Major BOS 8VD

Manual

VoIP control panel
for up to 8 digital (TETRA) and/or
analogous radio terminals

DEVELOPMENT PRODUCTION SOFTWARE HARDWARE ELECTRONICS CONSULTING

FunkTronic
Competence in electronics

Contents

1. Major BOS 8VD

Major BOS 8VD is a **Voice-over-IP (VoIP) table-top control panel for up to 8 mobile radio terminals** (MRTs)**.** With its TFT display, Major BOS 8VD is especially suited for the operation of digital (TETRA) radios (display of caller ID, group selection, sending status ...).

Using the **FT638 – Digital radio box** as a remote station at the radio site, the **most important functions of digital MRTs** can be accessed. If desired, **analogous radio terminals** can be used with **FT636B** IP interface as the remote station (using PTT, SQL, AF in/out + channel select pins).

The typical features and accessories, known from our other Major BOS(V) devices can also be used with Major BOS 8VD, as there are: the **footswitch**, **headsets**, **magnetic fixation for handset**, metal holder for **sunk-in table mounting**, **power-over-ethernet (PoE)**...

As with all our VoIP devices, **configuration of the Major BOS 8VD** is done via an intuitive **graphical web interface**.

2. Order information

Article No.	Description
640180	Major BOS 8 VD
	Optional Accessory:
640011	Option PoE – Voltage suppy via ethernet
900011	Power supply unit, for Major BOS, 12V/1,0A
631112	Magnetic fixation for handset of Major BOS
904000	Metal holder for sunk-in table mounting
001530	Foot switch, incl. connection cable
001555	Headset without volume control, incl. 6-pin connection cable
001556	Headset with inline volume control, incl. 6-pin connection cable
001560	WL-DECT base
001561	Headset Air Talk XS-WL – for connection with WL-DECT

3. Control elements Major BOS 8VD

1 – TFT display

2 – Radio selection buttons (***Menu/OK***)

3 – Volume buttons: VOL+ / ***Menu+***

4 **–** Volume display (LED band)

5 – Volume buttons: VOL- / ***Menu-***

6 – Loudspeaker buttons: on/off / **← (*Go back*)**

7 – Function F2 (programmable)

8 – Function F1 (programmable)

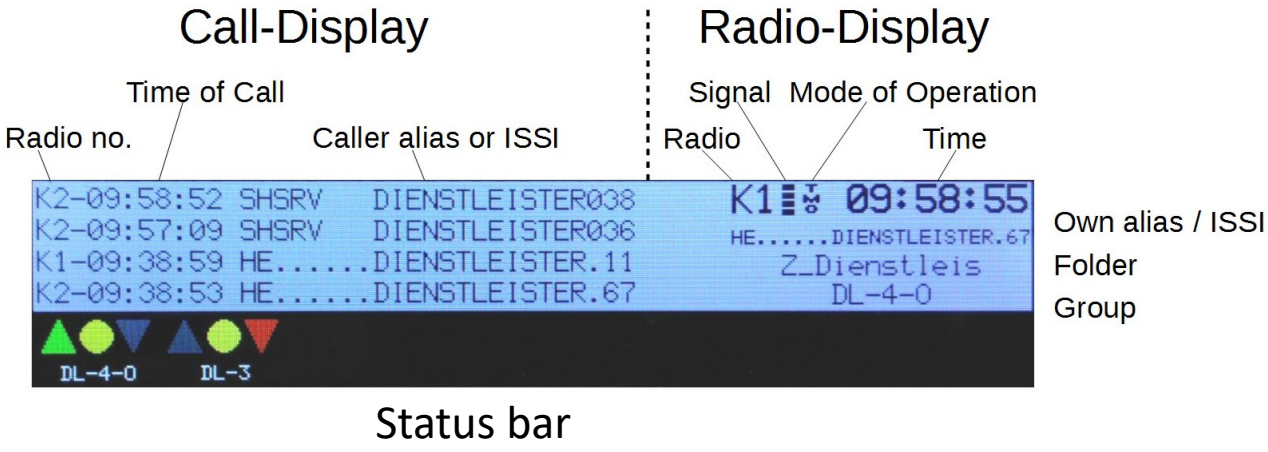
9 – PTT (***X/Escape***)

10 – Loudspeaker

11 – Handset with PTT on inner side

12 – Gooseneck microphone

3.1. Display (standard operation)



Call-Display (shows 4 most recent calls)

- Radio no.: Number of the radio that received the call
- Time of Call: Time the call was started
- Caller ISSI: ISSI of the caller (or alias if applicable)

Radio-Display (informations about currently chosen radio)

- Radio: Number of the radio whose informations are displayed
  (if the choice of several radios is possible: radio with lowest number is displayed)
- Signal: Radio Signal Strength
- Mode of Operation: TMO/DMO/GW/REP
- Time: Current time (as received from TETRA time server)
- Own ISSI: ISSI of the connected radio (or alias if applicable)
- Folder name of the currently activated group
- Name of the currently activated group

Status Bar (Informations for up to 8 available radios)

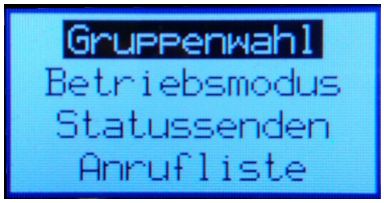
- Radio selection status ●
- PTT / Permission to speak ▲
- SQL / Other party has permission to speak ▼
- Display of group name

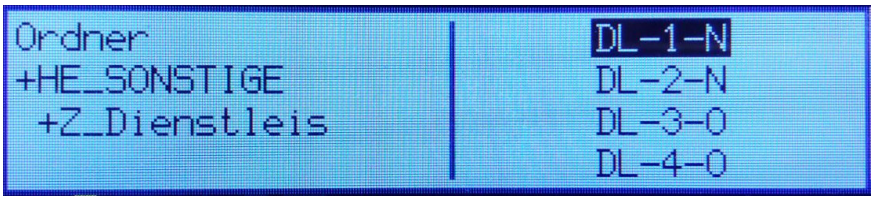
3.2. Menüsteuerung

Zur komfortablen Bedienung der zusätzlichen Funktionen des Digitalfunks verfügt die Major BOS 8VD über eine selbsterklärende Menüstruktur. Zum Öffnen des Hauptmenüs für den jeweiligen Funkkreis muss die entsprechende Menütaste (= Kreistaste) 1 Sekunde lang gedrückt werden.

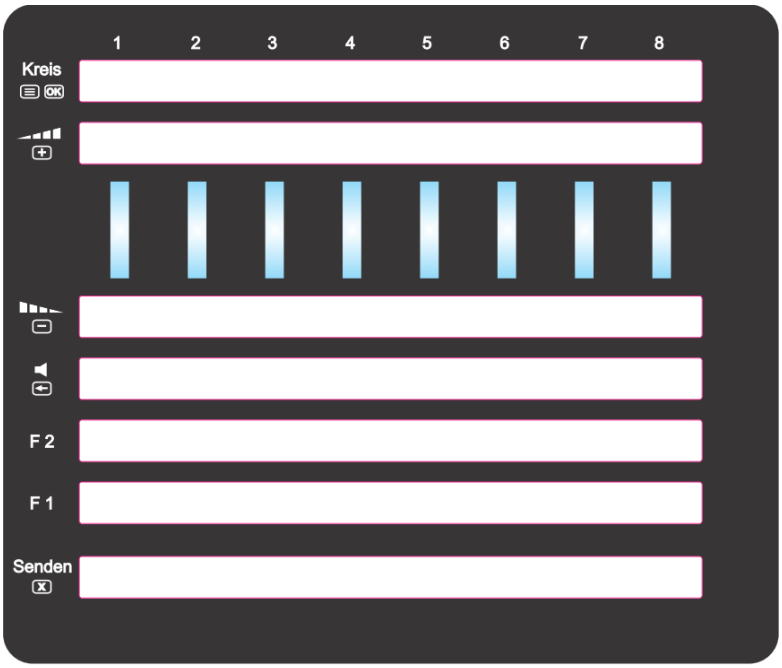
Im Hauptmenü erfolgt die Anwahl der Optionen mit **[+]** / **[-]** / **[OK]**. Zum übergeordneten Menü bzw. zum übergeordneten Ordner (Gruppenwahl) gelangt man mit **[←]**. Mit **[X]** kann das Menü jederzeit wieder verlassen werden.

Hauptmenü (oben) und Gruppenwahl (unten)





Tastenfeldbeschriftung Major BOS 8VD



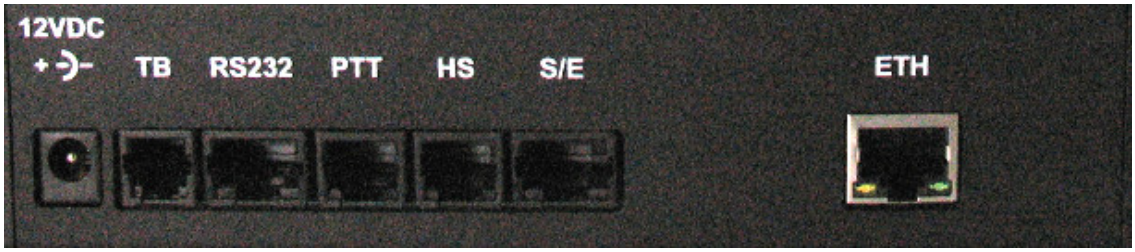
4. Connectivity

The VoIP control panel Major BOS 8VD enables the connection of up to 8 radios via ethernet. Using the **FT638 Digital radio box** MRTs of Sepura (SRG3900) and/or Motorola (MTM800 FuG (ET) / MTM5X00 series) can be connected. One FT638 enables the connection of two MRTs via ethernet.

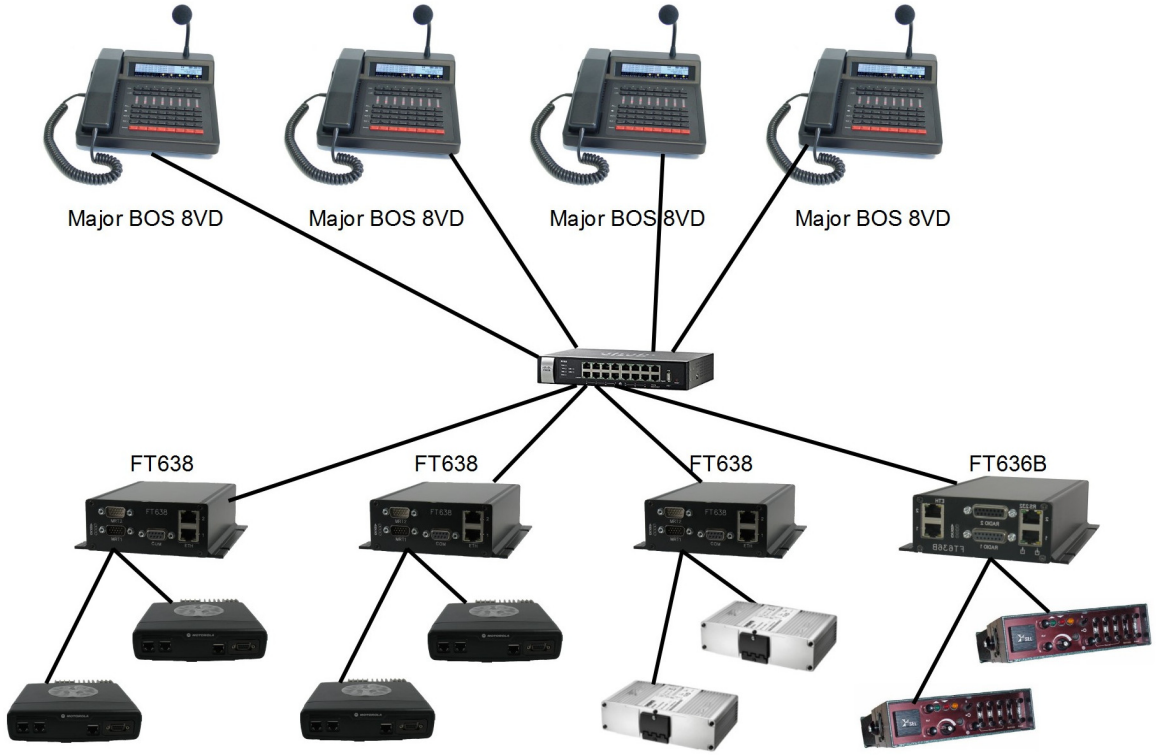
For the connection of analogous radios the IP interface FT636B is used (2 radios per interface). If desired, one of the 8 radio circuits can be used to just communicate between different Major BOS 8VD (intercom).

The connection of the standard accessories of Major BOS devices is also possible with Major BOS 8VD (see 2.Order information).

Rear View of Major BOS 8VD



Example Setup for 4 work stations (each with full access to 8 MRTs)



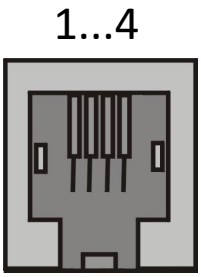
5. Pin layout

Power supply

+12V DC, max. 1,5 A

Socket TB

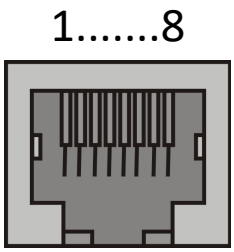
Connection of voice recorder



1	GND
2	Control pin for recorder
3	AF out A
4	AF out B

Socket RS232

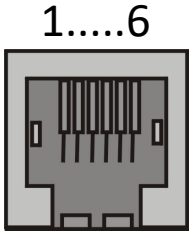
3-pin RS232 interface + programmable I/Os



1	TXD (output)
2	RXD (input)
3	GND
4	I/O 0
5	I/O 1
6	I/O 2
7	I/O 3
8	I/O 4

Socket PTT

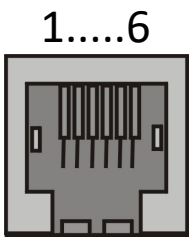
Connection of ext. PTT (e.g. foot switch) or headset adapter (not necessary for standard headset)



1	PTT HS2 in
2	+BATT out (headset adapter)
3	HS on (headset adapter control pin)
4	Optocoupler in (Anode +)
5	Optocoupler in (Cathode -)
6	GND (PTT HS2)

Socket HS

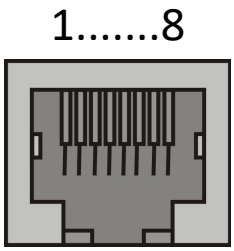
Connection of headset (or headset adapter)



1	PTT HS1 in
2	AF in HS (mic +)
3	AF out HS (earphone +)
4	GND AF out (earphone -)
5	GND AF in (mic -)
6	GND (PTT HS1)

Socket S/E

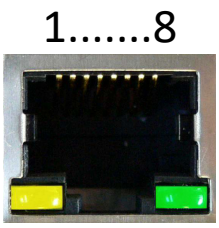
8-wire socket for connection of analogous device



1	NF in A
2	NF in B
3	SQL in S/E (mit Pullup)
4	GND
5	+BATT out (**Do not connect to radio!**)
6	PTT S/E (in/out)
7	NF out A
8	NF out B

Socket ETH

Connection to ethernet, **optionally available with power-over-ethernet (PoE)**



1	TX +
2	TX -
3	RX +
6	RX -

6. Configuration via web interface

The configuration of the Major BOS 8VD is done via its graphical web interface. The ex-factory configurations of the most important network settings are:

User name:	**mbosv**
Password:	**radio**

Local IP address:	192.168.16.181
Target IP addr. radio1:	192.168.16.191
Subnet mask:	255.255.255.0
Port audio/AF:	10000, UDP protocol
Port data:	10001, TCP protocol
Port web server:	80, TCP protocol
Port LS/update:	9999, TCP protocol

Please be aware that all devices, that need to be connected, have to be in the same subnet!

6.1. Restoring the default IP address

If the IP address of the Major BOS 8VD is not known for some reason, the device can be started in **default IP mode**. For this, during power-on, you have to simultaneously press the red PTT button for radio 1 and the PTT button on the inner side of the handset, while the handset is situated on its rest (hook-on). After that, the web interface of the Major BOS 8VD can again be accessed via its default IP address 192.168.16.181. Now, you have to change it to the desired IP address of your choice.

7. Technical data

Dimensions (w/o gooseneck mic)	245 x 220 x 90 mm (W x D x H)
Weight	ca. 1500 g
Supply voltage	+12V DC / -15% +25%
Current consumption	ca. 200-500 mA

Input level (S/E)

Factory setting	775 mV (= 0 dB) / 600 Ohm
Adjustment range	-99 dB bis +26 dB / 200 Ohm
Input impedance	600 Ohm

Output level (S/E)

Factory setting	500 mV (= - 3,8 dB) / 200 Ohm
Adjustment range	-99 dB bis +26 dB
Output impedance	ca. 200 Ohm

Output level for earphone (headset) (RX-Out)

Factory setting	0 dB (an 200 Ohm)
Adjustment range	-99 dB bis +26 dB
Output impedance	ca. 150 Ohm

Input level for microphone (headset) (TX-In, electret)

Factory setting	0 dB
Adjustment range	-99 dB bis +26 dB
Input impedance	ca. 700 Ohm

8. General Safety Instructions

Please read the manual carefully before installation and setup of your device.

The relevant regulations must be complied to when working with 230V line voltage, two-wire-lines, four-wire-lines and ISDN-lines. It is also very important to comply to the regulations and safety instructions of working with radio installations.

Please comply to the following safety rules:

- All components may only be mounted and maintained when power is off.
- The modules may only be activated if they are built in a housing and are scoop-proof.
- Devices which are operated with external voltage – especially mains voltage – may only be opened when they have been disconnected from the voltage source or mains.
- All connection cables of the electronic devices must be checked for damage regularly and must be exchanged if damaged.
- Absolutely comply to the regular inspections required by law according to VDE 0701 und 0702 for line-operated devices.
- Tools must not be used near or directly at concealed or visible power lines and conductor paths and also not at and in devices using external voltage – especially mains voltage – as long as the power supply voltage has not been turned off and all capacitors have been discharged. Electrolytic capacitors can be still charged for a long time after turning off.
- When using components, modules, devices or circuits and equipment the threshold values of voltage, current and power consumption specified in the technical data must absolutely be complied to. Exceeding these threshold values (even if only briefly) can lead to significant damage.
- The devices, components or circuits described in this manual are only adapted for the specified usage. If you are not sure about the purpose of the product, please ask your specialized distributor.
- The installation and setup have to be carried out by professional personnel.

9. Returning of Old Equipment

According to German law concerning electronic devices, old devices cannot be disposed off as regular waste. Our devices are classified for commercial use only. According to § 11 of our general terms of payment and delivery, as of August 2015, the purchasers or users are obliged to return old equipment by us free of cost. FunkTronic GmbH will dispose of this old equipment at its own expense according to regulations.

Please send old equipment for disposal to:

FunkTronic GmbH
Breitwiesenstr. 4
36381 Schlüchtern
GERMANY

>>> Important: Freight forward deliveries cannot be accepted by us!

Subject to change, errors excepted!

10. Release Notes

15.11.17 - First version