INSTRUCTION MANUAL

DTS 2440.audio-clock

Time announcer („speaking clock“) / Broadcast time signal generator

Certification of the Producer

STANDARDS

The device has been developed and produced in accordance with the EU Standards
2004 / 108 / EG

Applied standards:
EN 61000-6-2
EN 61000-6-4

CE

References to the Instruction Manual

1. The information in this Instruction Manual can be changed at any time without previous notice.
2. This Instruction Manual has been composed with utmost care, in order to explain all details in respect of the operation of the product. Should you, nevertheless, have questions or discover errors in this Manual, please contact us.
3. We do not answer for direct or indirect damages, which could occur, when using this Manual.
4. Please read the instructions carefully and start the setting-up of the product, only once you have correctly understood all information for the installation and of the operation.
5. The installation must only be carried out by skilled staff.
6.

.

Content

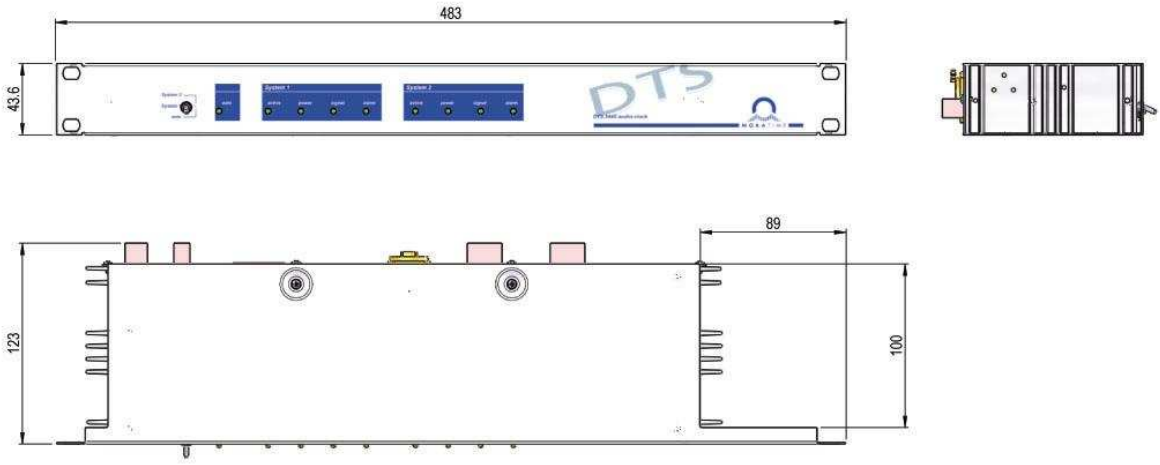
1. Introduction

DTS 2440.audio-clock has 2 different applications. The device works as time announcer („speaking clock“) or as broadcast time signal generator.

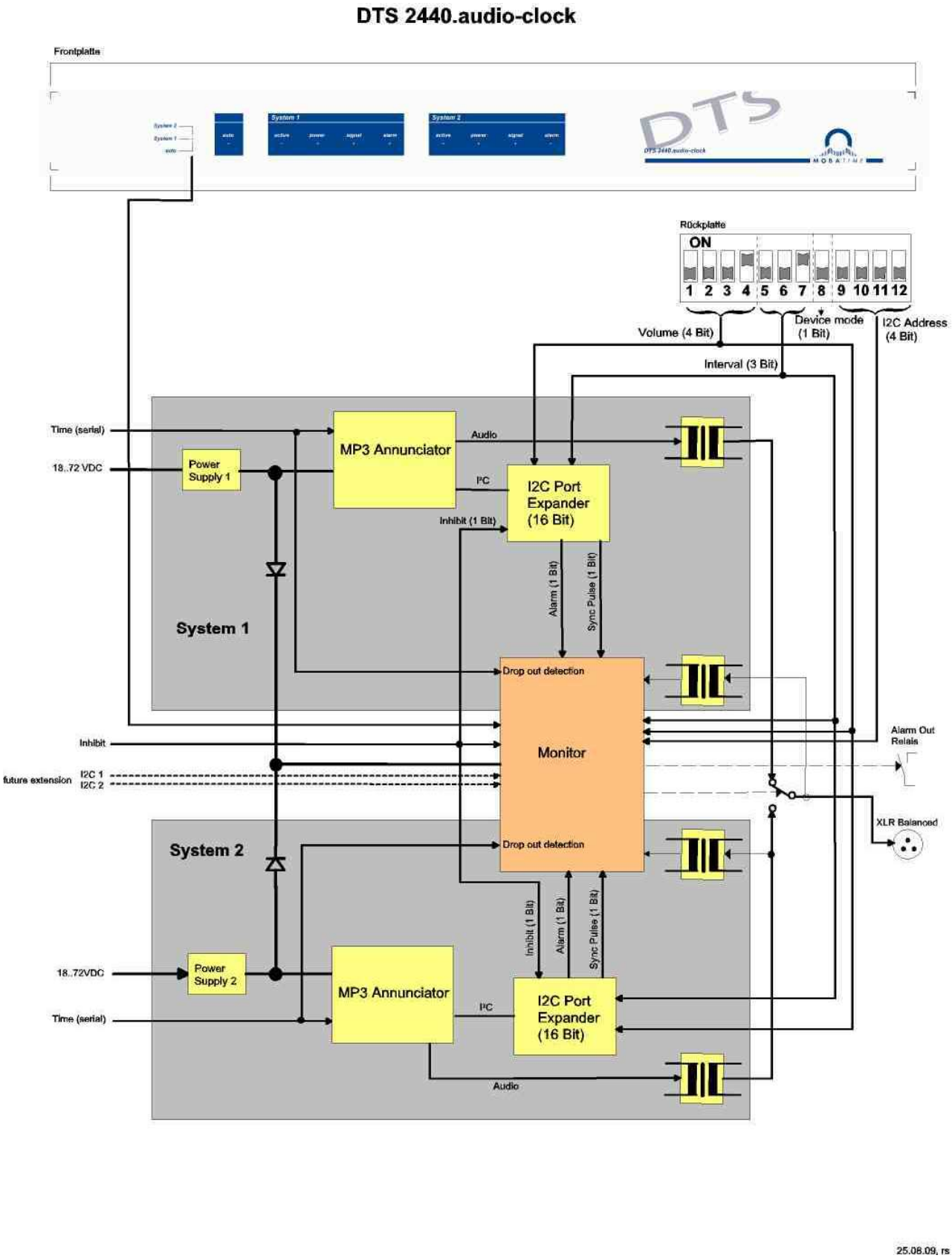
DTS 2440.audio-clock is redundant and includes two identical systems. In case of alarm the monitor switches automatically from system 1 to system 2. Using the device in a real redundant application it is necessary to connect two independent time sources (IF 482 telegram) and two independent power supplies.

„Speaking clock“: Audio output of the time in hours, minutes and seconds followed by a beep. The language of the announced time is British English. Interval and volume is selectable.
Broadcast time signal generator: Beep output. Length an frequency adjustable.

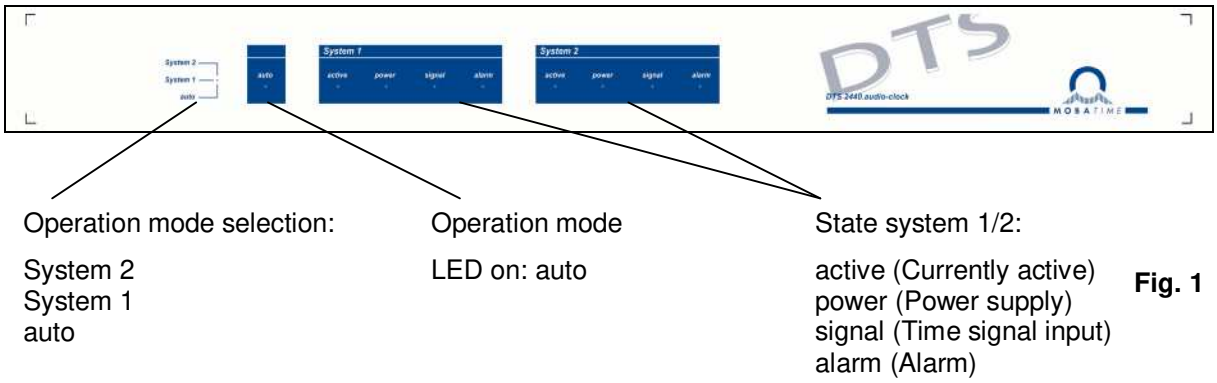
2. Dimensions



3. Block diagram



4. Operation



Operation mode selection:

System 2
System 1
auto

Operation mode

LED on: auto

State system 1/2:

active (Currently active)
power (Power supply)
signal (Time signal input)
alarm (Alarm)

Fig. 1

4.1 Selection of operation mode

Switch position:	**Description:**
System 2	Master clock 2 is permanently selected as the active system
System 1	Master clock 1 is permanently selected as the active system
auto	Master clock 1 is working as the active system. In case of failure the DTS 2440.audio-clock automatically switches to master clock 2 (The state of system 2 is irrelevant)

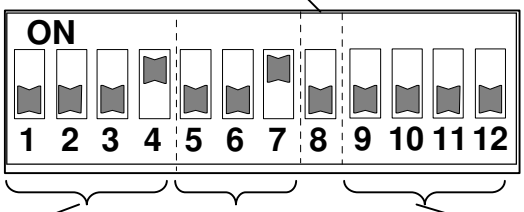
4.2 State indication (LED)

LED:		**State:**	**Description:**
auto		on	Operation mode ”auto” selected
		off	Operation mode ”System 1” or ”System 2” selected
System 1	active	on	System is currently active
		off	System is currently inactive
	power	on	Power supply is available
		off	Power supply is not available
	signal	on	Time signal (IF 482 telegram) is available
		off	Time signal (IF 482 telegram) is not available
	alarm	on	Active alarm on system reported
		off	Normal operation
System 2	active	on	System is currently active
		off	System is currently inactive
	power	on	Power supply is available
		off	Power supply is not available
	signal	on	Time signal (IF 482 telegram) is available
		off	Time signal (IF 482 telegram) is not available
	alarm	on	Active alarm on system reported
		off	Normal operation

4.3 DIP Switch

Device mode

8	Mode
Off	Time announcer ("speaking clock")
On	Broadcast time signal generator



Volume

1	2	3	4	Level [dBm]
Off	Off	Off	Off	0
On	Off	Off	Off	0
Off	On	Off	Off	0
On	On	Off	Off	0
Off	Off	On	Off	0
On	Off	On	Off	0
Off	On	On	Off	-1
On	On	On	Off	-2
Off	Off	Off	On	-3
On	Off	Off	On	-4
Off	On	Off	On	-5
On	On	Off	On	-6
Off	Off	On	On	-7
On	Off	On	On	-8
Off	On	On	On	-9
On	On	On	On	-10

Interval

5	6	7	Interval [s]
Off	Off	Off	60
On	Off	Off	60
Off	On	Off	60
On	On	Off	60
Off	Off	On	30
On	Off	On	20
Off	On	On	10
On	On	On	OFF

I^2C Address

9	10	11	12	Address
Off	Off	Off	Off	0
On	Off	Off	Off	1
Off	On	Off	Off	2
On	On	Off	Off	3
Off	Off	On	Off	4
On	Off	On	Off	5
Off	On	On	Off	6
On	On	On	Off	7
Off	Off	Off	On	8
On	Off	Off	On	9
Off	On	Off	On	10
On	On	Off	On	11
Off	Off	On	On	12
On	Off	On	On	13
Off	On	On	On	14
On	On	On	On	15

5. Device mode

5.1 General

The device mode is initialised by the manufacturer and cannot be modified by the customer. To ensure a proper monitoring of the output signal the DIP-Switch 8 has to be set on the position according to the device mode.

5.2 Time announcer („speaking clock“)

Audible announcement of the time in hours, minutes and seconds followed by a beep. The beep indicates the time when the announced time is valid. The time announcement language is British English and has following format: „2 hours – 1 minute – 0 seconds“

Set DIP-Switch 8 to position OFF. The beep starts exactly to the beginning of the second. The length is 500ms and the frequency is 1kHz.
With DIP-Switches 5..7 the intervals 60s, 30s, 20s or 10s are selectable. Additional it’s possible to switch off the time announcement with these switches.

For intervals bigger than 1 minute the inhibit function is available.

5.3 Broadcast time signal generator

Set DIP-Switch 8 to position ON. It’s possible to output a beep on every beginning of a second. So a maximum of 60 beeps per minute are audible. The interval selection with DIP-Switches 5..7 is disabled. Frequency and length of every beep is adjustable:
Frequency range: 500Hz .. 10kHz ±5% in steps of 1Hz
Length: 10ms..500ms in steps of 10ms

For intervals bigger than 1 minute the inhibit function is available.

5.4 Inhibit function

A connection between the two inhibit inputs inhibits the audio output. Thereby it is possible to achieve intervals bigger than one minute by connecting a relay switch.

6. Switch over function

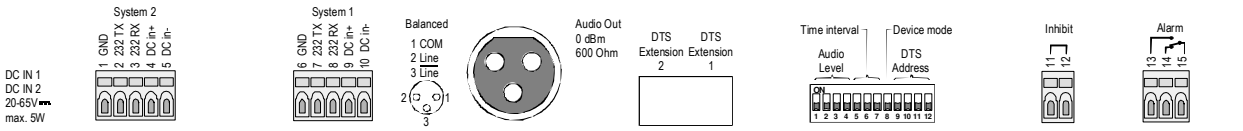
The operation mode selector on position “auto” means that if on system 1 an alarm appears the DTS 2440 switches automatically to system 2. It is irrelevant if system 2 also displays an alarm. There are 4 different alarm cases:

1. Power supply not available (additional displayed by the extinguished green power LED)
2. Time signal not readable/available (additional displayed by the extinguished green signal LED)
3. Output monitor: The level of the output signal is lower than expected (no beep), or is permanently on the same value (continuous beep).
4. Internal error of the MP3 players

7. Supervision of DTS 2440.audio-clock

Every system has got an own I^2C communication interface to a supervision DTS device. This function is a future intention and not yet implemented.

8. Connection (rear view)



Terminal	Connection	Description	
1 [2]	RS232 GND system 2	Serial communication of system 2 IF482 telegram	
2 [2]	RS232 TXD system 2		
3 [2]	RS232 RXD system 2		
4 [3]	DC in 2 power supply +	Input for an ext. power supply (20..65VDC) for system 2	
5 [3]	DC in 2 power supply -	Input for an ext. power supply (ground) for system 2	
6	RS232 GND system 1	Serial communication of system 1 IF482 telegram	
7	RS232 TXD system 1		
8	RS232 RXD system 1		
9	DC in 1 power supply +	Input for an ext. power supply (20..65VDC) for system 1	
10	DC in 1 power supply -	Input for an ext. power supply (ground) for system 1	
XLR 1	Audio output COM	Audio output shield	0..-10dBm at 600Ω Balanced
XLR 2	Audio output line	Audio output “hot”	
XLR 3	Audio output /line	Audio output “cold”	
DTS Ext 2 [1]	I^2C supervision system 2	I^2C communication for supervision for system 2	
DTS Ext 1 [1]	I^2C supervision system 1	I^2C communication for supervision for system 1	
11*	Inhibit A	To inhibit the audio output. Example application: relay switch	
12*	Inhibit B		
13	Alarm relay “break”	Opens in case of Alarm	Rating: 30W (150VDC or 1A) / 60VA (125VAC or 1A)
14	Alarm relay “make”	Closes in case of Alarm	
15	Alarm relay change over	Common contact	

[1] I^2C communication to supervision DTS (future intention, function not yet implemented)
[2] For non redundant running connect the same time signal as for system 1
[3] For non redundant running connect the same power supply as for system 1

9. Maintenance

For a function control of the internal relay switch it is recommended to switch the operation mode selector from position “auto” to position “system 2” and back to “auto” for one time per year.

10. Technical specification

Power supply		20VDC..65VDC ±10%
Power consumption		< 5W
Signal input		IF482 telegram (RS232)
Time announc-er	Format	Hours, minutes, seconds in British English
	Acoustic signal	Beep, frequency 1kHz, length 500ms
	Volume	0dBm..-10dBm at 600Ω balanced, selectable in steps of 1dB
	Interval	60s, 30s, 20s, 10s, OFF
Broadcast time signal generator	Interval	Possible on every beginning of the second
	Frequency	500Hz..10kHz ±5%
	Length	10ms..500ms, selectable in steps of 10ms
Dimensions		19" Rack, 1HE (W x H x D [mm] = 483 x 44 x 125)
Weight		about 1.6kg
Environment temperature		0..50°C, 10-90% relative humidity, without condensation
Alarm contact		Load: 30VDC / 1A / 30W respectively 125VAC / 1A / 60VA
Standards		EN 61000-6-2; EN 61000-6-4

HEADQUARTERS / PRODUCTION

MOSER-BAER AG
Spitalstrasse 7, CH-3454 Sumiswald
Tel. +41 34 432 46 46 / Fax +41 34 432 46 99
moserbaer@mobatime.com / www.mobatime.com

SALES WORLDWIDE

MOSER-BAER SA EXPORT DIVISION
19 ch. du Champ-des-Filles, CH-1228 Plan-les-Ouates
Tel. +41 22 884 96 11 / Fax + 41 22 884 96 90
export@mobatime.com / www.mobatime.com

SALES SWITZERLAND

MOBATIME AG
Stettbachstrasse 5, CH-8600 Dübendorf
Tel. +41 44 802 75 75 / Fax +41 44 802 75 65
info-d@mobatime.ch / www.mobatime.ch

MOBATIME SA
En Budron H 20, CH-1052 Le Mont-sur-Lausanne
Tél. +41 21 654 33 50 / Fax +41 21 654 33 69
info-f@mobatime.ch / www.mobatime.ch

SALES GERMANY, AUSTRIA

BÜRK MOBATIME GmbH
Postfach 3760, D-78026 VS-Schwenningen
Steinkirchring 46, D-78056 VS-Schwenningen
Tel. +49 7720 8535 0 / Fax +49 7720 8535 11
buerk@buerk-mobatime.de / www.buerk-mobatime.de