PROJECT: WFAC2X2

FIRMWARE RELEASE NOTE

Document Information	
Project Number/Name:	WFAC2x2
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Revision Control

Revision	Author	Purpose and Brief Summary of Changes	Date
0.1	E. de Kievit	Describe firmware release R0.9.003	May 29, 2020

Table of Contents

1 INTRODUCTION

1.1 Document Purpose and Scope

This document describes the content of the firmware releases for the WFAC2x2 project, variant Begonia MPW1.

1.2 References

Table 1-1 References

Doc #	Reference	Name	Date
19CAIN01_C06S017	[UM]	User Manual v1.1	Dec 10, 2019
17CAIN09_C06S009	[AMG]	API Migration Guide v1.0	Sept 25, 2019

1.3 Abbreviations and Definitions

Table 1-2 Abbreviations

Abbreviation	Meaning

Table 1-3 Definitions

Definitions	Meaning

2 RELEASE PACKAGE

2.1 Version Identification

Identifier	Value
target	MPW1
firmware version	R0.9.003

For this release, the GetVersion command will reply with the following information:

Identifier	Value
hw_major	01
hw_minor	B0 for MPW1
target_ver	1
fw_major	0
fw_minor	9
build_nr	3

2.2 Package Content

The release package contains the following files:

File	Description
WFAC22_01B0_prog.mem	Program memory file, to be loaded by the host
WFAC22_01B0_init.mem	Initialization file, to be loaded by the host

Please follow the load and boot instructions as explained in the [UM].

3 RELEASE CONTENT

3.1 Goal

The main goal of this release is to provide full featured firmware. APP_CalResistor is now also functional, and non critical errors in APP_Activate are turned into (internal) warnings, so they don't longer stop execution of the command.

3.2 Supported Functionality

The table below shows which commands are part of this release, and if there are limitations for the command in this release.

Table 3-1 command overview

Command	Status
GEN_GetVersion	Functional
APP_GetStatus	Functional
APP_Sleep	-
APP_Activate	Functional, non-critical errors changed into warnings
APP_Deactivate	Functional
APP_GetTemperature	Functional
APP_Calibrate	Functional
APP_CalResistor	Functional, new in this release
APP_SetResistor	Functional
APP_ConfigTrx	Functional
APP_ConfigFemCtrl	Functional
CLK_SetXo	Functional
TRX_Receive	Functional
TRX_Transmit	Functional
TRX_Stop	Functional
TRX_Park	Functional
TRX_Prepare	Functional
TRX_GetStatus	Functional
TRX_SetTestDc	Functional

3.3 Improved Performance

The activation time has been reduced slightly.

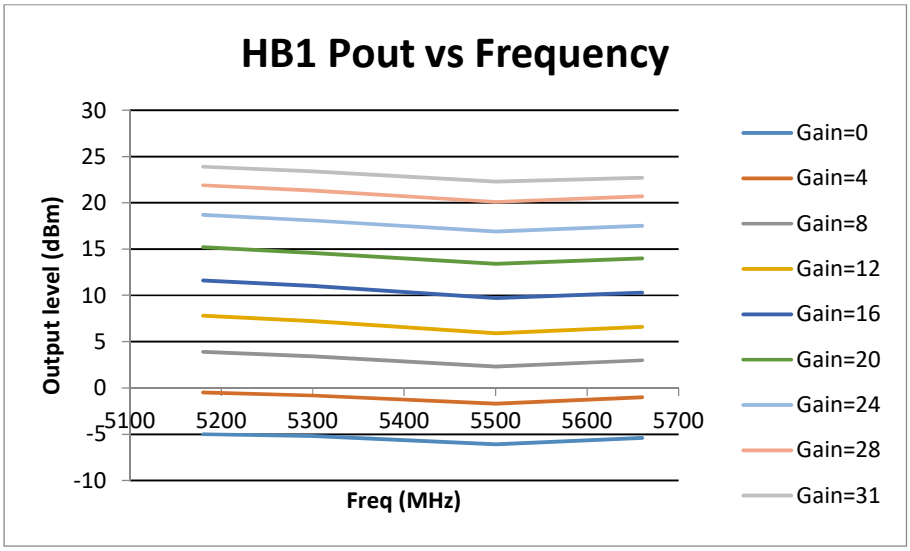
4 KNOWN PROBLEMS & LIMITATIONS

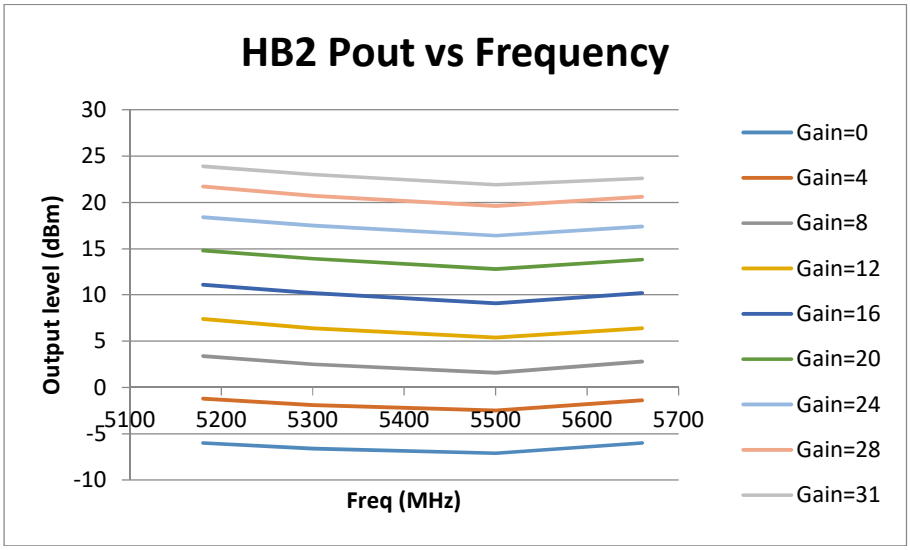
On host level, the timing of the timeout functions needs to be checked for the following:

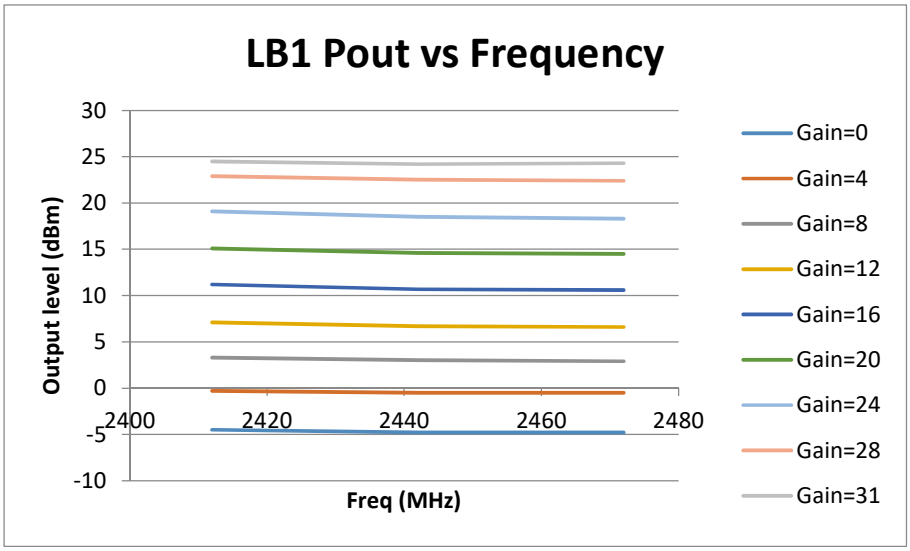
1. After having loaded the WFAC22_01B0_init.mem, the booting will take up to 4 ms.

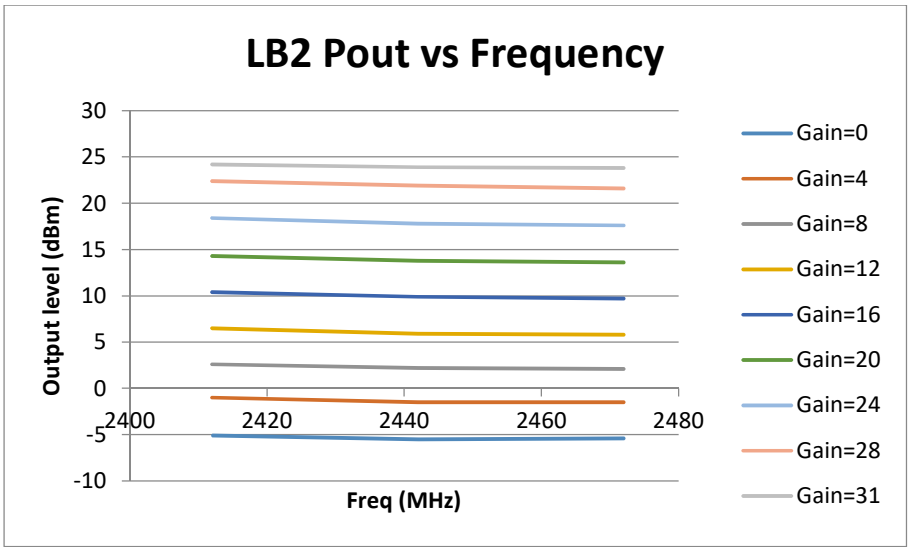
5 TEST RESULTS

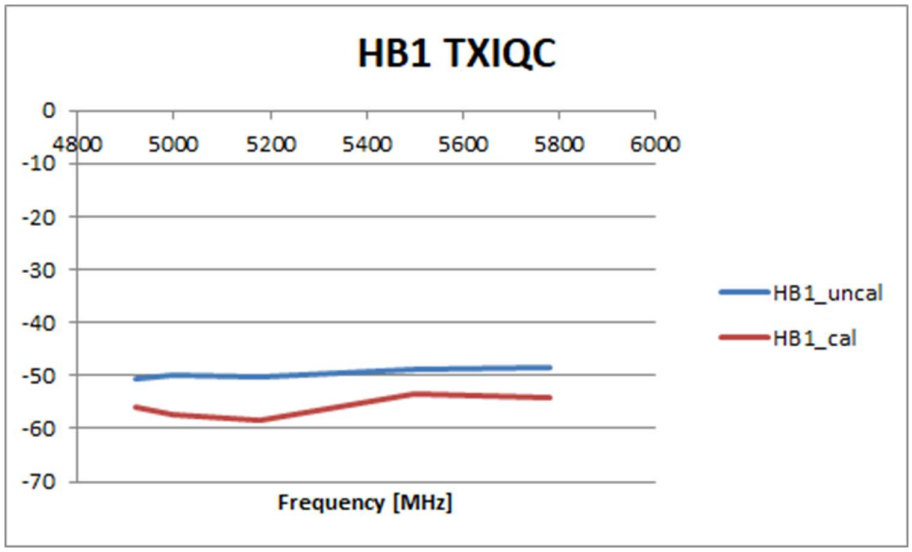
MPW1-RFP-06

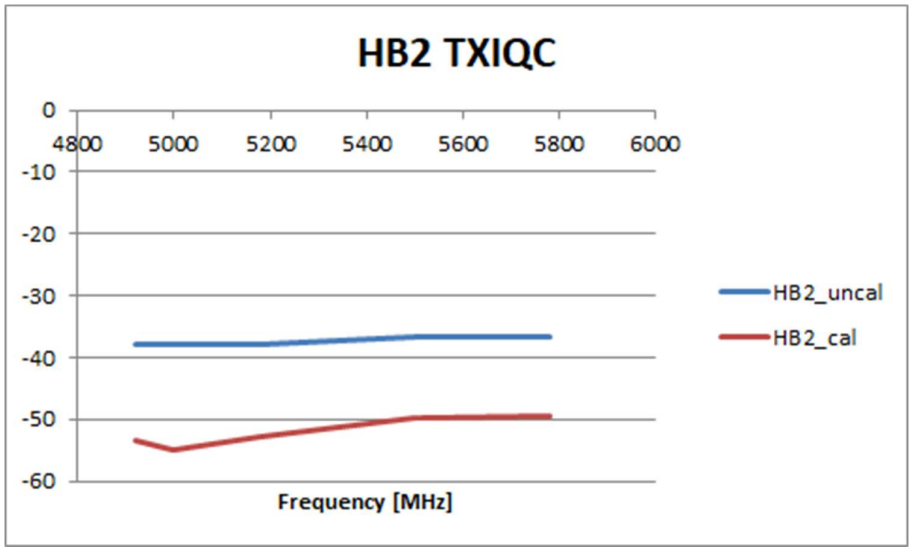





LB1 Pout vs Frequency
Output level (dBm)
30
25
20
15
10
5
0
-5
-10
2400
2420
2440
2460
2480
Freq (MHz)
Gain=0
Gain=4
Gain=8
Gain=12
Gain=16
Gain=20
Gain=24
Gain=28
Gain=31


LB2 Pout vs Frequency
Output level (dBm)
30
25
20
15
10
5
0
-5
-10
2400
2420
2440
2460
2480
Freq (MHz)
Gain=0
Gain=4
Gain=8
Gain=12
Gain=16
Gain=20
Gain=24
Gain=28
Gain=31


HB1 TXIQC
0
-10
-20
-30
-40
-50
-60
-70
4800
5000
5200
5400
5600
5800
6000
Frequency [MHz]
HB1_uncal
HB1_cal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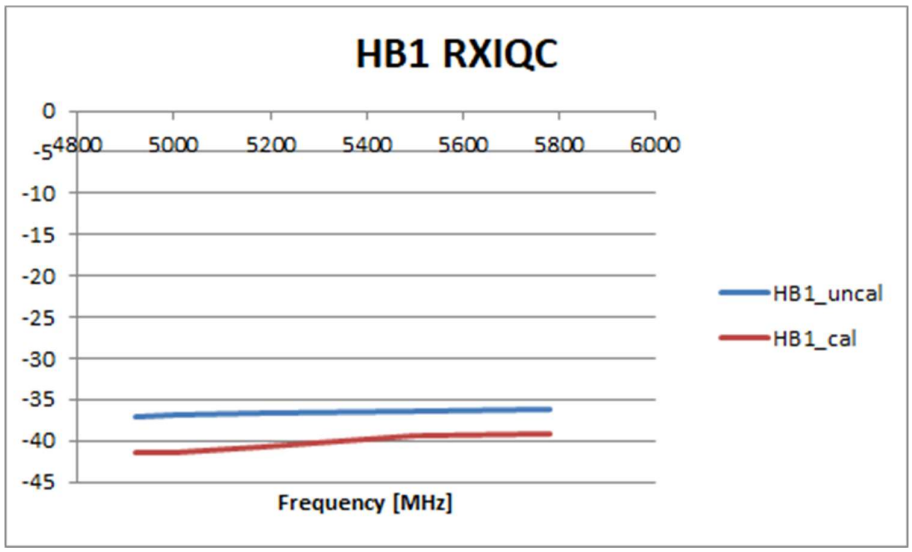
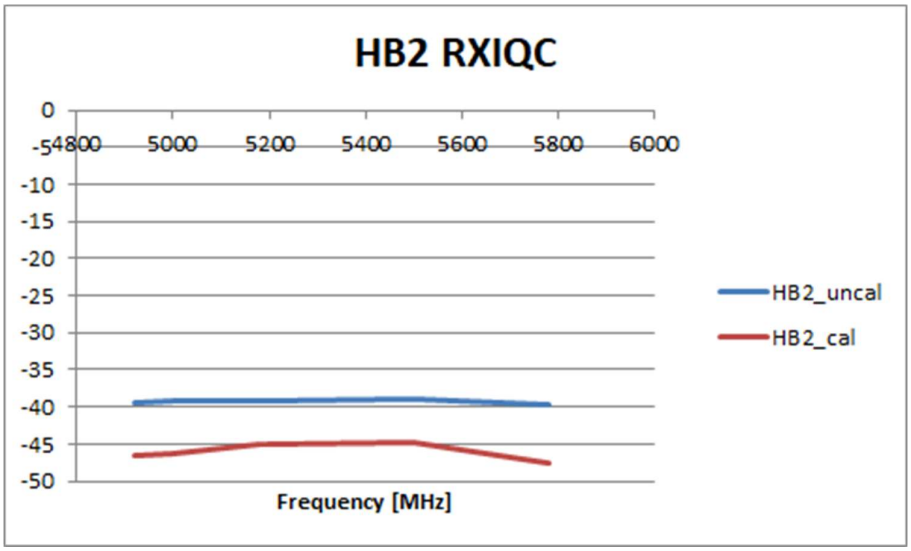
0
-10
-20
-30
-40
-50
-60
4800
5000
5200
5400
5600
5800
6000
Frequency [MHz]
HB2_uncal
HB2_cal


HB1 RXIQC
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
4800
5000
5200
5400
5600
5800
6000
Frequency [MHz]
HB1_uncal
HB1_cal


HB2 RXIQC
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
4800
5000
5200
5400
5600
5800
6000
Frequency [MHz]
HB2_uncal
HB2_cal