H.323 　　　VoIP 　　　　　　　　　　　**TTA Verified**

(NEtwork Testing Team)

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			•
00	2002.11.11.		• (TTA-V-02-003-CC10)
01	2003.07.14.		•
02	2003.07.19.		• 'PSTN　'
03	2003.11.07.	12	• Ref　　Scope
04	2006.07.25.		•

1.

H.323 VoIP   Verified   ITU-T H.323   Version 3.0(9
9/09)   BMT   TTA
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1) ITU-T, H.323, "Packet-based multimedia communications systems", Version 3, 1999.09.

2) KT, "VoIP(H.323)   ",   : T940030000, 2002. 08.07.

3)   , "VoIP Access Gateway   ", V1.1, 2001.09.

4) KTS, "VoIP CPE   ", 2002.05.

5) TTA, "VoIP - H.323   ", V0.1, 2002.01.31.

2.

		Direct Signaling
		G/K Routed Signaling
		Fast Connection
		Fast connect Normal connect
		Normal Connection
			Auto negotiation
			(G.711, G.729/G.729a, G.723.1)
			Comfortable noise
			Echo cancellation
		FXS-1
	RAS (H.225)	Discovery(GRQ/GCF/GRJ)
		IRR
		H.323 Endpoint	(RRQ/RCF/RRJ, URQ/UCF/URJ).
			Lightweight RRQ
			Reload(Rebooting)
		H.323 ID	H.323 ID ,
			H.323 ID ,

		E.164		
		(　　　　　,　　　　　)	RRQ　　　　H.323 ID　　E.164	
			ARQ　　　　H.323 ID　　E.164	
			Setup　　　H.323 ID　　E.164	
		DTMF　　　　　　　　(Out of band)		
		DTMF　　　　　　　　(In-band)		
		FAX　　　　　(T.38)　FXS-1		
		Inbound 　FXS-1　　　　　　　　, E1		
		Inbound/Outbound　　　　Prefix　　　/		
	PSTN	E1, FXS　　PSTN　(　　FXO)		
	IP	10/100 Base-T Ethernet		
		SNMP MIB		
		FXS-1		
		S/W		
		2 Stage　　　　　　FXO		
		Last digit		
		VoIP　　　　PSTN　　　　　(PSTN Backup)		
		Tone		
		LLO(Line Lock Out)　　E1		
		',　　',　　', 　E1		
		(　　　',　　　　　　',　　ID　)		
		, RS-232C　　　　FXS-1		

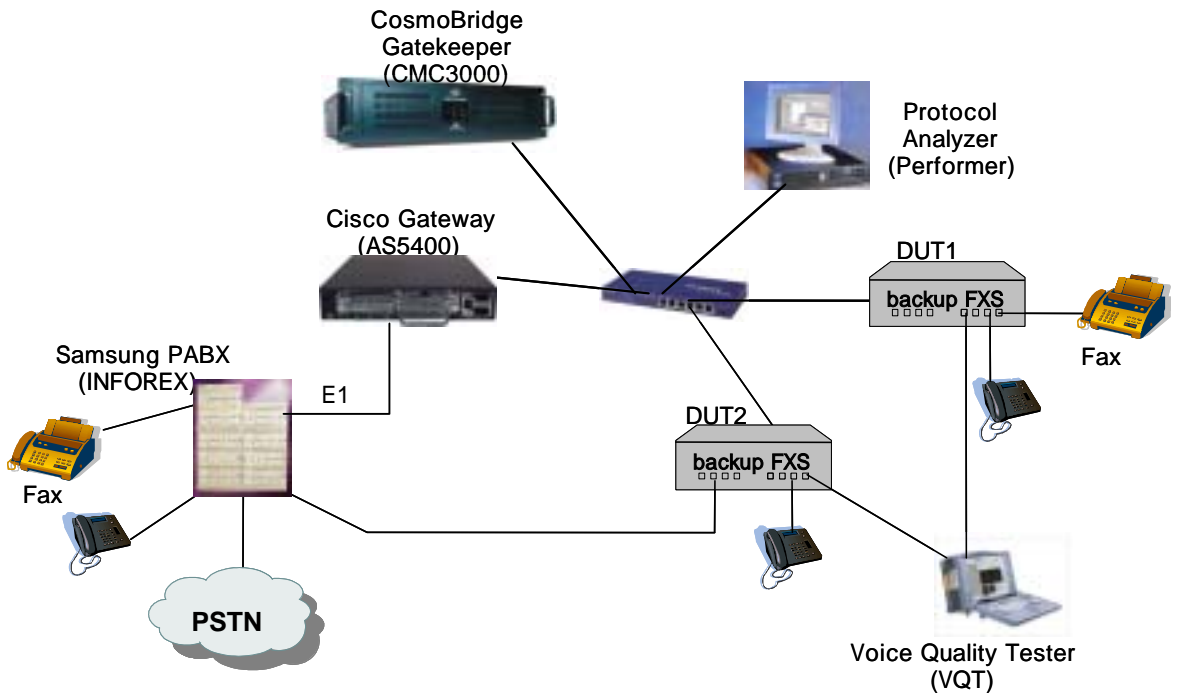|			Restore
			FXS 1
			Secondary Gatekeeper
			FXS 1
			(H.225, RAS, H.245)
			FXS-1
			FXS-1
		FXS 1	
		xDSL, Cable Modem, 전용선, Ethernet 지원 FXS 1	
		DHCP, NAT 기능 FXS 1	
		(MOS)	
		Speech Delay	
		(24)	

FXS 1   KT BMT   .

3. Testbed

3.1   Testbed

3.2   Testbed
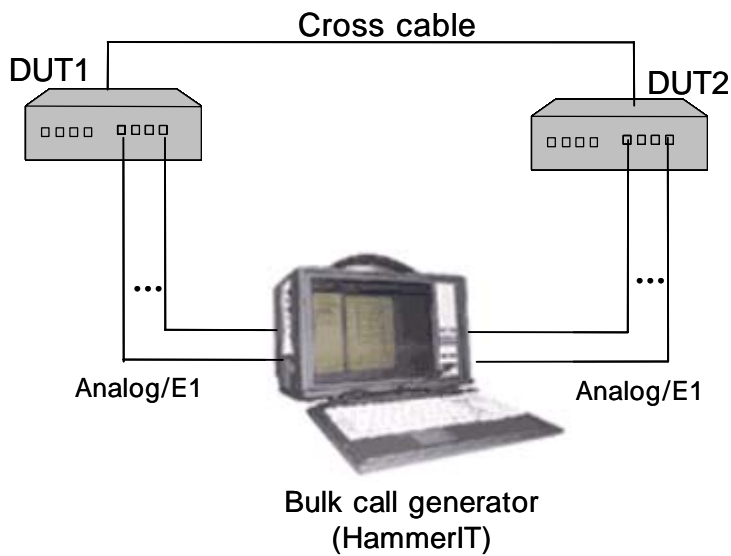
4.

Direct Signalling	GK direct mode , GW Q.931 GK .
G/K Routed Signalling	GK GW .
Fast Connection	GK GW DUT Fast Start .
Fast connect Normal connect	GK GW DUT Fast Start , GW Fast Connection , Normal connection . (GW . DUT DUT , H.323 Call Generator)
Normal Connection	GK GW DUT Normal Start .
Auto negotiation	GW DUT Auto negotiation , DUT GW Auto negotiation , . .
(G.711, G.729/ G.729a, G.723.1)	DUT (G.711 A-law/U-law, G.723.1 5.3k/6.3k, G.729 /G.729a) .
Comfortable noise	CNG On/Off . .
	VAD On/Off . .
Echo cancellation	Echo Canceller On/Off . Echo On/Off Echo Free Rate .
	2 . (8)
Discovery (GRQ/GCF/GRJ)	IP .
IRR	IRQ Unrequested IRR Explicit IRR

(RRQ/RCF/RRJ, URQ/UCF/URJ).	RRQ H.323 ID E.164 , RRQ RCF , URQ UCF , , RRQ .
Lightweight RRQ	LW-RRQ , KeepAlive , .
Reload(Rebooting)	DUT .
H.323 ID ,	H.323 .
H.323 ID ,	H.323 ID .
E.164	E.164 .
RRQ H.323 ID E.164	RRQ H.323 ID E.164 .
ARQ H.323 ID E.164	ARQ H.323 ID E.164 .
Setup H.323 ID E.164	Setup H.323 ID E.164 .
DTMF (Out of band)	DUT GW H.245 DTMF .
DTMF (In-band)	DUT GW RTP(In-band) DTMF .
FAX (T.38)	DUT GW Fax .
Inbound	DUT .
Inbound/Outbound Prefix /	DUT Prefix / .

E1, FXS   PSTN
 	
(FXO)
	E1 FXS , E1 (PRI/MFC-R2)
	         , FXS PSTN PSTN
	     FXO . , PSTN FXO
	     .

10/100 Base-T Ethernet	IP 10M 10/100M .
SNMP MIB	SNMP VoIP MIB .
	Telnet HTTP DUT / .
S/W	Local Remote tftp S/W .
2 Stage	2 Stage . 2 Stage IVR , .
	DUT .
Last digit	PDD last digit . # .
VoIP PSTN (PSTN Backup)	VoIP PSTN .
	.
Tone	Dial tone, Ring back tone, Busy tone, Congestion tone .
LLO(Line Lock Out)	, LLO .
	.
, , ,	.

(, , ID)	, ID .
RS-232C	RS-232C .
	DUT (, ,) , .
Restore	(: User Provision Data) , .
	.
Secondary Gatekeeper	Down .
	, (, , , , ,) .
(H.225, RAS, H.245)	.
	DUT .
	CDR .
xDSL, Cable Modem, , Ethernet	xDSL, Cable Modem, , Ethernet .
DHCP, NAT	DHCP server IP , IP NAT server IP , LAN , DHCP Server NAT Server , VoIP LAN PC .
(MOS)	DUT MOS 3.5 .
Speech Delay	DUT Speech delay 200 ms .
(24)	DUT 24 95% .

5.

TTA

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Function & Performance
(TTA-V-N-XX-XXX)