Qualcomm
TECHNOLOGIES, INC

Videotelephony Power Consumption Measurement

Application Note

80-NR718-1 A

August 27, 2014

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Revision history

Revision	Date	Description
A	Aug 2014	Initial release

1 Introduction

1.1 Purpose

This document provides videotelephony power measurement instructions for Android™ devices using MSM8974, MSM8974Pro, APQ8084+MDM9x25, and APQ8084+MDM9x35M.

1.2 Conventions

Function declarations, function names, type declarations, and code samples appear in a different font, e.g., `#include`.

Code variables appear in angle brackets, e.g., `<number>`.

1.3 References

Reference documents are listed in Table 1-1. Reference documents that are no longer applicable are deleted from this table; therefore, reference numbers may not be sequential.

Table 1-1 Reference documents and standards

Ref.	Document	
Qualcomm Technologies		
Q1	*Application Note: Software Glossary for Customers*	CL93-V3077-1
Q2	*Power Consumption Measurement Procedure for MSM™ (Android™-Based)/MDM Devices*	80-N6837-1

1.4 Technical assistance

For assistance or clarification on information in this document, submit a case to Qualcomm Technologies, Inc. (QTI) at https://support.cdmatech.com/.

If you do not have access to the CDMATech Support website, register for access or send email to support.cdmatech@qti.qualcomm.com.

1.5 Acronyms

For definitions of terms and abbreviations, see [Q1].

2 VoLTE Setting

This chapter describes the device and call box settings for VoLTE.

2.1 Device Under Test (DUT) settings

Table 2-1 DUT NV items

NV number	NV name	Value
00010	Digital/Analog Mode Preference	
	nam	0
	mode	4
67261	IMS DPL configuration	
	PtimeValue	0
	InitialBufferTimeValue	0
	E911IPV6Enabled	0
	IPV6Enabled	1
	MSRPPktSz	0
	RUIMIMSIValue	0
	DscpValue	0
	IMSParamSrc	2
71527	Ims_rat_apn_info[0].iRAT	24
	Ims_rat_apn_info[0].iAPNType_APNindex	17
	Ims_rat_apn_info[0].iIMSServiceInfo	2047
	Ims_rat_apn_info[1].iAuth_SecType	200
	Ims_rat_apn_info[0].iIPTypeInfo	64
	Ims_rat_apn_info[1].iRAT	24
	Ims_rat_apn_info[1].iAPNType_APNindex	34
	Ims_rat_apn_info[1].iIMSServiceInfo	0
	Ims_rat_apn_info[1].iAuth_SecType	0
	Ims_rat_apn_info[1].iIPTypeInfo	0
	Ims_rat_apn_info[2].iRAT	0
	Ims_rat_apn_info[2].iAPNType_APNindex	0
	Ims_rat_apn_info[2].iIMSServiceInfo	0
	Ims_rat_apn_info[2].iAuth_SecType	0
	Ims_rat_apn_info[2].iIPTypeInfo	0
	Ims_rat_apn_info[3].iRAT	0
	Ims_rat_apn_info[3].iAPNType_APNindex	0

NV number	NV name	Value
	Ims_rat_apn_info[3].iIMSServiceInfo	0
	Ims_rat_apn_info[3].iAuth_SecType	0
	Ims_rat_apn_info[3].iIPTypeInfo	0
	Ims_rat_apn_info[4].iRAT	0
	Ims_rat_apn_info[4].iAPNType_APNindex	0
	Ims_rat_apn_info[4].iIMSServiceInfo	0
	Ims_rat_apn_info[4].iAuth_SecType	0
	Ims_rat_apn_info[4].iIPTypeInfo	0
	Ims_rat_apn_info[5].iRAT	0
	Ims_rat_apn_info[5].iAPNType_APNindex	0
	Ims_rat_apn_info[5].iIMSServiceInfo	0
	Ims_rat_apn_info[5].iAuth_SecType	0
	Ims_rat_apn_info[5].iIPTypeInfo	0
	Ims_rat_apn_info[6].iRAT	0
	Ims_rat_apn_info[6].iAPNType_APNindex	0
	Ims_rat_apn_info[6].iIMSServiceInfo	0
	Ims_rat_apn_info[6].iAuth_SecType	0
	Ims_rat_apn_info[6].iIPTypeInfo	0
	Ims_rat_apn_info[7].iRAT	0
	Ims_rat_apn_info[7].iAPNType_APNindex	0
	Ims_rat_apn_info[7].iIMSServiceInfo	0
	Ims_rat_apn_info[7].iAuth_SecType	0
	Ims_rat_apn_info[7].iIPTypeInfo	0
	Ims_rat_apn_info[8.iRAT	0
	Ims_rat_apn_info[8].iAPNType_APNindex	0
	Ims_rat_apn_info[8].iIMSServiceInfo	0
	Ims_rat_apn_info[8].iAuth_SecType	0
	Ims_rat_apn_info[8].iIPTypeInfo	0
	Ims_rat_apn_info[9].iRAT	0
	Ims_rat_apn_info[9].iAPNType_APNindex	0
	Ims_rat_apn_info[9].iIMSServiceInfo	0
	Ims_rat_apn_info[9].iAuth_SecType	0
	Ims_rat_apn_info[9].iIPTypeInfo	0
	Rat_apn_fb_info[0].iRATAPNFallback	20992
	Rat_apn_fb_info[0].iServicePriorityWWAN	0
	Rat_apn_fb_info[1].iRATAPNFallback	16896
	Rat_apn_fb_info[1].iServicePriorityWWAN	0
	Rat_apn_fb_info[2].iRATAPNFallback	0
	Rat_apn_fb_info[2].iServicePriorityWWAN	0
	Rat_apn_fb_info[3].iRATAPNFallback	0
	Rat_apn_fb_info[3].iServicePriorityWWAN	0
	Rat_apn_fb_info[4].iRATAPNFallback	0

NV number	NV name	Value
	Rat_apn_fb_info[4].iServicePriorityWWAN	0
	Rat_apn_fb_info[5].iRATAPNFallback	0
	Rat_apn_fb_info[5].iServicePriorityWWAN	0
	Rat_apn_fb_info[6].iRATAPNFallback	0
	Rat_apn_fb_info[6].iServicePriorityWWAN	0
	Rat_apn_fb_info[7].iRATAPNFallback	0
	Rat_apn_fb_info[7].iServicePriorityWWAN	0
	Rat_apn_fb_info[8].iRATAPNFallback	0
	Rat_apn_fb_info[8].iServicePriorityWWAN	0
	Rat_apn_fb_info[9].iRATAPNFallback	0
	Rat_apn_fb_info[9].iServicePriorityWWAN	0
	iAllowedIMSSrvOnWLAN	0
	bAddAllFTs	0
	iACSPriority	0
	iISIMPriority	0
	iNVPriority	1
	iPCOPriority	0
	iIMSServiceStatus	34815
	Ims_apn_name_db[0].cAPNName	vzwims
	Ims_apn_name_db[1].cAPNName	vzwinternet
	Ims_apn_name_db[2].cAPNName	
00855	RTRE Configuration	0x00
01896	Ipv6 Enabled	1
00562	Preferred Hybrid Mode	0x1
04265	VOIP R67261 gistration Mode	0
67218	IMS Enable	1
04230	VOIP Preferred URI	0
65956	QIPCall Preferred URI Type	0
67280	QIPCall Ringing Timer	30000
67281	QIPCall Ringback Timer	35000
67282	QIPCall RTP Link Alivness Timer	20
67199	QIPCall Domain Selection Enabled	0
65959	QIPCall Callerid Mode	0
65964	QIPCall HD Voice Enabled	1
66031	QIPCall Codec Mode Set	0
66472	SMS Domain Preference	1
66473	SMS Mandatory	1
67264	IMS Registration Module Configuration	
	RegONMode	1
	RegModeConfig	3
	regManagerPdpProfileName	"vzwims"

NV number	NV name	Value
	RegEventPacket	0
	RegPCOEnabled	0
	RegDHCPEnabled	0
	RegPreConfigEnabled	1
	regManagerPreConfigServerBase	“[2002:c023:9c17:203::0a2a:5c21]:5060”
	RegRATConfig	10
	RegNVPCSCFEnabled	0
	RegWLANEnabled	0
	RegUserNameIMSI	0
	RegResponseforOptions	0
	RegConfigMaxDiscoveryCount	0
	regManagerDiscoverySchedule	
	regManagerCDMAPdpProfileName	“106”
	RegConfigPdnRecoveryDelayTimerVal	60
	regManagerPDPFailureSchedule	“5,5,5”
	RegConfigMaxIntermediatePDPRetries	0
	RegConfigEHRPDRecoveryTimer	15
	RegConfigRegistrationAttempts	3
	RegConfigDelayAttemptTimer	15
	RegConfigTestMode	0
	RegPCSCFPort	5060
67259	IMS SMS Configuration	
	smsConfigVDN	“11111”
	SMSFormat	0
	smsAcceptContact	“+g.3gpp.smsip”
	smsRATMaskString	"10"
	RatMaskValue	0x00000600
	PhoneContextURI	“vzims.com”
	iSMSOverIPNetworkIndication	1
67257	IMS VOIP Configuration	
	VoipConfigQOS	0
	VoipConfigDomainNotificationEnable	1
	VoipConfigRTCP	1
	voipConfigAcceptContact	“urn:urn-7:3gpp-service.ims.icsi.mmtel”
	VoipConfigExpires	1800
	VoipMinSessionExpires	600
	VoipSessionTimerEnabled	0
	voipConfigConfURI	“1234”
	VoipSilentRedialEnabled	0
	iVoipConfigSessionExpires	1800
	VoipConfigSessionRefresherType	0
	VoipConfigSessionRefresherMethod	1

NV number	NV name	Value
	VoipConfigInviteHeader	“VZW2012”
67258	IMS Configuration	
	regConfigUserName	“sip:11111@test.3gpp.com”
	regConfigPassword	“11111”
	regConfigPrivateURI	“11111@test.3gpp.com”
	regConfigDisplayName	“11111”
	regConfigDomainName	“test.3gpp.com”
	regAuthSecertKey	“465b5ce8b199b49faa5f0a2ee238a6bc”
	3GPPEnabled	0
	regConfigOPField	“5f1d289c5d354d0a140c2548f5f3e3ba”
69744	IMS SIP Extended Configuration	
	version	1
	SipLocalPort	5060
	TimerSipRegValue	7200
	TimerSipSubscribeValue	0
	Timer_T1Value	3000
	Timer_T2Value	16000
	Timer_T4Value	5000
	Timer_TfValue	30000
	Timer_TJValue	30000
	iTCPThresholdValue	1500
	CompactFormEnabled	0
	SigCompEnabled	0
	FMCConfig	0
	iIpSecIntScheme	0
	iIpSecEncAlgo	0
	AuthScheme	0
	InitialAuthConfig	0
	AuthHeaderValue	
	ProxyRouteValue	
00850	Service Domain Preference	0x02
65777	UE Usage Setting	1
66048	Voice Domain Preference	3

NOTE: The IP address, domain name, and user ID should be the same as configured in your SIP.

For detailed procedure on VoLTE settings and the measurement procedure, see [Q2].

2.2 PXT setting

- Change the band according to the requirement – Freq-Band
- Channel bandwidth – Mode setup→Bandwidth→10 MHz/20 MHz
- UL/DL MCS and RBs settings – Mode setup→PHY settings→UL/DL resource allocation
  - MSM™
    - UL – MCS: 12, RBs: 30
    - DL – MCS: 5, RBs: 6
- CDRX parameters
  - Mode setup – Page 2
  - RRC settings – Page 2
- UL HARQ setting
  - Mode setup – Page 2
  - MAC settings – UL HARQ
- To change in TDD mode – Tech-TDD

2.3 IMS setting

Disable RTCP reporting.

3 Videotelephony Test Procedure

This chapter describes videotelephony-specific NV settings and test procedure for videotelephony power consumption measurement.

3.1 NV items

Table 3-1 Videotelephony NV items

NV number	NV name	Value
70287	IMS_Hybrid_Enable	1
67332	IMS Media Config	
	Version	2
	rtp_mtu_size	1428
	VideoResolution	0
	VideoEncodingBitRate	0
	FramesperSecond	0
	VideoCodec	0
	SAR	0
	PAR	0
	H264Profile	0
	H264ProfileLevel	0
	lipsync_drop_upper_limit	0
	lipsync_drop_lower_limit	0
	lipsync_enabled	1
	qdj_time_warping	0
	qdj_iba_max	2
	qdj_max_frames_at_start	0
	qdj_max_delay	100
	qdj_min_delay	40
	qdj_delay_by_frame_count	0
	qdj_max_frames_at_run	0
	qdj_max_bumped_up_delay	0
	qdj_jitter_increment	20
	qdj_target_underflow	5
	qdj_go_through_threshold	50
	qdj_drop_threshold	0
	qdj_default_jitter	60

NV number	NV name	Value
	gmin	0
	tx_system_delay	0
	rx_system_delay	0
70291	IMS VT 4G Media Capability	
	Version	0
	H263.preferred_frame_rate	15
	H263.preferred_bit_rate	64
	H263.preferred_resolution	6
	H263.preferred_profile_level	1
	H263.min_frame_rate	1
	H263.max_frame_rate	15
	H263.min_bit_rate	1
	H263.max_bit_rate	64
	H263.resolutions_supported	4095
	H263.min_profile_levels_per_resolution	0
	H263.H263Profile	1
	H264.preferred_frame_rate	15
	H264.preferred_bit_rate	384
	H264.preferred_resolution	8
	H264.preferred_profile_level	4
	H264.min_frame_rate	0
	H264.max_frame_rate	20
	H264.min_bit_rate	0
	H264.max_bit_rate	384
	H264.resolutions_supported	8191
	H264.min_profile_levels_per_resolution	0
	H264.H264Profile	1
70293	IMS VT 3G Media Capability	
	Version	0
	H263.preferred_frame_rate	15
	H263.preferred_bit_rate	64
	H263.preferred_resoultion	6
	H263.preferred_profile_level	1
	H263.min_frame_rate	1
	H263.max_frame_rate	15
	H263.min_bit_rate	1
	H263.max_bit_rate	64
	H263.resolutions_supported	4095
	H263.min_profile_levels_per_resolution	0
	H263.H263Profile	1

NV number	NV name	Value
67348	IMS QIPCall Config Items	
	Version	14
	EnableRTCPforActiveVOIPCall	0
	VT RTCP Reporting Interval	1
	qipcall_rtp_nb_amr_payload_type	0
	qipcall_rtp_wb_amr_payload_type	0
	qipcall_rtp_nb_dtmf_payload_type	0
	qipcall_rtp_wb_dtmf_payload_type	0
	MediaAttribute	–
	qipcall_desired_qos_strength	0
	AUDIO_CMR_AMR_NB	0
	AUDIO_CMR_AMR_WB	0
	emerg_call_cs_only	0
	video_media_profile_mode	3
	VT Calling Enabled	1
	mobile_data_enabled	1
	volte_disabled	0
	cvo_enabled	1
	audio_feature_tag	–
	video_feature_tag	“video”
	qipcall_rtp_tty_text_payload_type	0
	qipcall_rtp_tty_red_payload_type	0
	qipcall_rtp_tty_red_level	0
	qipcall_rtp_tty_cps	0
	SRTPAudioCryptoSuites	0
	SRTPVideoCryptoSuites	0
	E911_Call_Timer	0
70233	IMS RCS Auto-Config Parameterss	
	Version	0
	DisableAutoConfig	1
	RCSOnlyDeviceType	0
	RCSPdpProfileName	–
	InternetPdpProfileName	–
	PCOConfigPriority	0
	ISIMConfigPriority	0
	PreConfigPriority	0
	AutoConfigPriority	–
	RCSClientVendor	–
	RCSClientVersion	–
	RCSTerminalVendor	–
	RCSTerminalModel	–
	RCSTerminalSWVersion	–

NV number	NV name	Value
	RCSConfigServerAddress	–
	RCSConfigServerPort	–
	RCSLteFTList	–
	RCSHspaFTList	–
	RCSWifiFTList	0

3.2 UI setting

Use the following ADB commands:

```
adb shell setprop persist.radio.VT_HYBRID_ENABLE 1
adb shell setprop persist.radio.calls.on.ims true
adb shell setprop persist.radio.jbims 1
adb shell setprop persist.radio.VT_ENABLE 1
adb shell setprop persist.rcs.supported 1
```

NOTE: The commands are applicable when the QTI IMS solution is used.

3.3 Test procedure

1. Make a mobile terminated video call.
2. Select **Enable Video** from PXT.
3. Verify that there is no movement in front of the camera and take a measurement.

   The customer should file a case if the measurement result is not the same as the QTI release.