

2 Services and Ports

2.1 Voice Traffic and Signaling

2.1.1 HG1500

HiPath HG 1500 uses for communication on the network the following services and ports:

Important: Except the UDP-Ports for the Voice payload the port numbers listed cannot be changed in the product.

Explanation:

A-Prot. Application-Layer-Protocol

M-Prot. Middleware-Layer-Protocol

T-Prot. Transport-Layer-Protocol

D-Ports Default-Ports are the port numbers or the port range which comes in effect after turning power on the first time – without administration.

A-Ports Admin-Ports are the alternative port numbers or the port range in which the ports can be altered by administration.

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
Accounting Server (HG1500) IP-Accounting								
	Accounting Server IP-Accounting	server	ACP	---	TCP	13042		Def: Accounting
Decomposed Media Gateway - Signalling for decomposed media gateway in HiPath3000								
	IPNC MediaGatewaycontrol	server	MCP	---	TCP	12051	1 - 65535	Def: IPNC Adm: Default can be modified within this range
	MPH MediaPayloadHandler	server	MCP	---	TCP	12052	1 - 65535	Def: MPH Adm: Default can be modified within this range
DSL-Diagnose Server - DSL-Statusanzeige								
	DSL-Diagnose Server DSL-Statusanzeige	server	DSL-D	---	UDP	12200	1 - 65535	Adm: Default can be modified within this range
H.323 Networking								
	CAR client Call address resolution client	client	CAR	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	CAR-Alive Client Alivechecks (configurable)	client	CAR Alive	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	CAR-alive server Alive checks (configurable)	server	CAR Alive	---	TCP	12062	1 - 65535	Def: CAR Adm: Default can be modified within this range
	CAR_Alive w. Ping Ping based check alive mechanism	peer	ICMP-Echo	---	ICMP			Def: Unspecified Default Port(range) values
	H.323 Call Signaling active VoIP Verbindungssteuerung	client	H.323 (H.225- Q.931)	---	TCP	12250 - 12950	1 - 65535	Def: H.323 Adm: Default can be modified within this range

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
	H.323 Call Signaling passive Voice over IP: Verbindungssteuerung	server	H.323 (H.225- Q.931)	---	TCP	1720	1 - 65535	Def: H.225/Q.931 Adm: Default can be modified within this range
	RAS client RAS client for registration at external gatekeeper	client	H.323 (H.225- RAS)	---	UDP	1024 - 65535		Def: Ephemeral Ports (IANA)
	RM client Resource manager for networkwide use of MOH and Conference	client	RM API	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	RM server Resource manager for networkwide use of MOH and Conference	server	RM API	---	TCP	9000	1 - 65535	Def: RM Adm: Default can be modified within this range
	RTP Payload Transport active VoIP Payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
H.323 Subscriber								
	H.225 RAS RAS server for H.323 endpoints	server	H.323 (H.225- RAS)	---	UDP	1719	1 - 65535	Def: H.225/RAS Adm: Default can be modified within this range
	H.245 Media Signaling active H.245 channel signalling for H.323 endpoints	client	H.323 (H.245)	---	TCP	12250 - 12950	1 - 65535	Def: H.323 Adm: Default can be modified within this range
	H.245 Media Signaling passive H.245 channel signalling for H.323 endpoints	server	H.323 (H.245)	---	TCP	12250 - 12950	1 - 65535	Def: H.323 Adm: Default can be modified within this range
	H.323 Call Signaling active VoIP Verbindungssteuerung	client	H.323 (H.225- Q.931)	---	TCP	12250 - 12950	1 - 65535	Def: H.323 Adm: Default can be modified within this range
	H.323 Call Signaling passive Voice over IP: Verbindungssteuerung	server	H.323 (H.225- Q.931)	---	TCP	1720	1 - 65535	Def: H.225/Q.931 Adm: Default can be modified within this range
	RTP Payload Transport active VoIP Payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
HFA subscriber								
	CorNet TC	server	CorNet-TC	---	TCP	4060	1 - 65535	Def: CorNet-TC Adm: Default can be modified within this range

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
	H.323 Call Signaling active VoIP payloadtransport	client	H.323 (H.225-Q.931)	---	TCP	12250 - 12950	1 - 65535	Def: H.323 Adm: Default can be modified within this range
	H.323 Call Signaling passive Voice over IP: payloadtransport	server	H.323 (H.225-Q.931)	---	TCP	1720	1 - 65535	Def: H.225/Q.931 Adm: Default can be modified within this range
	RTP Payload Transport active VoIP payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
SIP networking								
	CAR client Call address resolution client	client	CAR	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	CAR-Alive Client Alivechecks (configurable)	client	CAR Alive	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	CAR-alive server Alive checks (configurable)	server	CAR Alive	---	TCP	12062	1 - 65535	Def: CAR Adm: Default can be modified within this range
	CAR_Alive w. Ping Ping based check alive mechanism	peer	ICMP-Echo	---	ICMP			Def: Unspecified Default Port(range) values
	RM client Resource manager for networkwide use of MOH and Conference	client	RM API	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	RM server Resource manager for networkwide use of MOH and Conference	server	RM API	---	TCP	9000	1 - 65535	Def: RM Adm: Default can be modified within this range
	RTP Payload Transport active VoIP Payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	SIP Call Signalling active (symmetric UDP) Call Signalling for SIP endpoints and SIP based trunking	client	SIP	---	UDP	5060		Def: SIP
	SIP Call Signalling active (TCP) Call Signalling for SIP endpoints and SIP based trunking	client	SIP	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	SIP Call Signalling passive Call Signalling for SIP endpoints and SIP based trunking	server	SIP	---	TCP_UDP	5060	1 - 65535	Def: SIP Adm: Default can be modified within this range

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
SIP Service Provider Trunk								
	RTP Payload Transport active VoIP Payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	SIP Call Signalling active (symmetric UDP) Call Signalling for SIP endpoints and SIP based trunking	client	SIP	---	UDP	5060		Def: SIP
	SIP Call Signalling active (TCP) Call Signalling for SIP endpoints and SIP based trunking	client	SIP	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	SIP Call Signalling passive Call Signalling for SIP endpoints and SIP based trunking	server	SIP	---	TCP_UDP	5060	1 - 65535	Def: SIP Adm: Default can be modified within this range
	STUN (client) STUN client used for SIP Provider access	client	STUN	---	UDP	1 - 65535		Def: STUN client, Port depends on the client for which STUN request is sent
SIP subscriber								
	RTP Payload Transport active VoIP Payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	SIP Call Signalling active (symmetric UDP) Call Signalling for SIP endpoints and SIP based trunking	client	SIP	---	UDP	5060		Def: SIP
	SIP Call Signalling active (TCP) Call Signalling for SIP endpoints and SIP based trunking	client	SIP	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	SIP Call Signalling passive Call Signalling for SIP endpoints and SIP based trunking	server	SIP	---	TCP_UDP	5060	1 - 65535	Def: SIP Adm: Default can be modified within this range
VCAPI - Virtual Common (ISDN) Application Programming Interface								
	VCAPI VCAPI Server	server	VCAPI	---	TCP	12001		Def: VCAPI
VPN-IPSEC VPN tunnel								

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
	VPN-ESP (client) IPSEC protocol for encrypted payload transport	client	IPSEC	---	ESP	0		Def: NoPort assigned for this protocol
	VPN-ESP (server) IPSEC protocol for encrypted payload transport	server	IPSEC	---	ESP	0		Def: NoPort assigned for this protocol
	VPN-ISAKMP (client) Internet Security Association and Key Management Protocol for IPSEC	client	ISAKMP	---	UDP	1024 - 65535		Def: Ephemeral Ports (IANA)
	VPN-ISAKMP (server) Internet Security Association and Key Management Protocol for IPSEC	server	ISAKMP	---	UDP	500		Def: ISAKMP
	VPN-NAT-T (client) NAT traversal, IPSEC protocol for encrypted payload transport	client	NAT-T	---	UDP	1024 - 65535		Def: Ephemeral Ports (IANA)
	VPN-NAT-T (server) NAT traversal, IPSEC protocol for encrypted payload transport	server	NAT-T	---	UDP	4500		Def: NAT-T

2.1.2 IP- Clients

2.1.2.1 optiClient 130 V5.1 R5

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
HFA Client								
	Cornet TC	server	Cornet-TC	---	TCP	4060	1 - 65535	Def: CorNet-TC Adm: Default can be modified within this range
	H.323 Call Signaling active VoIP Verbindungssteuerung	client	H.323 (H.225-Q.931)	---	TCP	12250 - 12950	1 - 65535	Def: H.323 Adm: Default can be modified within this range
	H.323 Call Signaling (MDW_MSA) Voice over IP: Verbindungssteuerung	server	H.323 (H.225-Q.931)	---	TCP	1720		Def: H.225/Q.931
	H.323 Media Signaling (MDW_MSA) Voice over IP: Verbindungssteuerung für Sprachkanäle (Mediachannels)	server	H.323 (H.245)	---	TCP	12000 - 12100		Def: H.245 portnumber is negotiated via H.225
	RTP Payload Transport active VoIP Payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
LDAP Connectivity (client sided) client sided connectivity to a LDAP Service								
	LDAP Access Directory access via LDAP	client	LDAP	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
DLC Connectivity (DLS client sided) client sided connectivity to Deployment Licence Service								
	DLS contact me request (optiClient sided) workpoint sided DLS contact me service	server	HTTP	---	TCP	8082		Def: HTTP optiClients
	DLS Detection (DHCP) DLS detection via DHCP	client	DHCP	---	UDP	68		Def: DHCP Client Port
	DLS Detection (DNS) DLS detection via DNS	client	DNS	---	UDP		1024 - 65535	Def: Unspecified Default Port(range) values Adm: PortLow/PortHigh can be modified within this range ()
	DLS Workpoint Interface (optiClient sided) workpoint sided DLS Communication interface workpoints	client	WPIP	HTTPS	TCP	18443		Def: DLS: Communication interface workpoints – DLS

HFA Client

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
	Cornet TC	server	Cornet-TC	---	TCP	4060	1 - 65535	Def: CorNet-TC Adm: Default can be modified within this range
	H.323 Call Signaling active VoIP Verbindungssteuerung	client	H.323 (H.225-Q.931)	---	TCP	12250 - 12950	1 - 65535	Def: H.323 Adm: Default can be modified within this range
	H.323 Call Signaling (MDW_MSA) Voice over IP: Verbindungssteuerung	server	H.323 (H.225-Q.931)	---	TCP	1720		Def: H.225/Q.931
	H.323 Media Signaling (MDW_MSA) Voice over IP: Verbindungssteuerung f?r Sprachkan?le (Mediachannels)	server	H.323 (H.245)	---	TCP	12000 - 12100		Def: H.245 portnumber is negotiated via H.225
	RTP Payload Transport active VoIP Payloadtransport	client	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
	RTP Payload Transport passive VoIP payloadtransport	server	RTP_RTCP	---	UDP	29100 - 29159	1 - 65535	Def: RTP portnumber is negotiated via H.245. Max 30 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: Default can be modified within this range
HLM Connectivity (client sided) client sided HiPath Licence Management								
	CLA Connectivity (CLC) Used for data transfer between CLC / CLM	client	HLP	---	TCP - SSL	61740		Def: Port will be discovered by CLM through multicast procedure. CLC uses port by configuration.
LDAP Connectivity (client sided) client sided connectivity to a LDAP Service								
	LDAP Access Directory access via LDAP	client	LDAP	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)

2.1.2.2 optiPoint 410/420 SIP V5R0

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
OAM (oP410 SIP) Administration of optiPoint SIP devices								
	DHCP-Client (op410) Server of "Dynamic Host Configuration Protocol"	client	DHCP	---	UDP	68		Def: DHCP Client Port
	DHCP-Server (oP410) Server of "Dynamic Host Configuration Protocol"	server	DHCP	---	UDP	67		Def: DHCP Server Port
	DLS Workpoint Interface (client sided) workpoint sided DLS Communication interface workpoints	client	WPIP	HTTPS	TCP	18443	0 - 65535	Def: DLS: Communication interface workpoints – DLS
	DNS DNS relay	server	DNS	---	TCP_UDP	53		Def: DNS
	FTP_Server_Control (oP410) FTP-Server	server	FTP	---	TCP	21		Def: FTP-Server Control Port
	HTTPS_Server (Phones) Secure Embedded Web Server	server	HTTP	---	TCP	443	0 - 65535	Def: HTTPS
	HTTP_Server (Phones) Web Interface	server	TFTP	---	TCP	8085	0 - 65535	Def: HTTP optiPoints, HG1500
	IP-Config (Phones) IP Configuration Services	server	*proprietary*	---	UDP	5100		
	SNMP (SET/GET) (Phones) SNMP SET/GET-Functionality	server	SNMP	---	UDP	161		Def: SNMP (Set/Get)
	SNMP Trap (oP410) SNMP Trap function	client	SNMP	---	UDP	161 162		Def: SNMP Trap (oP410)
	SNTP (oP410) Simple Network Time Protocol	server	SNTP	---	UDP	123		Def: SNTP
	SNTP heartbeat (oP410) Simple Network Time Protocol	server	SNTP	---	UDP	580		
QoS Data Collection Unit (QCU) phones Send QoS reports								
	QCU client 12010 Client application which sends QDC data to the QCU	client	SNMP	---	UDP	12010	0 - 65535	Def: QCU receiving Port
SIP payload transport (op410 SIP) Session Initiation Protocol (SIP) payload								
	SIP Payload Transport (oP410) active Voice over IP: Transmission of Payload	client	RTP_RTCP	---	UDP	5004 - 5027	0 - 65534	Def: Port 5004 .. 5006 for normal usage. For every line-key you have to add two channels. The maximum of line keys are 10 -->. For this the maximum range of 5004 .. 5027 is valid Adm: even port number only

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
	SIP Payload Transport (oP410) passive Voice over IP: Transmission of Payload	server	RTP_RTCP	---	UDP	5004 - 5027	0 - 65534	Def: Port 5004 .. 5006 for normal usage. For every line-key you have to add two channels. The maximum of line keys are 10 -->. For this the maximum range of 5004 .. 5027 is valid Adm: even port number only
SIP Signalling (oP410 SIP) Session Initiation Protocol (SIP) signaling								
	SIP Signaling (WL2-Phone) SIP over TLS	client	SIP	---	TCP - TLS	5061		Def: SIP
	SIP signaling TCP (oP410) SIP signalling in the case of using TCP (configurable inside the phone)	client	SIP	---	TCP	5060		Def: SIP
	SIP signaling UDP (oP410) SIP signalling in the case of using UDP (configurable inside the phone)	client	SIP	---	UDP	5060		Def: SIP
	SIP-TLS (OP410) SIP over TLS	client	SIP	---	TCP - TLS	5061	1 - 65535	Def: SIP Adm: Configuration the port value to zero will result in the default port value being used
User Applications (oP410 SIP) bundle of user functions								
	JAVA (optiPoints) JAVA applications in phones	client	HTTP	---	TCP	9200	0 - 65535	Def: Java default port in optiPoint phones
	LDAP Access (optiPoint phones) Directory access via LDAP	client	LDAP	---	TCP	389	0 - 65535	Def: LDAP
	WAP client (TCP) for WAP access to WAP services (server)	client	WAP	---	TCP	9200	0 - 65535	Def: WAP connectionless session service (IANA)

2.1.2.3 optiPoint 410/420 V5 R3

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
H.323 (oP410) General term for H.323 functions								
	H.323 Call Signaling (oP410) active Voice over IP: Verbindungssteuerung	client	H.323 (H.225-Q.931)	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	H.323 Call Signaling (oP410) passive Voice over IP: Verbindungssteuerung	server	H.323 (H.225-Q.931)	---	TCP	1720	0 - 65535	Def: H.225/Q.931
	H.323 Payload Transport (oP4x0 at H2k/H3k) active Voice over IP: Uebertragung der Sprachpakete	client	RTP_RTCP	---	UDP	5004 - 5013	0 - 65534	Def: RTP portnumber is negotiated via H.245. Max 5 connections: RTP starts at <adr> port2/max - 1 down to <adr> port 1/min , RTCP at <adr> port2/max down to <adr> port 1/min+1 Adm: even port number only
	H.323 Payload Transport (oP4x0 at H2k/H3k) passive Voice over IP: Uebertragung der Sprachpakete	server	RTP_RTCP	---	UDP	5004 - 5013	0 - 65534	Def: RTP portnumber is negotiated via H.245. Max 5 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1). Adm: even port number only
	H.323 Payload Transport (oP4x0 at H4k) active Voice over IP: Uebertragung der Sprachpakete	client	RTP_RTCP	---	UDP	5008 - 5013	0 - 65534	Def: Attention: The phone is prepared to handle up to 5 port couples in total. If the base port is set to 5004 inside the phone, the port range then is 5004 ... 5013. But, in H4k scenarios, only the upper three couples (starting from the top) are used: 5012/5013, 5010/5011 and 5008/5009 . Adm: even port number only
	H.323 Payload Transport (oP4x0 at H4k) passive Voice over IP: Uebertragung der Sprachpakete	server	RTP_RTCP	---	UDP	5008 - 5013	0 - 65534	Def: Attention: The phone is prepared to handle up to 5 port couples in total. If the base port is set to 5004 inside the phone, the port range then is 5004 ... 5013. But, in H4k scenarios, only the upper three couples (starting from the top) are used: 5012/5013, 5010/5011 and 5008/5009 . Adm: even port number only
HFA (oP410) Hicom Feature Access								
	CorNet TC Logon (oP600) CorNet TC Logon Port	client	*proprietary*	---	TCP	4060		Def: CorNet-TC
OAM (oP410 HFA) Administration of optiPoint HFA devices								
	DLS Workpoint Interface (client sided) workpoint sided DLS Communication interface workpoints	client	WPIP	HTTPS	TCP	18443	0 - 65535	Def: DLS: Communication interface workpoints – DLS
	FTP_Server_Control (oP410) FTP-Server	server	FTP	---	TCP	21		Def: FTP-Server Control Port
	HTTPS_Server (Phones) Secure Embedded Web Server	server	HTTP	---	TCP	443	0 - 65535	Def: HTTPS
	HTTP_Server (Phones) Web Interface	server	TFTP	---	TCP	8085	0 - 65535	Def: HTTP optiPoints, HG1500
	IP-Config (Phones) IP Configuration Services	server	*proprietary*	---	UDP	5100		

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
	SNMP (SET/GET) (Phones) SNMP SET/GET-Functionality	server	SNMP	---	UDP	161		Def: SNMP (Set/Get)
	SNMP Trap (oP410) SNMP Trap function	client	SNMP	---	UDP	161 162		Def: SNMP Trap (oP410)
QoS Data Collection Unit (QCU) phones Send QoS reports,								
	QCU client 12010 Client application which sends QDC data to the QCU	client	SNMP	---	UDP	12010	0 - 65535	Def: QCU receiving Port
User Applications (oP410 HFA) bundle of user functions of HFA phone oP410								
	CTI Service (TCP) CTI Service in oP410	client	Cornet TS	---	TCP	5105		Def: CTI Service oP410
	JAVA (optiPoints) JAVA applications in phones	client	HTTP	---	TCP	9200	0 - 65535	Def: Java default port in optiPoint phones
	LDAP Access (optiPoint phones) Directory access via LDAP	client	LDAP	---	TCP	389	0 - 65535	Def: LDAP
	WAP client (TCP) for WAP access to WAP services (server)	client	WAP	---	TCP	9200	0 - 65535	Def: WAP connectionless session service (IANA)

2.1.2.4 optiPoint WL2 professional V1.0 HFA Variant

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
H.323 (WL2) General term for H.323 functions								
	H.323 Call Signaling (WL2) active Voice over IP: Verbindungssteuerung	client	H.323 (H.225-Q.931)	---	TCP	1024 - 65535		Def: Ephemeral Ports (IANA)
	H.323 Call Signaling (WL2) passive Voice over IP: Verbindungssteuerung	server	H.323 (H.225-Q.931)	---	TCP	1720	1 - 65535	Def: H.225/Q.931 Adm: Default can be modified within this range
	H.323 Payload Transport (WL2) active Voice over IP: Uebertragung der Sprachpakete	client	RTP_RTCP	---	UDP	5004 - 5011		Def: RTP portnumber : RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1).
	H.323 Payload Transport (WL2) passive Voice over IP: Uebertragung der Sprachpakete	server	RTP_RTCP	---	UDP	5004 - 5013		Def: RTP portnumber is negotiated via H.245. Max 5 connections: RTP starts at <adr>, RTCP at <adr>+1 (=RTP+1).
HFA (WL2) Hicom Feature Access								
	CorNet TC Logon (WL2) CorNet TC Logon Port	client	*proprietary*	---	TCP	4060		Def: CorNet-TC
LDAP WL2 LDAP access for phones								
	LDAP Access (WL2) Directory access via LDAP	client	LDAP	---	TCP	389	0 - 65535	Def: LDAP
OAM (WL2) Administration of optiPoint HFA devices								
	DHCP-Client (WL2) Server of "Dynamic Host Configuration Protocol"	client	DHCP	---	UDP	68		Def: DHCP Client Port
	DHCP-Server (WL2) Server of "Dynamic Host Configuration Protocol"	server	DHCP	---	UDP	67		Def: DHCP Server Port
	DLS Workpoint Interface (WL2) (client sided) workpoint sided DLS Communication interface workpoints	client	WPIP	HTTPS	TCP	1024 - 65535	0 - 65535	Def: Ephemeral Ports (IANA)
	HTTPS_Server (WL2) Secure Embedded Web Server	server	HTTP	---	TCP	443		Def: HTTPS
	HTTP_Server (WL2) Web Interface	server	TFTP	---	TCP	8085		Def: HTTP optiPoints, HG1500
	IP-Config (WL2) Service Agent Reque	server	*proprietary*	---	UDP	5100		
	SNMP (SET/GET) (WL2) SNMP SET/GET-Functionality	server	SNMP	---	UDP	161		Def: SNMP (Set/Get)
	SNMP (Traps) (WL2) active Senden SNMP-Fehlermeldungen	client	SNMP	---	UDP	162		Def: SNMP (Traps)
	Telnet (WL2) Telnet-Server	server	Telnet	---	TCP	23		Def: Telnet

Application	Function	Type	A-Prot.	M-Prot.	T-Prot.	D-Ports	A-Ports	Remarks
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QoS Data Collection Unit (QCU) phones Send QoS reports,

QCU client 12010

Client application
which sends QDC data
to the QCU

client

SNMP

UDP

12010

0 -
65535

Def: QCU receiving Port

2.2 Administration and Diagnosis

The following services are needed for administration and diagnosis in addition to those listed in chapter Voice Traffic and Signaling

OAM (HG1500) Administration and Maintenance

DNS client	DNS Client	client	DNS	---	TCP_UDP	1024 - 65535	Def: Ephemeral Ports (IANA)
DynDNS client	DynDNS Client	client	DynDNS	---	UDP	1024 - 65535	Def: Ephemeral Ports (IANA)
Expert Access (HG1500) Debug Agent access		server	*proprietary*	---	UDP	17185	Def: VxWorks DebugAgent
HTTP client (HG1500) used for multi gateway administration feature (MGAF)		client	HTTP	---	TCP	1024 - 65535	Def: Ephemeral Ports (IANA)
HTTP Server (HG1500) HTTP Server for WBM access		server	HTTP	---	TCP	8085	Def: HTTP optiPoints, HG1500
HTTPS client used for multi gateway administration feature (MGAF)		client	HTTPS	---	TCP - SSL	1024 - 65535	Def: Ephemeral Ports (IANA)
HTTPS Server (HG1500) Secure Web Server		server	HTTPS	---	TCP - SSL	443	Def: HTTPS
QCU Report (Client) Client application which sends QDC reports to QCU Server		client	SNMP	---	UDP	1024 - 65535	Def: Ephemeral Ports (IANA)
SNMP (SET/GET) (H2/3/5k/HG1500) SNMP Set/Get		server	SNMP	---	UDP	161	Def: SNMP (Set/Get)
SNMP (Traps) (H2/3/5/HG1500) SNMP Error Messages		client	SNMP	---	UDP	1024 - 65535	Def: Ephemeral Ports (IANA)
SNMP (Traps) (HG1500) Receiving of SNMP-Traps		server	SNMP	---	UDP	162	Def: SNMP (Traps)
SNTP Server (H2/5k/HG1500,BizIP) Simple Network Time Protocol		server	SNTP	---	UDP	123	Def: SNTP
Telnet (HG1500) CLI		server	Telnet	---	TCP	23	Def: Telnet

Service Center (HG1500) Diagnosis access for development only

ServiceCenter (HG1500) Interface for diagnosis (developmentlevel)	server	SCP	---	TCP	5098	1 - 65535	Def: SC-LDH Adm: Default can be modified within this range
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X-Trace (HG1500) Access for X-Tracer

Online Trace (HG1500) Access to X-Trace	server	---	TCP	2048			Def: XTrace
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