Ltage sym

? ? ? ????????

??? (ISP) ??

??????????????????

??? (Gateway) ??64Kbps????????????????????
???? ????????????

??????????????? (Toll Quality) ?? G.723.1?G.729A???

???????????????? ????
??????????????????????????????????IP???/???

VoIP??????

???VoIP (Voice over IP)???????????????VoIP???VoIP????????VoIP?????????

?? VoIP?????????????????????????????????????64kbit/s?????VoIP??IP??UDP???????

?????IP?????????????????????????????????????VoIP????????????????IP?????VoIP??????????2-18??????????VoIP?????????????IP????????????

1???-????

????????????IP??8??6???
G.711???

2?????IP??

??15ms??????????60ms????4???????????????120??????????8kHz???????4??????

3???

??????????????????????????????????????t?????????????t?????????????????????????????????????IP???

4? IP?-?????

???VoIP??????IP???

5????????????

????????????????480????????????????????????8kHz??????????????IP????????????????????????????????IP???IP??????????IP?????????????????

????VoIP???????????????????????????????????????VoIP???VoIP?????????????2-2??????????????

1???????????????????Digital Signal Processor ,DSP???????????????????????DSP?????????????????????????????????CPU???????????????????????DSP????????VoIP???????????

??????G.729?????????????????20MIPS?????????CPU???DSP?????CPU?????????????????????DSP

Multilink PPP ????????

SIP ??????CoS

Packet over SONET IP?ATM QoS/CoS???

????????? H.323 ??????? DSP MPLS??????????????ASIC RTP, RTCP ??????????? DWDM RSVP ??????? SONET Diffserv, CAR Cisco???? CPU???? G.729, G.729a:CS-ACELP ????? ADSL?RADSL?SDSL FRF.11/FRF.12 ????? Multilink PPP ???????? SIP ??????CoS Packet over SONET IP?ATM QoS/CoS???

2????????????????Application-Specific Integrated Circait, ASIC??????????????????ASIC?ASIC???CPU?????????????????????RSIC???????

3? IP??IP?????QoS?????????????
over ATM?IP over SDH?IP over DWDM??????????????????2-20???

?????????????????????IP??IP???????????????????IP????????????????IP???????????????????????????IP??????????????????IP overDWDM?????????????????

?????????Dense Wave Division MultipLexing,DWDM??????????????????????????????????????DWDM??LASER????????????????????

???????????9.6Gbit/s??????OC-192???DWDM????????????150Gbit/s?????????DWDM?????????????????????????????ATM?SDH??????????????????

4???????

IP???FTTH???V5.1/V5.2??????????????????????????????
bit/s????IP?????????????????????????????????????ITU???????????????????????????????????21?????????????????

????????????:PSTN?IADN?ADSL?CM?DDN? X.25? Ethernet????????????????????????????????ADSL?CM?CM(Cable Modem)??????????????????????????????????ADSL?Asymmetrical Digital Loop???8 Mbit/s?????????????1M bit/s?ADSL?????????????????????????????????ADSL????????????????????????????????????VPN??????VoIP?????

5?????????

???????CPU?????????????????????PC???????????CPU?????????????PC??