

**GB**

**D**

**F**

**S**

**FIN**

**DK**

**ESP**

**I**

# User guide

TDH 700 modules:  
DVB-Satellite  
DVB-Terrestrial

Simply **more**  
- more simply



# Set-up road map for TDH modules

[D] Merklister für Inbetriebnahme der TDH-Module [F] Mise en oeuvre d'une centrale TDH  
[S] Användarguide [DK] Køreplan for betjening af TDH [FIN] Sääädä äänitaso  
[ESP] Guía de instalación para módulos TDH [I] Mappa installazione moduli per TDH

Start

## 1 Read the user guide for Main/Sub-unit and this guide

[D] Lesen Sie die Bedienungsanleitung für Haupt- und Untereinheit und die vorliegende  
[F] Prendre connaissance de la notice d'utilisation du châssis primaire ou d'extension.  
[S] Läs den här huvudmenyn, och menyn för Bas- / slavenheterna. [FI] Lue perusyksikön ja moduulien käyttöohjeet  
[DK] Læs denne vejledning samt vejledning for Main/Sub-unit [ESP] Leer las guías de usuario de las cabeceras principal/secundaria y de los módulos [I] Leggere la guida per i moduli Main/Sub e questa guida

## 2 Mount the Master module in the TDH Main or sub-unit.

[D] Montieren Sie das Mastermodul in der TDH-Haupt- oder Untereinheit  
[F] Monter le module maître dans le châssis.  
[S] Montera Mastermodulen i TDH Basenheten. [FI] Asenna master-moduulit pää -/aliyksikköön  
[DK] Monter Master modul i Main-unit el. Sub-unit [ESP] Instalar el módulo maestro en las cabeceras principal y secundarias  
[I] Montare i moduli Master nella TDH principale e nelle Sub unità

## 3 Connect possible Slave modules to the Master module

[D] Schließen Sie eventuell vorhandene Slaves an das Mastermodul an  
[F] Relice les modules esclaves jil ya lieu  
[S] Montera Slavmodulen i TDH Basenheten [FI] Kytke mahdolliset orja-moduulit master-moduuleihin  
[DK] Forbind Master og Slave moduler vha det medføjede fladkabel  
[ESP] Conectar los posibles módulos esclavos al módulo maestro [I] Collegare gli eventuali moduli Slave ai moduli Master

## 4 Place cover on Main and Sub-unit

[D] Setzen Sie die Abdeckplatte auf Haupt- und Untereinheit.  
[F] Remonter le couvercle [S] Placera locket på bas- och sub-enheten  
[FI] Aseta kansi paikalleen [DK] Monter låg på kabinet  
[ESP] Poner la tapa de las cabeceras [I] Chiudere il coperchio della centrale

## 5 Connect the input signal to the modules

[D] Legen Sie die Eingangssignale an die Module an  
[F] Distribuer les signaux d'entrées sur les modules [S] Koppla ingångssignal till modul.  
[FI] Kytke tulosignaalit moduuleihin [DK] Tilslut signal til de enkelte moduler  
[ESP] Conectar la señal de entrada a los módulos [I] Collegare il segnale di ingresso ai moduli

## 6 Connect video monitoring device or connect PC

[D] Schließen Sie das Videoüberwachungsgerät oder einen PC an  
[F] Brancher le moniteur vidéo ou le PC pour programmer les module [S] Koppla in video signalen eller din PC  
[FI] Kytke monitori tai PC [DK] Tilslut video monitor eller PC [ESP] Conectar PC o dispositivo para monitorizar el vídeo  
[I] Collegare l'uscita Video al monitor di controllo o il PC alla centrale

## 7 Program modules from no: 1 to 30

[D] Programmieren Sie die Module 1 bis 30 [F] Programmer les différents modules: 1.....30.  
[S] Programmera modul nr: 1 till 30 [FI] Ohjelmoi moduulit 1 ... 30  
[DK] Programmer de monterede moduler fra 1....30 [ESP] Programar los módulos del 1 al 30  
[I] Programma i moduli dal n°1 al n°30

## 8 Connect fieldstrength meter to Test point

[D] Schließen Sie das Feldstärken-Messgerät an die Ausgangsklemmen an  
[F] Connecter un mesureur de champ à la sortie du châssis. [S] Koppla in fältstyrkeinstrumentet till testpunkt  
[FI] Kytke kentänvoimakkuusmittari lähtöliitimeen [DK] Tilslut feltstyrkemåler til testpunkt  
[ESP] Conectar medidor de campo en el conector punto de test [I] Collegare il misuratore di campo al connettore di uscita

## 9 Adjust output level on each modules

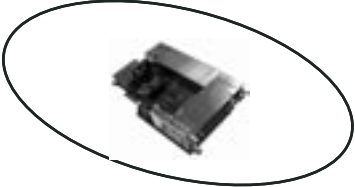
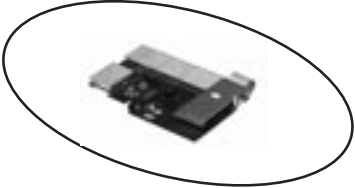
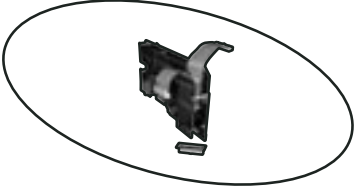
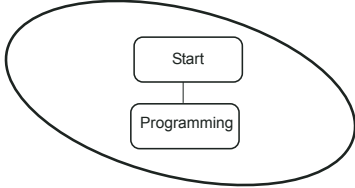
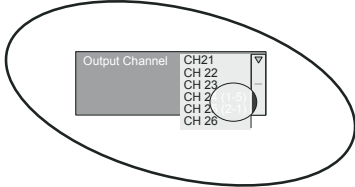
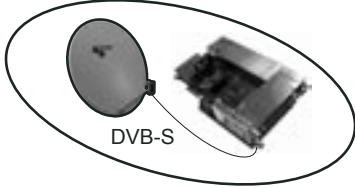
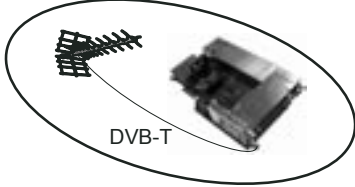
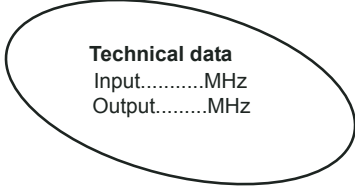
[D] Stellen Sie bei allen Modulen den Ausgangspegel ein [F] Ajuster le niveau de sortie de chaque module.  
[S] Justera utgångssignalen på varje modul [FI] Sääädä jokaisen moduulin taso  
[DK] Juster udgangsniveau på de enkelte moduler [ESP] Ajustar nivel de salida de cada módulo  
[I] Regolare il livello di uscita di ogni modulo

## 10 Activate pin code if wanted

[D] Aktivieren Sie den PIN-Code [F] Activer le code d'accès (code PIN) si nécessaire.  
[S] Aktivera pin kod om behov finnes [FI] Halutessasi aktivoi pin-koodi [DK] Aktiver eventuel pinkode  
[ESP] Activar código PIN si se desea [I] Attivare il codice se necessario

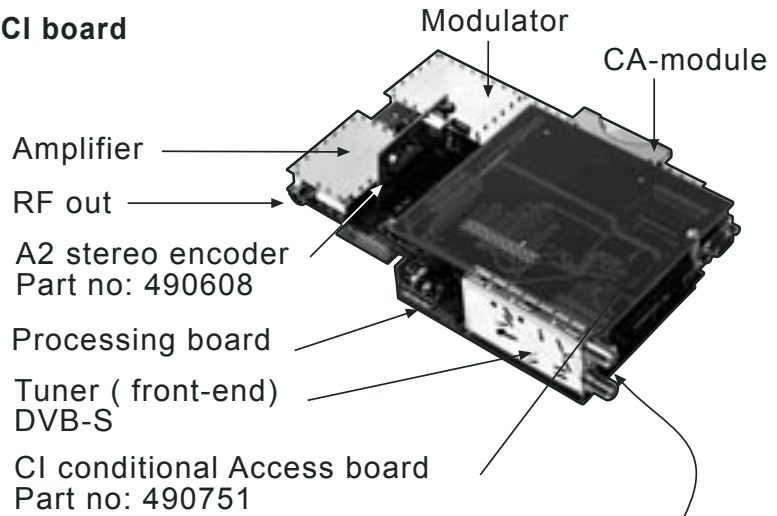
End

# Contents

	<b>Page</b>
<b>Contents</b>	
[D] Inhaltsverzeichnis	
[F] Sommaire	
[S] Innehållsförteckning	
[FI] Sisältö	
[DK] Indholdsfortegnelse	
[ESP] Contenidos	
[I] Indice	3
<hr/>	
	
<b>Module identification</b>	
[D] Modulidentifikation	
[F] Identification du module.	
[S] Modul identifikation	
[FI] Moduulitieto	
[DK] Identifikation af modultype	
[ESP] Identificación de módulos	
[I] Identificazione moduli	4
<hr/>	
	
<b>Slave module</b>	
[D] Slavemodul	
[F] Module esclave.	
[S] Slav modul	
[FI] Orjamoduuli	
[DK] Slave modul	
[ESP] Módulo esclavo	
[I] Modulo Slave	5
<hr/>	
	
<b>Master &amp; Slave module Set-up</b>	
[D] Setup des Slavemoduls	
[F] Mise en oeuvre du module esclave.	
[S] Montera slav modul	
[FI] Orja-moduulin ohjelmointi	
[DK] Opsætning af Slave modul	
[ESP] Instalación de módulos maestro y esclavo	
[I] Installazione modulo Slave	6
<hr/>	
	
<b>Start programming</b>	
[D] Programmierung	
[F] Programmation d'un module.	
[S] Börja programmera	
[FI] Ohjelmoinnin aloitus	
[DK] Start programming	
[ESP] Inicio de la programación	
[I] Programmazione	7+14
<hr/>	
	
<b>Output setting</b>	
[D] Ausgangseinstellungen	
[F] Programmation des caractéristiques de sortie.	
[S] Ange utgångssignal (RF)	
[FI] Lähtöasetukset	
[DK] indstilling af modulator	
[ESP] Ajustes de salida	
[I] Installazione uscita	8
<hr/>	
	
<b>Input setting DVB-S</b>	
[D] Eingangseinstellungen	
[F] Programmation des caractéristiques d'entrée pour un module DVB-S	
[S] DVB-S ange ingångssignal	
[FI] Tuloasetukset	
[DK] Indstilling af input del DVB-S	
[ESP] Ajustes de entrada DVB-S	
[I] Installazione ingresso	9
<hr/>	
	
<b>Input setting DVB-T</b>	
[D] Eingangseinstellungen	
[F] Programmation des caractéristiques d'entrée pour un module DVB-S	
[S] DVB-T ange ingångssignal	
[FI] Tuloasetukset	
[DK] Indstilling af input del DVB-T	
[ESP] Ajustes de entrada DVB-T	
[I] Dati tecnici Moduli Master e Slave	10
<hr/>	
	
<b>Technical data</b>	
Input.....MHz	
Output.....MHz	
<b>Technical data Master and Slave module</b>	
[D] Technische Daten	
[F] Fiche technique.	
[S] Teknisk data	
[FI] Master-/orjamoduulien tekniset tiedot	
[DK] Tekniske data Master og Slave modul	
[ESP] Datos técnicos de módulos maestro y esclavo	
[I] Dati tecnici Moduli Master e Slave	11-12

# Module identification

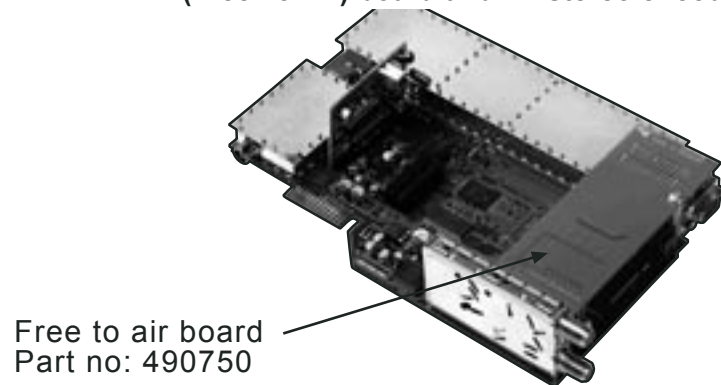
## The Master module with tuner and CI board and A2 stereo encoder



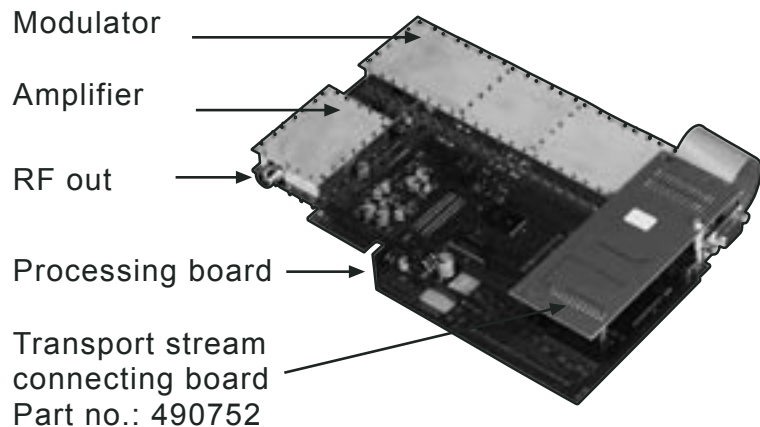
### Signal error indicator

- [D] Anzeige "Kein Signal"
- [F] Led (Indicateur d'absence de signal).
- [S] Signal Indikator
- [FI] Signaalin puuttumisen ilmaisin
- [DK] Lyser ved fejl i signal
- [ESP] Indicador de señal de error
- [I] Indicatore assenza di segnale

## The Master module with tuner and FTA (Free To Air) board and A2 stereo encoder

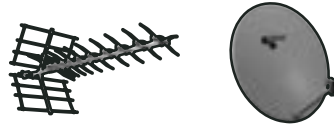


## The Slave module without tuner

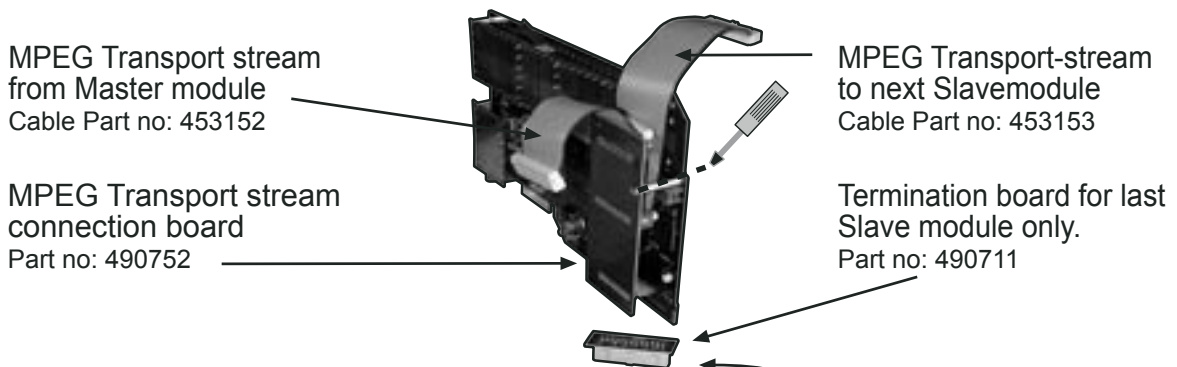
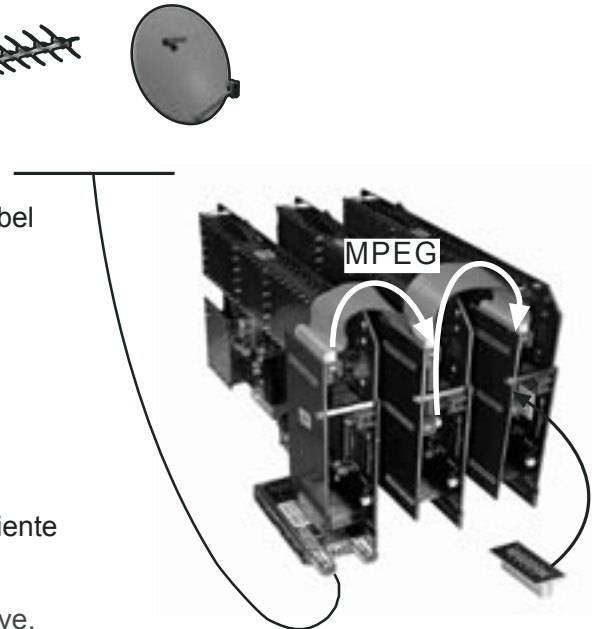


# Slave module

- [GB]** The Slave module receives a MPEG transport stream, from the Master module. Each individual services are now available for the Slave modules.
- [D]** Das Slavemodul erhält einen MPEG-Transportstream vom Master. Die Slavemodule können jetzt alle Dienste nutzen.
- [F]** Le module esclave reçoit le flux MPEG du module maître. Tous les services sont alors disponibles pour le module esclave.
- [S]** Slavmodulen tar emot en MPEG transport ström. Varje individuellt program i multiplexen är nu tillgängligt
- [FI]** Orjamoduuli saa MPEG transportstreamin Mastermoduulilta.
- [DK]** Slave modulet modtager MPEG transport strøm fra Master modul, og et program fra pakken kan vælges.
- [ESP]** El módulo esclavo recibe un transport stream MPEG del módulo maestro. Cada uno de los servicios está ahora disponible en el módulo esclavo.
- [I]** Il modulo Slave riceve il segnale MPEG transport stream dal modulo Master. Tutti i servizi all'interno del segnale MPEG sono disponibili per i moduli Slave.

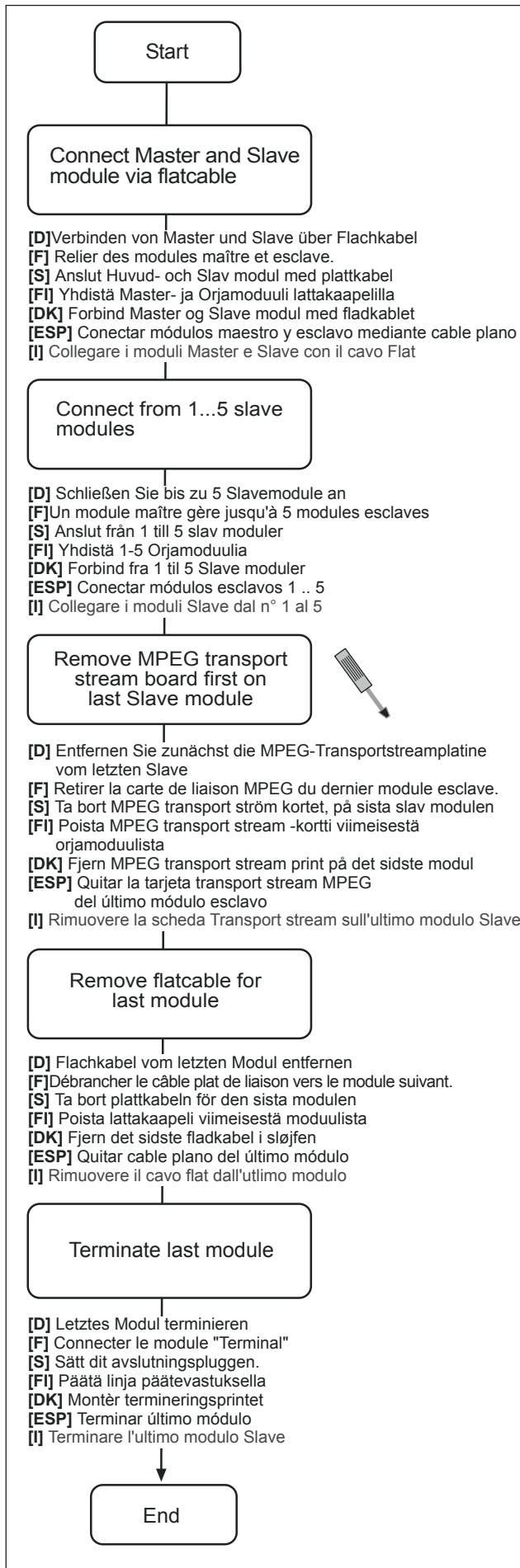


- [GB]** The MPEG transport stream is transferred via the flat-cable to next module.
- [D]** Der MPEG-Transportstream wird über Flachkabel an das nächste Modul weitergegeben.
- [F]** Le flux MPEG est transporté via le câble en nappe vers le module suivant.
- [S]** MPEG transport strömmen transporteras via platt-kabel till nästa modul.
- [FI]** MPEG transport stream siirtyy lattakaapelissa seuraavaan moduuliin
- [DK]** MPEG transportstrømmen bliver overført via det medfølgende fladkabel.
- [ESP]** El transport stream MPEG se transfiere al siguiente módulo mediante un cable plano.
- [I]** Il segnale MPEG Transport-stream è trasferito attraverso il cavo flat al successivo modulo Slave.



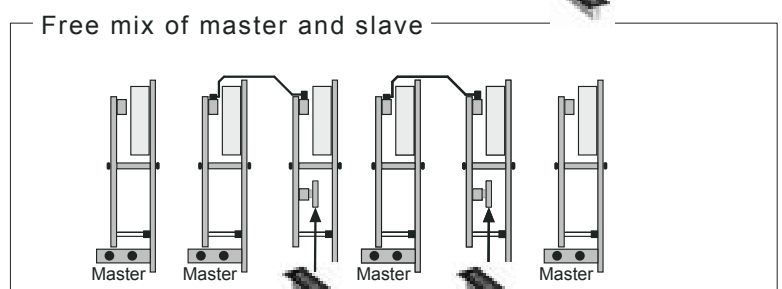
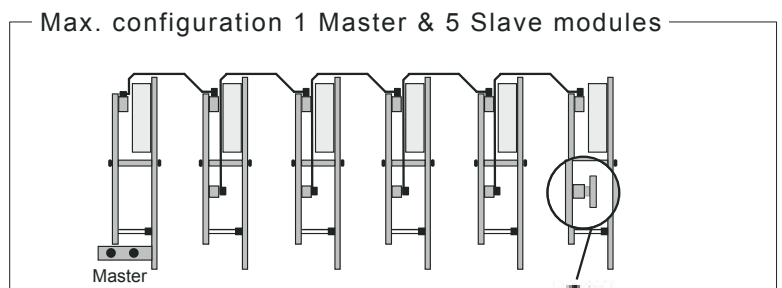
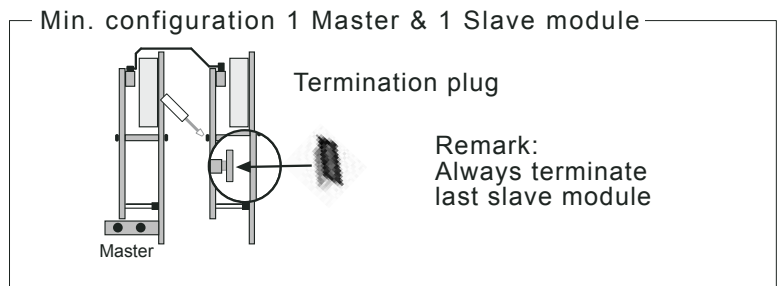
- [D]** Abschlussplatine nur für letzten Slave.
- [F]** Module "Terminal". A connecter sur le dernier module esclave.
- [S]** Avslutnings enhet endast för den sista modulen
- [FI]** Päätevastus viimeiseen orjayksikköön.
- [DK]** Terminerings plug, monteres kun på sidste slave module
- [ESP]** Tarjeta de terminación sólo para el último módulo esclavo Código 490711
- [I]** Terminazione per l'ultimo modulo Slave

# Master & Slave module set-up



## Using Master and Slave module

[D] Verwendung von Master- und Slavemodul  
 [F] Utilisation des modules maître et esclave.  
 [S] Användning av Huvud- Och Slavmodul  
 [FI] Master- ja Orjamoduulien käyttö  
 [DK] Anvendelse af Master og Slave moduler  
 [ESP] Usando módulos maestros y esclavos  
 [I] Utilizzo moduli Master e Slave



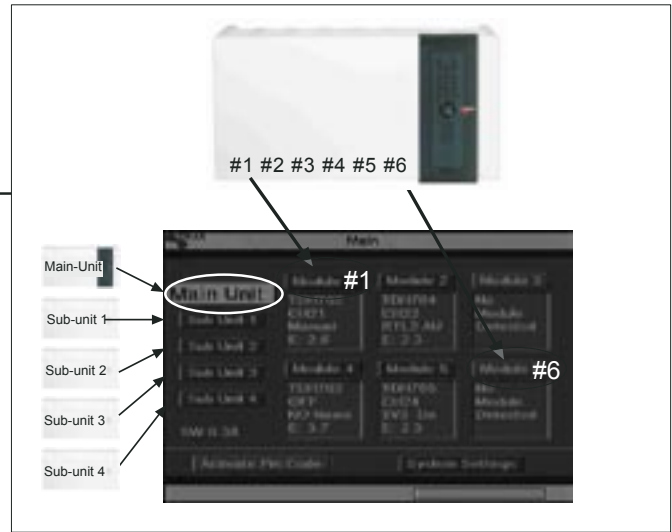
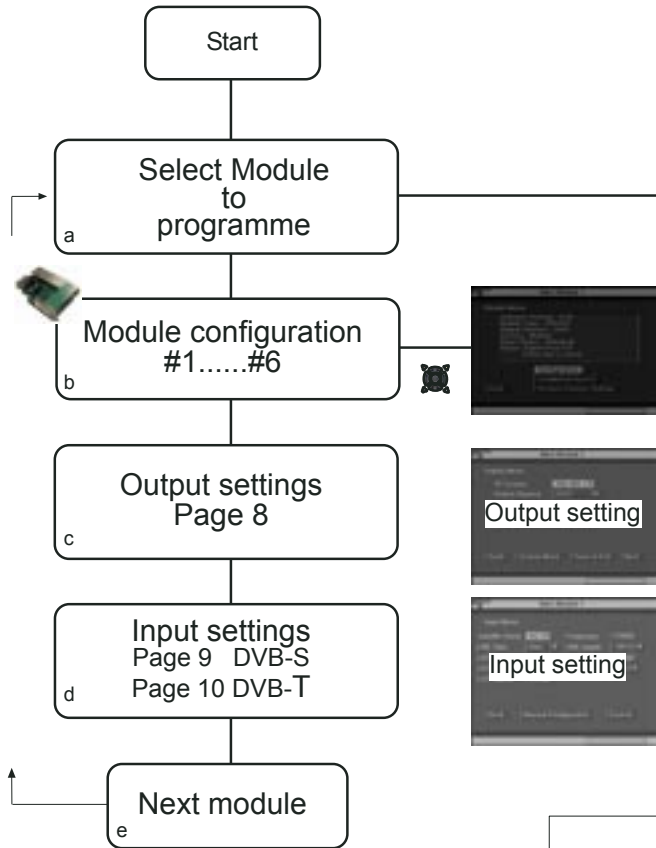
[GB] Number of Master and Slave modules can be mixed within the same cabinet.  
 [D] Die Anzahl der Master und Slaves in einem Schaltschrank kann variiert werden.  
 [F] Le châssis peut recevoir indifféremment des modules maîtres ou esclaves.  
 [S] Flera Huvud- och Slavmoduler kan mixas tillsammans i samma basenhet.  
 [FI] Useampia Master- ja Orjamoduuleita voidaan asentaa samaan perusyksikköön  
 [DK] Antallet af Master og Slave module kan blandes indenfor et kabinet  
 [ESP] El número de módulos maestros y esclavos se pueden mezclar en la misma cabecera  
 [I] Attenzione: all'interno di ogni centrale possono essere allocate massimo coppie di moduli Master e Slave

[GB] Remark: Always terminate last slave module  
 [D] Hinweis: Letzten Slave immer terminieren.  
 [F] Remarque: le dernier module esclave doit recevoir le module "Terminal".  
 [S] Avsluta alltid sista modulen med en avslutningsplugg.  
 [FI] Huom: Muista päättää viimeinen moduuli päätevastuksella  
 [DK] Bemærk: Sidste Slave modul skal afsluttes med termineringsprintet  
 [ESP] Nota: Siempre terminar el último módulo esclavo  
 [I] Attenzione: ricordarsi sempre di terminare l'ultimo modulo Slave

[GB] Remark: Master/Slave for Free to air program only  
 [D] Master/Slave nur für Free-to-Air-Programm.  
 [F] Remarque: l'utilisation de la fonction maître/esclave n'est conseillée qu'en traitement de programme FTA.  
 [S] Huvud/Slav modul är endast för Free to air program.  
 [FI] Huom! Master/Orja yhdistelmä toimii vain vapailla kanavilla  
 [DK] Bemærk: Master/slave systemet er kun for ukodede programmer.  
 [ESP] Nota: Combinación maestro/esclavo sólo para emisiones FTA  
 [I] Attenzione: utilizzare la combinazione Master/Slave solo per canali in chiaro

# Start programming

## Start programming a module



- a [D] Wählen Sie das zu programmierende Modul aus  
[F ] Choisir le module à programmer.  
[S] Välj modul som önskes programmeras  
[FI] Valitse ohjelmoitava moduuli  
[DK] Vælg det modul som ønskes programmeret  
[ESP] Seleccionar módulo a programar  
[I] Selezione modulo da programmare
- b [D] Modulkonfiguration #1...#6  
[F ] Entrer dans le menu de programmation.  
[S] Modul konfiguration #1...#6  
[FI] Moduulin asetukset #1...#6  
[DK] Modul fra #1...#6  
[ESP] Configuración de módulos #1...#6  
[I] Configurazione modulo #1...#6
- c [D] Ausgangseinstellungen Seite 8  
[F ] Programmation des caractéristiques de sortie (voir Page 8).  
[S] Utgång Ange Ut signal  
[FI] Lähtöasetukset Sivu 8  
[DK] Indstilling af modulator se side 8  
[ESP] Ajustes de salida Página 8  
[I] Settaggi uscita Pagina 8
- d [D] Eingangseinstellungen Seite 9-10  
[F ] Programmation des caractéristiques de sortie(voir Page 9-10).  
[S] In signal Ange In signal  
[FI] Tuloasetukset sivu 9-10  
[DK] Indstilling af tuner mm. se side 9-10  
[ESP] Ajustes de entrada Página 9 DVB-S, Página 10 DVB-T  
[I] Settaggi ingresso Pagina 8
- e [D] Nächstes Modul  
[F ] Module suivant.  
[S] Nästa modul  
[FI] Seuraava moduuli  
[DK] Næste modul  
[ESP] Siguiente módulo  
[I] Prossimo modulo

Main Information window → Fenêtre d'information.

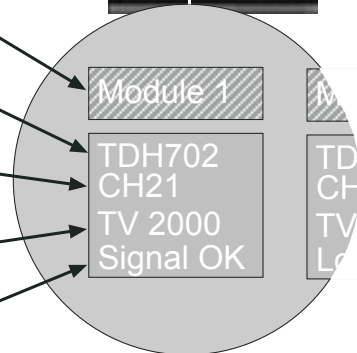
Module number → Numéro de module.

Type of module → Type de module.

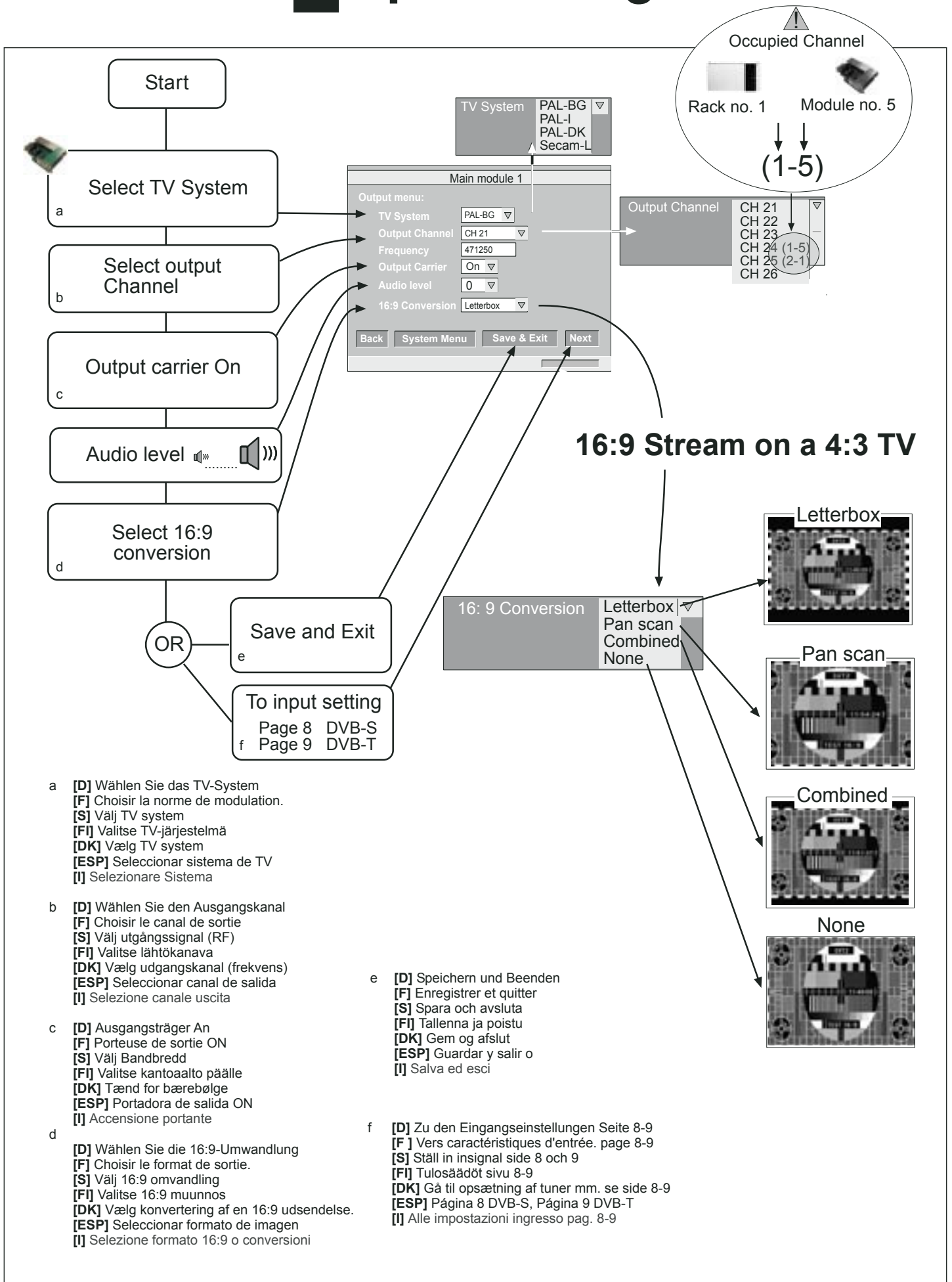
Output channel → Canal de sortie.

Name of program → Nom du programme diffusé.

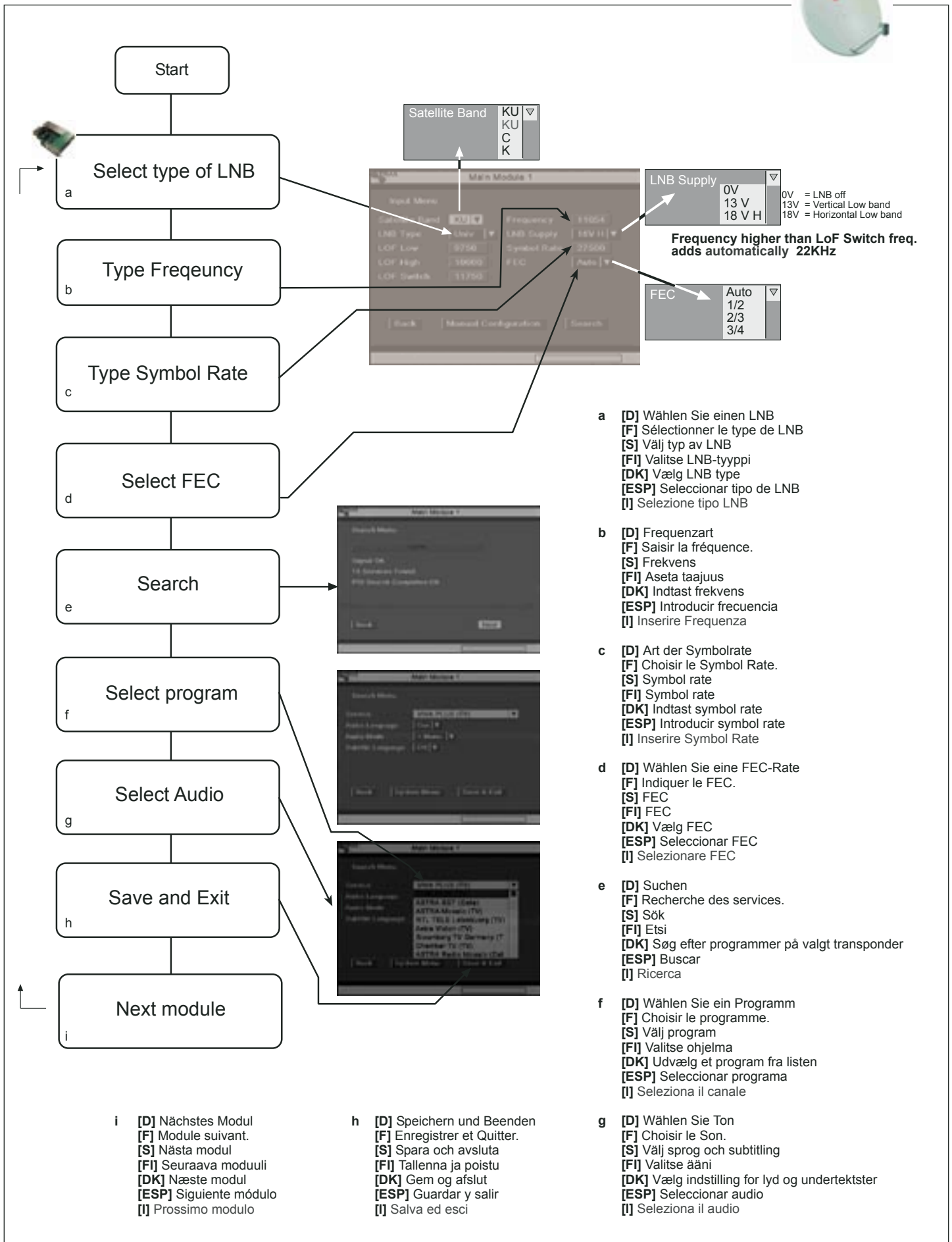
Tuner status → Etat du tuner.



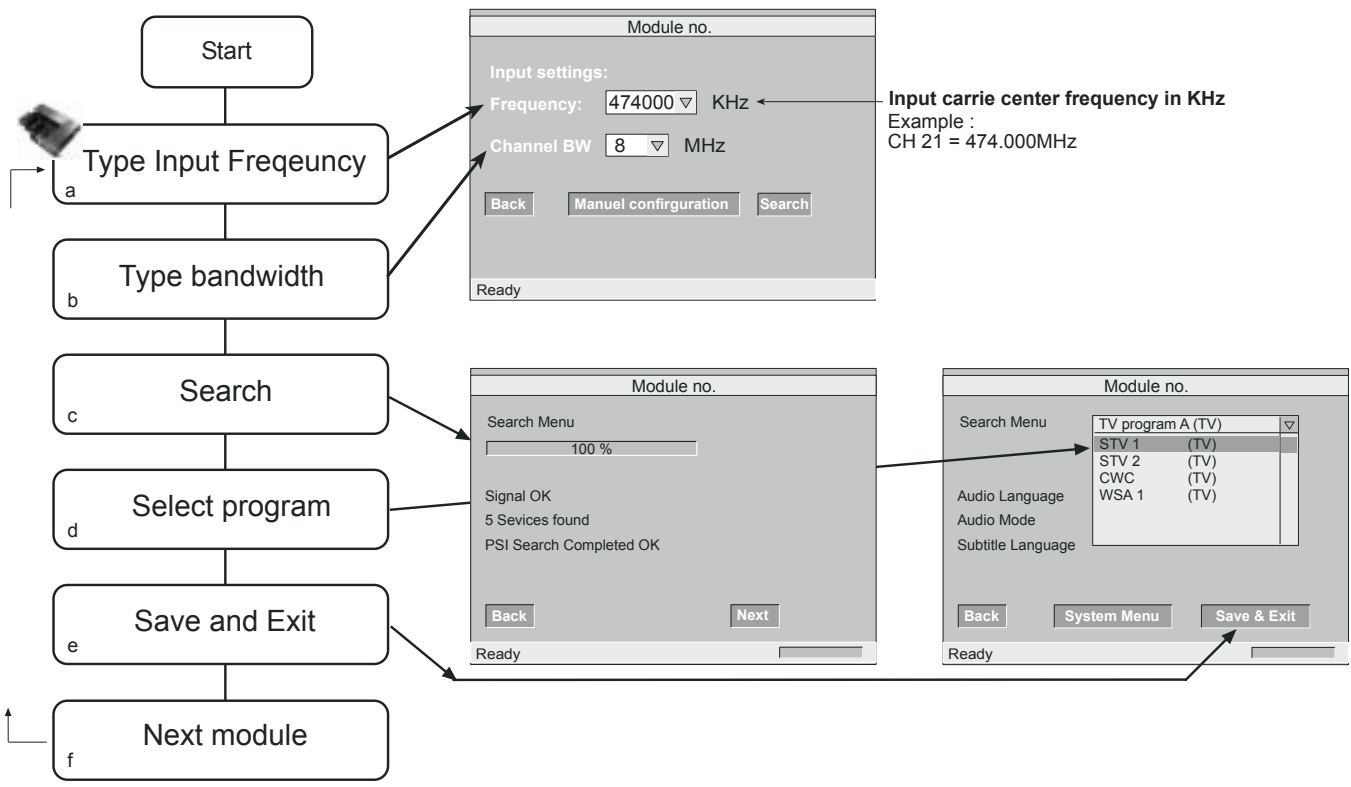
# Output setting



# Input setting DVB-S module



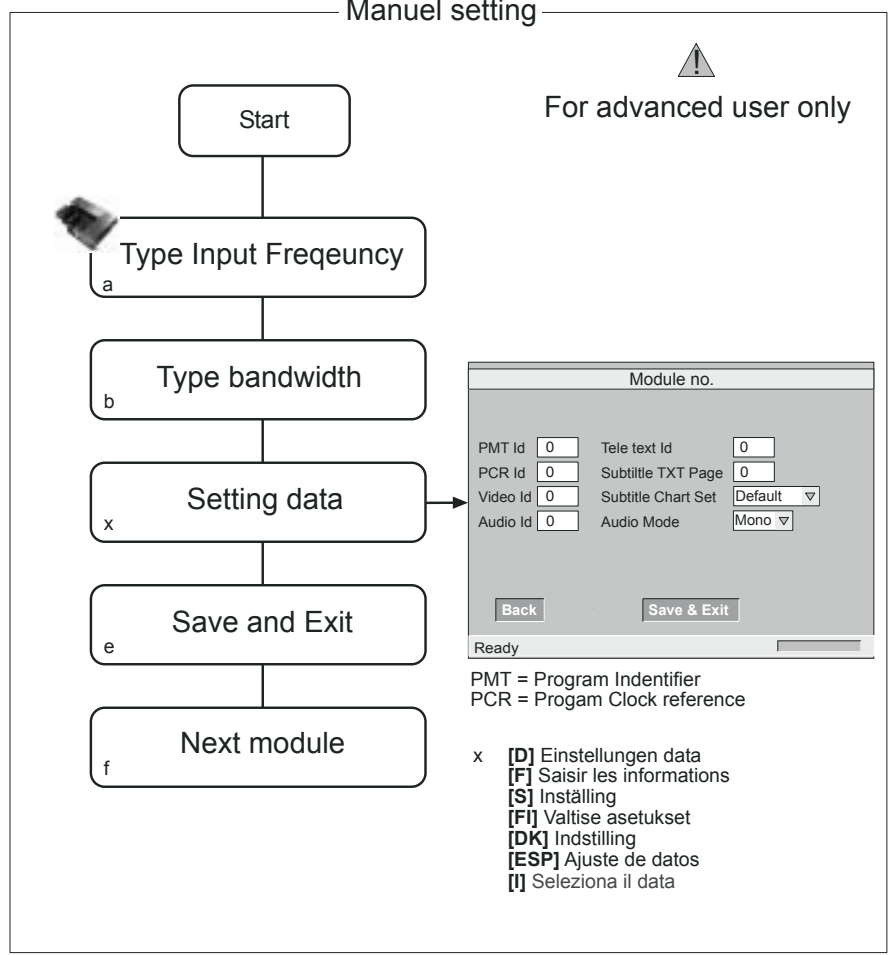
# Input setting DVB-T module



**Input carrier center frequency in KHz**  
 Example :  
 CH 21 = 474.000MHz

- a** [D] Frequenzart  
 [F] Saisir la fréquence d'en lieu  
 [S] Frekvens  
 [FI] Taajuus  
 [DK] Indtast frekvens  
 [ESP] Introducir frecuencia de entrada  
 [I] Inserire Frequenza
- b** [D] Kanalbandbreite  
 [F] Chaisir la largueur de bande canal  
 [S] Kanal bandbreidd  
 [FI] Valitse kaistanleveys  
 [DK] Vælg kanal båndbredde  
 [ESP] Introducir ancho de banda
- c** [D] Suchen  
 [F] Recherche des services.  
 [S] Sök  
 [FI] Etsi  
 [DK] Søg efter programmer  
 [ESP] Buscar  
 [I] Ricerca
- d** [D] Wählen Sie ein Programm  
 [F] Choisir le programme.  
 [S] Välj program  
 [FI] Valitse ohjelma  
 [DK] Udvælg et program fra listen  
 [ESP] Seleccionar programa  
 [I] Seleziona il canale
- e** [D] Speichern und Beenden  
 [F] Enregistrer et Quitter.  
 [S] Spara och avsluta  
 [FI] Tallenna ja poistu  
 [DK] Gem og afslut  
 [ESP] Guardar y salir  
 [I] Salva ed esci
- f** [D] Nächstes Modul  
 [F] Module suivant.  
 [S] Nästa modul  
 [FI] Seuraava moduuli  
 [DK] Næste modul  
 [ESP] Siguiente módulo  
 [I] Prossimo modulo

## Manuel setting



**For advanced user only**

Module no.

PMT Id	0	Tele text Id	0
PCR Id	0	Subtitle TXT Page	0
Video Id	0	Subtitle Chart Set	Default ▾
Audio Id	0	Audio Mode	Mono ▾

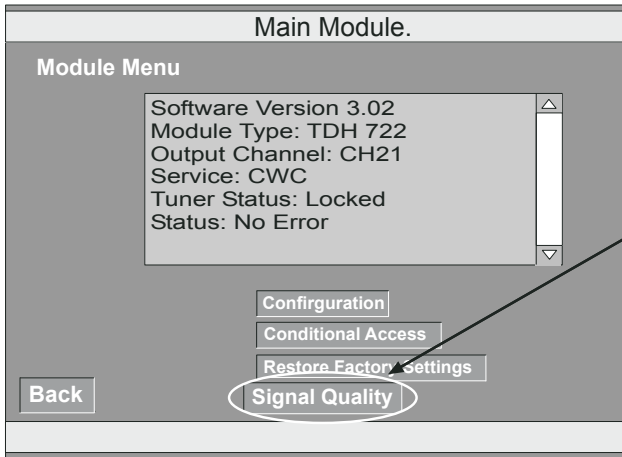
Back Save & Exit

Ready

PMT = Program Identifier  
 PCR = Program Clock reference

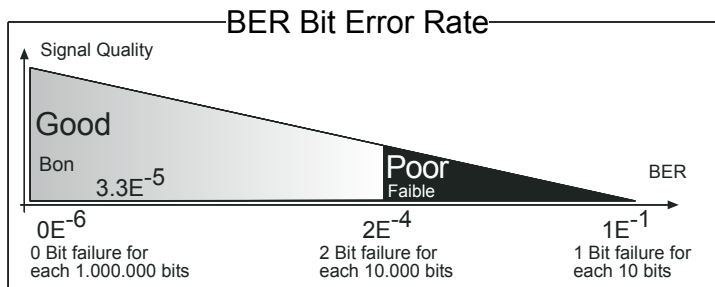
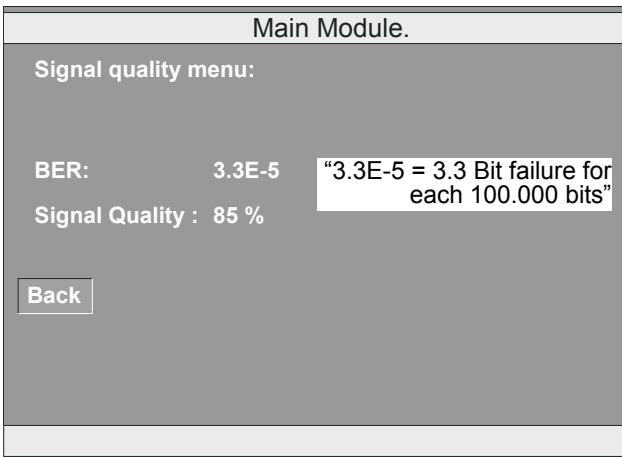
- x** [D] Einstellungen data  
 [F] Saisir les informations  
 [S] Inställing  
 [FI] Valtise asetukset  
 [DK] Indstilling  
 [ESP] Ajuste de datos  
 [I] Seleziona il data

# Bit Error Rate read out

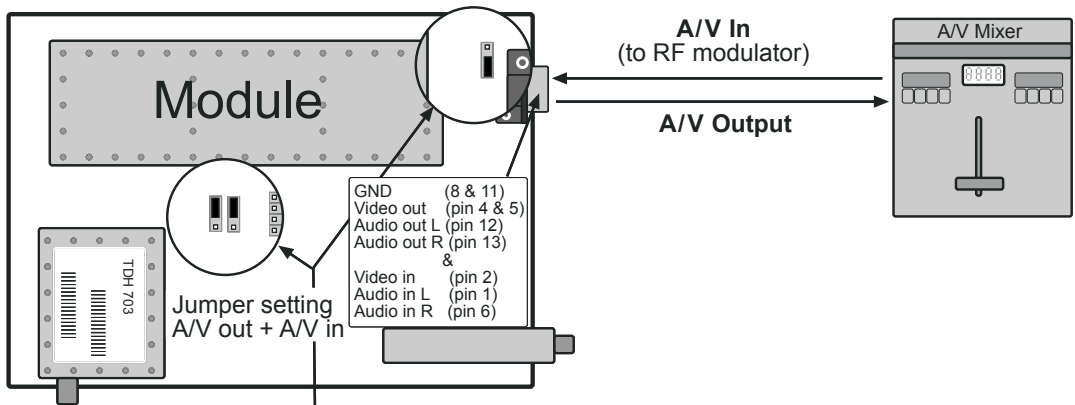
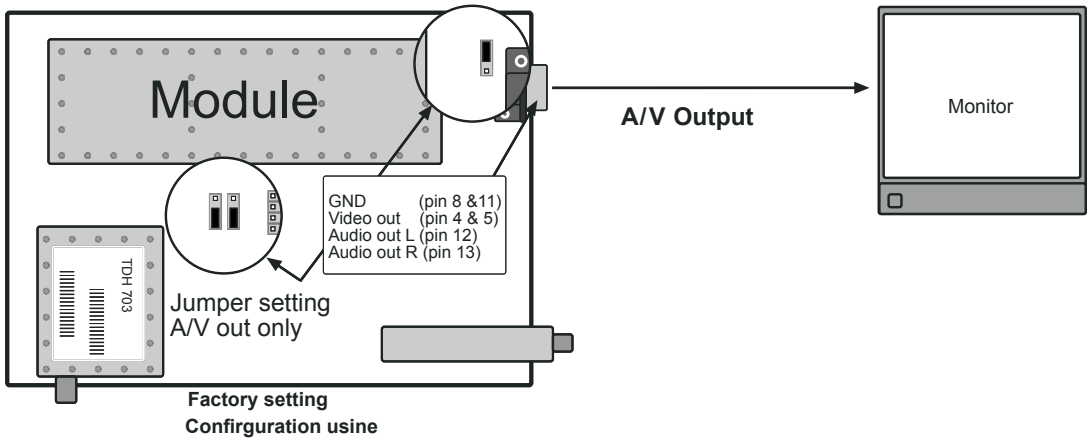


## Signal Quality menu

- [D] Aktivieren Sie den Menüpunkt Signalqualität
- [F] Menu qualite du signal
- [S] Signalkvalitet
- [FI] Signaalin laatuvalikko
- [DK] Signal kvalitets menu
- [ESP] Menú Activar Calidad de Señal

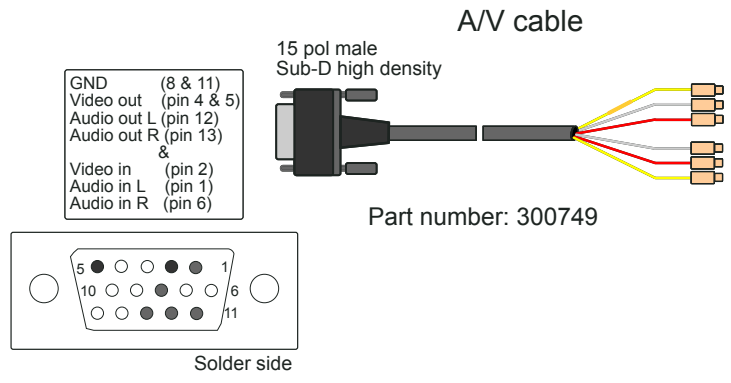


# External Audio/Video connection

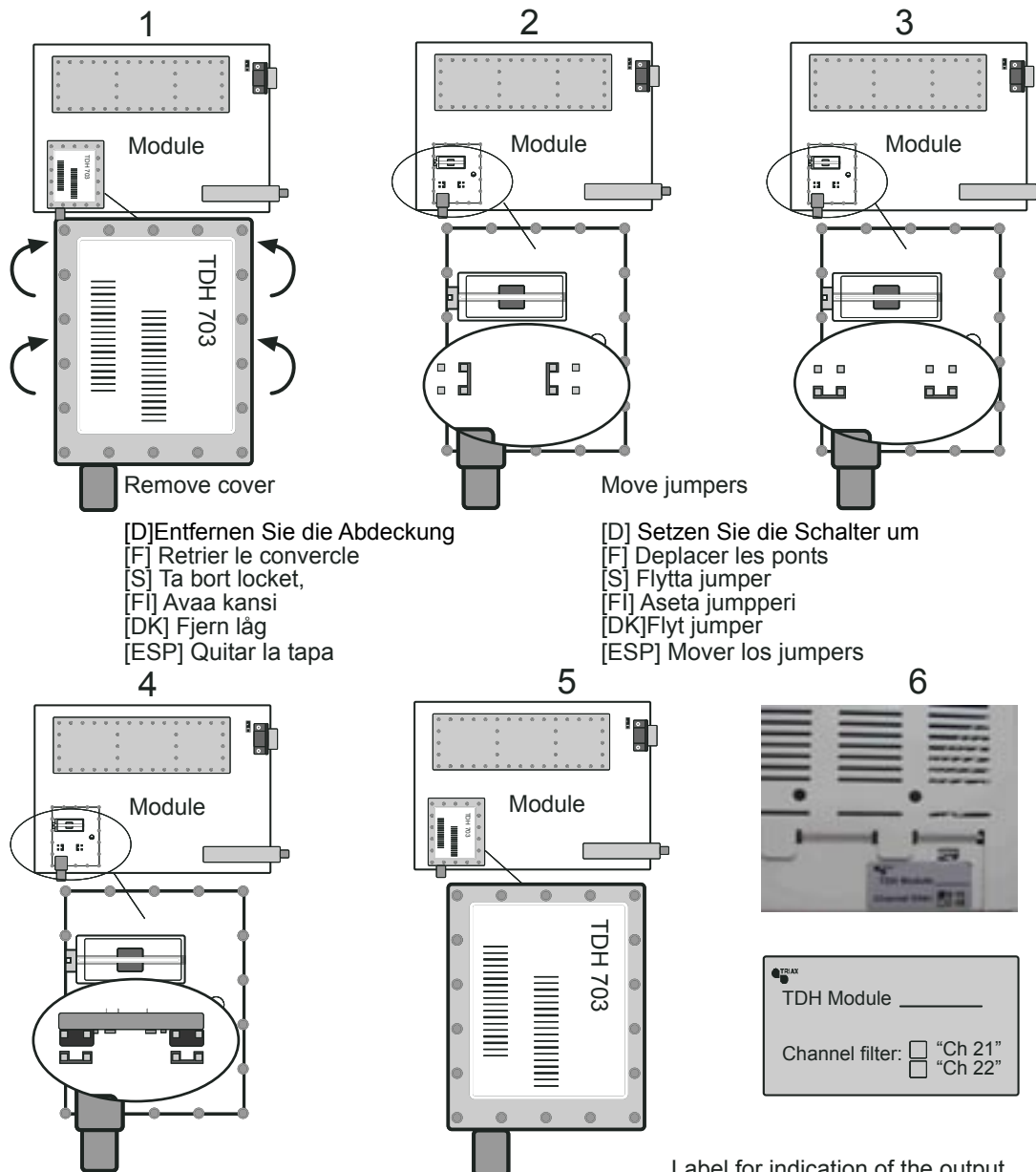


Move jumpers

- [D] Setzen Sie die Schalter um
- [F] Distotione jes ponts pour configurer les entres / sortie Audio et Video
- [S] Flytta jumper
- [FI] Aseta jumpperi
- [DK] Flyt jumper
- [ESP] Mover los jumpers



# Single channel filter option



[D] Entfernen Sie die Abdeckung  
 [F] Retrier le couvercle  
 [S] Ta bort locket,  
 [FI] Aava kansi  
 [DK] Fjern låg  
 [ESP] Quitar la tapa

[D] Setzen Sie die Schalter um  
 [F] Deplacer les ponts  
 [S] Flytta jumper  
 [FI] Aseta jumpperi  
 [DK] Flyt jumper  
 [ESP] Mover los jumpers

Insert filter board

Mount cover

[D] Setzen Sie die Filterplatine ein  
 [F] Inserir le filtre  
 [S] Montera filter till printer  
 [FI] Asenna suodinyksikkö  
 [DK] Monter filter print  
 [ESP] Insertar el filtro

[D] Montieren Sie die Abdeckung  
 [F] Remonter le couvercle  
 [S] Montera locket  
 [FI] Aseta kansi paikalleen  
 [DK] Monter låg  
 [ESP] Poner la tapa

Label for indication of the output channel

[D] Etikett für die Anzeige des Ausgangskanal  
 [F] Coller l'étiquette  
 [S] Etikett för indikation av utgångssignal  
 [FI] Tarra, jossa lähtökanava  
 [DK] Label for indikering af udgangskanal  
 [ESP] Etiqueta para indicar el canal de salida

## Remark:

The single channel filter option is available on following versions:  
 All DVB-Sat. + Modulator modules with PCB version ID = **K** or later  
 All DVB-Terrestrial modules with PCB version ID = **E** or later  
 All Slave modules with PCB version ID = **K** or later

L'adjonction de filtre sortie n'est possible que sur les modules plus récents de la gamme TDH  
 \* Modules DVB-Sat et modulateurs repérés sur la circuit imprimé d'une lettre **K** ou supérieure  
 \* Modules DVB-T repérés sur la circuit imprimé d'une lettre **E** ou supérieure  
 \* Modules esclave repérés sur la circuit imprimé d'une lettre **K** ou supérieure

[D] Die Einzel-Programmfilterauswahl ist bei folgenden Versionen verfügbar:

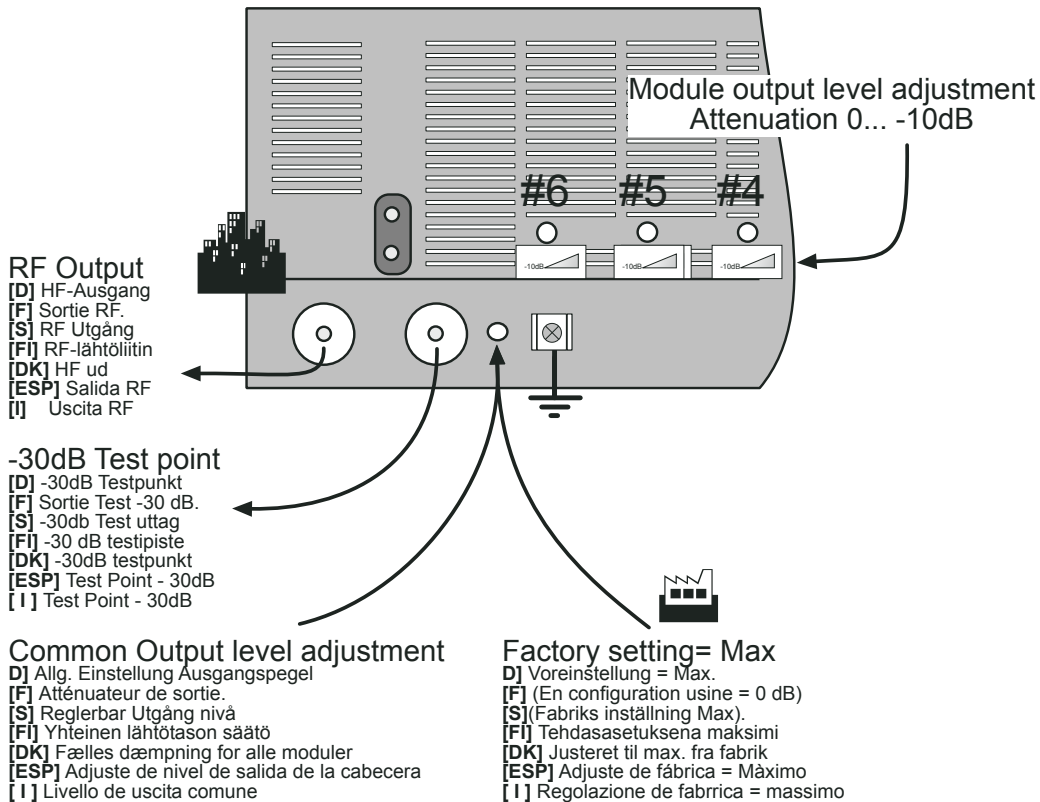
[FI] Kanavasuodinoptio on mahdollista seuraavissa versioissa:

[DK] Enkelt kanal filter er mulig med følgende moduler

[ESP] La opción de filtro monocanal está disponible en las siguientes versiones:

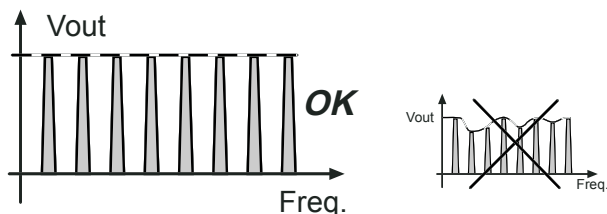
Type	PCB Version ID
DVB Satellit	>= K
DVB Terrestrial	>= E
Slave modules	>= K
Modulator modules	>= K

# Output level adjustment



## Adjust RF output level on each modulator without A/V signal (unmodulated)

- [D] Ausgangspegel eines jeden Modulators einstellen(ohne AV Signal)
- [F] Säädä jokaisen modulaattorin lähtötasokytkemättä A/V-signaalia.
- [S] Justera RF utgångssignal på varje modulator utan A/V signal(omodulerad)
- [DK] Juster udgangsniveau på hvert module umoduleret
- [I] Regolare il livello di uscita RF su ogni modulatore senza il segnale A/V (non modulato).



## Remark: Adjust the output level after heat up (30-60min.)

- [D] Hinweis: Verstellen Sie den Ausgangspegel nicht, bevor die Module (30-60min) aufgeheizt wurden.
- [F] Mocerder au reglage des niveaux de sortie apres une periode de fonctionnement de 30 a 60 min.
- [FI] Huom: Säädä moduulin lähtötaso vasta kun yksikkö on täysin lämmenyt (30-60 min)
- [S] Remark: Anmärkning: Justera utgångssignal efter uppvärmning (30-60 min)
- [DK] Juster udgangsniveau efter opvarming (30-60min),
- [ESP] Nota: No ajustar el nivel de salida hasta que se calienten los módulos (30-60 min.)

# Data sheet Master module

<b>RF:</b>		<b>DVB-S</b>	<b>DVB-T</b>
Frequency range .....	(MHz)	920 -2150	117.5 - 858
Input level .....	(dBμV)	45..84	
Input sensitivity QAM16 , FEC 2/3 Guard interval 1/4 (Digital measuring) .....	(dBμV)		30...70
Input sensitivity QAM64 , FEC 2/3 Guard interval 1/4 (Digital measuring) .....	(dBμV)		35...70
Input impedance .....	(Ohm)	75	75
Return loss .....	(dB)	>10	> 6
<b>LNB CONTROL( for DVB-S only):</b>			
V/H programmable .....	(V/mA)	0-13-18 / 200	
LO/HI programmable .....	(kHz)	0 / 22kHz	
<b>DEMODULATOR: DVB-S module</b>			
Type .....		QPSK	
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.	
<b>DEMODULATOR: DVB-T module</b>			
Type .....		COFDM	
FFT Mode : .....		2K / 8K	
Constellations: .....		QPSK, 16QAM, 64QAM	
Guard interval: .....		1/4, 1/8, 1/16, 1/32	
Viterbi decoder: .....		1/2, 2/3, 3/4, 5/6, 7/8	
Reed Solomon decoder .....		204,188, t=8.	
Deinterleaver .....		I=12.	
<b>DECODER:</b>			
Type .....		MPEG-2/DVB (Main Profile/Main Level)	
Demultiplexer data rate .....	(Mbps)	<65	
Video data rate .....	(Mbps)	<15	
Video output norm .....		Pal/Secam	
Teletext .....		Reinserted in VBI	
Subtitling .....		Teletext	
TS output .....		PI DVB/MPEG-2 TS	
<b>MODULATOR:</b>			
TV-norm .....	Pal/Secam B/G, I, L, D/K		
System .....	VSB VHF/UHF mono (TDH702/712/714/722)		
	VSB VHF/UHF A2 stereo/dual (TDH703/713/715/723)		
Output frequency range .....	(MHz)	47-862	
Picture carrier stability .....	(kHz)	< +/-70	
Spurious signals ref. picture carrier .....	(dB)	> -60	
Output level max .....	(dBμV)	100	
Output impedance .....	(Ohm)	75	
Return loss (MOD OUT) .....	(dB)	>10	
Differential gain .....	(%)	<8	
Differential phase .....	(deg.)	<8	
Chrominance / luminance delay .....	(ns)	<80	
Luminance non-linearity .....	(%)	<8	
Video S/N ratio .....	(dB)	54	
Sound sub carrier 1 .....	(MHz)	5,5 / 6,0 / 6,5	
Sound sub carrier 2 (TDH703 / 713 and 715 / 723 ) only .....	(MHz)	5,74	
Sound sub carrier stability .....	(kHz)	< +/-5	
Audio distortion, 1kHz .....	(%)	1	
Audio S/N ratio .....	(dB)	50	
<b>POWER SUPPLY:</b>			
Voltage/current .....	(V, mA)	3.3/0.2 – 5/1.24 – 12/0.39 – 30/0.004	
		23/200 for LNB (DVB-S only)	
<b>CONNECTORS:</b>			
Aerial input, .....	F	<b>DVB-T</b>	
Aerial loop-through, .....	F	IEC Female	
Aerial output, MOD .....	IEC-M	IEC Male	
Audio/video (optional) .....	D-SUB 15P		
MPEG-2 TS output .....	IDC CONNECTOR 26P		
Power supply/control .....	EDGE CONNECTOR 2X13P		
<b>ENVIRONMENT:</b>			
Temperature, operation .....	(Deg. C)	-10..+50	
Humidity, operation/storage .....	(%)	20..80 10..90	

# Data sheet Slave module

## DECODER:

Type.....	MPEG-2/DVB (Main Profile/Main Level)
Demultiplexer data rate.....(Mbps)	<65
Video data rate.....(Mbps)	<15
Video output norm.....	Pal/Secam
Teletext.....	Reinserted in VBI
Subtitling.....	Teletext
TS output.....	PI DVB/MPEG-2 TS

## MODULATOR:

TV-norm.....	Pal/Secam B/G, I, L, D/K
System.....	VSB VHF/UHF mono (TDH702/ 712/ 714/ 722)
	VSB VHF/UHF A2 stereo/dual (TDH703/ 713/ 715/ 723)
Output frequency range.....(MHz)	47-862
Picture carrier stability.....(kHz)	< +/-70
Spurious signals ref. picture carrier.....(dB)	> -60
Output level max.....(dBµV)	100
Output impedance.....(Ohm)	75
Return loss (MOD OUT).....(dB)	>10
Differential gain.....(%)	<8
Differential phase.....(deg.)	<8
Chrominance / luminance delay.....(ns)	<80
Luminance non-linearity.....(%)	<8
Video S/N ratio.....(dB)	54
Sound sub carrier 1.....(MHz)	5,5 / 6,0 / 6,5
Sound sub carrier 2 (TDH705 only).....(MHz)	5,74
Sound sub carrier stability.....(kHz)	< +/-5
Audio distortion, 1kHz.....(%)	1
Audio S/N ratio.....(dB)	50

## POWER SUPPLY:

Voltage/current.....(V, mA)	3.3/0.2 – 5/1.24 – 12/0.39 – 30/0.004 23/200 for LNB
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## CONNECTORS:

Aerial input, SAT.....	F
Aerial loop-through, SAT.....	F
Aerial output, MOD.....	IEC-M
Audio/video (optional).....	D-SUB 15P
MPEG-2 TS output.....	IDC CONNECTOR 26P
Power supply/control.....	EDGE CONNECTOR 2X13P

## ENVIRONMENT:

Temperature, operation.....(Deg. C)	-10..+50
Humidity, operation/storage.....(%)	20..80 10..90

### DECLARATION OF CONFORMITY

TRIAX confirms that the product conforms to relevant EEC harmonised standards and consequently can carry the CE-mark.

Relevant harmonised standards:

**EN 50083 and EN 60065**

*This document is only valid with the signature of the person responsible for CE-marking by Triax*

Date: 06.2005

Signature: