

Appendix B - Bandwidth

Protocol overhead x RTP packet	Bytes					
IP	20					
UDP	8					
RTP	12					
SRTP HMAC 32	4					
	44					
Audio Codec Frame size	Bytes	Duration in millis				
AMR 4.75kb	13	20				
AMR 12.2kb	32	20				
GSM	33	20				
PCM	160	20				
ptime	Duration in millis	Audio Frames x RTP packets	RTP packets x second	R T P packet size	Bytes x second x channel	Bytes x second x
AMR 4.75	100	5	10	109	1090	2180
AMR 12.2	100	5	10	204	2040	4080
GSM	20	1	50	77	3850	7700
PCM	20	1	50	204	10200	20400
AMR 4.75 kbs	Used by Android, Blackberry OS 7.0 and iphone					
AMR 12.2 kbs	Used by Blackberry OS 5.0					
GSM	Used by SNOM					
PCM	Used by SIP trunks and/or SNOM					

[Appendix A - Scenarios](#)

[Appendix C - Server Sizing](#)