TRIAX

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The new standard
for customer entertainment

| TDH 800 headend system

TDH
800

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The TDH 800 headend system is designed to provide reception and the distribution of TV services in residential, hotel and bed and breakfast accommodation etc. The TDH 800 unit uses the new TRIAX pool technology, and was developed using the same platform as the TDX headend.

This breakthrough technology greatly simplifies the installation programming and commissioning of headends by making sure the input and output modules are kept separate.
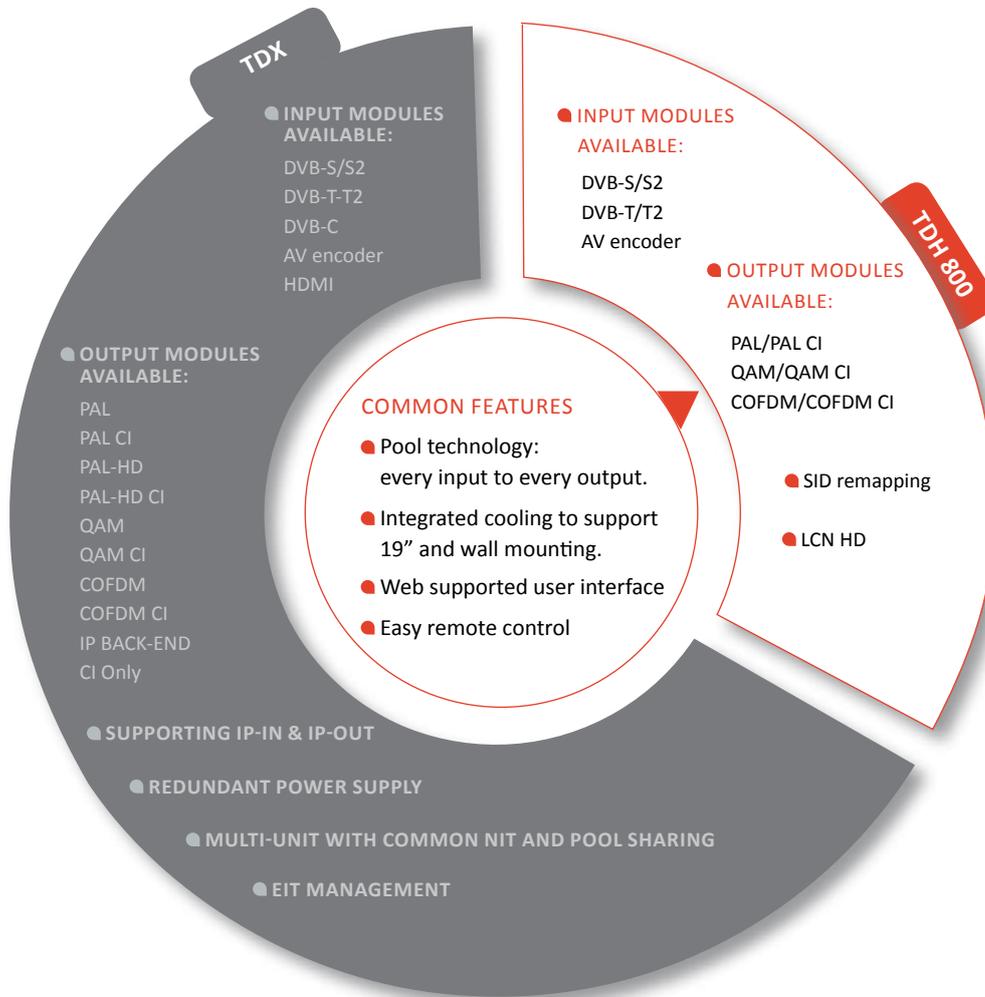
All input signals – regardless of whether they are received via satellite, terrestrial or audio/video – can be flexibly and independently distributed from a 'pool' to each and every output module. Another big advantage of the input and output modules being independent is that it only requires a small number of modules to support every receiving and distribution combination, making it easy to configure individual customised Mux packages.

How you benefit

| from choosing the right headend solution

AT-A-GLANCE BENEFITS OF THE TDH 800 SOLUTION

TDX

● **INPUT MODULES AVAILABLE:**
DVB-S/S2
DVB-T-T2
DVB-C
AV encoder
HDMI

● **OUTPUT MODULES AVAILABLE:**
PAL
PAL CI
PAL-HD
PAL-HD CI
QAM
QAM CI
COFDM
COFDM CI
IP BACK-END
CI Only

● **SUPPORTING IP-IN & IP-OUT**

● **REDUNDANT POWER SUPPLY**

● **MULTI-UNIT WITH COMMON NIT AND POOL SHARING**

● **EIT MANAGEMENT**

COMMON FEATURES
● Pool technology: every input to every output.
● Integrated cooling to support 19" and wall mounting.
● Web supported user interface
● Easy remote control

TDH 800

● **INPUT MODULES AVAILABLE:**
DVB-S/S2
DVB-T/T2
AV encoder

● **OUTPUT MODULES AVAILABLE:**
PAL/PAL CI
QAM/QAM CI
COFDM/COFDM CI

● SID remapping

● LCN HD

The TDH 800 range includes a series of popular modules. If you need additional features and/or modules, please select the TDX headend.

TRIAX technology makes it possible for you to take any type of input signal received from satellite, terrestrial or A/V and convert it to any type of output signal. This merges the highest level of efficiency with the exceptional reliability, you would expect from one of Europe's largest manufacturers of headends.

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THE BENEFITS OF TOMORROW'S TECHNOLOGY TODAY

In close collaboration with planners, installers and operators, TRIAX has developed a new headend technology designed to meet todays television distribution requirements. This pool technology enables you to assign input and output signals freely. Meaning traditional module arrangements featuring input demodulator and output modulator are no longer necessary.

All incoming signals initially enter the 'pool', providing unlimited opportunities to multiplex services for each output modulation. One service can be used for different modulation types simultaneously. Furthermore, it is easy to change all assignments between input to output signals at any time, making this a uniquely flexible, efficient and economical solution.

TDH 800

| reasons to buy

ENERGY-EFFICIENT – LONG-TERM RELIABILITY

- 16 tuners and six BACK-ENDs fully loaded 280 W total power consumption.

- Intelligent cooling system with integrated fans – increases the service life of the equipment and allows installation in 19" cabinets.

EASIER SERVICE HANDLING

- Fewer modules – allows easy spare part handling.

- Log file on all TDH 800s

- Remote access to the TDH for installation support.

EASY SETUP AND CONFIGURATION

- Web-based user interface means there is no need for special software to manage the system.

- Mux bandwidth monitor to ensure that the Mux is not overloaded.

- The four adjacent output channels can be freely selected across the full frequency range.

- LED to indicate operation and errors on each module

- Easy, intuitive step-by-step configuration.

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TDH 800 is a digital headend

| a design solution for distributing TV services
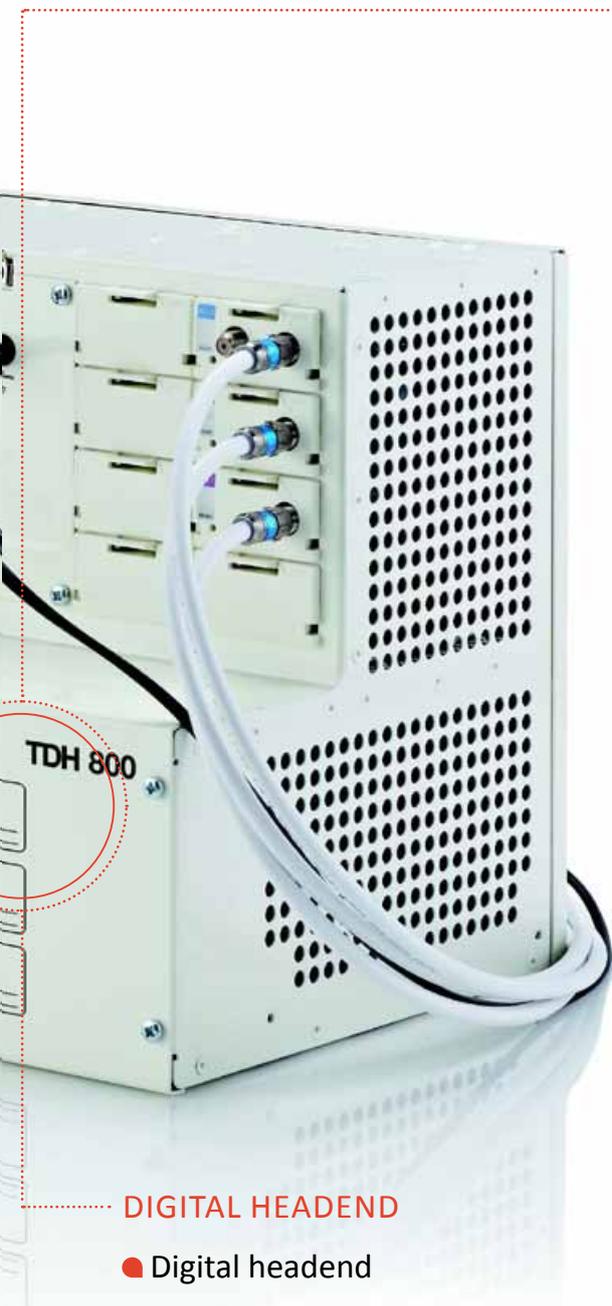
BETTER PERFORMANCE

- 1 unit
- 6 quad output modules
- Up to 24 PAL, QAM or COFDM channels

EASY INSTALLATION

- Input modules independent of output modules, resulting in a smaller number of modules overall.
- Saves time on installation
- DiSEqC 1.0 functionality
- Housing designed to accommodate up to 16 input and 6 quad output modules, making it possible to support 12 CAM modules.
- Can easily be installed on a wall or in a 19" cabinet.
- All inputs and outputs as well as all modules and cables can be accessed and operated easily from the front.
- Input and output modules identified via TRIAX supplied labels.

DIGITAL HEADEND

- Digital headend

TDH 800 basic unit

| technical specifications

TECHNICAL SPECIFICATIONS		

TDH 800 BASE UNIT
- for supporting 16 input modules and 6 quad output modules.

CABINET		
TYPE **PART NO.**		**TDH 800 MAIN UNIT** **TDHBASE**
Frequency range (TV out)	MHz	47-862
Impedance (RF out):	Ohm	75
Return loss (RF out):	dB	> 14 at 47 MHz (-1.5 dB/octave; min. 10 dB)
Testpoint	dB	-20
Output level max @ 60 dB IMD 24 combined PAL channels:	dBµV	93.0
POWER SUPPLY		
Operating voltage	VAC	190-260 50/60 Hz
Power consumption, max	W	280
Max. LNB control	mA	4 x 305
CONNECTORS		
AC Power in (1.8 m)		IEC320 (cable)
Ext. TV-OUT		F-connector
Ext. Testpoint		F-connector
PC		RJ 45
ENVIRONMENT		
Temperature, operating	°C	-10...+50
Temperature, storage	°C	-20...+70
Humidity, operating	%	20...80
Humidity, storage	%	10...90
MECHANICAL DATA		
Dimensions product (L x W x H)	mm	440 x 240 x 265
Dimensions cardboard packaging (L x W x H)	mm	546 x 316 x 374
Weight - net	kg	9.8
Weight - gross	kg	11.4

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TECHNICAL SPECIFICATIONS INPUT MODULES

FRONT-END – DVB-S / S2 [QPSK/8PSK] MODULE
SD and HD satellite receiver module. Multiplex transmission and routing of all programmes into the TDH 800 pool.

DVB-S / S2 INPUT DEMODULATOR MODULE

TYPE PART NO.		DVB-S / S2 MODULE TDHDVBSFE
Frequency range	MHz	950 - 2150
Input level	dBµV	42-82
Input impedance	Ohm	75
Input return loss	dB	> 10
Loop through gain	dB	0 - 6
LNB control DiSEqC		1.1
LNB control V/H	V/mA	0-13-18 / 300
Input connector		F-connector
Output connector (loop through)		F-connector

FRONT-END - DVB-T / T2 [COFDM] MODULE
SD and HD terrestrial receiver module. Multiplex transmission and routing of all programmes into the TDH 800 pool.

DVB-T / T2 (1 TUNER) INPUT DEMODULATOR MODULE

TYPE PART NO.		DVB-T / T2 MODULE TDHDVBTFE
Frequency range	MHz	177.5 - 226.5 / 474 - 858
Input level	dBµV	35...75
Input impedance	Ohm	75
Input return loss	dB	> 6
Loop through gain	dB	–
Demodulator mode		QPSK, 16QAM, 64QAM 256QAM / 1k 2k 8k 16k 32k
Bandwidth	MHz	7 / 8
Input connector		F-connector
Output connector (loop through)		–

FRONT-END - AV ENCODER MODULE
Converting analogue audio/video signal into an MPEG2 or MPEG4 stream and forwarding to the TDH 800 pool.

AV ENCODER MODULE

TYPE PART NO.		AV ENCODER MODULE TDHAVFE
Video level	Vpp	1
Video impedance	Ohm	75
Video S/N ratio	dB	> 52
Video input standards		PAL, Secam
Audio level	Vpp	< 2.4
Audio impedance	kOhm	10
Video input connector		15 pol high density sub-D
Audio input connector		15 pol high density sub-D

Output modules

technical specifications

BACK-END COFDM MODULE
Quad-COFDM modulator, adjacent channel operation, automatic multiplexing, available as FTA or CI variant.

DVBT / T2 INPUT DEMODULATOR MODULE		
TYPE PART NO.		FTA / CI TDHDVBTBE / TDHDVBTCIB
Output frequency range	MHz	50.5 - 858
Spurious signals	dB	> 60
QAM modes		16 QAM, 64 QAM, QPSK
Bandwidth	MHz	6, 7 or 8
Carriers supported		2k
Guard interval		1/32, 1/16, 1/8, 1/4
Error correction Viterbi FEC		1/2, 2/3, 3/4, 5/6, 7/8
Reed Solomon		204 byte mode
MER	dB	≥35
Output level (system)	dBμV	90.0
Output level adjustment	dB	+3 / -17 (0.5 dB step)
CI slots		0/2

BACK-END QAM MODULE
Quad-QAM modulator, adjacent channel operation, automatic multiplexing, available as FTA or CI variant.

QAM OUTPUT MODULE		
TYPE PART NO.		FTA / CI TDHQAMBE / TDHQAMCIBE
Output frequency range	MHz	50.5 - 858
Spourious signals	dB	> 60
QAM modes	QAM	16, 32, 64, 128, 256
Symbol rate	Mbps	2-40 (SCPC/MCPC)
Viterbi decoder		1/2, 2/3, 3/4, 5/6, 7/8
Reed Solomon	decoder	204, 188, t=8
Deinterleaver		I = 12
Output spectrum		Normal, Inverted Random
Symbol rate	Mbaud	3.5-7200
Roll-off factor	%	15
FEC block code		RS 204, 188
MER	dB	> 35
Output level (system)	dBμV	90.0
Output level adjustment	dB	+3 / -17 (0.5 dB step)
CI slots		0/2

BACK-END ANALOGUE / PAL MODULE
Quad-PAL modulator, adjacent channels, available as FTA or CI variant.
For programmes received only in HD, or processed as digital HD and analogue SD signal.

PAL OUTPUT MODULE		
TYPE PART NO.		FTA / CI TDHPALBE / TDHPALCIBE
TV standard		Pal/Secam B/G, I, L, D/K
TV system		VSB VHF/UHF/mono/A2/Nicam
Output frequency range	MHz	47-862
Picture carrier stability	kHz	< ±30
Spurious signals ref picture carrier	dB	< 60
Output level system	dBμV	93.0
Output level adjusting	dB	+3.0...-17.0 (0.5 dB step)
Output impedance	Ohm	75
Return loss	dB	> 10
Differential gain	%	< 8
Differential phase	degrees	< 8
Crominance/luminance delay	ns/m	< 80
Luminance non-linearity	%	< 8
Video S/N ratio (typical)	dB	54
CI slots	pcs	0/2

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SYSTEM TECHNOLOGY	TDH 800	TDX
FRONT-ENDS		
DVB-S / S2	✓	✓
DVB-T		✓
DVB-T-T2	✓	✓
DVB-C		✓
AV	✓	✓
HDMI		✓
BACK-ENDS		
PAL	✓	✓
PAL CI	✓	✓
PAL-HD		✓
PAL-HD CI		✓
QAM	✓	✓
QAM CI	✓	✓
COFDM	✓	✓
COFDM CI	✓	✓
IP BACK-END		✓
CI Only		✓
ADDITIONAL HARDWARE		
Redundant PSU		✓
FUNCTIONALITY		
IP-in IP-out		✓
Multi unit		✓
SID remapping	✓	✓
Common NIT		✓
LCN HD	✓	✓
PLP (DVB-T2)		✓
Alternative EIT input		✓
EIT management		✓
Network ID setting		✓
Network name		✓
Original network ID	✓	✓
Nit standard DVB, NorDig	✓	✓
CAT remove	✓	✓
FranceSAT NIT	✓	✓
Transport stream ID setting		✓
SERVICES		
Preconfiguration	✓	✓
Support	✓	✓

TRIAX

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