

CHAPTER-1

Analog circuits:

Loop start: When a phone is on-hook, the CO sees the circuit is broken. As soon as the phone goes off-hook to make an outgoing call, the circuit is completed and a -48V DC current flows. The CO sees the circuit as complete and sends a dial-tone.

When a phone receives an incoming call, the CO sends a 90V AC current and that makes the phone ring.

Loop start signalling is ideal for home users but can cause a problem known as "glare".

Ground start: This type of signalling is very common between a PBX and a CO switch. Here, both ends can request and confirm the use of circuit by closing the circuits from their end. The two wires are typically called the "tip" and the "ring" wires.

E&M- Usually called Ear and Mouth, or Earth and Magneto or Receive and Transmit. This type of signalling is used between PBXs.

Numbering Plans: It is a set of rules used to construct numbers. An authority regulates number distribution in the territory. Two types- E.164 and NANP.

The ITU developed an international standard for telephone numbering called the E.164 Addressing. It has 3 components-

- CC - Country Code
- NDC- National Designation Code
- SN- Subscriber Number

It can have a maximum of 15 digits.

Telephony signalling:

Supervisory signalling: On-hook, Off-hook and ringing. It communicates the state of the phone.

Informational signalling: The local CO sends different frequencies to notify the caller about, once the caller phone goes offhook- dial-tone, busy, ringback, congestion, reorder, receiver-offhook, no such number and confirmation. It communicates the current state of the call.

Address signalling: Once the dial-tone is available, user can dial digits. Two types of address signalling- DTMF (tone) and Pulse. The digits dialled are also address signalling.

Drawbacks: 1) Distance limitation
2) One line can only support one phone call at a time.

Ccna Voice Quick Reference Guide

Jeremy Cioara, Michael Valentine

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