

3.2.1. How Does a PPP Dial-Up Connection Work?

You will need the right software and a couple of pieces of information before you start. First, check the pppd. If the programs do not exist, you can download the source code from <https://ppp.samba.org/download.html> and port them to your embedded development environment. Next you must write configuration file for pppd.

3.2.1.1. Chat Scription

```
#named simcom-connect-chat and place in /etc/ppp/peers
ABORT "BUSY"
ABORT "NO CARRIER"
ABORT "NO DIALTONE"
ABORT "ERROR"
ABORT "NO ANSWER"
TIMEOUT 30
"" AT
OK ATE0
OK ATI;+CSUB;+CSQ;+CPIN?;+COPS?;+CGREG?;&D2
# Insert the APN provided by your network operator, default apn is 3gnet
OK AT+CGDCONT=1,"IP","3gnet",,0,0
OK ATD*99#
CONNECT
```

```
#named simcom-disconnect-chat and place in /etc/ppp/peers
ABORT "ERROR"
ABORT "NO DIALTONE"
SAY "\nSending break to the modem\n"
"" +++
"" +++
"" +++
SAY "\nGoodbay\n"
```

3.2.1.2. Configure dialing and PPP port

```
# named simcom-pppd and place in /etc/ppp/peers
/dev/ttyUSB3 115200

#Insert the username and password for authentication, default user and password
are test
user "test" password "test"

# The chat script, customize your APN in this file
connect 'chat -s -v -f /etc/ppp/peers/simcom-connect-chat'

# The close script
disconnect 'chat -s -v -f /etc/ppp/peers/simcom-disconnect-chat'

# Hide password in debug messages
hide-password

# The phone is not required to authenticate
noauth

# Debug info from pppd
debug

# If you want to use the HSDPA link as your gateway
defaultroute

# pppd must not propose any IP address to the peer
noipdefault

# No ppp compression
novj
novjccomp
noccip

ipcp-accept-local
ipcp-accept-remote
local

# For sanity, keep a lock on the serial line
lock
modem
dump
nodetach

# Hardware flow control
```

```
nocrtscts
remotename 3gppp
ipparam 3gppp
ipcp-max-failure 30
# Ask the peer for up to 2 DNS server addresses
usepeerdns
```

3.2.1.3. Dial-Up Connection

```
# pppd call simcom-pppd &
```

When you see the output below, it shows that dial-up succeeded.

```
Connect: ppp0 <--> /dev/ttyUSB3
sent [LCP ConfReq id=0x1 <asyncmap 0x0> <magic 0x5107d141> <pcomp> <accomp>]
rcvd [LCP ConfReq id=0x0 <asyncmap 0x0> <auth chap MD5> <magic 0x9a5c1936>
<pcomp> <accomp>]
sent [LCP ConfAck id=0x0 <asyncmap 0x0> <auth chap MD5> <magic 0x9a5c1936>
<pcomp> <accomp>]
rcvd [LCP ConfAck id=0x1 <asyncmap 0x0> <magic 0x5107d141> <pcomp> <accomp>]
sent [LCP EchoReq id=0x0 magic=0x5107d141]
rcvd [LCP DiscReq id=0x1 magic=0x9a5c1936]
rcvd [CHAP Challenge id=0x1 <dd93b9f04d75e2bbba3786f6d24df3d7>, name =
"UMTS_CHAP_SRV"]
sent [CHAP Response id=0x1 <498d4d7cf3b59dacfc07a45ce6eb7e26>, name = "test"]
rcvd [LCP EchoRep id=0x0 magic=0x9a5c1936 51 07 d1 41]
rcvd [CHAP Success id=0x1 ""]
CHAP authentication succeeded
CHAP authentication succeeded
sent [IPCP ConfReq id=0x1 <addr 0.0.0.0> <ms-dns1 0.0.0.0> <ms-dns2 0.0.0.0>]
rcvd [IPCP ConfReq id=0x0]
sent [IPCP ConfNak id=0x0 <addr 0.0.0.0>]
rcvd [IPCP ConfNak id=0x1 <addr 10.51.68.23> <ms-dns1 222.66.251.8> <ms-dns2
116.236.159.8>]
sent [IPCP ConfReq id=0x2 <addr 10.51.68.23> <ms-dns1 222.66.251.8> <ms-dns2
```