

# PROTOCOL

to laboratory exercise

## POTS

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**EL**

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**POTS**  
**[Messobjekt]**

### Used Devices

Nr.	Device	Manufacturer	Type	Place Nr.
1.	Telephonecenter	Auersworld	-	-
2.	Telephone	Kapsch	-	-
3.	Telephone	Kapsch	-	-
4.	Telephone	COMfortel	2500	-
5.	Telephone	Schrak	DIALOG A140	-

## 1 Contents

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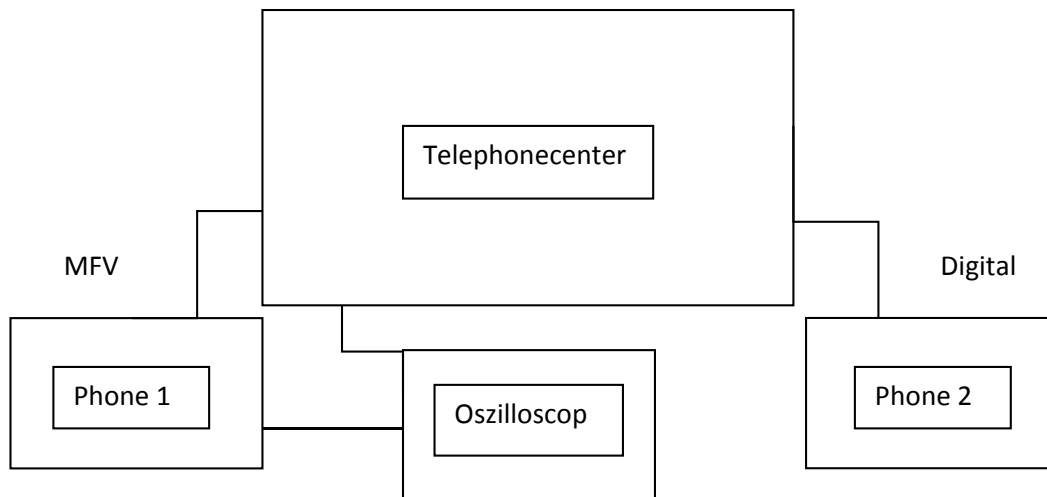
## 2 Tasks

Take it to the call-processing signals for an active and a passive conversation on the subscriber line with an oscilloscope and record them.

Show the phases for the following conversation:

- Active conversation (pick up, dial tone, dial, conversation, hang up, FFT)

### 2.1 Circuit



## 3 Measurements

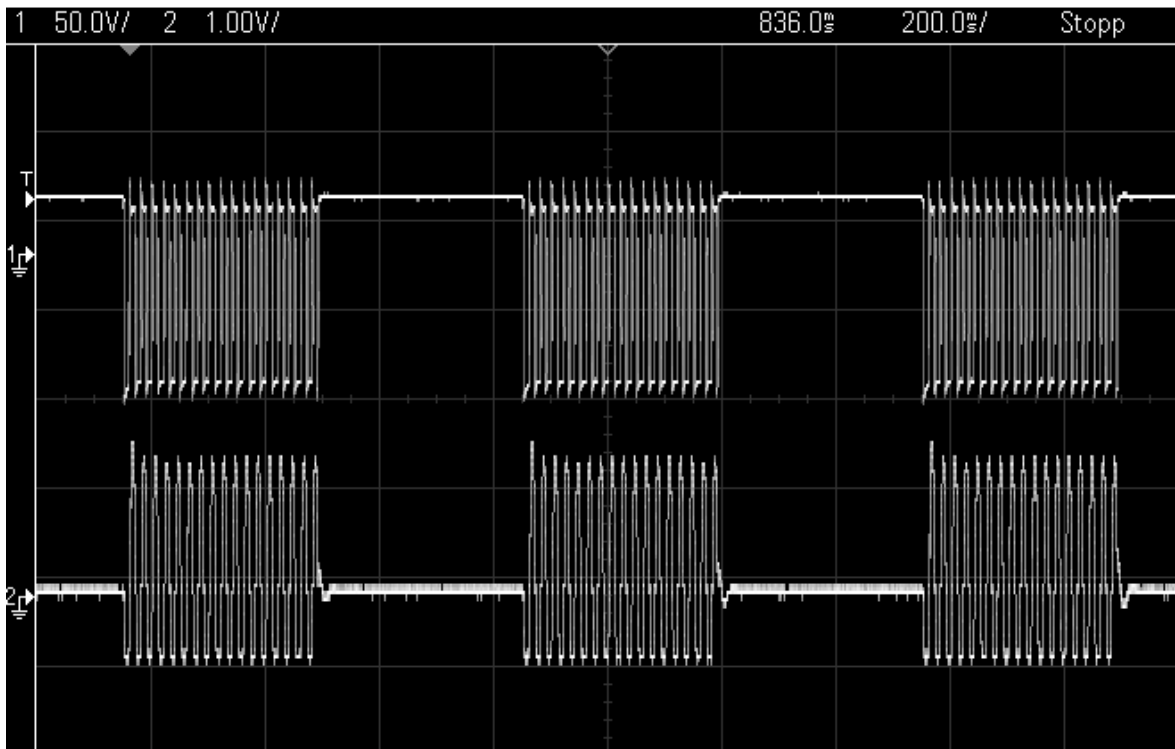
### 3.1 Pick up

If someone picks up the phone the voltage goes up to 19V.



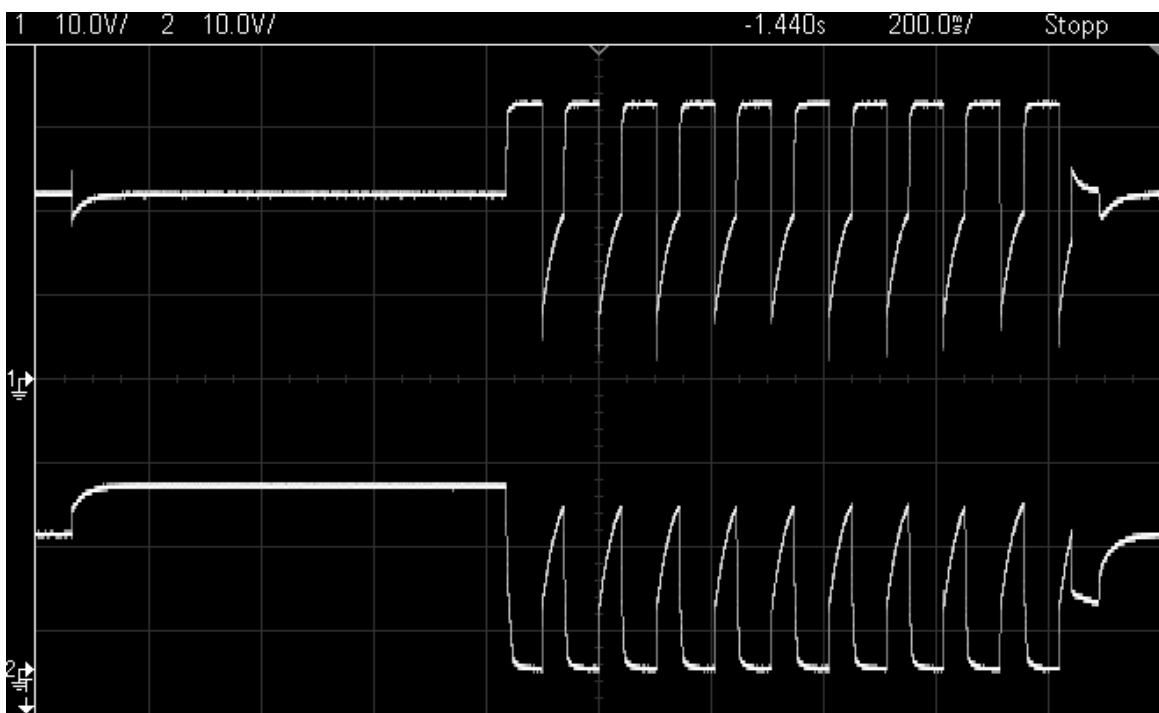
### 3.2 Ringing

During the ringing the Voltage is between +30V to -70V. The Frequenz is about 25Hz.



### 3.3 Dial

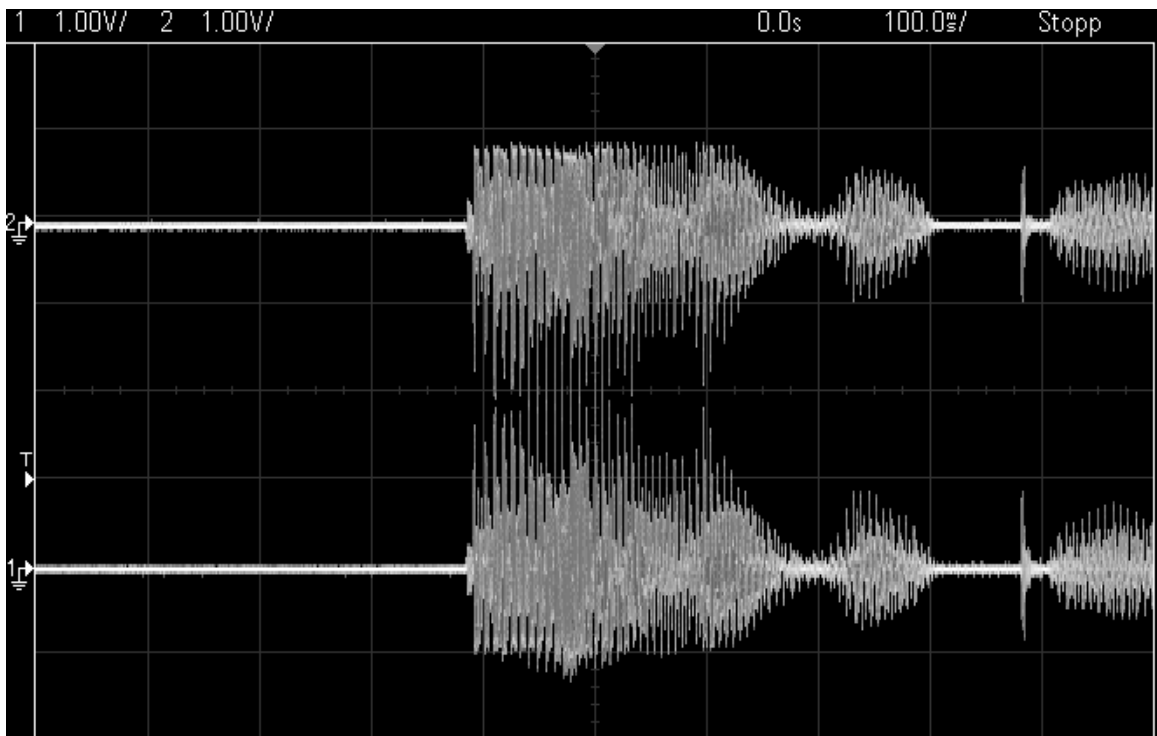
In the picture below you can see the dialling process. One pulse is 100ms long and the voltage level is about 30V. In this case number "0" was pressed.



### 3.4 Conversation

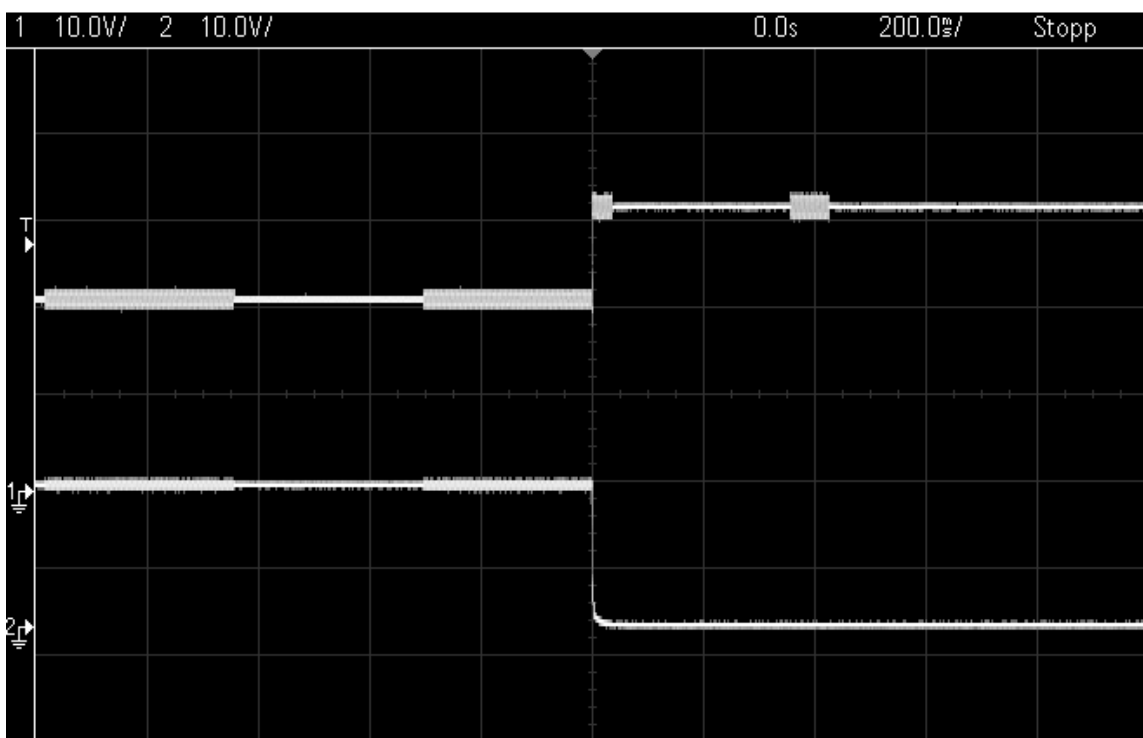
The voltage during the conversation is very low. It is around 5V.

When you superimpose the two signals you can see that they are perfectly symmetric.



### 3.5 Hang up

The hang up is similar to the pick up. About 20 V.



### 3.6 FFT of Conversation

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Bandwidth of the speech signal was about 10kHz-12kHz. The voltage drops at frequencies bigger than 10kHz.

