scri

View Current Auto Reply Config

Done

Cancel

2.2. Aiding Bit Description

Once a log file has been recorded using 3GPP automation or Loopit, there is a *<log file name>_ttff.csv* file that is also created. Looking in this file, the last column will show the aiding bits used in decimal. The following image shows 86 as the aiding bit value.

5.13,8,86
14.56,8,86
.41,8,86
0,14.63,8,86

Converting to hex (0x56) and then to binary (01010110) means that this was a

- Coarse Time
- Position aiding received and used
- Time aiding received and used
- Frequency aiding received and used

Reset as per the chart below:

Aiding Flags:	Bit 1 (0x01):	Precise Time
	Bit 2 (0x02):	Coarse Time
	Bit 3 (0x04):	External Position Aiding received and Used
	Bit 4 (0x08):	External Position Aiding received but Not Used
	Bit 5 (0x10):	External Time Aiding received and Used
	Bit 6 (0x20):	External Time Aiding received but Not Used
	Bit 7 (0x40):	External Frequency Aiding received and Used
	Bit 8 (0x80):	External Frequency Aiding received but Not Used

3. REVISION HISTORY

3.1. Revision History

Rev	Rev Date	Author	Description
1.d1	11-Feb-10	Conrad Canderle	Initial Draft
1.00	12-Feb-10	Conrad Canderle	Initial Release. Added Aiding Bit Description.