

## 1. General Information

The HD752 is an Audio Interface Unit for the Pro700 internal communication system.

Typical applications will be:

- PA (Public Address) interface. Transport of audio signals from a Pro700 master station to an amplifier circuit,
- Mobil Radio Interface. Transport of audio signals (RX/TX) between a Pro700 master station and a two way base station in a closed radio network, (no selective calls)
- Alarm Unit. Transport of audio signals from an external audio source to all stations in the Pro700 system (All-Call function). This call is automatically activated by a closing contact in the HD752 unit. The call is disconnected when deoperating the contact, or the call can be programmed to a predetermined length.



The HD752 unit is connected in the Pro700 cable network as a normal station, and requires call number programming as a normal station. If required, more units can be installed in the same installation network, each unit with its specific call number. Programming is done by switch setting.

The unit has connections for the following signals:

- One audio input, (TX).
- One audio output, (RX).
- Two relay outputs.
- One start input, from an external closing contact.

## 2. Operation/Features

### 1. HD752 as PA Interface.

By switch programming (SW1), HD752 must be given a call number in the range 10-31. The external amplifier input must be connected to the "audio output" terminals TB22 in the HD752 unit. If required, a relay contact (ON relay) can be connected to the amplifier's "start input". When the unit is called, the ON relay will operate and audio is transmitted from the audio output (TX) to the external amplifier. HD752 can be programmed as a member of All-Call and Group-Call 1 and 2. See Fig. 1.

### 2. HD752 as Radio Interface

By switch programming (SW1), HD752 must be given a call number in the range 10-31. The unit can be connected to a closed network radio system (no selective dialling). RX and TX are connected with two pairs, and a relay contact is provided for simplex, (press to talk), key function. When the calling station presses the T button, the KEY relay in HD752 will operate and key the radio transmitter. If the radio system is duplex, then the ON relay contacts can be used to open the base station.

*NOTE: Direct call-in from the mobile radios (selective call) is not possible.*

### 2.1 Indirect call-in via door-bell function

If the radio base station has a relay contact output, which closes when the HD752 is called from the mobile radio, then this contact can be used by HD752 to make a “door-bell” call in the Pro700 installation.

Stations programmed to reply on the “door-bell” function can then answer by pressing the no. 5 button, and will be connected to the radio base station.

### 2.2 Indirect call-in via the program channel of Pro700, (monitoring).

Connect the RX line from the base station to the program channel in Pro700, in parallel with the RX input to HD752. The user can now listen to the ongoing radio traffic, and when he recognises a call to him, he dials the call number to HD752 and will be connected to the radio base station for communication with the mobile radio.

See Fig 2 - Fig. 4.

### 3. HD752 as Alarm Unit

This function is programmed via switch package SW1 in HD752. When an external closing contact is detected at the START input terminals, HD752 will make an All-Call, and the audio signal connected to the RX terminal will be transmitted to all stations.

The All-Call will be on as long as the external contact is closed. All stations receiving the “Alarm All-Call” will read “50” in the display of the stations.

If the external contact is only giving a short pulse, then the All-Call will be on for 5, 10, 15, 20 or 25 seconds. This time is switch programmable.

See Fig. 5.

## 3. Programming

HD752 is programmed via the 8 switches on switch package SW1. The below table indicates the different switch settings. “Call number” is the call number to HD752. No other station in the Pro700 installation can have the same call number

### 3.1 Programming switches 1, 2, 3, 4 and 5

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>FUNCTION</u>
OFF	OFF	OFF	OFF	OFF	ALARM function enabled
ON	OFF	OFF	OFF	OFF	ALARM ON 5 seconds
OFF	ON	OFF	OFF	OFF	ALARM ON 10 seconds
ON	ON	OFF	OFF	OFF	ALARM ON 15 seconds
OFF	OFF	ON	OFF	OFF	ALARM ON 20 seconds
ON	OFF	ON	OFF	OFF	ALARM ON 25 seconds
OFF	ON	ON	OFF	OFF	Not used
ON	ON	ON	OFF	OFF	Not used
OFF	OFF	OFF	ON	OFF	Not used
ON	OFF	OFF	ON	OFF	Not used
OFF	ON	OFF	ON	OFF	Call number 10.
ON	ON	OFF	ON	OFF	Call number 11.
OFF	OFF	ON	ON	OFF	Call number 12.
ON	OFF	ON	ON	OFF	Call number 13.
OFF	ON	ON	ON	OFF	Call number 14.
ON	ON	ON	ON	OFF	Call number 15.

Table cont.

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>FUNCTION</u>
OFF	OFF	OFF	OFF	ON	Call number 16.
ON	OFF	OFF	OFF	ON	Call number 17.
OFF	ON	OFF	OFF	ON	Call number 18.
ON	ON	OFF	OFF	ON	Call number 19.
OFF	OFF	ON	OFF	ON	Call number 20.
ON	OFF	ON	OFF	ON	Call number 21.
OFF	ON	ON	OFF	ON	Call number 22.
ON	ON	ON	OFF	ON	Call number 23.
OFF	OFF	OFF	ON	ON	Call number 24.
ON	OFF	OFF	ON	ON	Call number 25.
OFF	ON	OFF	ON	ON	Call number 26.
ON	ON	OFF	ON	ON	Call number 27.
OFF	OFF	ON	ON	ON	Call number 28.
ON	OFF	ON	ON	ON	Call number 29.
OFF	ON	ON	ON	ON	Call number 30.
ON	ON	ON	ON	ON	Call number 31.

### 3.2 Programming switches 6,7 and 8

<u>6</u>	<u>7</u>	<u>8</u>	<u>FUNCTION</u>
ON	OFF	OFF	Receiving All-Call
OFF	ON	OFF	Receiving Group-Call no. 1.
OFF	OFF	ON	Receiving Group-Call no. 2.

## 4. Adjustments

The RX level (input) is adjusted via potentiometer R2.  
 The TX level (output) is adjusted by potentiometer R55

## 5. Installation

### 5.1 PA interface

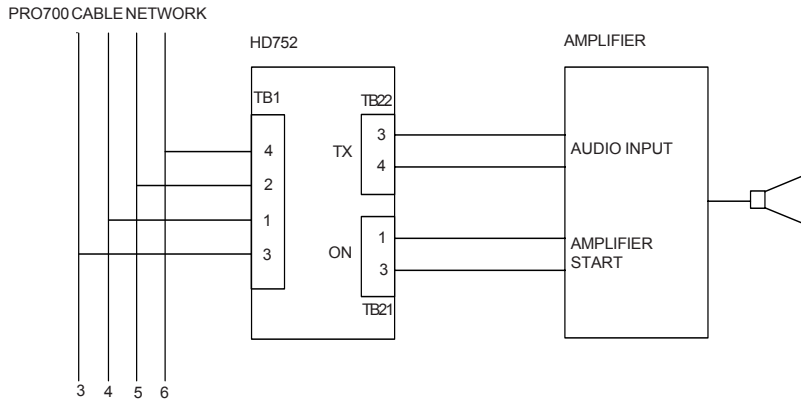


Fig: 1

Connection to a power amplifier.

Calls can only be made from Pro700 and to the radio network. The relay in HD752 will operate when the unit is called, and the relay contact can be used to open the input of the amplifier.

### 5.2 Radio interface

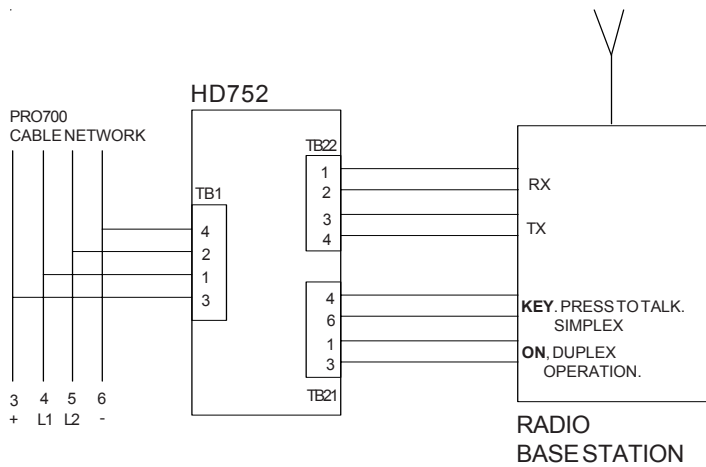
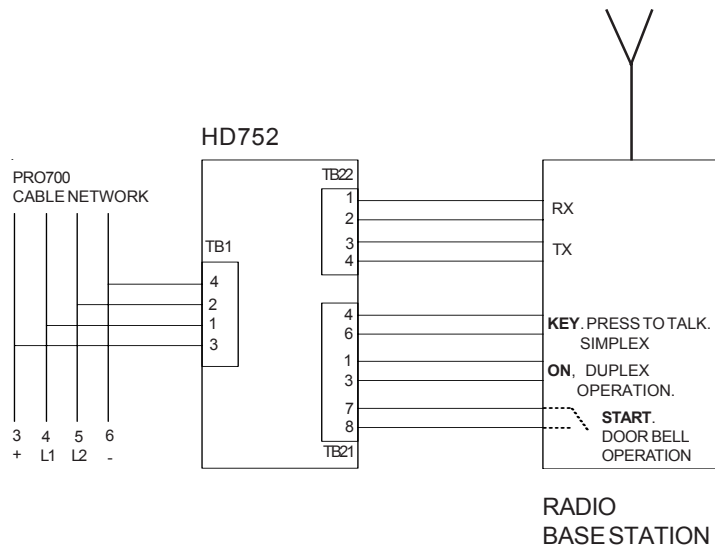


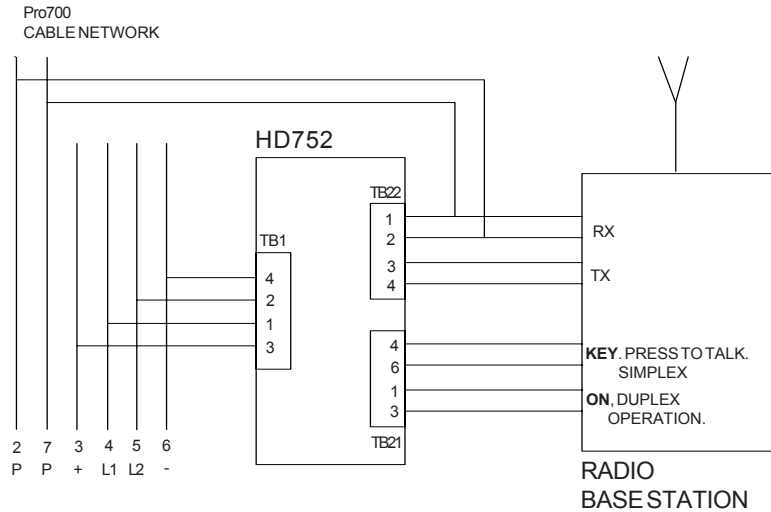
Fig: 2.

Connection to open radio network.

Calls can only be made from Pro700 and to the radio network



**Fig: 3.**  
 Connection to open radio network.  
 INDIRECT CALL-IN via the door bell feature in the Pro700 system. If the base station can identify the call number for HD752 and then operate an internal relay in the base-station, then the contact of this relay can be used to operate the Door-Bell function in Pro700



**Fig: 4**  
 Connection to open radio network.  
 INDIRECT CALL-IN via the program distribution channel in the Pro700 system. The users are listening to the on-going radio communication on the program distribution channel. When a call is identified to be for one person in the Pro700 system, then that person simply dials the call number to HD752, and will be connected to the radio network.

## 5.3 Alarm unit

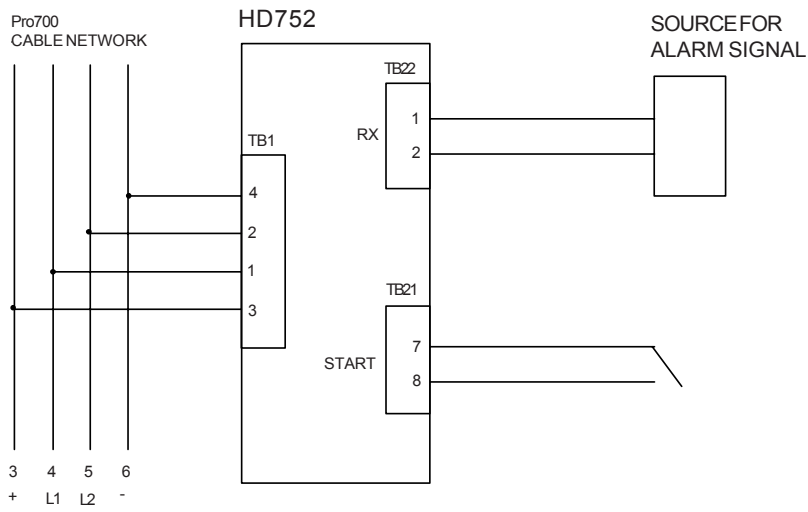


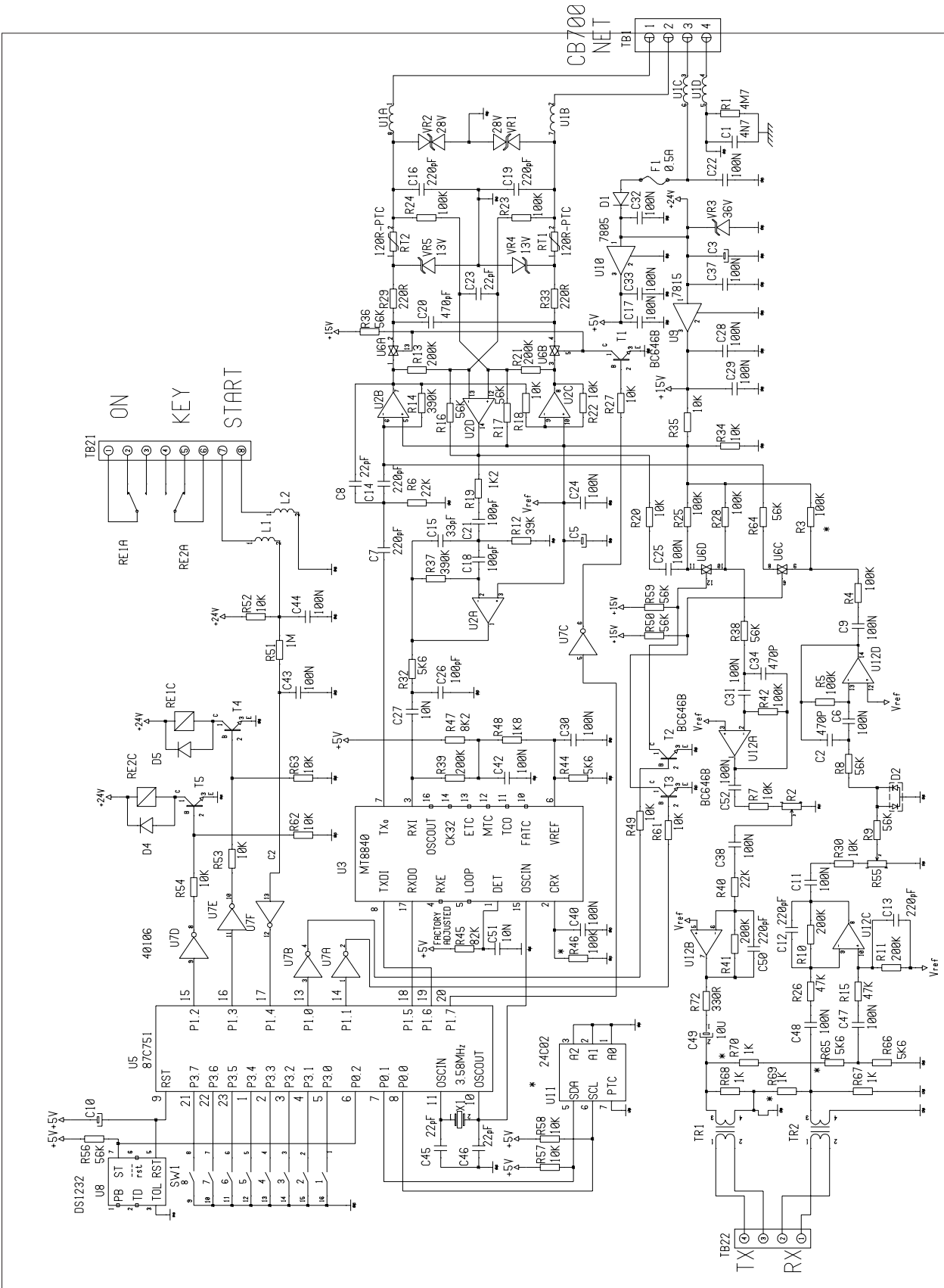
Fig: 5.

HD752 will automatically dial an All-Call when the external contact closes.

The alarm signal from the signal source will then be transmitted to all stations connected in the All-Call.

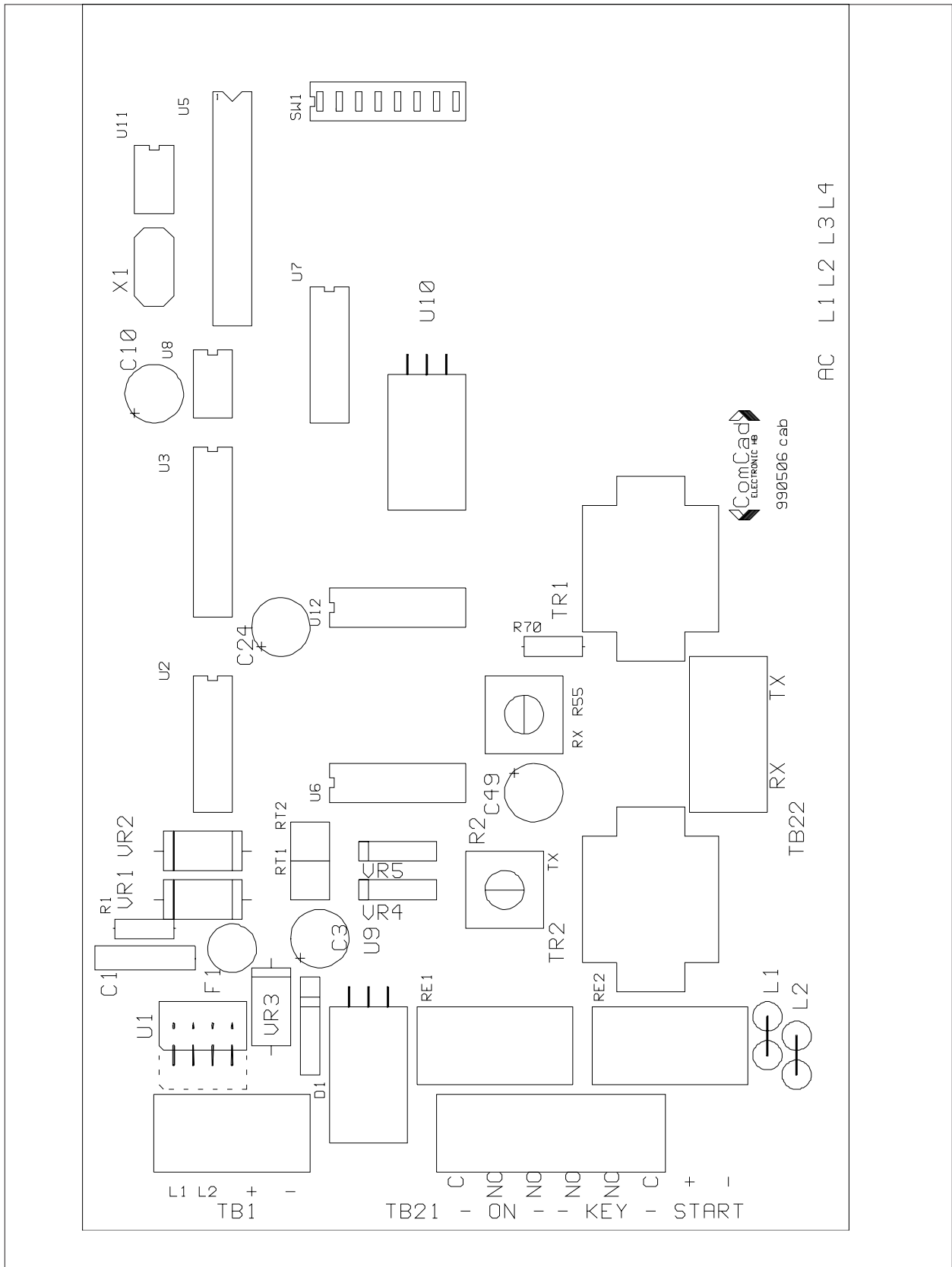
## 6. Technical Data

Operating voltage	: 12-27 VDC
Current drain max.	: 150 mA
Line specification:	galvanic line, 3 twisted pairs, 0.5/0.6mm teleph. cable
Max. distance between power supply and a HD752 Unit:	12V DC: 100m (330 ft) 18V DC: 300 m (1000 ft) 24V DC: 500 m (1600 ft)
Max. total capacitance on the cable network:	87nF
Max. cable run in a system:	standard cable quality: 120nF/km - 700m/2100ft good cable quality: 47nF/km - 1700m/5100ft
Line spec:	Same as for all Pro700 stations.
Call number range:	10-31
Audio output. TX.:	Balanced 600 Ohms/0dBm
Audio input. RX.:	Balanced 600 Ohms/0dBm
ON-Relay:	1 switching contact. Max. 50VDC/60VA
KEY-relay (T-button operation):	1 switching contact. Max. 50VDC/60VA
START input:	External closing switch. 1mA
Cabinet dimensions:	Dept: 65 mm Width: 145 mm Length: 220 mm
Card dimensions :	160x100 mm
Edition:	April 1999
Software	LM0.1



Drawing NFE9102-1  
 PCB, Audio Interface Unit HD752  
 Cat. no: NFE9102  
 Circuit Diagram

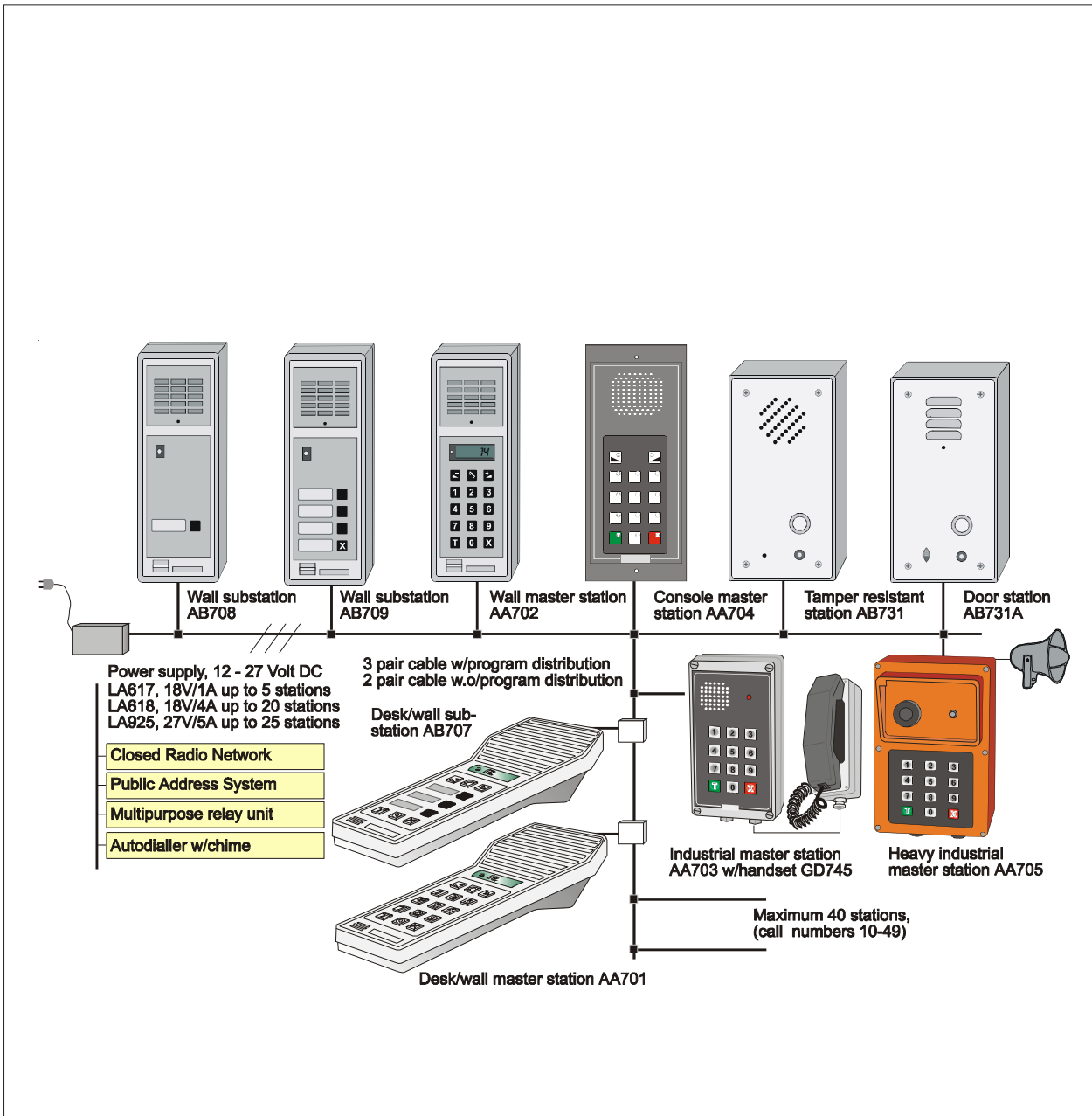




Drawing NFE9102-6  
 PCB, Audio Interface Unit HD752  
 Cat. no: NFE9102  
 Layout diagram, componet side



# Audio Interface Unit HD752



The Audio Interface Unit HD752 is marketed by Zenitel Norway ASA. The company's Quality Assurance System is certified to meet the requirements in NS-EN ISO 9001:1994. Zenitel Norway ASA reserves the right to modify designs and alter specifications without prior notice, in pursuance of a policy of continuous improvement.

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