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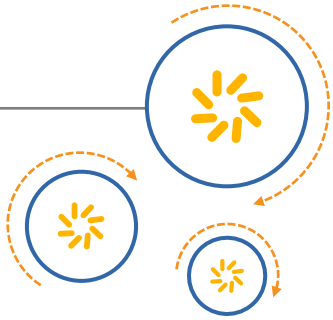

QCA61x4, QCA65x4, and QCA937x

Configuration Parameters Specification

80-Y7674-11 Rev. K

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Qualcomm Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121
U.S.A.

Revision history

Revision	Date	Description
A	February 2014	Initial release.
B	April 2014	Updated the power configuration.
C	October 2014	Removed BTCoex parameters since it does not apply to QCA6174, added Section 2.6.3 gTDLSExternalControl parameter.
D	October 2014	Changed the distribution type from internal to external.
E	November 2014	Changed the document title and replaced the QCA6174 device with the QCA61x4 and QCA65x4 devices. Modified Table 1-1, reference documents and standards, and minor changes in Sections 2.2, 2.6, 2.7, and 2.8.
F	February 2015	Minor changes in Section 1.1 and 1.2, removed reference documents from Table 1-1 and updated most of chapter 2.
G	June 2015	Added new parameters and created Wi-Fi Direct (P2P) and Thermal Mitigation sections (Sections 2.5 and 2.12).
H	September 2015	Updated gChannelBondingMode5GHz. Added: gDisableDFSChSwitch, gRoamScanOffloadEnabled, gRoamBmissFirstBcnt, gRoamBmissFinalBcnt and gInitialScanNoDFSChnl.
J	September 2016	Updated the parameter values according to MSM8976SG
K	April 2017	Changed the description of the parameter gChannelBondingMode24GHz from Auto to 20 MHz only.

Contents

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Tables

1 Introduction

This document describes configuration parameters for the Qualcomm® QCA CLD2.0 device driver on the Android, Linux, and QNX platforms.

These parameters apply to the following WLAN-Bluetooth devices:

- QCA61x4A
- QCA65x4A
- QCA937x

2 General

Table 2-1 General parameters

Parameter	Description	Min	Max	Default
BandCapability	Preferred band (0: both, 1: 2.4 G only, 2: 5 G only)	0	2	1
gChannelBondingMode5GHz	Configures channel bonding in 5 GHz ▪ 0, 20 MHz ▪ 1, for STA, use the AP mode; for SoftAP or GO, value depends on gVhtChannelWidth ▪ Other values are reserved	0	9	0
gChannelBondingMode24GHz	Configures channel bonding in 24 GHz ▪ 0, 20 MHz only ▪ 1, HT40 mode, upper primary channel ▪ 2, HT40 mode, lower primary channel	0	2	0
gDot11Mode	PHY mode; see Table 2-2	0	9	0
gTxPowerCap	This ini is used to cap TxPower Do not use CFG default; if there is no registry setting, this is ignored by SME.	0	128	27
gMaxPsPoll	Maximum number of Ps polls sent by STA to retrieve buffered frames before leaving out of power save if more data is buffered in AP	0	255	0
g11dSupportEnabled	Enables or disables 11d support; all recent PLs disables through ini file	0	1	1
InfraUapsdVoSrvInTv	Unscheduled automatic power save delivery service interval for VO traffic in ms	0	4294967295UL	20
InfraUapsdViSrvInTv	UAPSD service interval for VI traffic	0	4294967295UL	300
InfraUapsdBeSrvInTv	Unscheduled automatic power save delivery service interval for BE traffic in ms.	0	4294967295UL	300
InfraUapsdBkSrvInTv	UAPSD service interval for Bk traffic	0	4294967295UL	300
InfraUapsdBkSrvInTv	(Applies only when STA is connected to AP) Unscheduled automatic power save delivery driven by QoS-aware applications, such as VoIP. Aabbreviations: ▪ BK, background ▪ BE, best effort ▪ VI, video ▪ VO, voice 1	-	-	-
gShortGI20Mhz	Short guard interval for HT20 ▪ 1, Enable ▪ 0, Disable	0	1	1

Parameter	Description	Min	Max	Default
gShortGI40Mhz	Short guard interval for HT40 ▪ 1, Enable ▪ 0, Disable	0	1	1
g11hSupportEnabled	802.11h support ▪ 1, Enable ▪ 0, Disable	0	1	1
ImplicitQosIsEnabled	Implicit QoS for WMM AC handling ▪ 1, Enable, driver enables QoS support ▪ 0, Disable	0	1	1
gEnableLogp	Driver watchdog thread for driver fatal error recovery ▪ 1, Enable ▪ 0, Disable	0	1	0
gStaKeepAlivePeriod	Sends NULL frame to AP periodically in seconds to notify STA existence	0	65535	0
gEnablefwlog	Firmware log in the kernel message ▪ 1, Enable ▪ 0, Disable	0	1	0
gEnablefwprint	Print firmware messages on the QCA device UART port ▪ 1, Enable ▪ 0, Disable	0	1	0
gEnableMCCMode	Multi-channel concurrency mode ▪ 1, Enable ▪ 0, Disable, MCC not allowed	0	1	1
gDot11PMode	(Applies to QCA6584 only) 802.11p support in driver and WLAN0 interface ▪ 0, Disable (default) ▪ 1, Enable_standalone (only WLANOCB0 mode is supported, WLAN0 is disabled) ▪ 2, Enable_standby (enable both WLANOCB0 and WLAN0 interfaces)	0	2	0
RTSThreshold	Sets RTS threshold (depends on maximum frame size)	0	1048576	2347
gFragmentationThreshold	Sets the fragmentation threshold	256	8000	8000
Intf0MacAddress	Default MAC address for interface 0	0	FFFFFFFFFFFF	00:0A:F5:89:89:80
Intf1MacAddress	Default MAC address for interface 1	0	FFFFFFFFFFFF	00:0A:F5:89:89:81
Intf2MacAddress	Default MAC address for interface 2	0	FFFFFFFFFFFF	00:0A:F5:89:89:82
Intf3MacAddress	Default MAC address for interface 3	0	FFFFFFFFFFFF	00:0A:F5:89:89:83
gAddTSWhenACMIsOff	Sends AddTs even when ACM is not set for the AC	0	1	0

Parameter	Description	Min	Max	Default
WmmIsEnabled	WMM feature ▪ 0, STA associates with any AP even if AP supports QoS ▪ 1, STA associates QBSS capable AP	0	2	0
gEnableDFSMasterCap	DFS master capability ▪ 0, Disable ▪ 1, Enable	0	1	0
EseEnabled	Enterprise security enhancements (ESE) feature; EseEnabled replaces "CcxEnabled (same functionality) ▪ 0, Disable ▪ 1, Enable	0	1	0
enableBeaconEarlyTermination	Beacon early termination feature; allows power down as soon as TIM bit is clear without waiting for entire beacon to be received and FCS checked. Power savings depends on beacon size and placement of the TIM IE within the beacon. For scenario (150-byte beacon and Cisco 1252 AP), active receive duration shrinks from 1.3 ms to 800 µs with BET enabled	0	1	0
beaconEarlyTerminationWakeInterval	For BET, a FCS check is not performed when TIM is clear; RXP does not update TSF using timestamp from the beacon. ▪ Can result in drift over time when no traffic for STA ▪ Periodically and temporarily suspends BET for a TSF resync by allowing a full beacon to be received with FCS check and RXP update of TSF	2	255	3
gEnableBypass11d	Bypass 802.11d; when enabled, start with an active scan based on the default country code (in NV.bin); WLAN bypasses the initial passive scan needed for 11d to determine the country code and domain, which reduces time to associate with AP ▪ 0, Disable ▪ 1, Enable	0	1	1
gSetTxChainmask1x1	Sets transmit chain mask; if gEnable2x2 is disabled, gSetTxChainmask1x1 and gSetRxChainmask1x1 values are considered. If chainmask value exceeds the maximum number of chains supported by target, the max number of chains is used. By default, chain0 is selected for both Tx and Rx. ▪ 1, gSetTxChainmask1x1 or gSetRxChainmask1x1 to select chain0 ▪ 2, gSetTxChainmask1x1 or gSetRxChainmask1x1 to select chain1	1	2	1

Parameter	Description	Min	Max	Default
gSetRxChainmask1x1	Sets receive chain mask. If gEnable2x2 is disabled, gSetTxChainmask1x1 and gSetRxChainmask1x1 values are taken into account. If chainmask value exceeds the maximum number of chains supported by target, the max number of chains is used. By default, chain0 is selected for both Tx and Rx. ▪ 1, gSetTxChainmask1x1 or gSetRxChainmask1x1 to select chain0 ▪ 2, gSetTxChainmask1x1 or gSetRxChainmask1x1 to select chain1	1	2	1
gMaxMediumTime	Maximum channel time. Valid values are 2048, 4096, 8192, and so on. Do not use other values.	0	65535	2048
gRrmEnable	Controls the capabilities (11 k) included in the capabilities field. ▪ 0, Disable ▪ 1, Enable	0	1	0
gRrmOperChanMax	Radio resource management operating channel measurement duration	0	8	3
gRrmNonOperChanMax	Radio resource management nonoperating channel measurement duration	0	8	3
gRrmRandnIntvl	Randomization interval in Tus ▪ 0, Disable randomization interval (no random delay is to be used); used to specify the desired maximum random delay in the measurement start time	10	100	100
gNumStaChanCombinedConc	Number of channels combined for STA in each split scan operation	1	255	3
gEnableRxThread	(Debug only) Receive thread ▪ 0, Disable ▪ 1, Enable	0	1	1
TxPower2g	SAR Thermal limit values for 2.4 GHz	0	30	30
TxPower5g	SAR Thermal limit values for 5 GHz	0	30	30
gEnable5gEBT	5 G early beacon termination ▪ 0, Disable ▪ 1, Enable, terminate the reception of beacon if the TIM element is clear for the power saving	0	1	0
ssdp	Simple service discovery protocol (SSDP) multicast DNS and Link-Local Multicast Name Resolution (LLMNR) protocol in firmware in WoW mode ▪ 0, Disable ▪ 1, Enable	0	1	1
gEnableHystereticMode	Debug setting that depends on QCA6174 hardware version; enabled by default.	0	1	1
gEnableStrictRegulatoryForFCC	Strict FCC regulatory ▪ 0, Disable ▪ 1, Enable	0	1	1
gEnablePacketLog	Internal debugging parameter to enable WLAN Firmware packet logging feature	0	1	1

Parameter	Description	Min	Max	Default
gBusBandwidthHighThreshold	Requests higher bus bandwidth and also for TCP delayed acknowledgment feature. This value is set as optimal from experiment results, so it is not recommended to change.	0	4294967295UL	40000
gBusBandwidthLowThreshold	Number of packet(s) water mark to switch to default TCP delayed acknowledgment behavior. Set as optimal from experiment results, so it is not recommended to change.	0	4294967295UL	150
gBusBandwidthComputeInterval	Interval for which the bus bandwidth in terms of packets is evaluated. Set as optimal from experiment results, so it is not recommended to change.	0	10000	100
gRegulatoryChangeCountry	Strict regulatory or customer regulatory settings. For details, see *QCA61x4 and QCA65x4 Regulatory Guidelines* (80-Y7674-300) ▪ 0, Disable ▪ 1, Enable customer regulatory	0	1	0
gRArateLimitInterval	Router advertisement in Ipv6 (RA) rate Limit Interval. RA filtering rate limit is in effect when RA filter is enabled with gRAFilterEnable.	60	300	60
gMaxConcurrentActiveSessions	Number of active sessions (personality, for example, STA/SAP/GO/IBSS) allowed on device at most. If a value of 3 was assigned, only three active session are allowed, for example, SAP/STA/P2P GO.	1	4	2
gPNOScanSupport	Preferred network offload (PNO) feature that WLAN firmware scans for saved SSID while in system suspend and not connected with AP. ▪ 0, Disable ▪ 1, Enable	1	0	1
gReorderOffloadSupported	Packet reordering offload to firmware. ▪ 0, Disable ▪ 1, Enable	0	1	0
gEnableLpassSupport	WLAN location to deliver to LOWI server though QMI interface. This is related to Geofencing location feature. ▪ 0, Disable ▪ 1, Enable	0	1	0
gCountryCodePriority	Driver retrieves the runtime country code from either the AP 11d IE or from framework over a private IOCTL command. User can configure the country through IOCTL/IW only when this flag is set—then the driver disables 11dSupportEnabled (this implies that driver does not take country from beacons) ▪ 0, Country code from AP 11d IE has higher priority ▪ 1, Country code from framework over private IOCTL command has higher priorit	0	1	0

Parameter	Description	Min	Max	Default
gEnableSifsBurst	SIFS burst ▪ 0, SIFS burst totally disable ▪ 1, SIFS burst enabled, but disabled for legacy mode ▪ 3, SIFS burst enabled, also for legacy mode	0	3	0
gIbssTxSpEndInactivityTime	In IBSS mode Tx Service Period, inactivity time in ms indicates the time after which Tx Service Period is terminated by sending a QoS Null frame with EOSP. ▪ 0, Tx SP is terminated with the last buffered packet, instead of waiting for the inactivity.	0	100	0
gEnableCustomConcRule1	Used in automobile applications (STA + GO + SoftAP) to make SoftAP follow STA's channel. If SoftAP came up first and STA coming up later. When enabled, it ensures SoftAP and STA are always SCC if STA comes up after SoftAP.	0	1	0
gEnableCustomConcRule2	Used in automobile applications to make P2P GO follow STA's channel. If P2P GO comes up first and STA comes up later. When enabled, it ensures P2P GO and STA are always SCC if STA comes up after P2P GO.	0	1	0
gEnableStaConnectionIn5Ghz	Used in automobile applications (STA connection not allowed on 5 GHz). If the application does not want P2P GO restart, set gEnableCustomConcRule1=1 and set gEnableStaConnectionIn5Ghz=0, so, STA connection will not happen in 5 GHz and hence P2P GO restart is not required. ▪ 0, Disable ▪ 1, Enable	0	1	1
gInitialScanNoDFSChnl	▪ 0, Disable 1, Enable, for the first scan after driver boots up, WLAN skips scanning the DFS channels	0	1	0

2.1 PHY mode settings

Table 2-2 lists the PHY mode settings (0-9) and the corresponding STA values and the user settings.

Table 2-2 PHY mode settings

STA	PHY mode	11abg	11b	11g	11n	11g only	11n only	11b only	11ac only	11ac
0	802.11_MODE_AUTO	a, g	b	g	n	g	n	b	11ac	11ac
1	802.11_MODE_ABG	a, g	b	g	a, g	g	NC	b	NC	a, g
2	802.11_MODE_B	b	b	b	b	NC	NC	b	NC	b
3	802.11_MODE_G	g	b	g	g	g	NC	b	NC	g
4	802.11_MODE_N	a, g	b	g	n	g	n	b	NC	n
5	802.11_MODE_G_Only	g	NC	g	NC	g	NC	NC	NC	NC
6	802.11_MODE_N_Only	NC	NC	NC	n	NC	n	NC	NC	NC
7	802.11_MODE_B_Only	b	b	NC	NC	NC	NC	b	NC	NC
8	802.11_MODE_11AC_Only	NC	NC	NC	NC	NC	NC	NC	11ac	11ac
9	802.11_MODE_11AC	a, g	b	g	n	g	n	b	11ac	11ac

3 Power save

Table 3-1 Power save configuration parameters

Parameter	Description	Min	Max	Default
gEnableBmps	STA mode power save ▪ 1, Enable ▪ 0, Disable	0	1	1
gEnableDynamicDTIM	Uses Dynamic DTIM. See reference document *CNSS.SW_RM Wi-Fi Software Architecture Overview* (80-Y7674-2)	0	5	0
gDataInactivityTimeout	Timer in ms indicating the amount of time the station waits for data frames.	1	255	20
gEnableWoW	▪ 0, Disable both magic pattern match and pattern byte match ▪ 1, Enable magic pattern match on all interfaces ▪ 2, Enable pattern byte match on all interfaces ▪ 3, Enable both magic patter and pattern byte match on all interfaces	0	3	3
gMaxWoWFilters	Maximum number of WoW filters required	0	22	22
gEnablePowerSaveOffload	Power save offload ▪ 0, Disable ▪ 1, Legacy power save ▪ 2, QPower ▪ 3-4, Reserved	0	5	0
UapsdMask	ACs to setup U-APSD ▪ Bit 0 set, Voice both deliver/trigger enabled ▪ Bit 1 set, Video both deliver/trigger enabled ▪ Bit 2 set, Background both deliver/trigger enabled ▪ Bit 3 set, Best Effort both deliver/trigger enabled	0x00	0xFF	0xaa
InfraUapsdVoSrvIntv	Voice service interval if UAPSD for voice is enabled	0	4294967295UL	20
InfraUapsdVoSuspIntv	UAPSD suspension interval for VO traffic	0	4294967295UL	2000
InfraUapsdViSrvIntv	UAPSD service interval for VI traffic	0	4294967295UL	300
InfraUapsdViSuspIntv	Video Suspend Interval if UAPSD for video is enabled	0	4294967295UL	2000

Parameter	Description	Min	Max	Default
InfraUapsdBeSrvIntv	Best effort service interval if UAPSD for BE is enabled	0	4294967295UL	300
InfraUapsdBeSuspIntv	Best effort suspend interval if UAPSD for BE is enabled	0	4294967295UL	2000
InfraUapsdBkSrvIntv	UAPSD service interval for BK traffic	0	4294967295UL	300
InfraUapsdBkSuspIntv	UAPSD suspension interval for BK traffic	0	4294967295UL	2000
DelayedTriggerFrmInt	Delayed trigger frame interval in ms; used by firmware to send trigger frames if there is no traffic for suspend interval	1	4294967295UL	3000

3.1 gDataInactivityTimeout workflow

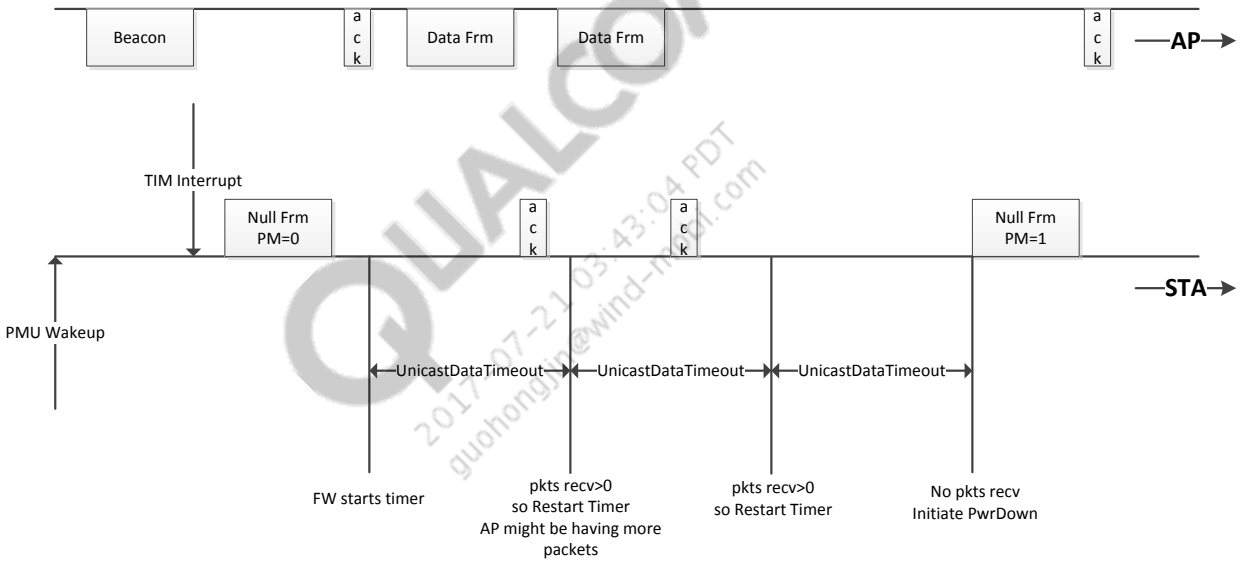

Figure 3-1 gDataInactivityTimeout workflow

1. AP indicates queued frames for QCA devices by turning on the TIM bit in beacon.
2. QCA device sends data null frame with PM bit set to 0, which implies QCA device is out of sleep.
3. QCA61x4 starts a software timer with *gDataInactivityTimeout* value.
4. AP sends the queued frames. The QCA device acknowledges accordingly.
5. When the timer expires, if the QCA devices receives any data frame from AP, it restarts the timer.

NOTE: If the device receives no data, it sends data null with PM set to 1. This implies it is going to sleep. If AP has frames for the QCA device, AP queues them until next beacon interval.

4 SoftAP

Table 4-1 SoftAP configuration parameters

Parameter	Description	Min	Max	Default
gEnableApProt	802.11 protection flag; controls the protection bit when a legacy client joins the SAP; this enables the protection by setting protection bits in the beacons. ▪ 0, Disable ▪ 1, Enable	0	1	1
gEnableApOBSSProt	Overlapping BSS (OBSS) protection. This parameter controls and updates the protection bit. ▪ 0, Disable ▪ 1, Enable, required for certification When a legacy AP is present on the same channel OBSS as that of SAP or when the SAP is operating in 5 GHz with 40 MHz, and the overlapping legacy AP is present on its current channel of operation or extension channel	0	1	0
gEnableApUapsd	Unscheduled automatic power save delivery (UAPSD) for SoftAP. ▪ 0, Disable ▪ 1, Enable	0	1	1
gAPAutoShutOff	AutoShutdown is to disable AP and turn off Wi-Fi after a user-configurable period of inactivity and when no clients are connected. Auto Shutdown value is in seconds.	0	4294967295(UL)	0
gDisableIntraBssFwd	Intra BSS forwarding. When set for SoftAP mode, WLAN firmware forwards packets in its BSS to other client without waking up host. ▪ 0, Disable ▪ 1, Enable	0	1	0
gAPCntryCode	Country code; ISO country code as per 802.11d specification	USI	USI	FFF
gSapSccChanAvoidance	Toggles channel avoidance in SAP mode. ▪ 0, Disable, WLAN driver does not send channel avoid event indication to upper layers; usually sent to make SoftAP/P2P GO stop if its channel is within the list of channel avoidance ranges ▪ 1, Enable, stopping SAP/P2P GO is handled by HOSTAPD/wpa_supplicant and not via WLAN driver. For 3port(STA + GO + SoftAP) concurrency, must be done by WLAN driver and gSapSccChanAvoidance is set to 0.	0	1	0

Parameter	Description	Min	Max	Default
gWlanAutoShutdow	SoftAP auto shutdown feature ▪ 0, Disable ▪ Other, shutdown timer in seconds (max value is one day). If the SoftAP is idle (no connection) for certain time it unloads driver; for an MDM device.	0	86400	0
gApKeepAlivePeriod	For a certain period of seconds, if there is no activity from the connected STA, the SAP disconnects the STA. Applies when WCN is running as SAP.	1	65535	20
gWlanMccToSccSwitchMode	MCC To SCC switch mode ▪ 0, Disable ▪ 1, Enable ▪ 2, Force to switch It decides if SoftAP needs to restart/come up on STA's channel in a SoftAP + STA concurrency case; for an MDM device.	0	2	0
gEnableOverLapCh	Overlap channel ▪ 0, Disable ▪ 1, Enable, allows overlapping channels to be selected for the SoftAP	0	1	0
gEnableGreenAp	▪ 0, Disable ▪ 1, Enable, only one Tx/Rx chain when there are no STAs connected in SoftAP mode. Whenever STA is connected, GreenAP mode is disabled	0	1	1
gDFSradarMappingPriMultiplier	Radar pulse compensating multiplier in the SAP DFS master mode.	0	10	4
gSoftApMaxPeers	Maximum allowable STAs connected in SoftAP mode	1	32	32
gDisableDFSChSwitch	Sets the softAP in DFS test mode. ▪ 0, AP changes channel when radar is injected which is the default behavior. ▪ 1, Put the softAP in DFS test mode allowing the AP to continue to stay on the same channel after injecting the radar in order to test the radar probability detection for DFS test labs.	0	1	0

5 Channel range and auto-channel select

Table 5-1 Channel range and auto channel select configuration parameters

Parameter	Description	Min	Max	Default
gApAutoChannelSelection	Enables SoftAP Auto Channel selection ▪ 0, Disable ▪ 1, Enable	0	1	0
gAPChannelSelectStartChannel	Starts channel to be used by SoftAP for Auto Channel Selection. Valid only when gApAutoChannelSelection is set.	0	0XFF	0
gAPChannelSelectEndChannel	Ends channel to be used by SoftAP for Auto Channel Selection. Valid only when gApAutoChannelSelection is set.	0	0XFF	11

6 Wi-Fi direct

Table 6-1 Wi-Fi direct configuration parameters

Parameter	Description	Min	Max	Default
isP2pDeviceAddrAdministrated	Derive the P2P MAC address from the primary MAC address ▪ 0, Disable ▪ 1, Enable	0	1	1
gEnableP2pListenOffload	P2P Listen offload, which puts WLAN firmware in P2P listen state. Firmware responds to incoming probe requests with P2P IEs. ▪ 1, Enable ▪ 0, Disable	0	1	0
gGoKeepAlivePeriod	Time spent checking whether the frames are sending or not. Hence, the total effective detection time is gGoLinkMonitorPeriod+ gGoKeepAlivePeriod/gApLinkMonitorPeriod+ gApKeepAlivePeriod.	1	65535	20
gNumP2PChanCombinedConc	Number of channels combined for P2P in each split scan operation	1	255	1
gEnableMCCAdaptiveScheduler	MCC adaptive scheduler feature ▪ 0, Disable ▪ 1, Enable	0	1	1

7 Virtual STA

Table 7-1 Virtual STA configuration parameters

Parameter	Description	Min	Max	Default
gEnableVSTASupport	Enables Virtual STA support which is needed to support 32 STAs for SoftAP ▪ 0, Disable ▪ 1, Enable	0	1	0

8 TDLS

Table 8-1 TDLS configuration parameters

Parameter	Description	Min	Max	Default
gEnableTDLSSupport	Global flag that controls the TDLS feature ▪ 0, Disable ▪ 1, Enable	0	1	0
gEnableTDLSImplicitTrigger	Controls only implicit trigger. For implicit trigger to work, both gEnableTDLSSupport and gEnableTDLSImplicitTrigger are enabled. CLD driver initiates TDLS discovery to a peer when TDLS setup criteria (throughput and RSSI thresholds) is met; then it tears down TDLS when teardown criteria (idle packet count and RSSI) is met ▪ 0, Disable ▪ 1, Enable	0	1	1
gTDLSExternalControl	TDLS external control works with TDLS implicit trigger. TDLS external control allows a user to add a MAC address of potential TDLS peers so that the CLD driver can initiate implicit TDLS setup to only those peers when criteria for TDLS setup (throughput and RSSI threshold) is met. ▪ When TDLS external control is enabled, CLD driver does not initiate TDLS setup to a peer if it has not been added externally, even though traffic towards that peer meets implicit TDLS criteria ▪ If TDLS connection is initiated from a peer, the CLD driver accepts the TDLS connection, even if that peer MAC is not configured before connection setup ▪ For TDLS external control to work, supplicant also needs to be configured for external control	0	1	1
gTDLSTxStatsPeriod	Time period (in ms) to evaluate whether the number of Tx/Rx packets exceeds TDLSTxPacketThreshold and triggers a TDLS Discovery request	10	4294967295UL	40
gTDLSTxPacketThreshold	Number of Tx/Rx packets during the period of gTDLSTxStatsPeriod when exceeded, a TDLS Discovery request is triggered	0	4294967295UL	40

Parameter	Description	Min	Max	Default
gTDLSMaxDiscoveryAttempt	Number of failures of discover request, when exceeded, the peer is assumed to be not TDLS capable and no further TDLS discovery request is made	1	100	5
gTDLSIdlePacketThreshold	Number of Tx/Rx packet, if less than within last gTDLSTxStatsPeriod period is an idle condition	0	40000	3
gTDLSRSSITriggerThreshold	Absolute value (in dB) of the peer RSSI, less which a TDLS setup request is triggered.	-120	0	-75
gTDLSRSSITeardownThreshold	Absolute value (in dB) of the peer RSSI, when exceed, a TDLS teardown is triggered	-120	0	-75
gEnableTDLSBufferSta	Global flag that controls the TDLS buffer	0	1	1
gTDLSUapsdMask	Access categories, for which mask needs to be enabled ▪ 0x1, Background ▪ 0x2, Best effort ▪ 0x4, Video ▪ 0x8, Voice	0x0	0x0f	0x0f
gTDLSPuapsdPTRTimeout	Peer traffic Response timer duration in ms	0	10000	5000
gEnableTDLSWmmMode	WMM support over TDLS link ▪ 0, Disable ▪ 1, Enable, required for any TDLS and uAPSD functionality	0	1	0
gEnableTDLSOffChannel	Off-channel support for TDLS link ▪ 0, Disable ▪ 1, Enable	0	1	0
gTDLSPrefOffChanNum	Preferred TDLS channel number when off-channel support is enabled.	1	165	36
gTDLSPrefOffChanBandwidth	TDLS off-channel bandwidth ▪ 0x1**,** 20 MHz ▪ 0x2**,** 40 MHz ▪ 0x4**,** 80 MHz ▪ 0x8 **,** 160 MHz When more than one bit is set, firmware starts from the highest and selects one based on capability of peer	0	0x0f	0x07

9 Packet filtering

Table 9-1 Packet filtering configuration parameters

Parameter	Description	Min	Max	Default
mcastBcastFilter	Filters Mcast and Bcast Rx packets completely ▪ 0, No filtering ▪ 1, Filter all multicasts ▪ 2, Filter all broadcast ▪ 3, Filter all Mcast and Bcast	0	3	0
hostArpOffload	HostARPOffload feature for ARP response is sent by the QCA device target firmware ▪ 0, Disable ▪ 1, Enable	0	1	0
gEnableActiveModeOffload	Enables/disables packet filter/arp offloading to the QCA device target firmware in active mode. ▪ 0, Disable ▪ 1, Enable	0	1	1
hostNSOffload	hostNSOffload feature ▪ 0, Disable ▪ 1, Enable	0	1	0

10 Scanning

Table 10-1 Scanning configuration parameters

Parameter	Description	Min	Max	Default
gEnableDFSChnlScan	DFS channel scan ▪ 0, Disable scan on DFS channels ▪ 1, Enables passive scan on DFS channels ▪ 2: Enables active scan on DFS channels for static list Static or CFG list is the channel list set by IOCTL SETROAMSCANCHANNELS	0	2	1
gEnableDirectedScanOffload	Directed scan offload to the QCA device target firmware ▪ 0, Disable ▪ 1, Enable	0	1	0
gScanAgingTime	Scan aging timeout value in seconds; purge the scan results based on aging	0	200	60

11 Roaming

Table 11-1 Roaming configuration parameters

Parameter	Description	Min	Max	Default
FastTransitionEnabled	802.11r support ▪ 0, Disable ▪ 1, Enable	0	1	1
gNeighborScanTimerPeriod	CX support and fast transition, the time between individual channels in scan; scan timer. When this timer expires, BGSCAN starts roaming. ▪ LFR1.5, started when lookup down event is sent by FW to host ▪ LFR 2.0, scanTimerPeriod is sent to FW during scan offload as scan is offloaded to FW (in ms)	3	300	200
gNeighborLookupThreshold	Defines the lookup threshold. When the RSSI is reached, FW sends indication to host to scan the better APs. ▪ 0, the host calculates the adaptive threshold based on the minimum supported data rate, and the RSSI threshold triggers a background scan to find potential roam candidates	10	120	78
gNeighborScanChannelMinTime	Minimum dwell time for scan in ms	10	40	20
gNeighborScanChannelMaxTime	Maximum dwell time for scan	3	300	30
gNeighborScanChannelList	List of channels scan; provides channel list, contains all valid channels; no min and max values or default channel.	—	—	Null
FastRoamEnabled	Legacy (non-CCX, non-802.11r) fast roaming support ▪ 0, Disable ▪ 1, Enable	0	1	0
RoamRssiDiff	Configuration item for an AP to be qualified as a candidate AP when the AP shows RoamRssiDiff higher in RSSI than current AP	0	30	5
gMaxNeighborReqTries	Configures the number of times to retry the neighboring requests if a failure or timeout	1	4	3
gEnableFastRoamInConcurrency	Legacy fast roaming (LFR) on STA link during concurrent sessions ▪ 0, Disable ▪ 1, Enable	0	1	1

Parameter	Description	Min	Max	Default
gRoamScanOffloadEnabled	Offload the roam scan to firmware ▪ 0, Disable ▪ 1, Enable	0	1	1
gRoamBmissFirstBcnt	After consecutive number of beacons missed as configured by gRoamBmissFirstBcnt, the system stays alive (no power collapse) to receive beacons until final BMISS (consecutive number of beacons missed as configured by gRoamBmissFinalBcnt)	5	100	10
gRoamBmissFinalBcnt	After consecutive number of beacons missed as configured by gRoamBmissFirstBcnt, the system stays alive (no power collapse) to receive beacons until final BMISS (consecutive number of beacons missed as configured by gRoamBmissFinalBcnt)	5	100	10

12 802.11ac

Table 12-1 802.11 ac configuration parameters

Parameter	Description	Min	Max	Default
gEnableRXSTBC	Rx STBC capability in STA mode ▪ 0, Disable ▪ 1, Enable	0	1	1
gEnableTXSTBC	Tx STBC capability in STA mode ▪ 0, Disable ▪ 1, Enable	0	1	0
gEnableRXLDPC	Rx LDPC capability in STA mode ▪ 0, Disable ▪ 1, Enable	0	1	1
gVhtRxMCS	VHT Rx MCS capability for 1x1 mode ▪ 0, MCS0-7 ▪ 1, MCS0-8 ▪ 2, MCS0-9	0	2	2
gVhtTxMCS	VHT Tx MCS capability for 1x1 mode ▪ 0, MCS0-7 ▪ 1, MCS0-8 ▪ 2, MCS0-9	0	2	2
gVhtChannelWidth	Channel width capability for 11ac (valid only for SoftAP and P2P GO modes). If gChannelBondingMode5GHz=0, the bandwidth is always 20 MHz. ▪ 0, 20 MHz ▪ 1, 20 and 40 MHz ▪ 2, 20 and 80 MHz (default)	0	2	2
gVhtMpduLen	Maximum MPDU length (VHT only) ▪ 0, 3895 octets ▪ 1, 7991 octets ▪ 2, 11454 octets	0	2	0
gVhtAmpduLenExponent	Maximum receive AMPDU size (VHT only) ▪ 0, 8 k ▪ 1, 16 k ▪ 2, 32 k ▪ 3, 64 k ▪ 4, 128 k	0	7	7
gEnable2x2	VHT Tx/Rx MCS values for 2x2 ▪ 0, Disable ▪ 1, Enable	0	1	0

Parameter	Description	Min	Max	Default
gVhtRxMCS2x2	VHT Rx MCS values for 2x2 ▪ 0, MCS0-7 ▪ 1, MCS0-8 ▪ 2, MCS0-9	0	2	0
gVhtTxMCS2x2	VHT Tx MCS values for 2x2. ▪ 0, MCS0-7 ▪ 1, MCS0-8 ▪ 2, MCS0-9	0	2	0
gTxBFEnable	Transmit beamfoaming feature ▪ 0, Disable ▪ 1, Enable	0	1	1
gEnableTxBFin20MHz	Transmit beamfoaming in 20 MHz mode ▪ 0, Disable ▪ 1, Enable	0	1	0
gEnableVhtFor24GHzBand	VHT supporting in 2.4 GHz band ▪ 0, Disable ▪ 1, Enable, SoftAP beacon on 2.4 has VHT IE	0	1	0
gEnableMuBformee	Multi-user (MU) beam formee capability ▪ 0, Disable ▪ 1, Enable, when gTxBFEnable and gEnableMuBformee are 1, MU beam formee capability is enabled	0	1	1

13 Thermal mitigation

Table 13-1 Thermal mitigation configuration parameters

Parameter	Description	Min	Max	Default
gThermalMitigationEnable	Thermal mitigation feature, which prevents the WLAN chip from overheating. When the WLAN chip temperature is too high, the transmit ratio is adjusted lower to reduce heat ▪ 0, Disable ▪ 1, Enable	0	1	1
gThrottlePeriod	Throttle period defines transmit on and off time ratio Level0 ▪ Transmit on time: gThrottlePeriod>>0 (shift right 0 bit=same value) ▪ Transmit off time: gThrottlePeriod-(on time) Level3 ▪ Transmit on time: gThrottlePeriod>>3 (shift right 0 bit=divided by 8) ▪ Transmit off time: gThrottlePeriod-(on time)	10	10000	4000
gThermalTempMinLevel0	Thermal temperature maximum level 0. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	0
gThermalTempMaxLevel0	Thermal temperature minimum level 0. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	90
gThermalTempMinLevel1	Thermal temperature minimum level 1. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	70
gThermalTempMaxLevel1	Thermal temperature maximum level 1. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	110
gThermalTempMinLevel2	Thermal temperature minimum level 2. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	90

Parameter	Description	Min	Max	Default
gThermalTempMaxLevel2	Thermal temperature maximum level 2. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	125
gThermalTempMinLevel3	Thermal temperature minimum level 3. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	110
gThermalTempMaxLevel3	Thermal temperature maximum level 3. When temperature crosses gThermalTempMaxLevelX, it moves to next upper level. If temperature crosses gThermalTempMinLevelX, it moves to next lower level.	0	1000	0

14 Invalid or unused

The following parameters are invalid or unused for the current release. These can be ignored in the ini file:

- gEnableIdleScan
- gEnableHandoff
- gRoamingTime
- BtAmpPreferredChannel
- gEnableBtAmp
- gApMacAddr
- gImmediateRoamRssiDiff
- gNeighborReassocThreshold
- gListOfNon11acCountryCode
- gFlexConnectPowerFactor
- gIPAEnable
- gIPAPreFilterEnable
- gIPARMEnable
- gIPAIPv6Enable

A References

Document	Document ID
QCA6174 Power Debugging Guide	80-Y7674-5
CNSS.SW RM Wi-Fi Software Architecture Overview	80-Y7674-2
QCA61x4 and QCA65x4 Regulatory Guidelines	80-Y7674-300
Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications Amendment 4: Enhancements for Higher Throughput	IEEE P802.11n/D7.0, Sep 2008
Codes for the Representation of Names of Countries and Their Subdivisions, Part 1: Country Codes	ISO/IEC 3166-1