CTFE FW v10.4.0.0 Release Notes

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Cable and Terrestrial Frontend Firmware

CTFE FW v10.4.0.0

Customer Release Notes

10/13/2017

Relevant BRCM ICs

This release firmware runs on the frontend LEAP processor of the following Broadcom chips:

Cable Frontend Chips	Terrestrial Frontend Chips	Settop Box SoCs	Cable Modem SoCs
BCM312x family	BCM3461	BCM7584(5)-family	BCM3385
BCM314x family	BCM3465	BCM7576	BCM3390
BCM3184	BCM3466	BCM7145	
BCM3158x family		BCM7563(5)	
BCM3412 LNA			
BCM3462 LNA			

Release History

FW Release	Unified Release	FW Release Date	FW Release to URSR	Comments
CTFE FW v10.4.0.0	17.4	10/02/2017	10/13/2017	CTFE F/W Release ver. 10.4.0.0 for URSR 17.4. Note: The frontend F/W for the following chips will be frozen at the F/W versions per the table below. Future URSR releases may contain critical F/W patches for these chip families, as required:
CTFE FW v10.3.0.0	17.3	06/28/2017	07/14/2017	CTFE F/W Release for URSR 17.3
CTFE FW v10.2.0.0	17.2	03/24/2017	04/04/2017	<not yet entered>
CTFE FW v10.1.0.0	URSR 17.1	01/09/2017	01/13/2017	<not yet entered>
CTFE FW v9.4.0.0	16.4	09/26/2016	10/21/2016	• Introduces support for BCM3465/BCM3466 • Bug fixes (BCM3158) • Miscellaneous bug fixes/improvements
CTFE FW v9.3.0.0	16.3		07/14/2016	• BCM3158 family - this release is for "A0" revision only. • For the BCM3158 chip ONLY: this release breaks backward compatibility with the AOB/OOB Coretype HAB interface (3128 and 7584 are unaffected.)
CTFE FW v9.2.0.0	16.2	03/24/2016	04/13/2016	
CTFE FW v9.1.0.0	16.1	12/18/2015	01/14/2016	

The embedded table within the v10.4.0.0 Comments cell:

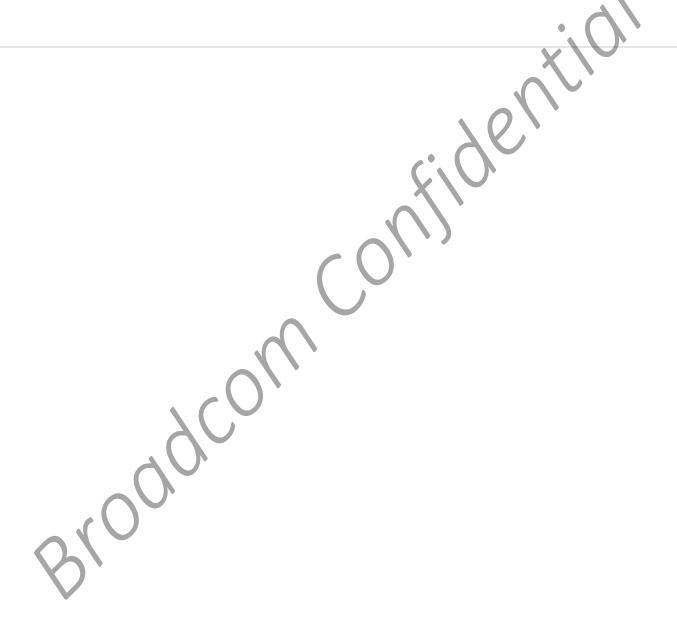| Chip Family	Rev.	Version
BCM3128	C0	10.4.0.0
BCM3461	B0	10.4.0.0
BCM7584	A0	10.4.0.0
BCM7563	A0	10.4.0.0
BCM3465	A0 only	10.3.0.0
BCM3466	A0 only	10.3.0.1

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BBS Support

(Note: this table specifies BBS plugins and JS tools for the most recent release. Please refer to prior release notes of a particular release for BBS details for that release.)

Platform	Plugin Version	BBS Version	HTML/JS FE Tools	Notes
9312x/4x	3.1.60125.18	BBS3	N/A	
93461	3.1.60125.7	BBS3	N/A	
93472	3.1.60125.7	BBS3	v1.2.0	
97563	4.0.0.2	BBS4	v1.1.0	
97584	4.0.0.2	BBS4	v1.5.0	
97145	3.1.60125.16	BBS3	v1.2.0	
97364	4.0.0.15	BBS4	v1.0.0	
93390	4.0.0.17	BBS4	v1.2.0	
93158	4.0.0.7	BBS4	v1.3.0	
975525	4.0.0.1	BBS4	v1.0.0	
93465	4.0.0.0	BBS4	v1.2.0	
93466	4.0.0.0	BBS4	v1.2.0	

Release Notes

CTFE FW v10.4.0.0

FW Release Date: 10/02/2017
Release to Unified (URSR): 10/13/2017
Unified Release Target: 17.4
Release Status: Released
Release Info: CTFE F/W Release ver. 10.4.0.0 for URSR 17.4.

Note: The frontend F/W for the following chips will be frozen at the F/W versions per the table below. Future URSR releases may contain critical F/W patches for these chip families, as required:

Chip Family	Rev.	Version
BCM3128	C0	10.4.0.0
BCM3461	B0	10.4.0.0
BCM7584	A0	10.4.0.0
BCM7563	A0	10.4.0.0
BCM3465	A0 only	10.3.0.0
BCM3466	A0 only	10.3.0.1

Change List

Item #	Chip	Change Description	Category
1	3158x, 3390-Cx, 3390-Zx	From 3390 LEAP-v10.3.7017.0 Auto-power-down the Capture engine of the AIF after an 11 second period of inactivity of executing either Capture or Spec-A.	FW
2	3465-66	BCM3465/66 Terrestrial ODS receiver acquisition time performance improvements.	FW
3	3465-66	Add Nexus/Magnum Support for 3466 B0	Nexus, PI

Known Issues

None.

Nexus Release Notes

Added support for 3465 B0 and 3466 B0. Building for A0 now requires the Nexus compile-time flag NEXUS_FRONTEND_3466_VER=A0.

Nexus Frontend API Changes

None.

End CTFE FW v10.4.0.0

CTFE FW v10.3.0.0

FW Release Date: 06/28/2017
Release to Unified (URSR): 07/14/2017

Unified Release Target: 17.3
Release Status: Released
Release Info: CTFE F/W Release for URSR 17.3

Change List

Item #	Chip	Change Description	Category
1	3158x	From: 3390 LEAP-v10.2.7016.0 Implements the WFE "Histogram" Proactive Network Management (PNM) API via the HAB	FW
2	3465-66, 7563	DVB-T2 MPLP stream lock performance fixes/improvements.	FW
3	3158x	Fixes daisy and loop through glitches.	FW
4	3158x	Invert Spectrum / Auto-invert ADS status parameter fixes	FW
5	3465-66	Nordig T2 N-1/N+1 7MHz performance improvement	FW

Known Issues

None.

Nexus Release Notes

Add Nexus support for 3466 frontend handles to tune QAM.

Add 3466 OFDM Diversity Support

Nexus Frontend API Changes

Added Diversity Antenna Support to NEXUS_FrontendDevice_SetSettings()/NEXUS_FrontendDevice_GetSettings() API. Diversity mode can be enabled/disabled by setting the numDiversityChannels variable in the NEXUS_FrontendDeviceSettings structure.

Changed the defaults from NEXUS_FrontendDevice_GetDefaultOpenSettings to enable loadAP and each frontend type by default. This allows platform code to be streamlined, and should only affect cases where loadAP needs to be false.

End CTFE FW v10.3.0.0

CTFE FW v10.2.0.0

FW Release Date: 03/24/2017
Release to Unified (URSR): 04/04/2017
Unified Release Target: 17.2
Release Status: Released
Release Info: <not yet entered>

Change List

Item #	Chip	Change Description	Category
1	312x/4x, 7584	Adds a non-channelized LNA Status HAB command so that LNA (LNA Bypass) status may be obtained via the HAB without having to obtain it via Tuner HAB Status. Prior to this change, the LNA status could to be obtained only via channelized Tuner status, but if the Tuner was powered off, a HAB command error would occur, since the individual tuner was powered down.	FW, PI
2	3158x	MTSIF default clock-rate value correction for BCM3185.	
3		AVS update settings based on split parts	FW
4		Support both DS channels for 3466	FW
5	3158x, 3390-Bx, 3390-Zx, All	`fix ADS status acquistion type`	FW

Known Issues

None.

Nexus Release Notes

Nexus Frontend API Changes

End CTFE FW v10.2.0.0

CTFE FW v10.1.0.0

FW Release Date: 01/09/2017
Release to Unified (URSR): 01/13/2017
Unified Release Target: URSR 17.1
Release Status: Released
Release Info: <not yet entered>

Change List

Item #	Chip	Change Description	Category
1	3158x	From Bcm3158 Patch 9.4.0.1 • 3158 : SNR drops after every DS power cycle • 3158: Fixes DS unlock if the IFDAC is powered up first (before DS) after board power-up or board power cycle.	FW

2	3158x, 3390-Bx	From Bcm3158 Patch 9.4.0.2
		
		• BCM3158: Adds HAB capability of selecting between two LoopThrough Modes:
		  • 0 - nominal gain (default) , 0dB
		  • 1 - high gain, 3dB
		• (Note: F/W change is backward compatible for the HAB, but URSR versions earlier than 16.4 do not support this parameter).
		• Nexus API and Magnum Change: Adds capability of selecting between two LoopThrough Mode
		• nominal gain / high linearity mode.
		• high gain / low noise figure mode.
		
		• Corrects proper operation of AnnexB DS Spectrum Search
			BBS, FW, Nexus, Nexus API

3	312x/4x, 3158x	From Bcm3158 Patch 9.4.0.3 • Incorporate support for the Nexus/Magnum IFDAC Status API "IFDAC RSSI" parameter of the BCM3158 B0. This change does NOT impact backward compatibility of the HAB Interface. • Corrects the scaling of the AVS temperature reported via the HAB for the BCM3158 B0. Scaling is corrected from 1/1000 degC per bit to 1/10 degC per bit. • Fix ADS AnnexB lock with high identical null packet TSs • Add PI and Nexus Support for IFDAC on 3158	FW, Nexus API
4	3158x	Fix to properly update fields in the "Gen3" CPPM Status HAB command: CppmThreshold, CppmThresholdHysterisis, and LNAGpioStatus.	FW
5	7563	T2 Nordig inside guard failed.	FW
6	3158x, 3390-Bx	Q64 AnnexB 128:4 Acquisition issue	FW
7	3158x	Low frequency RF improvement	FW

| 8 | 3158x | Change the Loopthrough configuration HAB command to allow the Loopthrough "Enable/Disable" to be configured independently of the LoopThrough "Gain Mode," so that the Loopthrough may be enabled/disabled after the Wideband Front-end is powered on | FW |

Known Issues

BCM3465

1. Can't tune frequencies above 860MHz in DVB-C mode

BCM3466

1. Can't tune frequencies above 860MHz in DVB-C mode
2. Only 1 receiver supported in DVB-C mode. A HAB error occurs when trying to power up the 2nd DVB-C core (Core ID 1)

Nexus Release Notes

Modified implementation of NEXUS_FrontendDevice_GetAmplifierStatus for 3128, allowing it to be called when frontend 0 is powered down.

Nexus Frontend API Changes

<enter Nexus FE API changes>

End CTFE FW v10.1.0.0

CTFE FW v9.4.0.0

FW Release Date: 09/26/2016
Release to Unified (URSR): 10/21/2016
Unified Release Target: 16.4
Release Status: Released
Release Info:
- Introduces support for BCM3465/BCM3466
- Bug fixes (BCM3158)
- Miscellaneous bug fixes/improvements

Change List

Item #	Chip	Change Description	Category
1	3158x	default AGC settings	FW
2	Other	Add support for BCM3465 / BCM3466, including dual / multi channel support to the ODS CTFE F/W core driver.	BBS, FW, PI
3	All	Documentation change only. Corrects description of the "TriggerCppm" field of the CPPM Config HAB command.	FW
4	7563	Bcm7563 improved DVB-T/T2 ACI performance.	FW
5	All	CTFE FW 3390-B0-v9.3.5012.0 Adds a version Id and CRC suffixed "BBS" F/W binary image file to the set of binaries included in the CTFE F/W release package or zip file. The newly added file is image-wise identical to the bhab_chipid_fw_revid.bin file, except that the new file's name is suffixed with the CTFE F/W image's hexadecimal CRC checkvalue.	FW
6	3158x	Changes the scaling factor applied to the magnitudes of the OOB constellation HAB command's plot vectors for the 3158 A0/B0. Makes the 3158 OOB constellation plot scaling consistent with OOB constellation plots of other chips.	BBS, FW
7	Other	Add Nexus and PI Support for 3466	Nexus, PI
8	3158x	FEC triggers an unlock event at a higher AWGN C/N then previous ADS chips	FW

9	3158x		FW
		Report the FE daisy gain for 3158 B0	

Known Issues

None.

Nexus Release Notes

Added Nexus and PI Frontend Support for 3466 and 3465

Nexus Frontend API Changes

Added support for loopthrough gain modes to NEXUS_FrontendDevice_SetSettings.

End CTFE FW v9.4.0.0

CTFE FW v9.3.0.0

FW Release Date:
Release to Unified (URSR): 07/14/2016
Unified Release Target: 16.3
Release Status:
Release Info:
- BCM3158 family - this release is for "A0" revision only.

- For the BCM3158 chip ONLY: this release breaks backward compatibility with the AOB/OOB Coretype HAB interface (3128 and 7584 are unaffected.)

Change List

Item #	Chip	Change Description	Category
1	3158x, 3390-Bx	Out of Band HAB Interface change: Add *RsPreEstimate, RSPostEstimate, FEC BERT, Non-FEC BERT, and Average SNR* parameters to the Out of Band GetStatus HAB command (does not impact 3128 nor 7584).	BBS
2	All	Adds "Broadband Studio" loadable LEAP binary images to the release-package provided to the Broadcom Setop Box Ref. S/W team and to the customer.	FW, PI
3	312x/4x	Relax tuner power-up hold-off during execution of periodic tuner monitor in order to improve individual tuner channel power-up time. (Ref. CSP Cisco RDK [CASE#1049915]).	FW
4	3158x, 3390-Bx	OOB over MTSIF feature enabled.	FW
5	3158x	Fix the CPPM unchange mode to not update status	FW
6	7364	Disable the UART GPIO settings in FW	FW

Known Issues

None.

Nexus Release Notes

Nexus Frontend API Changes

End CTFE FW v9.3.0.0

CTFE FW v9.2.0.0

FW Release Date: 03/24/2016
Release to Unified (URSR): 04/13/2016
Unified Release Target: 16.2
Release Status: In Progress
Release Info:

Change List

Item #	Chip	Change Description	Category
1	3390, 7584, Other	Implements a HAB Command to support for reading the Out-of-Band demod constellation.	BBS, FW
2	3158x	Adds BCM3158 A1 Support to UR 16.2	BBS, FW, Nexus, PI
3	3158x	Tweak IntLna RF AGC settings to improve SCTE-40 performance	
4	7563	Bcm7563 failed 7MHz analog CCI test.	FW
5	7563	Bcm7563 fail the Performance in Time-Varying Channels	FW
6	3158x	Add Frontend PI Support	

Known Issues

None.

Nexus Release Notes

Added support for 3158.

Nexus now stores firmware for frontends in userspace even when built for kernel mode.

Nexus Frontend API Changes

Added a new function pair (NEXUS_FrontendDevice_GetWakeupSettings, NEXUS_FrontendDevice_SetWakeupSettings) to configure wakeup packet scanning on 3158.

End CTFE FW v9.2.0.0

CTFE FW v9.1.0.0

FW Release Date: 12/18/2015
Release to Unified (URSR): 01/14/2016
Unified Release Target: 16.1
Release Status: Released
Release Info:

Change List

Item #	Chip	Change Description	Category
1	3461, 3472, 7364, 7563	Improve adjacent-channel protection ratio, to enhance immunity to interference, including interference from LTE.	FW

| 2 | 7563 | Improve DVBT field signal reception. | FW |
| 3 | 312x/4x, 3461, 7364, 7563, 7584 | Add support to load cable and terrestrial frontend firmware (on 3128, 7584, 3461, 7563, and 7364) from userspace when building in kernel mode, reducing kernel memory requirements. | Nexus, PI |

Known Issues

None.

Nexus Release Notes

Nexus frontend has implemented IMG support for frontend firmware loading (for 3128, 7584, 3461, 7563, and 7364). This reduces the Nexus memory footprint in kernel/proxy mode. (SW7435-2006)

Build support for 3472 has been removed from Nexus and will generate an error in 16.1 and future releases.

Nexus Frontend API Changes

End CTFE FW v9.1.0.0