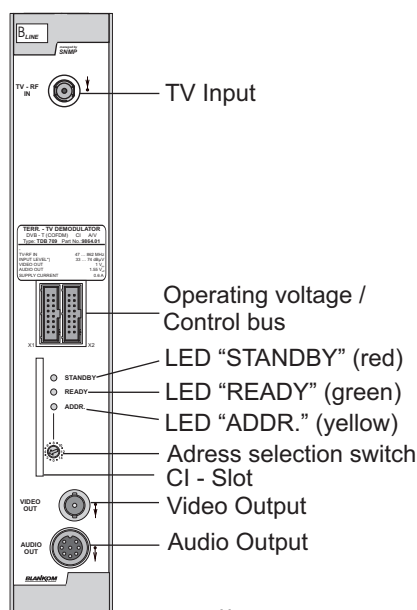


TDB 709

TERR - TV - DEMODULATOR
DVB - T (COFDM) CI A/V

**B^{CE}
LINE**



Pic. 01

DEVICE VARIANT

TDB 709 9864.01 DVB-T (COFDM) to Audio / Video with CI
(Common Interface)

Minimum software required for HCB 100 (Headend Controller):

9650.03: Version 2.34
9650.04/ 05: Version 3.18

GENERAL

The terr. TV-Demodulator TDB 709 is a module of the B-LINE headend system which is conceived as a complete system for middle sized distribution networks. The TDB 709 demodulates digital terrest. signals (COFDM) into Audio/Video-signals. A Common Interface-slot enables using of CA-modules for decoding of encoded programs.

All modules are programmed at the central control unit (HCB 100) and are working independently afterwards.

The status of the module (channel) is displayed via colored LEDs:

· Red	- permanent	Modul in Standby mode
	- flashing	Hardware error
· Green	- permanent	Module ok
	- flashing	Signal error
· Yellow	- permanent	Remote access
	- flashing	Data transfer

FUNCTION DESCRIPTION

The dig. terrest. Signal is passed through to the frontend, where the program selection and the COFDM demodulation follow. The data stream feeds either via CA-module or directly the DVB-module. The DVB-module consisted of demultiplexer and MPEG – decoder generates the analogue Video- and Audio signal. Than the Video filtering and the Audio signal conversion (dig./analogue) follow. The TDB 709 supports additional services (Teletext, WSS, VPS). Further options are available on request (subtitling and check lines). The analogue Video and Audio signals feed two separate amplifiers to the outputs of the unit (allocation Audio socket is shown in figure 03). The Audio socket allocation is conducted in symmetric technique. The module contains standardized CI-slot for CA-modules (Conditional-Access-Module). A respective CA module with card has to be used for decoding.*

* The design of the Common interface of this module is done according to DVB compliant standards. According to the dependencies in interaction of DVB signals, CA-modules and smartcard we can not assure a general functional reliability for all application possibilities. Please contact our Service-Department for further assistance!

ADJUSTMENT POSSIBILITIES

Adjustment with the Headend Controller

Adjustment of the addresses at the Bus Extender BEB 100 and at the modules
Activation of the programming mode of the individual modules by selecting the line (BEB 100) and the module position (01 - 15) at the Headend Controller (HCB 100)
yellow LED is lit up til the beginning of the parameter adjustment
Adjustment of the TDB 709 parameter (see Pic. 04) green LED is lit up
After the programming, the TDB 709 will be automatically switched into the operating status
yellow LED light up briefly / green LED is lit up

Adjustment with PC / Laptop

Condition for the remote programming is an "online - connection" after IP - standard and an ethernet connection at the PC / Laptop
Adjustment of the line / position addresses at the Bus Extender BEB 100 as well as at the modules
At the Headend Controller HCB 100 IP - address input (e.g. 192.168.001.001)
For "direct connection" between a PC and HCB 100 use a crossed patch cable (RJ 45)
For connection over a deviation use an uncrossed patch cable
HTML - browser start-up and put in IP - address as target address
If connected correctly the HTML - control surface at the PC will open up and a blue LED (LINK) at the HCB 100 will be lit up
All adjustment of the modules are specified at the control surface

The manual instructions of the Headend Controller HCB 100 and the Bus Extender BEB 100 have to be considered!

TECHNICAL DATAS

VHF / UHF Input

Frequency range	47 ... 862 MHz
Frequency grid	166.666 kHz, 62.5 kHz
AFC - Range	500 kHz, 125 kHz
Input level *)	33 ... 74 dBμV
	*) typ. min at 64-QAM, CR=2/3, GI=1/32, BER=2*10 ⁻⁴ , Gaussian Channel
Minimum input level (GI=1/32, BER=2*10 ⁻⁴ , Gaussian channel, typical)	
Code rate	QPSK / 16-QAM / 64-QAM
1/2	19 / 25 / 30 dBμV
2/3	21 / 27 / 33 dBμV
3/4	22 / 28 / 34 dBμV
5/6	23 / 29 / 35 dBμV
7/8	24 / 30 / 36 dBμV
Connector	F socket
Impedance	75

COFDM-Demodulator/Decoder

Carrier mode	2 k, 8 k
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
Protection class	1/4, 1/8, 1/16, 1/32
Modulation	QPSK, 16 QAM, 64 QAM
Signal processing	EN 300744 (DVB-T)

Decryption Interface

Common Interface	PCMCIA - Slot according EN 50221
Operating voltage	+5 V

Video Output

Output voltage	1 V _{pp}
Impedance	75
Connector	BNC socket
TV-colour standards	PAL / SECAM / NTSC

Audio Output

Nominal level (at digital 0 dBFS)	6 dBu at 10 k
	4 dBm at 600
Output	symmetrical grounding free
Connector	socket according DIN 45326 IEC 130 - 9 - 20

Operating parameter

Voltage / current	12 V (0,2 V) / 600 mA
Residual ripple of the supply voltage	10 mV _{pp}

Environmental conditions

Temperature range	-10 ... +55 °C
Relative humidity	80 % (not condens.)
Mounting	vertically
Mounting location	squirting and dripping water protected

Physical information

Dimensions (W x H x L)	
without 19" - Adapter	50 x 276 x 148 mm
with 19" - Adapter	50 x 301 x 148 mm
Weight	1500 g

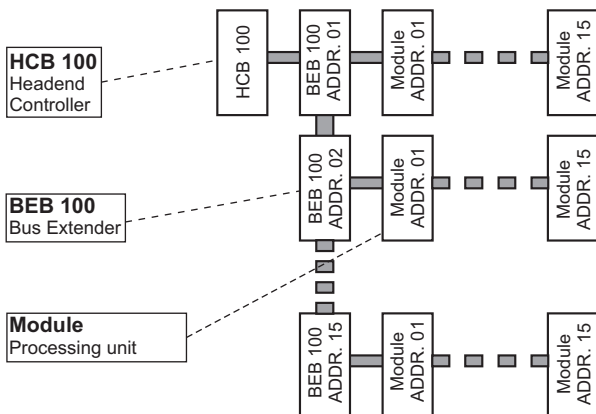
Delivery content

1 x BUS connector
1 x Audio connecting cable ASK 525
1 x Video connecting cable VVK 526
1 x Programming

Software - Options

Test line	CKB 101	9650.51
Subtitling	CKB 102	9650.52

HEADEND BUS STRUCTURE

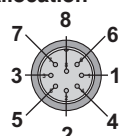


The number of the possible module connections (00 ... 15) to a BEB 100 depends on the total power consumption of this line!

Pic. 02

AUDIO SOCKET

Allocation



- 1 Stereo Left+ / Dual A+ / Mono+
- 2 Screening / Earth
- 3 Stereo Right+ / Dual B+
- 4 Stereo Left- / Dual A- / Mono-
- 5 Stereo Right- / Dual B-
- 6 Control line Contact 1
- 7 Control line Contact 2
- 8 Control line Return path (Earth)

Audio mode	Contact 1 Pin 6 - 8	Contact 2 Pin 7 - 8
mono	open	closed
stereo	closed	open
dual	closed	closed

Pic. 03

SECURITY AND OPERATING INSTRUCTIONS

STOP When assembling, starting-up and adjusting the modules, it is necessary to consider the system specific references in the manual instruction!

- ⚠ The modules may only be installed and started up by authorized technical personnel!
- ⚠ When assembling the modules into the receiving points, the adherence of the EMC regulations is to be secured!
- ⚠ The assembly and wiring have to be done without voltage!
- ⚠ All active modules may only be operated with the Headend Controller HCB 100 or Bus Extender BEB 100!
- ⚠ The main voltage and the operating voltage of the modules working by DC have to be in compliance to the operating parameters described in the technical datas.
- ⚠ With all work the defaults of the DIN EN 50083 have to be considered! Especially the safety relevant execution of the DIN EN 50083/1 is necessary!

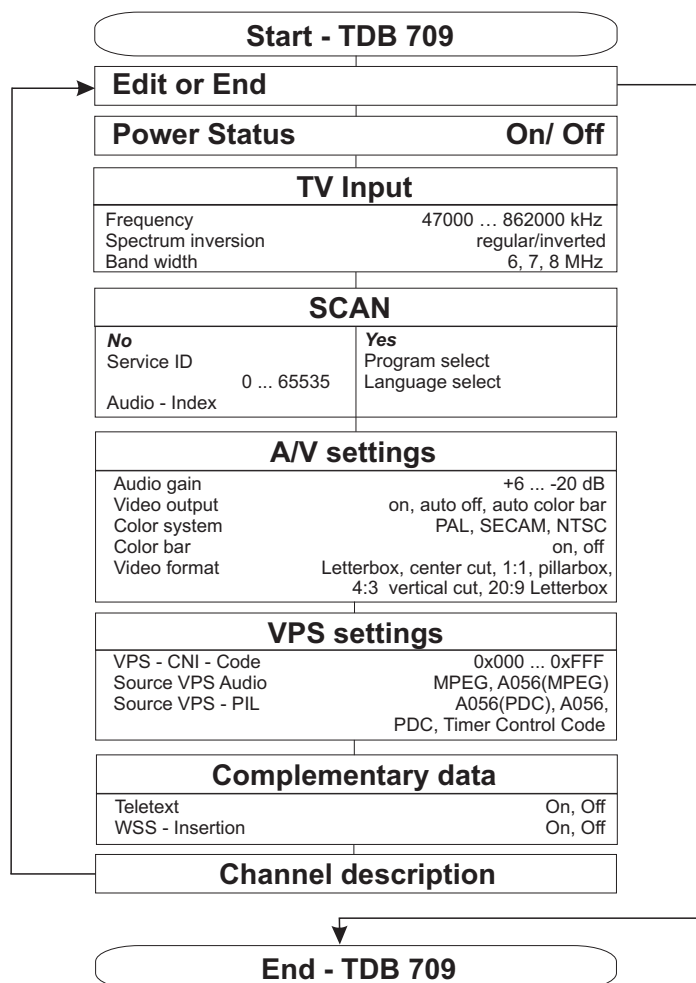
Options and other TV standards available upon request!

Changes due to technical progress possible.

Part n°: 9864.01

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Pic. 04