Local Loop Functions
Telephone Network Architecture

Customer

Local Loop

Central Office, Class 5 Office

Tandem Switch

Trunks

“The Network”
Local Loop

Local Loop, 2-Wire

Hybrid

Trunks 4-Wire
Local Loop Services (Provided by the Central Office)

• BORSCHT:
  - Battery
  - Overvoltage Protection
  - Ringing
  - Supervision
  - Coding
  - Hybrid
  - Testing
Battery and Ringing

- Nominal voltage is 48 V DC
- Ringing uses 100 V AC
Supervision

• Loop Start
  – Switchhook, Local Loop, and CO Battery form a circuit.
  – Switchhook open = on-hook
  – Central Office cannot start a call, only send ring signal

• Ground Start
  – Start call by grounding either local loop wire
  – Can be started by either side
# Dialing

<table>
<thead>
<tr>
<th>Row</th>
<th>Column</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>*</td>
<td>0</td>
<td>#</td>
</tr>
</tbody>
</table>

- **Column Frequency**
- **Row Frequency**