



# User guide COFDM module

Model			ltem no.	
COFDM mod	lule		492060	
			492061	
Version	891077C	01 - 2012	EN	triax.com

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#### Contents

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#### Disposal



Within in the European Union this label indicates that the product cannot be disposed of with the general household waste. Neither the headend nor the input and output modules can be disposed of with the general household waste.

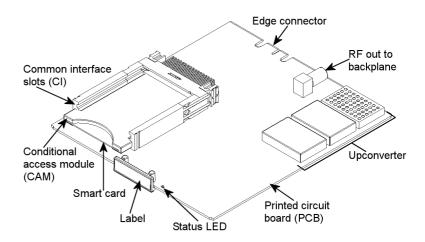
For proper treatment and recycling of old products, please take them to designated collection points in accordance with your national legislation.

#### **Box content** A new output module is wrapped in antistatic bubble wrap and packed in a cardboard box when you receive it. Included in the box is a user guide instructing you in how to use the TDX Service Tool to configure the module.

**COFDM module** The COFDM output module is one of the output modules that you can install in the output section of your TDX headend unit.

The COFDM output module is available in two versions, one version with Common Interface (CI) and one without.

Below you can see an illustrated description of a COFDM module with CI slots.

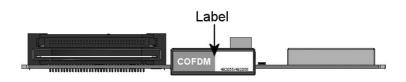


#### Labels

A label is placed on the output module where you can write the information regarding the configuration of the module.

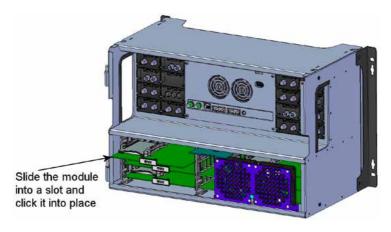
Besides the information that you write on the label, the module type and part number are also displayed on the label.

**Note** The coloured part of the label informs you of the module type. Each type of module is allocated a unique coloured label.



On the bottom of the module you will find a label with the bar code and a serial number printed on it.

**Module instal-** You install an output module by sliding the module into a module slot in the lower section of the headend unit and click it into place.

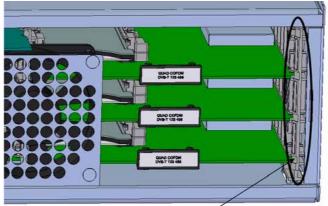


**Note** You can use hot swapping when you insert a module into or remove a module from the TDX system.

#### Module removal

You release an output module from a slot by using the lock mechanism that is placed to the right of the modules in the output section. Move the lock mechanism slightly to release the module.

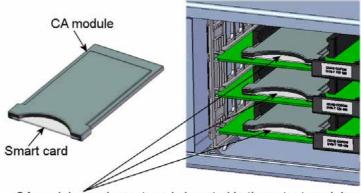
#### **Basics**



To take a module out of a slot in the output section, tip the lock mechanism and then pull the module out

#### CAM/Smart card You can insert 2 Conditional Access modules (CA) into each of those output modules that have Common Interface (CI) slots. Each CA module is able to unscramble at least one service. Which services

Each CA module is able to unscramble at least one service. Which services depend on the service provider of the CA module and smart card.



CA modules and smart cards inserted in the output modules

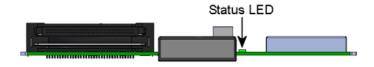
#### **Basics**

**Status LED** There is a status LED on the front of each module. The LED indicates whether the module functions according to its purpose or fails.

- **Green flashing** The output module receives data.
- Green constant on The output module receives valid services.

Red When starting the TDX system the output module and the system controller negotiate connection speed. If the LED continues to be red either the output module or the system controller has not been inserted correctly.

**No colour** The output module has not been configured yet or the module has not been inserted correctly.



When you update the software of a module the status LED provides you with information about the updating process.

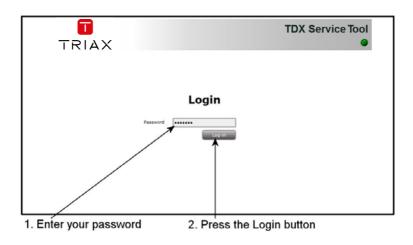
- Orange Boot loader state.
- **Temporary off** Initiation of the software update.

**Temporary green** Every time the modules receives a valid data package. Repeated until the update is completed without errors.

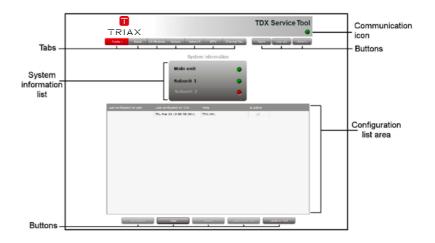
Red Software update failed.

Log in

When you have loaded the TDX Service Tool from the headend system to your laptop/computer the Login window of TDX Service Tool is displayed.



When you have pressed the Log in button the System window is displayed.



#### CA Modules window

Click the CA Modules tab in the TDX Service Tool to display the CA Modules window.

The first time you display the CA Modules window in a new configuration the module list only displays the number and type of the CA modules that you have inserted in the main and subunits.

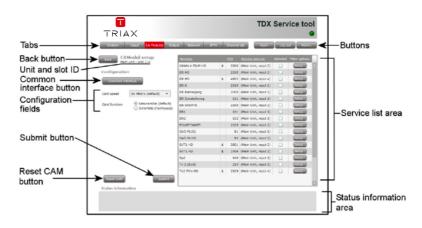
Skit	Card installed	Servicei Status
# Main	unit (2 itema)	
1:4	Conax	Select Selec
1-8	Conax	(Entropy) (France
2-A	Conax	(Sector and Sector)
2-8	Viasat	Contraction (Contraction)
	1 (2 dema)	
L-A	Conex	Sector Sector
1-8	Viesst	CONTRACTOR OF CONTRACTOR
2.A	Cohex	(Second Second

You have to configure the CA modules individually.

To display the Configuration window, click the Setup button of the CA module you want to configure.

			TDX Service tool	
	em Input <mark>CA Nocurles</mark> Output No	rork IPTV Channel list	Apply Log out Admin.	
Sot	Card installed	Services 5	Status	
# Main u	unit (2 items)			Click the Set
1-A	Conex		Seturate and	
1-0	Conax		Setup	button
2-A	Conax		Setup Delete	
2-8	Viasat		Sea para Children	1
# Unit: :	1 (2 items)			
1-A	Conex		Setup Delete	1
1-B-	Viasat		Setup Delete	1
2-A	Conex		Setup Delete	1

**CA Modules con-** The first time the TDX Service Tool displays the Configuration window for a **figuration window** CA module in a new configuration the fields and radio buttons display default values and nothing is selected in the service list area.



#### Card speed

If your smart card is able to use a higher card speed than the default card speed, open the drop-down list with the card speeds you can choose from.

Select the card speed you want to use.

System	Input CA Modules Output	t Network SPTY	-	Turrel	la Paril	1000	Admin	
CA	Modul setup	Increase		9400 -	Series and the	Enlarded	1.0ml agitizes	
	Unit - Sot 1 w	CANLAL & FOLM HO	1	3306	(Main Unit, input 3)	12		
Configuration		DR HD		2030	(Hain Unit, input 2)			Olivity the environments
Gaverage internal and		DR.HD	\$	4802	(Main Unit, input 4)			Click the arrow to
Contraction of the local division of the loc		CR.K		2010	(Hain Unit, input 2)	-0-		open the drop-dow
Card speed		CR. Ramasiang		2005	(Hain Line mpt 2)	13	CONTRACT	그 것이 집에서 가지 작품이 안 안에서 안 물건이 가지 않는다.
	50 Mbit/s (default)	CR Synstolkning	-	111	(Plain Unit, input 1)			list
Card function	72 Mort/s	DR UFDATE		2000	(Main Unit, input 2)	13	CUTION IN	
	(*) Scramble (PanAccess)	DRI		101	(Main Unit, input 1)	130	Carried Contract	
		CR2		102	(Main Unit, input 1)	Ū.	0000	
		FOLKETINGET		2025	(Main Unit, input 2)	0		
		CAD MUX3		81	(Main Unit, input 1)	0	C2130	
		CAD MUX3		82	(Hain Unit, input 2)		C. M. M.	
		Sv71 HD	- 5	3801	(Main Unit, input 3)	10		
		SVT1 HD		1406	(Hain Unit, input 3)	UU		
		Syd		414	(Main Unit, input 1)	11	6.00	
		TV 2 (Syd)		214	(Marri Unit, input 1)	0	Contraction of the local division of the loc	
		TVZ Film PD	- 5	2929	(Ham Unit, input 4)	- C2 (	Card a	
Former CAN	Sec. 1							1
The other Designation of the other Designation							12	

**Card function** You can use the Card function radio buttons to determine whether you want the CA module to descramble services that are scrambled or you want the module to scramble services that are not scrambled.

Click the Descramble (default) button if you want to descramble services .

Click the Scramble (PanAccess) button if you want to scramble services using the PanAccess Scrambler.

a second s	Curger Hotersk 34	2200	Sector.		ыř.	- Logina	All and a surger	
CAModul setup Nair orit - Skt 1-4	Service .		600	Devis your	10)	Solution	Filter options	1
	CANAL & FEJR HD		3106	(Main Unit, in	(t tild	10	CIII E	
ondigoration	DRHD		2530	(main smit, in	put z)		Carlos	To scramble services
Comment charters	DR.HD	. (8)	48.02	(Hain Unit, in	(h huq		(11) M	Click the Scramble (Pa
and the second se	OR K		3030	Dair Unit n	p.(t 7)	-		
and speed 72 Mbit/s	CRI. Ramasjaro			(Pater Linis -		9	CLUB	Access) radio button
	DR Dynatoliuring	-	111	(Main Unit, in	(t fug		0000	
Card function Obscientifie (Default) Obscientifie (PenAccess			30.00	(Nair Unit, n	put 1)	- D	COLUMN	
	IN OIL		303	(Marc shit, in	(L tug		Catolin	
	002		362	(Hain Unit, in	(1 hulp	0	Contraction in the	
	FOLKETINGET		2025	(Nair Unit, in	put 73		CITIN	
	OAD MUKL		-61	(Marc shot, in	(L fog	- G1 -	Contract of	
	OND HUKD		-42	(Hain Unit, in	put 2)		(100 m)	
	5V71 HD		3863	(Net Unit, it	p.( 1)	9	C11736	
	5471 HD		1400	(Marc shill, in	pul 2)		Carlos	
	Syd		494	(Hain Unit, in	put 13	0	Contraction of the	
	TV 2 (Sec)		714	(Nair Unit, in	put 1)			
	TV2 film HD		2529	(Marc stort, in	(+ tuq	197	Carlie	
	0x0 H0x0 5x71 H0 3x71 H0 5x4 1x7 3 (Set)	5 3	42 3803 1400 454 714	(Hain Unit, in (Hain Unit, in (Hain Unit, in (Hain Unit, in	put 2) put 2) put 2) put 2) put 1)	00000		

In the Service list area you can select the service or services that you want to descramble and you can set up individual filter options for each service. The services that are scrambled are marked with a dollar sign - \$.

	Supel CA Hoduka Outor	and the state of the		Secretar Apple	- molene	Arris		030031 0
CA	Modul setup	Sanctasi.			Sector	Film: options		Click the square t
		CARLES + FILM MD	1	3326 (Marchite, sepir 2)	12	-	-	select the service
Configuratio		DK HD		2032 (Hen unit, insut 2)		111150		select the service
Correspondence and	and the second se	01.HD	- 8	4002 (Main Unit, Input 4)		1000		
		DR.K		2010 (Main Unit, input 2)	11	Post Section		
Card acced	72 H640 +	CR. Ramalang		2005 (Mein Unit, input 2)		(C) (S)		
	Carlos Constanting	Of Dynatolkning		111 (Main Crist, Wast 1)	0	Rear and		
	<ul> <li>Descramble (default)</li> <li>Scramble (FanAccess)</li> </ul>	OR UPDATE		3003 (Main Unit, woult 2)	D.	S11100		
		DRU.		101 (Main Linit, Induit 1)		(COD)		
		092		\$52 (Main Unit, Insul 1)		10000		
		POLKETINGET		3025 (Main Linit, Viout 2)	1	Cornel .		
		OAD MUKL		81 (Marn Linit, Input 1)		CONTRACT OF		
		OND MUKE		E3 (Main Unit, Input 2)		C.T.M.		
		SVT1 HD		3801 (Memünit, mout 3)		11120		
		\$V71.HD		1405 (Main Linit, Input 3)	0	ECONOMIC .		
		Erd		est (Main Unit, input 1)		Contraction of the local division of the loc	21 I	
		TV 2 (Setti		214 (Main Unit, shout 1)	10	Corner.		
		TV2 Film HD		2929 (Main Unit, Input 4)	10	CONTRACT OF		
a consector	South Providence							
Concentration of the	No. of Concession, Name of Street, or other						10	

10

To select a service, click the check box (square) to the right of the service in question.

If you want to change the filter options for a service, click the Setup button of the service in question to open the Filter options window.

	Pool LA Nodues LA	Contraction of the local data			Contraction of the	and the second se	Click the Setup
	Modul setup	Services	- 3	153 Service advectors	Selected	Filter aptions	button to open
100	More - Date and	CANNER FELK HD		3306 (Main Unit, mpit 3)		- COLORA	
configuration	0	DR HD		2030 (Hain Linit, input 2)		Citran	the Filter option
sintly all	atta a	DR.HD	8.	4802 (Mein Unit, input 4)	0	(222)	window
		DH K		2010 (Main Unit, input 2)		112.00	WINDOW
Cerd speed	72 Mbit/s =	DR. Ramasiang		2005 (Main Unit, input 2)	10	(C270)	
	1	DR Syvatolkrang		111 (Main Unit, input 1)		(TTU-100)	
Card Function	<ul> <li>Descramble (default)</li> <li>Scramble (Panicces)</li> </ul>			2000 (Main Unit, input 2)	- C1		
	O scande (rancoss)	041		111 (Main Unit, input 1)		(1117)	
		DR2		102 (Main Unit, input 1)	0	(11738)	
		FORKETINGET		3015 (Main Unit, input 2)	1	000000	
		OAD MUX1		81 (Main Unit, input 1)	L.	600.00	
		GAD MUK2		82 (Main Unit, input 2)			
		SVT1 HD	1	3811 (Main Unit, input 3)	61	C-27.50	
		SVT1 HD		1416 (Main Line, input 3)			
		Syd		414 (Main Unit, input 1)	0	0.000	
		TV 2 (9vd)		214 (Main Unit, yout 1)	1	60000	
		TV2 Film HD	8	2929 (Main Unit, Mput 4)	147	(iiiiii)	
STATISTICS.	- Alerta						
ALC: UNKNOWN OF TAXABLE PARTY.	Country of Country						

The first time you open the Filter options window the default value Descramble all audio PIDs has been selected.

Filter options for DR Update	22	
Descramble non audio/video PIDs	0	
Descamble all audio PIDs	✓ 🗲	—Default value
Cance	I OK	

If you want to descramble PIDs (Packet Identifier) that are not audio or video PIDs, click the Descramble non audio/video PIDs check box.

25	]
.≺	- Click to select
ок	
	2

In case you do not want to descramble all audio PIDs you can select which audio PIDs you want to descramble.

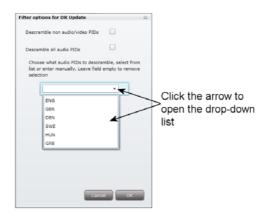
To descramble only selected audio PIDs you have to deselect the Descramble all audio PIDs check box.

Filter options for DR Update	
Descramble non audio/video PIDs	
Descamble all audio PIDs Choose what audio PIDs to descramble, select from list or enter manually. Leave field empty to remove selection	Field with drop-down list that is displayed when you deselect the check box
Cancel Ox	

When you have deselected the Descramble all audio PIDs check box a field with a drop-down list is displayed below the check box.

To select which audio PID you want to descramble, open the drop-down list with the languages you can choose from.

Select the language of the audio PID you want to descramble.



When you have selected the required language, a second field is displayed below the first field so you can descramble another audio PID. You can descramble as many audio PIDs as you need.

Filter options for DR Update	
Descramble non audio/video PIDs	
Descamble all audio PIDs	
Choose what sudio PIDs to descramble, select from list or enter manually. Leave field empty to remove selection	Having selected which audio PID language you want to descramble, a second field appears
Cancel OK	

If the language of the audio PID you want to descramble is not displayed in the list you can enter a three letter string signifying the language you need. To remove your selection leave the field empty.

Click OK to return to the Configuration window.

When you have selected the services you want to descramble and changed the filter options you want to change, you have to click the Submit button to save this information in the headend system and return to the CA Modules window.

You use the Common interface button to open the common interface menu.

Clicking the Common interface button gives you access to information from the smart card inserted in the CA module. The type of information provided by the smart card depends on the card itself and its make.

TRIAX	TDX Service tool
System Sigat CA Hadaes Output Renark SPTV	Channel Int Apply Log out Advan-
Contemporation Common Interface Main unit - Stat 1-A	
Conax Conditional Access	
Product Order/ng	
Sabeription Status	
Even: Statu	
Change CA PIN	
Hatwiky Rating	
Canod	)

Below is an example of the interface of a Conax card.

Please refer to the user guides of the CA modules and smart cards you have inserted in the output modules for further information.

If you need to reboot the CA module you can use the Reset CAM button.

Click the Reset CAM button to reboot the TDX headend system.

	CA	Modul setup	Terreror.	-	II.) Terrer sources	Terrified.	Alter splings
	Harrison Harrison	vunit - Slut 1-A	CAURLY FEMILES	1	3305 (Har Link input 2)		1000
	Configuratio		0KHD	-	2020 (Her LPIT, legut 2)		613
	Re Hill	our monotone	DRHD		(HEE (Mar Unit, Input 4)	0	1000
	and the second se	or the ready	DR N		2018 (Her Unit, Input 2)		111120
	Card speed	72 M00/w	DR #ansadang		2005 (Here Unit, legal 2)	0	C200
			DR Synatoliciting		III (Har Onk input I)		1000
	Gent Function	() Decommble (default)	DR SPOATE		2000 (Merr Unit, Input 2)		00000
		🖸 Scientile (Perfoces)	DR1		(III (Mar Unit, input 1)		1
			043		182 (Hair Unit, input 1)		200
			POLKETINGET		2225 (Merr Unit, Input 2)		1000
			DAD MUKI		BL (Main Unit, input 1)	0	0000
			OAD MUKE		82 (Hole Unit, input 3)		2130
			8V71 HD		3801 (Mer Unit, legal 3)	0	0.117.00
			EV71HD		1406 (Hair Unit, input 2)	0	6150
			Syd		414 (Mon Unit, input 1)	0	121120
lick the Reset			TV 2 (Syd)		- 214 (Here unit, input 1)	D.	(Cica)
A 14 1			TV2 Film HD		2828 (Mair Unit, input 4)	12	0.000
CAM button to		Safert	TVS Film HO	4	2825 (Mair (215, input 4)	10	1000

When you have selected the services you want to descramble or scramble you have to click the Submit button to enter this information into the headend system and return to the CA Modules window.

	and in case of the local division of the loc	CA Madana Conce	a manual lan		1000	and interest	and over	No Married
	CAModel Her unt - 2		Sintai	1.1			Sciel-1	
	Contiguestion		CREATER HER HD			(Hum Unit, must 2) (Hum Unit, must 2)	2	And and
			DE HO			(Nerr Ust, east 4)		(C)
	CONTRACTOR OF A		DE NO			(Herrist, ep.(4) (Herrist, mat 7)		0000
	SUCCESSION PROFESSION		Ol Barrayana			(New Unit, mult 2)		
	Card surged 72 PE	k/a (+	CR. Suffithining			Hair Unit, input al	100	Contract of the local division of the local
	Card function (1) a	aurane (default)	DR. UPDATE			(Hein Unit, mpd 2)		(111)
	0.5	(yanete (ranhussa)	DRI			(Ham Unit, mod 2)	100	01000
			DAT			(Heir that, hand 1)	B	100
			FOLIETONGET			Hen Vist, east 23		1000
			OAD MUSE			Hen Ust, and E		6000
lick the Submit			CAD MURZ		82	Her Dist, apart 21		0.00
utton to enter			SUT1 ND		1011	(Heir thit, mad 3)	0	1000
			SVT1 HD		3406	(Hern Linet, equal 2)		600
our selections			Svil		424	(Hain Lint, Hput 2)		1111
			742 (9+6		224	Her this mail 1]		2376
	_	*	TV2 Film HD	1	2829	(Rem Unit, epst 4)		1000

When you return to the CA Modules window the descrambled services will be displayed next to the CA module you have configured.

. Main i	init (2 tams)			
1.4	Conex	CANAL+ FILM HD.	ŐK.	Restances Assessed
1-8	Conax			Supreme Statute
2-A	Conex			Contractory Contractory
2-8	Valat			SUCCESSION SECTION.
a Unitr	1 (2 dems)			
1-A	Conax			Anter a rest
1+B	Viasat			Contains and contained
2-A	Conax			COLUMN STREET

Remember to click the Apply button in the upper right-hand corner to save new settings in the configuration.

Status informa- To be implemented later. tion

15

Output window Click the Output tab in the TDX Service Tool to display the Output window.

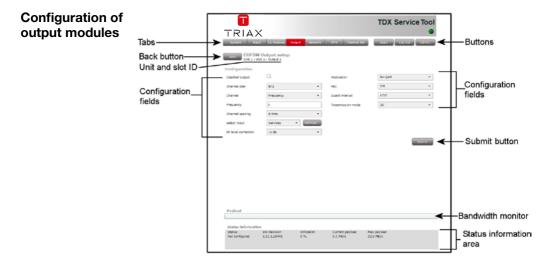
The first time you display the Output window in a new configuration the module list only displays the number and type of output modules that you have inserted in the main and subunits.



You have to configure the output modules individually.

To display the Configuration window, click the Setup button of the COFDM output module you want to configure.

11	100	Contradium - Judget - Talkey's	and store	NHE AT	and manager (starting)	
1000	n üvent	Hit Installed	Ourse	ana.		1 1200000 1200
· Uni	e il (18 Heeld)		_			Click the Setu
10.1	100	COTON establish conference as NONC		int serious		button
1	1	COFON extput configured as NONE		Not configured		button
		COFCH output configured as NONC				
		COFON output configured as NONE COFON cutput configured as NONE		Not contigured		
1000	1	COFON extput configured as NONE		Not contigured		
-		COVER extput configured as NEWS		Net configured		
		COTON output configured as NONE		Not configured		
1		CONTRA COMPACT COMPANY AN ACTUAL		Net contigured		
1		DOPTH extpat configured as solver		her configured		
	18	COPUM surput configurat as solar		we may end		
		DOPEN calpat configured as table?		we inspect		
100		COPOR supplies and goods as NOAR		ar infand		
		COPON calpel configured as NOAP		but instand		
1.0	16	COPCH output configured as NONC		het surfaced		
		COTON subject configured as NCNC		WA configured		
4 100	t 1 14 itemaŭ				Barred Barred	
1a	12	light output configured as some		last configured	STORE STORES	
1	1	take outsid temperature within		let intig and	STORE STORE	
1		Law output configured as inline		we config and	Manual Manual Voters	
- 1		CAM GROAT CONFIGURATION MODIFY		wat und pared	SALES AND ADDRESS OF	



The first time the TDX Service Tool displays the Configuration window for an output module in a new configuration the fields in the window will either display a default value or be empty.

**Disabled output** If you want to disable this output, click the Disabled output check box.

Channel plan

To select another TV system, open the drop-down list with the systems you can choose from. Select the system you want to use.

				TDX S	ervice Tool		
TRIAX					-		
System 1's	nd CA Modules	Dubut Network	JPTV Chann	d list Accoly	Lee out Admin	'	
COFDN Unit 1 - 5	I Output setup Not 1 • Output 1	p					
Configuration							
Disabled output			Modulation	64-QAM			
Channel plan			FEC	7/18			
Channel	D/K		Guard interval	1/32	•		
Frequency	L		Transmission mod	10			
Channel spacing	8						Click the emerged to ener
Select input	Services	· Services				$\geq$	Click the arrow to open
RF level correction	-3 dB	•					the drop-down list
					Submit		
Peyload							
Status Information							
	SW-Revision 1.11.1.20441	Utilization 0 %	Current payload C.1 Mb/s	Max payload 32.0 Ma/a			

Channel, Frequen- cy and Channel spacing	<ul> <li>You have two possibilities when you configure a COFDM module:</li> <li>You can use the specifications of the channel plan or</li> <li>You can enter a frequency manually.</li> <li>Using the channel plans:</li> <li>To select the required channel, open the drop-down list with the channels you can choose from.</li> <li>Select the channel you want to use.</li> <li>When you have selected a channel the Frequency and</li> </ul>
	Channel spacing fields are automatically filled in.
	Enter a frequency manually: To be able to enter a frequency manually, open the drop-down list with the channels you can choose from. Select "Frequency" from the drop-down list.
	Enter the desired frequency in kHz in the Frequency field.
	To select the required channel spacing, open the drop- down list with the channel spacings you can choose from.
	Select the channel spacing you want to use.
	<b>Note</b> When you have selected a channel using the channel plan or entered a frequency manually then you have also set up the other three RF channels on the module in question. You only need to select services for each of the three other RF channels, or disable one or more of the three channels.
Select input	<ul> <li>You have two possibilities when you select services:</li> <li>You can select services from the TDX-pool or</li> <li>You can select services from a particular input module.</li> </ul>
	Services from the TDX-pool To select services from the TDX-pool, open the drop- down list. Select "Services" from the drop-down list.

Select "Services" from the drop-down list.

To select services, click the Services... button next to Select input field to open the Select services window.

				TDX Serv	vice Tool	
TRIAX					٠	
System Input	CA Modules	Output Network	IPTV Channel is	et Accely Log o	u: Admn.	
COFDM Unit 1 - Siz	Output setup					
Configuration						
Disabled output			Modulation	64-QAM		
Channel plan	B/G		FEC	7/8	-	
Channel	CH35 (586000	•	Guard interval	1/32		
Frequency (KHz)	506000		Transmission mode	2K	-	
Channel spacing	8.1012	v				Click the service button
Select input	Services	* Services				
RF level correction	-3 d8					
					Submit	
Payload						
Status information						
	SN-Revision 1.11.1.20441	Utilization 0 %	Curvent psyload 0.1 Mb/s	Max pryload 32.0 Milvis		

			Service sources	Select service(s)
CANAL+ FILM HD	τv	\$ 3306	(Main Unit, input 3)	
CANAL+ FILM HD_descrambled	TV	3306*	(Main Unit, cam 1-B	
DR HD	TV	2030	(Main Unit, input 2)	
DR HD	TV	\$ 4802	(Main Unit, input 4)	
DR HD_descrambled	TV	4802*	(Main Unit, cam 1-B	
DR K	TV	2010	(Main Unit, input 2)	
DR Ramasjang	τv	2005	(Main Unit, input 2)	
DR Synstolkning	TV	111	(Main Unit, input 1)	
DR UPDATE	τv	2000	(Main Unit, input 2)	
DR1	TV	101	(Main Unit, input 1)	
DR2	τv	102	(Main Unit, input 1)	
FOLKETINGET	TV	2025	(Main Unit, input 2)	
SVT1 HD	τv	\$ 1406	(Main Unit, input 3)	
SVT1 HD_descrambled	TV	1406*	(Main Unit, cam 1-B	

In the Select Services window you can select the service or services that you want to output.

**Note** By clicking one of those column headlines that are underlined in the Select services window you can sort the list into alphabetical or numerical order depending on which column headline you click.

					Select service(s)	Click the square
CANAL+ FILM HD	τv	\$	3306	(Main Unit, input 3)		
CANAL+ FILM HD_descrambled	TV		3306*	(Main Unit, cam 1-8		to select service
DR HD	TV		2030	(Main Unit, input 2)	0	11111111111111111111111111111111111111
DR HD	TV	. \$	4802	(Main Unit, input 4)		
DR. HD_descrambled	τv		4802*	(Main Unit, cam 1-0	E)	
DR K	TV		2010	(Main Unit, input 2)		
DR. Ramasjang	TV		2005	(Main Unit, input 2)	0	
DR Synstolkning	τv		111	(Main Unit, shout 1)		
DR UPDATE	TV		2000	(Mein Unit, input 2)		
DR1	TV		101	(Main Unit, input 1)		
DR2	TV		102	(Main Unit, input 1)	EI	
FOLKETINGET	TV		2025	(Main Unit, input 2)		
SVT1 HD	τv	\$	1406	(Main Unit, input 3)		
SV71 HD_descrambled	TV.		1406*	(Main Unit, cam 1-8	0.0	
4						

To select a service, click the check box (square) to the right of the service you want.

If you want to give your selection of services a name, enter the name in the Mux name field.

					Select service(a)	
CANAL+ FILM HD	TV	\$	3306	(Main Unit, input 3)	1	
CANAL+ FILM HD_descrambled	TV		3306*	(Main Unit, cam 1-B		
DR HD	τv		2030	(Main Unit, input 2)		
DR HD	TV	4	4802	(Main Unit, input 4)		
DR HD_descrambled	TV		4802*	(Main Unit, cam 1-B	0	
DR K	TV		2010	(Main Unit, input 2)		
DR Ramasjang	TV		2005	(Main Unit, input 2)	(J)	
DR Synstokning	TV		111	(Main Unit, input 1)		0.67625
DR UPDATE	TV		2000	(Main Unit, input 2)		Enter name
DR1	TV		101	(Main Unit, input 1)		8 7533556050503357
DR2	TV		102	(Main Unit, input 1)		
FOLKETINGET	TV		2025	(Main Unit Out 2)		
SVT1 HD	TV	.5	1406	(Main Unit, input 3)		
SVT1 HD_descrambled	TV		106*	(Main Unit, cam 1-5	L) 2	
	1	/				

Click OK to return to the Configuration window.

Now you continue to select or enter values in the other fields in the Configuration window.

**Note** When you have selected a service this service will no longer be available in the TDX-pool.

#### Services from input module

To select the services from a particular input module, open the drop-down list.

Select "Transparent" from the drop-down list.

To select services from an input module, click the Services... button next to Select input field to open the Select input modules window.

			Selected	
# Unit: 1	(4 items)			
1	DVB-S	11293 MHz	Ver	
2	DVB-S	11302 MHz	0.1	Select input module
3	DV8-T	546000 KHz		modulo
4	DVB-T	658000 KHz		module

To select an input module, click the check box (square) to the right of the module you want to use.

If you want to give your selection a name, enter the name in the Mux name field.

Click OK to return to the Configuration window.

**Note** There is a limit to the number of services an output module is able to output. You can consult the TDX Web Configurator to avoid overloading the output module, i.e. select more services than the module in question is able to handle.

Next you select or enter values in the other fields in the Configuration window.

- **RF level correction** To select another RF level correction, open the dropdown list with the levels you can choose from.

   Select the level you want to use.
   Select the level you want to use.
- ModulationTo select which modulation to use, open the drop-<br/>down list with the QAM mode you can choose from.<br/>Select the QAM mode you want to use.
- FEC To select which FEC rate to use, open the drop-down list with the FEC rates you can choose from. Select the FEC rate you want to use.

Guard interval	To select which guard interval to use, open the drop- down list with the intervals you can choose from. Select the guard interval you want to use.
Transmission mode	To select which transmission mode to use, open the drop-down list with the modes you can choose from. Select the transmission mode you want to use.

	×			TDX Serv	vice Too
System 1		Output Network	IPTV Channel i	st Apply Log ou	Admin.
Configuration					
Disabled output			Modulation	64-QAM	*
Channel plan	B/G	•	rec	1/2	
Channel	CH35 (586000)	•	Guard interval	1/32	*
Frequency (KHz)	586000		Transmission mode	2K	•
Channel spacing	.6 MHz	.*			
Select input	Services	· Survey			
R/F level correction	-3 dB				
Payload					Submit
	0.0				
Status Informati	5W-Revision	Utilization	Current payload	Max payload	

**Note** When you display the Configuration window for an output module that has been configured, all fields are filled in and services have been selected.

If you want to change the existing values or services just follow the same procedure as when you configure an output module for the very first time.

When you have selected or inserted the values you want you have to click the Submit button to enter this information into the headend system and return to the Output window.

	×			TDX Ser	vice Tool	
Eystern 34	N Output setu		k BTV Charnel list	Apply Log a	ut Admin.	
Configuration	Slot 1 - Output 1					
Disabled output			Nodulation	64-QAM		
Channel plan	B/G		FEC	1/2		
Channel	CH35 (58600	.) .	Guard interval	1/30		
Frequency (KHz)	586000		Transmission mode	2K		
Channel spacing	8 MHz					
Select input	Services	· Servicem				
R* level correction	db C-					
					Submt	Click the Su button to say your selection
Payload						
Status informatio						
Status	SW-Revision 1.11.1.20441	Ublization 0 %		Nax payload		1
Not configured			0.1 Mb/s	32.0 Mb/s		

Remember to click the Apply button in the upper right-hand corner to save new settings in the configuration.

#### **Bandwidth** monitor

The bandwidth monitor which is placed above the status information area is a real time monitor, so it measures what is currently output. So when you change the configuration the changes have to be submitted before the bandwidth monitor can measure it.

The update frequency is approximately 5 seconds.

	Payload	
	The output does not exc	eed the maximum payload
	Payload	
	The output exceeds the	maximum payload
	The Status informati width monitor.	on area also contains information related to the band-
Status informa- tion		placed at the bottom of the Configuration window. The d in the configuration window of a COFDM module in- ftware.
	Status	Informs you about the state of the output module.
	SW revision	Displays the software version of the output module.

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Utilization	Displays what is currently output as a percentage of
	the maximum output.

**Current payload** Informs you about how much is currently output.

Max payload Displays the maximum limit of how much you can output.

					TDX Set	rvice Tool
	TRIAX	<				•
	System Irp.	-	Output Network	IPTV Channel lis	st Apply Log	out Admin.
	Bock COFDM Unit 1 - S	Output setup lot 1 - Output 1	p			
	Configuration					
	Disabled output			Medulation	64-QAM	-
	Channel plan	B/G	•	FEC	1/2	•
	Channel	CH35 (586000	•	Guard interval	1/32	
	Prequercy (KHz)	586000		Transmission mode	2К	•
	Channel spacing	8 MHz	*			
	Select input	Services	· Services			
	RF level correction	-3 dB				
						Submit
	Payload					
	Payroad					
	Status information					
formation —	Status	SW-Revision 1.11.1.20441	Utilization 52 %	Current payload 16.1 Mb/s	Max payload 31.7 Mb/s	
	-	1.111.1.2.3441	22.18	2012 (10/3	24.1 may 4	

When you return to the Output window the configuration of the output module is displayed in the module list.

	iene Ingut	Skhodure Output Newisk	Priv des		and the second distances in the	
	Celo-R	WW Sestalies	Outrel	Ratio		Output modul
4 1/8/	unit (18 items)	COPON	2505	OK.	Contraction of the local division of the	that has been
1.1	1	COFDH	0436	Disebled	Security Security	
Q.	S	COFDM	CH37	Disabled	ACTORNA ACTIVITA	configured
	- G	COFDM	0128	Disabled	SATURD STOTES	0
2	1	COFOH output configured as NONE		That configured	Sector Sectors	
-	3	COFOR subjut serigural as 1/01/0		Ret configured	STORE STORE	
2	5	COFOM extput configured as NONE		hot configured	STATES STATES	
		COFDH output configured as NONE		Not configured	COMP COMP	
3	1	COFDH output configured as NONE		Not configured	Sectors Stores	
	2	COFOR rudget configured as NOVE		net sayligared	COLUMN COLUMN	
3.	3	CDFDH subput configured as NONE		Not configured	1000 0000 0000 0000 0000 0000 0000 000	
1	*	COFOR output configured as NONE		Not configured	Sector Sector	
*	1	COFOR subjut configured as folke		Not contigured	Sectors Sectors	
4 :	2	COFDM surged configured as NOVE		not configured	Section Section	
	3	COTON output configured as NONE		Not configured		
		COFDM output configured as NONE		Not configured		
a Unit	: 1 (4 terra)					
4	1	QAH output configured as NONE		Not configured	Second Second	
3	3	QAH estput certigured as NOVE		<b>Ret configured</b>	STATES STATES	
10	3	QAM output configured as NONE		Not configured	Manual Manual	
11	×	QAM output configured as NONE		<b>Not configured</b>	Sector Sectors	1

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Now you can continue to configure the other output modules one by one, following the procedure described on the previous pages.

#### Delete output module

If you want to remove an output module and the associated configuration you can use the Delete button of the module in question in the Output window.

Click the Delete button of the COFDM output module you want to remove. A message window is displayed asking you to confirm that you want to remove the output module.



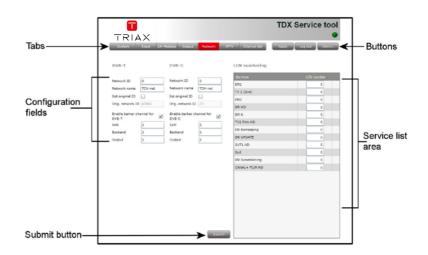
Until you have removed the output module physically from the headend unit the module list will display four lines with the writing in red.

340	em Titest	CA Madules Oxford Technolik	PTV	Channel fat		
	Chalpert	HW Installed	thered	Salar		
No. COMPANY	unit (16 items)	Sec. 1	CH21	0×	Margaret In succession in the	
3	SUNC.	COFDM	0422		Sector Strength	
1	2	COFDM	0422	OK OK	ACCOUNTS ACCOUNTS	
÷.	4	согон	D124	CK CK	Contractor Contractor	
-	1	COFOM	CH25	OK	ALCOLOGIE DE LA COLOGIE DE LA	
2	2	COFDM	CH26	ox	Contraction Contraction	
2	1	COFDM	0427	ax	Statute Statute	
	1 - C	CORDM	0.028	ox.	Control Control	
3	-	COPDM	CH21	ox.	Sector Sector	
3	2	COPDM	0432	ox	Contraction Contraction	
3		COPEM	DH33	ox.	Contraction of Contraction	The configuration
3	1	COPOH	0434	ox	Sectors Sectors	
4	1	COFDM output configured as NONE		Not circliquired	General General	has been delete
-	2	COFOM output configured as NONE		Not configured	ALL TAXABLE AND ALL TAXABLE	
		COFDM output configured as NONE		Not configured	ACTIVITY ACTIVITY	
		COFOM output configured as NONE		Not configured		
	1 (4 tems)	Second contra consider to de mont		The second second	Samuel Second	
1	1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 - 1990 -	GAM	041	OK	Stores States	
1	2	QAH	0142	OK	Section Section	1
1	2	GAM	CH43	OK	SCITTE SCITTE	1
		CAM	0144	CHK .	CONTRACTOR CONTRACTOR	1

#### Network window

Click the Network tab in the TDX Service Tool to display the Network window.

The first time you display the Network window the fields in the window will display a default value. The service list area will display all the digital services you have configured to output using the Output tab.



End-users may need the network ID if they have to make a NIT (Network Information Table) search when searching for services on their televisions or set-top boxes. Some set-top boxes may also need the original network ID in connection with a NIT search.

For both DVB-T and DVB-C you have to state network ID's and names.

Network ID	Enter the required network ID in the Network ID field. If it is an open network, the network ID has to follow the "ETSI TR 101 211" guidelines. If it a closed network you can determine the ID yourself.
Network name	Enter a network name in the Network name field. The maximum number of characters you can enter in the field is 255.
Set original ID	If you want to change the default values of the original network ID, click Set original ID check box to enable the Orig. network ID field.
Orig. network ID	Enter the required original network ID in the Orig. network ID field.

A barker channel carries all EIT information for a number of services.

Using a barker channel all EIT information will be transferred from the individual outputs to the barker channel thereby making more room/ payload available to the output of services.

**Note** If you to use a barker channel to carry the EIT information you have to make sure that the set-top boxes used by end-users are NorDig compliant, i.e. they can read a Linkage Descriptor from a NIT.

Enable barker Click the this check box to enable a barker channel for channel for DVB-T/ DVB-T and/or DVB-C . DVB-C

Unit	Enter the ID number of the unit you where you want to place the barker channel. You can enter values 1-3. "1" = main unit "2" = unit 1 "3" = unit 2
Backend	Enter the number of the output module where you want to place the barker channel. You can enter values 1-6
Output	Enter the number of the output where you want to place the barker channel. You can enter values 1-4.

In the service list area you determine the numerical output order of the digital services on the television or set-top box of the end-user.

**LCN number** Enter the desired number in the LCN number field to the right of each service in the service list area.

**Note** You cannot give the same LCN number to more services.

When you have entered the values you require you have to click the Submit button to enter this information into the headend system.

		~				TDX Service tool
	System		lodular Cutput	Network	9TV Charnel list	Apply Log out Admin.
	DVB-T		DVB-C		LCN numbering	
	hetwork ID Network name Set original ID Orig. network ID Enable barker of DVB-7 UvB-7 Eackand Output		Network ID Network name Set original ID Origi, retwork ID Enable barker dh DV5-C Uwik Backend Ourput		Secure DR1 TV 2 (Syd) DR HD DR HD DR KD DR KDR KD DR T DR T DR T DR T DR T DR T DR T	L2N subder
Click the Submit button to enter the information			;	Sumt		

Remember to click the Apply button in the upper right-hand corner to save new settings.

#### **Channel list**

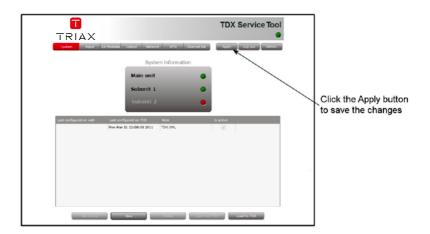
Click the Channel list tab in the TDX Service Tool to display the Channel list window.

When you have finished configuring all the output modules you have inserted into the headend units the Channel list tab displays a list with all the channels and services that you have selected.

	T IAX		
System		ules Output Network IPTV Chann	rel list Apply Log out Admin.
Channel	Mux name	Services	Output
CH21	Dk MUX	DR 1, DR 2, TV2, TV2Syd	COFDM(Main Unit, Slot 1-
CH22		DR Update	COFDM(Main Unit, Slot 1-
CH23		Sport 1, Sport 2	COFDM(Main Unit, Slot 1-
CH24		Disney, Cartoon	COFDM(Main Unit, Slot 1-

#### Save configuration

An **important button** when you change your configuration of the headend system is the **Apply** button placed in the upper right-hand corner of the TDX Service Tool window.



Apply

Whenever you have made changes in your configuration,
"Apply" on the Apply button turns red to tell you that you have unsaved changes that need to be saved.
Click the Apply button to **save** the changes. When changes have been saved the "Apply" text looses the red col-

WARNING - All unsaved changes will be lost in case of a power cut

our.

#### Manufacturer

#### Manufacturer

Triax A/S Bjørnkærvej 3 8783 Hornsyld Denmark

#### Your notes

Your notes





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TRIAX A/S | Bjørnkærvej 3 | DK-8783 Hornsyld | Denmark