

```
//-----  
//-----  
//-----
```

BKR5000/9000 Release version = x.5.10.43

BKR9000 tag = v6.5.10.43

BKR5000 tag = v7.5.10.43

date = 2/5/2025

General Comments:

1) Tested with RES 5.8.41

*****ARM*****

version 5.10.39 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.29

branch master

*****BSP*****

version 6.0.37

branch = master_v3_2_102

+ RS-3578: restore default prioritized BT profile to HFP

```
//-----  
//-----  
//-----
```

BKR5000/9000 Release version = x.5.10.42

BKR9000 tag = v6.5.10.42

BKR5000 tag = v7.5.10.42

date = 1/31/2025

General Comments:

1) Tested with RES 5.8.41

*****ARM*****

version 5.10.38 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.28

branch master

*****BSP*****

version 6.0.37

branch = master_v3_2_102

+ RS-3568: add Wi-Fi icon to basic main screens
+ RS-3566: add DSP hardware version method to EKL600
+ RS-3573: New RF PA Vrev thresholds for 12H boards

```
//-----  
//-----  
//-----  
BKR5000/9000 Release version = x.5.10.41  
BKR9000 tag = v6.5.10.41  
BKR5000 tag = v7.5.10.41
```

date = 1/23/2025

General Comments:

1) Tested with RES 5.8.41

*****ARM*****

version 5.10.37 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.27
branch master

*****BSP*****

version 6.0.37
branch = master_v3_2_102

+ RS-3532: attempt to re-enter PTT0B mode if user press & hold Bluetooth button.
App support needed
+ RS-3569: fix bluetooth HFP connect from BKRPlay, add check for remote services
known calling GetRemoteDeviceServiceInformation

```
//-----  
//-----  
//-----  
BKR5000/9000 Release version = x.5.10.40  
BKR9000 tag = v6.5.10.40  
BKR5000 tag = v7.5.10.40
```

date = 1/22/2025

General Comments:

1) Tested with RES 5.8.41

*****ARM*****

version 5.10.36 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.27
branch master

*****BSP*****

version 6.0.37
branch = master_v3_2_102

+ RS-3566: Add support for GPIO 11 external pull-down to indicate BKR9000 DSP hardware (rev 2 RF PA)

//-----
//-----
//-----
BKR5000/9000 Release version = x.5.10.39
BKR9000 tag = v6.5.10.39
BKR5000 tag = v7.5.10.39

date = 1/17/2025

General Comments:

1) Tested with RES 5.8.41

*****ARM*****

version 5.10.35 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.26
branch master

*****BSP*****

version 6.0.36
branch = master_v3_2_102

+ RS-3554: Send flag to DSP so it knows if the DES key bytes are encrypted or not
+ RS-3527: fix BKR9000 connection issue with 3M BT mask

//-----
//-----
//-----
BKR5000/9000 Release version = x.5.10.38
BKR9000 tag = v6.5.10.38
BKR5000 tag = v7.5.10.38

date = 12/10/2024

General Comments:

1) Tested with RES 5.8.41

*****ARM*****

version 5.10.34 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.25
branch master

*****BSP*****

version 6.0.36
branch = master_v3_2_102

+ RS-3559: add USB command to generate tones
+ RS-3555: PTT0B if user releases PTT button recheck audio and LED logic
+ RS-3321: Fixing command zone channel parameter copy

//-----
//-----
//-----

BKR9000 Release version = 6.5.10.37
BKR9000 tag = v6.5.10.37
BKR5000 Release version = 7.5.10.37
BKR5000 tag = v7.5.10.37

date = 11/30/2024

General Comments:

1) Tested with RES 5.8.41

*****ARM*****

version 5.10.33 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.25
branch master

*****BSP*****

version 6.0.36
branch = master_v3_2_102

+ RS-3556: For VIC radios, store ADP keys in keyfile and store ADP meta data in VIC
+ RS-3556: Fixing DESXL meta data in VIC
+ Have radio return the Out-Of-Memory status value for the keyloader if out of memory
+ RS-3541: programmable bluetooth mic gain not used when radio is acting as an audio gateway
+ RS-3535: use new Vrev trip points for rev 14 boards
+ RS-3535: add hardware version info to GPP_READY message
+ RS-3535: add battery source comparator GPIOs for v14 hardware

- + RS-3531: handle missing message in PTT0B mode, needed for radio power down
- + RS-3557: in PTT0B when channel is not in a group, play the Bad Channel tone, similar to LMR unprogrammed channel behavior
- + RS-3555: add support for BKRPlay tx pre-emption Floor Availability value 0x11
- + RS-3554: Adding support for DES/DESXL codeplug keys
- + RS-3552: revert PR OTAR manager stack size, inadvertently changed in august commit resulting in a seg fault
- + RS-3551: group regroup encryption security settings changed to follow selected talkgroup instead of default to selectable
- + RS-3549: keypad mute (i.e. tone mute) stops channel select, zone select, and other similar operations
- + RS-3540: change floor available unknown value from 2 to 16 to match app
- + RS-3524: Add battery INI version to radio info menu in BKR9000
- + PA-3245: update programmable buttons' ability to be assigned to toggle switch
- + RS-3530: add LED functionality for PTT0B mode
- + RS-3529: At powerup if encryption is enabled and the VIC fips level is set to 2 and the VIC is in Creation mode then re-provision the VIC. A customer radio was returned in this state and this code change will detect and correct this situation
- + RS-3528: Failsoft was using systemID as Tx NAC. Radio now uses Rx NAC

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```

```
Release version = 6.5.10.36
tag = v6.5.10.36
date = 8/21/2024
```

General Comments:

1) Tested with RES 5.8.38

*****ARM*****

```
version 5.10.32 (appended 'f' for factory version with authentication disabled)
branch = master
```

*****DSP*****

```
version 5.10.24
branch master
```

*****BSP*****

```
version 6.0.35
branch = master_v3_2_102
```

- + RS-3521: fix carrier detection misses during scan, for strong signals, by increasing AD9864 AGC overload update speed
- + RS-3512: P25 trunking fails to search Harris super group information
- + RS-3518: changed BT power-on to utilize an external process that can be killed
- + RS-3519: don't power-off the BT chip; just stop BT functionality

```
//-----
```

```
//-----  
//-----  
Release version = 6.5.10.35  
tag = v6.5.10.35  
date = 8/5/2024
```

General Comments:

1) Tested with RES 5.8.38

*****ARM*****

version 5.10.31 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.23
branch master

*****BSP*****

version 6.0.33
branch = master_v3_2_102

+ RS-3503: Set default P25 Trunking roaming setting to Enhanced
+ RS-3509: shorten initial battery statistics menu display from 5 seconds to 1 second. Add ability for user to press enter key and update battery statistics
+ RS-3509: add conversion from battery programmed ini version to match factory labels on the battery
+ RS-3514: BKR9000 will disable battery discharge FET if RX battery voltage drops below 5.8V. A battery will need to be placed into a charger with appropriate firmware to re-enable the discharge FET
+ RS-3514: BKR9000 low battery threshold changed to 6.3V (6.8 for alkaline), too low for tx threshold changes to 5.95 (6.65 for alkaline) per HW engineering request
+ RS-3515: use radio-specific settings for top contrast adjustment
RS-3513: add high-level Pause/Resume mutex in ScreenManager

- the ListScreen type includes multiple emWin windows that are created after a Reset followed by a Refresh that is called from Activate which occurs when the ScreenManager's screen stack has a new top window. Ultimately, the UIDisplay class periodically calls ScreenManager->Refresh every 25msec to update the display. Due to the way the update Timer event sends a message to the UIDisplay, the message is recieved asynchronously in an interrupt context. The result is a race condition between the Refresh being called in the middle of various UI screens being re-configured.
- this commit adds a high-level "mutex" in the ScreenManager to prevent the UIDisplay Refresh call from attempting to refresh the display before it is finished being updated in the various UI domain classes

```
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```

Release version = 6.5.10.34
tag = v6.5.10.34
date = 7/19/2024

General Comments:

1) Tested with RES 5.8.38-rc3

*****ARM*****

version 5.10.30 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.23
branch master

*****BSP*****

version 6.0.33
branch = master_v3_2_102

+ RS-3430: merged into master - BLE GATT support for to-date BKRPlay support
+ RS-3430: allow BKR5000 to connect HFP audio gateway. BT device filter based on
service class made less strict, now allows either audio or rendering device
+ RS-3506: add support for internal mic select button and menu item to BKR5000
+ RS-3494: enter a power down mode if the BKR9000 battery voltage is < 5.65V

```
//-----  
//-----  
//-----
```

Release version = 6.5.10.33
tag = v6.5.10.33
date = 6/13/2024

General Comments:

1) Tested with RES 5.8.38-rc3

*****ARM*****

version 5.10.29 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.22
branch master

*****BSP*****

version 6.0.32
branch = master_v3_2_102

+ RS-3504: disable fuel gauge reads if first 5 read attempts fail, done to improve responsiveness of HWM0 thread when attached to an alkaline battery
+ RS-3505: fix for transmit during group regroup on Harris TDMA system
+ RS-3502: Harris system - fix first unit call transmit on target radio without availability check

//-----
//-----
//-----

Release version = 6.5.10.32

tag = v6.5.10.32

date = 6/03/2024

General Comments:

1) Tested with RES 5.8.38-rc3

*****ARM*****

version 5.10.28 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.21

branch master

*****BSP*****

version 6.0.32

branch = master_v3_2_102

+ RS-3498: add BT mic audio gain
+ RS-3497: add feature to select between radio and Bluetooth speaker when connected to a Bluetooth device
+ RS-3496: add Bluetooth name & address to Bluetooth menu
+ RS-3493: add support for P25 trunking throughput mute timer - needed to eliminate brief reception of radios own transmission after each call on systems with long throughput
+ RS-3501: new BKR9000 Vrev trip points from HW engineering
+ RS-3495: add noise cancellation when active mic is from RSM

//-----
//-----
//-----

Release version = 6.5.10.31

tag = v6.5.10.31

date = 5/21/2024

General Comments:

1) Tested with RES 5.8.37

*****ARM*****

version 5.10.27 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.20
branch master

*****BSP*****

version 6.0.32
branch = master_v3_2_102

+ RS-3492: Add alkaline battery monitoring logic during tx with power reduction to BKR9000
+ RS-3386: internal mic select menu item for P25 trunking - fix missing parameter length
+ RS-3486: blank LCDs entering sleep, unblank LCDs exiting sleep
+ RS-3488: fix random BKR9000 RSM authentication failure

//-----
//-----
//-----
Release version = 6.5.10.28
tag = v6.5.10.28
date = 4/30/2024

General Comments:

1) Tested with RES 5.8.37

*****ARM*****

version 5.10.27 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.20
branch master

*****BSP*****

version 6.0.31
branch = master_v3_2_102

+ RS-3486: blank LCDs entering sleep, unblank LCDs exiting sleep
+ RS-3488: fix random BKR9000 RSM authentication failure

//-----
//-----
//-----
Release version = 6.5.10.27
tag = v6.5.10.27
date = 4/23/2024

General Comments:

1) Tested with RES 5.8.37

*****ARM*****

version 5.10.26 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.19
branch master

*****BSP*****

version 6.0.31
branch = master_v3_2_102

+ RS-3486: allow flip top display setting to occur with display update timer

//-----
//-----
//-----
Release version = 6.5.10.26
tag = v6.5.10.26
date = 4/19/2024

General Comments:

1) Tested with RES 5.8.37

*****ARM*****

version 5.10.25 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.19
branch master

*****BSP*****

version 6.0.31
branch = master_v3_2_102

+ RS-3486: update the displays after initializing them; add manual update to top display; changes to BKR9000 top display drier to fix update artifacts

//-----
//-----
//-----
Release version = 6.5.10.25
tag = v6.5.10.25
date = 4/18/2024

General Comments:

1) Tested with RES 5.8.37

*****ARM*****

version 5.10.24 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.19
branch master

*****BSP*****

version 6.0.30
branch = master_v3_2_102

+ RS-3340: another EFJ system inhibit fix

//-----
//-----
//-----
Release version = 6.5.10.24
tag = v6.5.10.24
date = 4/17/2024

General Comments:

1) Tested with RES 5.8.36

*****ARM*****

version 5.10.23 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.19
branch master

*****BSP*****

version 6.0.30
branch = master_v3_2_102

+ RS-3485: reset and initialize the top display after changing the model due to FES option

//-----
//-----
//-----
Release version = 6.5.10.23
tag = v6.5.10.23
date = 4/8/2024

General Comments:

1) Tested with RES 5.8.36

*****ARM*****

version 5.10.22 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.18
branch master

*****BSP*****

version 6.0.29
branch = master_v3_2_102

+ RS-3483: remove additional bluetooth mic 12 dB gain per HW request

//-----
//-----
//-----

Release version = 6.5.10.22
tag = v6.5.10.22
date = 4/5/2024

General Comments:

1) Tested with RES 5.8.36

*****ARM*****

version 5.10.21 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.17
branch master

*****BSP*****

version 6.0.29
branch = master_v3_2_102

+ RS-3483: remove old KNG series development only 18 dB attenuation to bluetooth mic samples, add additional 12 dB gain to bluetooth mic samples per HW testing with SCBA equipment

+ RS-3481: single file descriptor (and therefore single mutex) for combo battery fuel guage + authentication device. Fixes issue that an authentication IOCTL to driver and corrupt battery fuel gauge comms and vice versa.

+ RS-3480: add check of PREEMPT configuration in the kernel when parsing version string

+ RS-3479: Adding support for system alias

//-----
//-----

//-----

Release version = 6.5.10.21

tag = v6.5.10.21

date = 3/3/2024

General Comments:

1) Tested with RES 5.8.36

*****ARM*****

version 5.10.20 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.16

branch master

*****BSP*****

version 6.0.28

branch = master_v3_2_102

+ RS-3473: add round to read of RSOC register from MAX17320 for improved accuracy

+ RS-3474: disable transmit when accessory cable is attached (BKR9000 only)

//-----

//-----

//-----

Release version = 6.5.10.21

tag = v6.5.10.21

date = 3/3/2024

General Comments:

1) Tested with RES 5.8.36

*****ARM*****

version 5.10.20 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.16

branch master

*****BSP*****

version 6.0.28

branch = master_v3_2_102

+ RS-3473: add round to read of RSOC register from MAX17320 for improved accuracy

+ RS-3474: disable transmit when accessory cable is attached (BKR9000 only)

```
//-----  
//-----  
//-----
```

Release version = 6.5.10.20
tag = v6.5.10.20
date = 2/9/2024

General Comments:

1) Tested with RES 5.8.36

*****ARM*****

version 5.10.19 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.15
branch master

*****BSP*****

version 6.0.28
branch = master_v3_2_102

- + RS-3447: Replace BKR9000 top display driver IC with ST7588
- + RS-3449: Add DES OTAR
- + RS-3463: improve default parameter values
- + RS-3468: soft key text on 9000 front display clips for some feature assignments

```
//-----  
//-----  
//-----
```

Release version = 6.5.10.19
tag = v6.5.10.19
date = 12/28/2023

General Comments:

1) Tested with RES 5.8.35

*****ARM*****

version 5.10.17 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.13
branch master

*****BSP*****

version 6.0.27
branch = master_v3_2_102

- + RS-3459: Add additional Full Spectrum Scan table

- + RS-3458: change to fit all information on BKR5000 screen
- + RS-3461: Fix encryption module error at power-on to be non-critical and to display a correct message
- + RS-3458: add rssi information to system test squelch statistics. remove log data to file and replace as compile time option
- + RS-3452: P25Trunking main menu speaker attenuation and RSM LED enums are flipped
- + RS-3448: emergency hot mic audio source to follow emergency button press location
- + RS-3451: deprecate Battery Life menu/function button
- + RS-3450: Port keypad mute from 5.6 branch to BKR series radios

```
//-----  
//-----  
//-----  
Release version = 6.5.10.18  
tag = v6.5.10.18  
date = 10/19/2023
```

General Comments:

1) Tested with RES 5.8.31

*****ARM*****

version 5.10.16 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.13
branch master

*****BSP*****

version 6.0.27
branch = master_v3_2_102

- + RS-3446: improve accuracy of user specified Tx power levels by using alignment high power level as the reference instead of low power

```
//-----  
//-----  
//-----  
Release version = 6.5.10.17  
tag = v6.5.10.17  
date = 10/16/2023
```

General Comments:

1) Tested with RES 5.8.31

*****ARM*****

version 5.10.16 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.12
branch master

*****BSP*****

version 6.0.27
branch = master_v3_2_102

+ RS-3446: add support for user specified Tx power levels to BKR9000
+ RS-3442: fix emergency alarm sent on a trunking system during a queued call issue

//-----
//-----
//-----
Release version = 6.5.10.16
tag = v6.5.10.16
date = 10/5/2023

General Comments:

1) Tested with RES 5.8.30

*****ARM*****

version 5.10.15 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.11
branch master

*****BSP*****

version 6.0.27
branch = master_v3_2_102

+ RS-3445: remove dependency on encryption option to query encryption device, patch per Jim Gilley

//-----
//-----
//-----
Release version = 6.5.10.15
tag = v6.5.10.15
date = 9/27/2023

General Comments:

1) Tested with RES 5.8.30

*****ARM*****

version 5.10.14 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.11
branch master

*****BSP*****

version 6.0.27
branch = master_v3_2_102

Changes:

RS-3443: fix BKR9000 x-loader, caused failures during Lightning firmware update

//-----
//-----
//-----

Release version = 6.5.10.14
tag = v6.5.10.14
date = 9/08/2023

General Comments:

1) Tested with RES 5.8.30

*****ARM*****

version 5.10.14 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.11
branch master

*****BSP*****

version 6.0.26
branch = master_v3_2_102

Changes:

+ RS-3427: initial support for single modulation gain alignment curve (alignment version 3.0 and higher required)
+ RS-3440: add support for MOT trunking reject code ZC_NO_CAPABLE_SITES_REF (0x68)

//-----
//-----
//-----

Release version = 6.5.10.13
tag = v6.5.10.13
date = 8/27/2023

General Comments:

1) Tested with RES 5.8.30

*****ARM*****

version 5.10.13 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.10

branch master

*****BSP*****

version 6.0.25

branch = master_v3_2_102

Changes:

- + RS-3437: remove power switch monitoring task for 9000
- + RS-3438: fix P25 trunking full spectrum scan algorithm for all-band BKR9000
- + RS-3436: add support for vhf, uhf, 7/800 disable band options
- + RS-3435: limit rate that bluetooth set_remote_speaker_gain is called to fix observed Bluetopia reset
- + RS-3412: use 'bkr_device' symlink for flasher

//-----
//-----
//-----

Release version = 6.5.10.12

tag = v6.5.10.12

date = 7/24/2023

General Comments:

- 1) Tested with RES 5.8.28
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.11 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.8

branch master

*****BSP*****

version 6.0.24

branch = master_v3_2_102

Changes:

- + RS-3395: remove unnecessary delays in GNSS start; disable NMEA while configuring
RS-3395: default GNSS_EN GPIO to 1 at init-time
RS-3395: working on GNSS timeouts
RS-3395: default GNSS_EN to 1 at init-time
- + RS-3429: add support to query PSET value via USB command

//-----
//-----

//-----

Release version = 6.5.10.11

tag = v6.5.10.11

date = 7/18/2023

General Comments:

1) Tested with RES 5.8.28

2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.10 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.8

branch master

*****BSP*****

version 6.0.23

branch = master_v3_2_102

Changes:

+ RS-3428: fix ARM code does not parse alignment version

+ RS-3425: Always enable GPS option for BKR products

+ RS-3383: add Telnet password

//-----

//-----

//-----

Release version = 6.5.10.10

tag = v6.5.10.10

date = 7/13/2023

General Comments:

1) Tested with RES 5.8.28

2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.9 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.8

branch master

*****BSP*****

version 6.0.22

branch = master_v3_2_102

Changes:

- + RS-3424: GPS not selectable message doesn't fit on BKR9000 screen
- + RS-3404: VIC version information doesn't fit on front display of BKR9000
- + RS-3422: add 8 dB analog gain to rx audio path in codec for all BKR radios
- + RS-3395: enable GPIO for GNSS one-time initialization
- + RS-3374: Revert "RS-3374: make fuel-gauge secondary, authorization default"

```
//-----  
//-----  
//-----  
Release version = 6.5.10.9  
tag = v6.5.10.9  
date = 7/12/2023
```

General Comments:

- 1) Tested with RES 5.8.28
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.8 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.8
branch master

*****BSP*****

version 6.0.21
branch = master_v3_2_102

Changes:

- + RS-3415: BKR5000: add all GPS changes made to 9000 excluding Galileo satellites
- + RS-3422: add 8 dB analog gain to rx audio path in codec for BKR9000
- + RS-3421: ignore NMEA messages in Tier1 state off
- + RS-3374: default I2C select gpio to battery
- + RS-3409: Reduce top display font on BKR5000 to match BKR9000
- + RS-3413: remove one-time block on checking fuel gauge
- + RS-3402: BKR9000 add GLONASS, Galileo and SBAS satellites to the GPS System Test menu
- + RS-3408: GNSS: remove logic in Tier1 to estimate fix with GSV and reset chip if not enough satellites tracked
- + RS-3417: re-issue the initialization sequence when GPS-Reset is requested
- + RS-3410: Fixing BKR9000 top display bounds so flipped top display is no longer cut off
- + RS-3418: change UHF low tx divider from 1 to 2
- + RS-3420: BKR9000 radios with older alignment version 1.0 need VCO high freqs reduced by 1.5 MHz and UHF Tx divider set to 1

```
//-----  
//-----  
//-----
```

Release version = 6.5.10.8
tag = v6.5.10.8
date = 6/23/2023

General Comments:

- 1) Tested with RES 5.8.28
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.5 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.7
branch master

*****BSP*****

version 6.0.20
branch = master_v3_2_102

Changes:

- + RS-3403: Add auto detect algorithm for microphones
- + RS-3405: send internal mic agc enabled and level to DSP at power up
- + RS-3407: Add USB commands to query volume knob reading
- + RS-3406: fix LLA keyloading with KVL-5000: Add support for PPP echo LCP commands, remove compression option, reset upper layer state machine upon config request to LCP layer

//-----
//-----
//-----

Release version = 6.5.10.7
tag = v6.5.10.7
date = 6/16/2023

General Comments:

- 1) Tested with RES 5.8.27
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.4 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.6
branch master

*****BSP*****

version 6.0.20
branch = master_v3_2_102

Changes:

- + RS-3400: modify WL18xx conf file for 1837 to set channels 52-140 (U-NII-2A and U-NII-2C) to 0 dBm)
- RS-3400: add Trace event to indicate WiFi module detected in BSP
- + RS-3399: clear DPTT during rx inverted slot, fixes degraded receiver sensitivity during TDMA inverted slot

```
//-----  
//-----  
//-----  
Release version = 6.5.10.6  
tag = v6.5.10.6  
date = 6/07/2023
```

General Comments:

- 1) Tested with RES 5.8.27
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.3 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.5
branch master

*****BSP*****

version 6.0.19
branch = master_v3_2_102

Changes:

- + RS-3396: create a pseudo-random MI using software because the VIC is too slow. Fixes ADP transmit on Phase II traffic channels
- + RS-3398: remove check for codeplug key from keystore prior to query. Fixes observed power up race condition resulting in false report of key fail with a code plug key
- + RS-3397: add GPT6 timer/clock in DSP driver to support keyloader for VIC

```
//-----  
//-----  
//-----  
Release version = 6.5.10.5  
tag = v6.5.10.5  
date = 6/04/2023
```

General Comments:

- 1) Tested with RES 5.8.27

2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.3 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.4
branch master

*****BSP*****

version 6.0.18
branch = master_v3_2_102

Changes:

- + RS-3323: update eVCP profile from vendor (5.28.2023 extreme)
- + RS-3323: change eVCP AGC gain from -22 to -10 per request from Carlos G.
- + RS-3323: add compile-time condition for 6 dB gain to external mic to equal 6 dB loss from codec, this is a BKR9000 only change
- + RS-3393: Location information messages do not fit on BKR9000 display
- + RS-3394: Reduce BKR9000 top display font size to fit frequency info without scrolling
- + RS-3391: add logic to check for fuel-gauge without flooding errors if it isn't there

//-----
//-----
//-----

Release version = 6.5.10.3
tag = v6.5.10.3
date = 5/19/2023

General Comments:

- 1) Tested with RES 5.8.27
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.1 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.3
branch master

*****BSP*****

version 6.0.18
branch = master_v3_2_102

Changes:

+ RS-3323: add 3 dB gain to external mic to account for 3 dB removed from Codec
right mic amp in ARM commit e6166c2b3f09b990119bc4c46c26d32fad388e22 on 2/09/2023

//-----
//-----
//-----

Release version = 6.5.10.2

tag = v6.5.10.2

date = 5/18/2023

General Comments:

1) Tested with RES 5.8.27

2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.1 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.2

branch master

*****BSP*****

version 6.0.18

branch = master_v3_2_102

Changes:

+ RS-3323: add memory for eVCP init and ease logic checks so init() is more robust
for future delivered profiles

//-----
//-----
//-----

Release version = 6.5.10.1

tag = v6.5.10.1

date = 5/17/2023

General Comments:

1) Tested with RES 5.8.27

2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.1 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.10.1

branch master

*****BSP*****

version 6.0.18
branch = master_v3_2_102

Changes:

- + RS-3388: fix tx lockup due to stack overrun
- + RS-3388: increase DSP task stacks accross the board as a precaution
- + RS-3323: update eVCP profile from vendor (5.17.2023 Extreme AGC OFF)
- + RS-3323: add usb remote reset radio command for debug purposes

//-----
//-----
//-----

Release version = 6.5.10.0
tag = v6.5.10.0
date = 5/16/2023

General Comments:

- 1) Tested with RES 5.8.27-rc2
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.10.0 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.10.0
branch master

*****BSP*****

version 6.0.18
branch = master_v3_2_102

Changes:

- + RS-3387: change 700 band VREV threshold to 2.1V and 1.6V for low power
- + RS-3386: add support for internal mic select user selectable setting
- + RS-3386: fix bug with persistent setting for internal mic select & max
- + RS-3323: Add eVCP noise cancelling algorithm
- + RS-3323: update eVCP profile from vendor (5.10.2023)

//-----
//-----
//-----

Release version = 6.5.9.3
tag = v6.5.9.3
date = 5/7/2023

General Comments:

- 1) Tested with RES 5.8.24
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.8.88 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.9.4
branch master

*****BSP*****

version 6.0.16
branch = master_v3_2_102

Changes:

- + RS-3385: fix multi-thread reads of AD5592R
- + RS-3345 Fixed warm-start bug
- + RS-3370: increase BT-daemon-post-stop delay to 10msec
 - it seems to be needed to allow the retry Cleanup to return quicker

//-----
//-----
//-----

Release version = 6.5.9.2
tag = v6.5.9.2
date = 4/26/2023

General Comments:

- 1) Tested with RES 5.8.24
- 2) VERSION IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.8.87 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.9.2
branch master

*****BSP*****

version 6.0.16
branch = master_v3_2_102

Changes:

- + RS-3380: BKR9000 GPIO25 controls internal antenna switch
- + RS-3374: make fuel-gauge secondary, authorization default
- + RS-3375: update CC256x BTS file to official version (BLE enabled)

```
//-----  
//-----  
//-----
```

Release version = 6.5.9.1
tag = v6.5.9.1
date = 4/17/2023

General Comments:

- 1) Tested with RES 5.8.24
- 2) VERSION 5.9.1 IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.8.86 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.9.1
branch RS-3362

*****BSP*****

version 6.0.15
branch = master_v3_2_102

Changes:

RS-3373: use reverse channel collar positions for BKR-9000
RS-3362: change VREV 700 band threshold to 2.1V

```
//-----  
//-----  
//-----
```

Release version = 6.5.9.0
tag = v6.5.9.0
date = 4/08/2023

General Comments:

- 1) Tested with RES 5.8.24
- 2) VERSION 5.9.0 IS FOR NEW GREENPAK TIMING/FIRMWARE ONLY

*****ARM*****

version 5.8.85 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.9.0
branch RS-3362

*****BSP*****

version 6.0.15

branch = master_v3_2_102

Changes:

RS-3371: fix for BKR9000 doesn't make TIA tx power attack time
Revert "RS-3346: [BKR9000] Add extra 3 msec zero mod and PA data at the end of analog, securenet, and p25 transmissions to give PSET derived voltage in PA (Vattn) time to decay. Recommendation from HW engineering"
RS-3371: remove PSET linear ramp for conventional transmissions
RS-3365: add support for new PA gate bias alignment procedure (needed or new GreenPak)
RS-3366:[BKR9000] add transmit support for 7/800 gap frequencies for alignment
RS-3363: reduce mic audio delay buffer from 30 msec to 10 msec on BKR9000 to improve P25 Tx throughput delay
RS-3363: remove dotting pattern from P25 transmission
RS-3362: decrease BKR9000 P25 phase II PSET off ramp to 0.5 msec to ensure Tx power is off by the end of 1.2 msec window allowed by the standard.
RS-3362: increase REF to PSET != 0 minimum time to 220 usec
RS-3362: REF deassert to PA Gate Bias = 0V minimum is 700 usec with newest GreenPak. DPTT deassert now follows setting PA Gate Bias = 0V
RS-3362: change behavior of remote USB command set/clear DPTT. DPTT & pa gate bias must be tightly controlled together per HW requirements. embedded firmware will now modify pa gate bias when a DPTT change is requested to ensure timing is met
RS-3362: add pa DAC REF control to TXOutputProcess HWI; this single location for handling pa DAC commands independent of protocol is the most robust method identified
RS-3362: modify DPTT, PA Gate Bias, and Tx LO timing for new GreenPak firmware
RS-3359: expand in-band spur check algorithm per HW engineering request
RS-3355: Using MessageFilter for IPC_GL_MIC_GAINS
RS-3355: Adding mic gain settings

RS-3338: ignore ACK and NACK from GPS while in OFF state
RS-3369: remove man-down and accelerometer code
RS-3231: add battery stats to System Test menu for BKR-9000
RS-3368: emergency hot mic will use external mic if external speaker is attached else the internal mic is selected
RS-3364: Convert RSM speaker attenuation hardware-based function to software-based all-speaker attenuation function
RS-3358: Adding maximum volume setting
RS-3355: Adding internal and external mic gain settings

RS-3356: change WL18xx BT BTS file to that provided by Jon
RS-3361: update BluetopiaPM stack meant for the CC256x part on BKR-5000

//-----
//-----
//-----

Release version = 6.5.8.83

tag = v6.5.8.83

date = 2/26/2023

General Comments:

1) Tested with RES 5.8.24

*****ARM*****

version 5.8.84 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.56
branch master

*****BSP*****

version 6.0.14
branch = master_v3_2_102

Changes:

- + RS-3345: OTAR support
- + RS-3356: use new BluetopiaPM stack for BKR-9000
- + RS-3337: fix BT fails to enable on some BKR9000 radios
- + RS-3140: add all-band support for self quieter radio test
- + RS-3325: Adding ability to provision VIC for FIPS2 using FES and handling bad VIC conditions as a critical startup error
- + RS-3352: 700 band PSET foldback target changed to 1.0V per HW engineering
- + RS-3327: disable IRQs while updating backlight
- + RS-3357: IF invert needed to match AD9864 xtal change to 16.8 MHz

//-----
//-----
//-----

Release version = 6.5.8.81
tag = v6.5.8.81
date = 1/20/2023

General Comments:

1) Tested with RES 5.8.21

*****ARM*****

version 5.8.81 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.53
branch master

*****BSP*****

version 6.0.13
branch = master_v3_2_102

Changes:

+ RS-3349: promote priority for VC011 in UHF-Low Tx and swap priority of VC013 and VC011 in Rx

```
//-----  
//-----  
//-----  
Release version = 6.5.8.80  
tag = v6.5.8.80  
date = 1/20/2023
```

General Comments:

1) Tested with RES 5.8.21

*****ARM*****

version 5.8.81 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.52
branch master

*****BSP*****

version 6.0.13
branch = master_v3_2_102

Changes:

+ RS-3325 Added IPC messages for provision vic user and vic user login/resp
+ RS-2842: added ability to load LLA keys from sideport
 + added support for erasing LLA keys via sideport
 + added support for LLA key inventory via sideport
+ RS-3331: Bluetooth menu item 'Bluetooth:CONNECTED' runs off BKR9000 screen
+ RS-3342: fix system test menu off by 1 entry starting at speaker stress test
+ RS-3339: set BT UART to 3000000 whenever device is powered on
+ RS-3348: increase BKR9000 transmit frequency ranges to support Canada customers
+ RS-3347: increase synth calculation precision (i.e. float to double) to improve Tx frequency error
+ RS-3302: re-enable Vrev monitoring with updated thresholds from HW engineering
+ RS-3325 Add support for FIPS3 VIC provisioning
+ RS-3346: [BKR9000] Add extra 3 msec zero mod and PA data at the end of analog, securenet, and p25 transmissions to give PSET derived voltage in PA (Vattn) time to decay. Recommendation from HW engineering
+ RS-3346: At end of transmit, if output buffers starve, the BKR9000 PA DAC value (zero) must also contain the preceeding command Load in the MSB else the update will be ignored
+ RS-2842: increased C-ACE response timeout for auth key storage-related operations
+ RS-3332: fix BKR9000 bluetooth audio distortion

```
//-----
```

```
//-----  
//-----  
Release version = 6.5.8.79  
tag = v6.5.8.79  
date = 12/7/2022
```

General Comments:

1) Tested with RES 5.8.21

*****ARM*****

version 5.8.79 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.50
branch master

*****BSP*****

version 6.0.13
branch = master_v3_2_102

Changes:

- + RS-3333: alignment polynomial calculation can sometimes find erroneous result if the input frequency is equal to the high frequency
- + RS-3330: Add USB command support to query DSP TSK stack usage
- + RS-3320: force the displays to output background color when in soft powerdown

```
//-----  
//-----  
//-----  
Release version = 6.5.8.78  
tag = v6.5.8.78  
date = 12/4/2022
```

General Comments:

1) Tested with RES 5.8.21

*****ARM*****

version 5.8.78 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.49
branch master

*****BSP*****

version 6.0.13
branch = master_v3_2_102

Changes:

RS-3328: fix potential race condition at poweron. First channel collar report from HW domain should not result in a subsequent zone change event because we always powerup in previous zone i.e. zone change message is ignored in state powering on, but not other states

RS-3295: Adding VIC status message

RS-3319: LLA should use SW encryption

RS-3329: increase VC05 priority and decrease VC01 priority for UHF transmit

RS-3308: BKR9000 add ability to distinguish between WiFi chip variants

RS-3240: build kernel-backup.raw.jimage

//-----

//-----

//-----

Release version = 6.5.8.77

tag = v6.5.8.77

date = 11/3/2022

General Comments:

1) Tested with RES 5.8.21

*****ARM*****

version 5.8.76 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.8.48

branch master

*****BSP*****

version 6.0.12

branch = master_v3_2_102

Changes:

+ RS-3317: Fixing slider width to fit on narrow BKR9000 screen

+ RS-3253: Fixing BKR9000 bluetooth top screen icon position

+ RS-3322: Add USB command support to read GPIO pin

+ RS-3318: enable TPS61158 backlight for main display BKR-9000

//-----

//-----

//-----

Release version = 6.5.8.76

tag = v6.5.8.76

date = 10/12/2022

General Comments:

1) Tested with RES 5.8.21

*****ARM*****

version 5.8.75 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.47
branch master

*****BSP*****

version 6.0.11
branch = master_v3_2_102

Changes:

- + Revert "RS-3134: BKR9000 disable ambient light check until hardware is present to clean up Trace"
- + RS-3249: remove GPS IC reset if position acquisition timer expires for BKR9000
- + RS-3304: fix build error for BKR5000

//-----
//-----
//-----
Release version = 6.5.8.75
tag = v6.5.8.75
date = 10/07/2022

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.74 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.47
branch master

*****BSP*****

version 6.0.11
branch = master_v3_2_102

Changes:

- + RS-3312: [BKR9000] sum front and rear mic signals until noise canceling software is integrated
- + RS-3315: Add USB command to lock TX VCO
- + RS-3314: add mic input setting: MUTE
- + RS-3311: default the GPIO select line to 0 for all battery chips

//-----
//-----

//-----

Release version = 6.5.8.74

tag = v6.5.8.74

date = 9/22/2022

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.73 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.8.46

branch master

*****BSP*****

version 6.0.10

branch = master_v3_2_102

Changes:

+ RS-3302: disabled BKR9000 tx hardware monitor until HW engineering approves performance

//-----

//-----

//-----

Release version = 6.5.8.73

tag = v6.5.8.73

date = 9/22/2022

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.73 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.8.45

branch master

*****BSP*****

version 6.0.10

branch = master_v3_2_102

Changes:

+ RS-3313: add USB command to remote set mic input

+ RS-3302: VREV and PA temp HW trigger will last duration of transmission

```
//-----  
//-----  
//-----
```

Release version = 6.5.8.72
tag = v6.5.8.72
date = 9/20/2022

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.72 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.44
branch master

*****BSP*****

version 6.0.10
branch = master_v3_2_102

Changes:

+ RS-3310: use GPIO for power-switch detection on BKR9000 hardware
+ RS-3306: added and updated WiFi firmware bin files for 1835 and 1837 modules

```
//-----  
//-----  
//-----
```

Release version = 6.5.8.71
tag = v6.5.8.71
date = 9/18/2022

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.71 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.44
branch master

*****BSP*****

version 6.0.9
branch = master_v3_2_102

Changes:

+ RS-3309: [BKR9000] disable TX hardware monitoring of VREV and PA temp for

alignment

```
//-----  
//-----  
//-----
```

Release version = 6.5.8.70
tag = v6.5.8.70
date = 9/14/2022

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.70 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.43
branch master

*****BSP*****

version 6.0.9
branch = master_v3_2_102

Changes:

- + RS-3304: [BKR9000] add support for ACC_ANT_DET gpio
- + RS-3304: add pull-down to GPIO 25 (ACC_ANT_SEL) per HW engineering to ensure power-up voltage requirements are met
- + RS-3299: add switch to 16kHz BT audio codec for BKR-9000
- + RS-3299: update BTS file for BKR-9000 BT chip
- + RS-3302: update VREV threshold per HW engineering request
- + RS-3305: [BKR9000] add VCO rank

```
//-----  
//-----  
//-----
```

Release version = 6.5.8.69
tag = v6.5.8.69
date = 9/06/2022

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.69 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.41

branch master

*****BSP*****

version 6.0.8

branch = master_v3_2_102

Changes:

- + RS-3300: assert ACC_DET_MASK gpio to always energize side port to match previous BKR5000 hardware
- + RS-3301: handle repeated enter/exit alignment mode messages to simply manufacturing software
- + RS-3302: monitor VREV voltage and reduce transmit power if HW provided threshold is exceeded
- + RS-3302: monitor PA_TEMP voltage and reduce transmit power if HW provided threshold is exceeded
- + RS-3298: wrap metafile creation and modification with a VIC transaction; Fixed up FindCodeplugKey when searching by (algID, keyID)
- + RS-3152: Add support for VIC encryption IC
- + RS-3291: Add support for DSP to add DES, DES-XL, or ADP key to .neo keys (i.e. codeplug keys)
- + RS-3293: add zerioze codeplug keys message
- + RS-3294: add delete codeplug key message
- + RS-3296: add codeplug inventory message
- + RS-3297: add OTAR enabled flag to encryption enabled ARM->DSP message for VIC support

//-----
//-----
//-----

Release version = 6.5.8.68

tag = v6.5.8.68

General Comments:

1) Tested with RES 5.8.20

*****ARM*****

version 5.8.67 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.8.38

branch master

*****BSP*****

version 6.0.7

branch = master_v3_2_102

Changes:

- + RS-3292: [BKR9000] change AD9864 clock to 16.8 MHz

```
//-----  
//-----  
//-----
```

Release version = 6.5.8.66
tag = v6.5.8.66
branch = master

General Comments:

- 1) Tested with RES 5.8.20
- 2) Version released for V5 hardware
- 3) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.63 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.34
branch master

*****BSP*****

version 6.0.6
branch = master_v3_2_102

Changes:

- + RS-3271: [BKR9000] ramp down PA_GATE_BIAS to 0 volts
- + RS-3270: [BKR9000] Increase greenpak minimum setup time for latch enable pins by > 1 usec
- + RS-3269: [BKR9000] Remote set frequency USB command fails to update VCO gain and Tx switches
- + RS-3268: [BKR9000] AD5592R ADC reads of VCO_CNTRL channel randomly has an erroneous reading
- + RS-3272: [BKR9000] Reduce VCO mod signal out of PMIC by 6 dB

```
//-----  
//-----  
//-----
```

Release version = 6.5.8.65
tag = v6.5.8.65
branch = master

General Comments:

- 1) Tested with RES 5.8.20
- 2) Version released for V5 hardware
- 3) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.61 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.33

branch master

*****BSP*****

version 6.0.6

branch = master_v3_2_102

Changes:

- + RS-3264: increase DPTT de-assert to PA_GATE_BIAS = 0 to 11 msec per HW engineering request
- + RS-3266: Modify AD9864 LC tank tuning function for BKR9000 hardware
- + RS-3267: Remove clear DPTT during P25 phase II Rx inverted slot for BKR9000

//-----

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//-----

Release version = 6.5.8.64

tag = v6.5.8.64

branch = master

General Comments:

- 1) Tested with RES 5.8.20
- 2) !! This version disabled DPTT to protect RF PA circuitry !!
- 3) Version released for V5 hardware

*****ARM*****

version 5.8.61 (appended 'f' for factory version with authentication disabled)

branch = master

*****DSP*****

version 5.8.32

branch master

*****BSP*****

version 6.0.6

branch = master_v3_2_102

Changes:

- + RS-3265: [BKR9000] Change synth Rx output power setting for VHF and UHF to 2
- + RS-3264: [BKR9000] Set PA_GATE_BIAS to 0V in receive

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Release version = 6.5.8.63

tag = v6.5.8.63
branch = master

General Comments:

- 1) Tested with RES 5.8.20
- 2) !! This version disabled DPTT to protect RF PA circuitry !!
- 3) Version released for V5 hardware

*****ARM*****

version 5.8.61 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.31
branch master

*****BSP*****

version 6.0.6
branch = master_v3_2_102

Changes:

- + RS-3259: [BKR9000] update R-divider algorithm to reduce in-band spurs
- + RS-3254: [BKR9000] add alignment fields for VCOs 13 & 14
- + RS-3252: use correct radio model for BT device name
- + RS-3258: [BKR9000] add support to remote set Tx VCO frequency
- + RS-3260: Add internal pull-up to LS_INT gpio to ensure factory setup without external pull-up R continues to function

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Release version = 6.5.8.62
tag = v6.5.8.62
branch = master

General Comments:

- 1) Tested with RES 5.8.20
- 2) !! This version disabled DPTT to protect RF PA circuitry !!
- 3) Version released for V5 hardware

*****ARM*****

version 5.8.58 (appended 'f' for factory version with authentication disabled)
branch = master_v5 (cb3563837baa152c2544af543da8ecf6ed82b963)

*****DSP*****

version 5.8.30
branch master_v5 (2e731d32eed648dffe904cb89d325612ed82a278)

*****BSP*****

version 6.0.3
branch = master_v3_2_102

Changes:

- + RS-3254: [BKR9000] add alignment fields for VCOs 13 & 14
- + RS-3254: [BKR9000] Add GPIO select support for 14 VCOs
- + RS-3256: [BKR9000] change default sigma delta order to 3rd
- + RS-3257: [BKR9000] simplify to one synth charge pump setting (625 uA)
- + RS-3255: [BKR9000] update VCO tables for rev 5 hardware
- + RS-3252: use correct radio model for BT device name
- + RS-3248: Add DTMF live dial feature for portable (cherry-pick from commit 5a0a5085)
- + RS-3235: check ioctl return values correctly
- + RS-3250: release GNSS GPIO in board file
- + RS-3240: If block is bad in kernel image x-loader will attempt to load equivalent block from backup kernel image
- + RS-3193: remove typo from broadcast causing error on wifi connection
- + RS-3235: reduce I2C timeout to 1msec
- + RS-3235: only dequeue DSP-2-ARM message if user buffer is available
- + RS-3237: I2C write failure to LED driver will result in a software reset of IC to clear potential failure observed in multi-master configuration
- + RS-3236: remove deadlock condition introduced in I2C ISR

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//-----
Release version = 6.5.8.61
tag = v6.5.8.61
branch = master

General Comments:

- 1) Tested with RES 5.8.20
- 2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.58 (appended 'f' for factory version with authentication disabled)
branch = master

- + RS-3235: Add retries to transmit IPC messages
- + RS-3233: BKR9000 - add kv to remote set VCO frequency message
- + RS-3192: change BKR-9000 to composite fuel gauge and radio-authentication driver
- + RS-3191: add auth/fuelgauge combo unit test for BKR-9000

*****DSP*****

version 5.8.30
branch master

- + RS-3239: BKR9000 - give remote set RF power value priority over value from alignment file

- + RS-3238: BKR9000 - give remote set PA gate bias setting priority over value from alignment file
- + RS-3235: Increase IPC message buffers from 8 to 16
- + RS-3235: Add retries to transmit IPC messages
- + RS-3233: BKR9000 - add kv to remote set VCO frequency message

*****BSP*****

version 6.0.3

branch = master_v3_2_102

- + RS-3235: Increase IPC message buffers from 8 to 16
- + RS-3234: swap top and bottom side-button key definitions
- + RS-3232: update back ports patch file
- + RS-3191: add auth/fuelgauge combo unit test for BKR-9000

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Release version = 6.5.8.60

tag = v6.5.8.60

branch = master

General Comments:

1) Tested with RES 5.8.19

2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.57 (appended 'f' for factory version with authentication disabled)

branch = master

- + RS-3206: disable accelerometer IC support; no longer placed due to part shortage
- + RS-3221: [BKR9000] - Configure GPS module to enter/exit low power mode via GNSS_EN GPIO

*****DSP*****

version 5.8.29

branch master

*****BSP*****

version 5.8.32

branch = master

- + RS-3206: disable accelerometer IC support; no longer placed due to part shortage

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//-----

//-----

Release version = 6.5.8.59

tag = v6.5.8.59
branch = master

General Comments:

- 1) Tested with RES 5.8.18
- 2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.56 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.29
branch master

+ RS-3222: [BKR9000] - add VCO #11 to Tx 700 band list of available VCOs

*****BSP*****

version 5.8.31
branch = master

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//-----

//-----

Release version = 6.5.8.58

tag = v6.5.8.58

branch = master

General Comments:

- 1) Tested with RES 5.8.18
- 2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.56 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.28
branch master

+ RS-3220: BKR9000 - tx power settings from alignment file

+ RS-3219: BKR9000 - update VCO RF band coverage table and divider values

*****BSP*****

version 5.8.31
branch = master

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//-----  
//-----  
Release version = 6.5.8.57  
tag = v6.5.8.57  
branch = master
```

General Comments:

- 1) Tested with RES 5.8.18
- 2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.56 (appended 'f' for factory version with authentication disabled)
branch = master

- + RS-3215: [BKR9000] Move GPS physical interface to UART
- + TUNA-470: [BKR5000] - Remove E-Button support
- + RS-3211: [BKR9000] - Add vco table to alignment parameters

*****DSP*****

version 5.8.27
branch master

- + RS-3218: [BKR9000] when programming synthesizer for F1 do not program F2 registers and vice versa
- + RS-3217: [BKR9000] replace step with ramp on PSET for all non-phase II transmissions
- + RS-3214: Remove RF breadboard test code
- + RS-3211: [BKR9000] - Add vco table to alignment parameters
- + RS-3213: [BKR9000] - increase PSET Vref to 4.096V

*****BSP*****

version 5.8.31
branch = master

- + RS-3215: Move GPS physical interface to UART
- + TUNA-470: Remove E-Button support
- + RS-3204: remove fb_st7527 message from log

```
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//-----  
//-----  
Release version = 6.5.8.56  
tag = v6.5.8.56  
branch = master
```

General Comments:

- 1) Tested with RES 5.8.18
- 2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.55 (appended 'f' for factory version with authentication disabled)
branch = master

*****DSP*****

version 5.8.26
branch master

+ RS-3212: BKR9000 - synthesizer N-integer can not exceed 1023. Updated VCO table with latest values from HW engineering.
+ RS-3100: add missing HWAdcDac reference to makefile

*****BSP*****

version 5.8.30
branch = master

//-----
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//-----
Release version = 6.5.8.55
tag = v6.5.8.55
branch = master

General Comments:

- 1) Tested with RES 5.8.18
- 2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.55 (appended 'f' for factory version with authentication disabled)
branch = master

+ RS-3208: [BKR9000] Add support to remote set VCO frequency

*****DSP*****

version 5.8.25
branch master

+ RS-3209: BKR9000 - do not enable synth RF Tx output port until synthesizer is locked
+ RS-3208: Add support to remote set VCO frequency

*****BSP*****

version 5.8.30
branch = master

//-----
//-----

//-----

Release version = 6.5.8.54

tag = v6.5.8.54

branch = master

General Comments:

1) Tested with RES 5.8.18

2) !! This version disabled DPTT to protect RF PA circuitry !!

3) !! This version is first version with new BKR9000 alignment file format !!

*****ARM*****

version 5.8.54 (appended 'f' for factory version with authentication disabled)

branch = master

+ RS-3188: BKR9000 fix alignment parameters order in IPC message to match DSP

+ RS-3188: BKR9000 bug fix - if ARM alignment file is invalid the power-up sequence stalls

+ RS-3202: Fixing compiler warning that comparison is always true during BKR9000 builds

+ RS-3188: BKR9000 - new alignment parameters

+ RS-3200: BKR9000 Set Codec VCO gain dependent on Tx output divider (CHDIV3)

+ RS-3184: VCO modulation gain increased by 6 dB for BKR9000 per HW engineering

*****DSP*****

version 5.8.24

branch master

+ RS-3201: BKR9000 lower synth output power setting for both Rx and Tx per HW engineering

+ RS-3201: BKR9000 enable LNA at power up

+ RS-3188: BKR9000 - new alignment parameters

+ RS-3200: BKR9000 Set Codec VCO gain dependent on Tx output divider (CHDIV3)

+ RS-3194: BKR9000 Change Rvcoref value from 14 to 20 per HW engineering

*****BSP*****

version 5.8.30

branch = master

+ RS-3137: fix LED driver lp5562 init function

+ RS=3199: BKR9000 - Add internal pull-up to GPIO inputs ACC_DET, EXT_SPKR_DET, and KEYFAIL_OD

//-----

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//-----

Release version = 6.5.8.53

tag = v6.5.8.53

branch = master

General Comments:

1) Tested with RES 5.8.17

2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.53 (appended 'f' for factory version with authentication disabled)

branch = master

- + RS-3185: rename tuna to BKR-5000 in builds
- + RS-3174: BKR9000 add support for synth lock detect
- + RS-3172: BKR9000 add Kv to query synthesizer info USB command
- + RS-3184: VCO modulation gains updated for BKR9000
- + RS-3184: remove mobile from PMIC register table and replace with BKR9000
- + RS-3182: BKR9000 add remote control of single tone modulation signal
- + RS-3180: BKR9000 remove disabling of power switch off
- + RS-3176: BKR9000 add support for RF PA DAC MAX5705

*****DSP*****

version 5.8.23

branch master

- + RS-3185: rename tuna to BKR-5000 in builds
- + RS-3172: BKR9000 add Kv to query synthesizer info USB command
- + RS-3184: VCO modulation gains updated for BKR9000
- + RS-3171: BKR9000 fix erroneous modulation values sent to synth at the start or transmit
- + RS-3173: BKR9000 select synth DEN dependent on phase detector freq and output divider to achieve desired synth modulating signal gain
- + RS-3176: BKR9000 fix McBSP format to RF PA DAC - change to 24 bits per word from 16, ensures least significant 8-bits are predictable
- + RS-3178: BKR9000 add VC012 to list of available Tx VCOs for the VHF band
- + RS-3176: BKR9000 add support for RF PA DAC MAX5705

*****BSP*****

version 5.8.29

branch = master

- + RS-3187: TUNA-397: apply fix to BKR9000 - Fix power up issue where some display units may not power up correctly (portion of display corrupted)
- + RS-3185: rename TUNA to BKR5000 in flasher; add case for BKR9000 in flasher
- + RS-3185: rename tuna to BKR-5000 in builds
- + RS-3185: updated BKR-9000 header file

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//-----

Release version = 6.5.8.52

tag = v6.5.8.52

branch = master

General Comments:

- 1) Tested with RES 5.8.15
- 2) !! This version disabled DPTT to protect RF PA circuitry !!

*****ARM*****

version 5.8.52 (appended 'f' for factory version with authentication disabled)
branch = master

- + RS-3171: BKR9000 increase remote set RF Power DAC value to 16-bits
- + RS-3171 BKR9000 - RF driver changes for v3 hardware

*****DSP*****

version 5.8.22
branch master

- + RS-3171: BKR9000 RF driver changes for v3 hardware

*****BSP*****

version 5.8.28
branch = master

//-----
//-----
//-----
Release version = 6.5.8.51
tag = v6.5.8.51
branch = master

General Comments:

- 1) Tested with RES 5.8.15
- 2) !! This version disabled internal and external PTT GPIO. Done to disable transmit via PTT button(s) during development !!

*****ARM*****

version 5.8.51 (appended 'f' for factory version with authentication disabled)
branch = master

- + RS-3124: remove pre top display driver hack to the device table order. needed to avoid kng from seg faulting
- + RS-3161: Add support for SS1Tool for Bluetooth testing
- + RS-3143: fix string order to match .h file
- + TUNA-464: Add support for RSM Up and RSM Down function buttons
- + RS-3143: Add new all band type and support for cloning to/from an all band radio
- + RS-3154: update cwtest file descriptor after all other modules added
- + RS-3110: A lot of commits....
- + TUNA-463: Fixing unused parameter lengths that would cause cloning to fail
- + TUNA-461: Remove call to InitializeTimestamp because it was overriding the datetime being written from the battery backed RTC. Trace timestamps still work as

usual.

- + TUNA-456: when gathering mic samples for development, w/ external PTT, enable both external & internal mic bias
- + TUNA-451: Add unpairing to BT Forget All Devices behavior. SCBA equipment requires unpairing or else it will attempt to reconnect

*****DSP*****

version 5.8.21

branch master

- + RS-3170: BKR9000 Add IO support for increase from 8 to 12 VCOs
- + RS-3169: BKR9000 set synth PFD_DELAY = 4
- + RS-3168: BKR9000 alternate synth frequency registers F1/F2 each new frequency load
- + RS-3167: BKR9000 program hidden registers(R38, R37) for lock time delay
- + RS-3166: BKR9000 disable synth mute output buffers pre-lock feature
- + RS-3165: increase synth charge pump during lock
- + RS-3164: BKR9000 disable synthesizer dithering function

*****BSP*****

version 5.8.28

branch = master

- + RS-3170: BKR9000 Add IO support for increase from 8 to 12 VCOs
- + RS-3161: Add SS1Tool to roots
- + RS-3110: A lot of commits...
- + RS-3124: Top display driver