

# OPTIMUX Tx adapter



## Inputs

### Electrical

-DVB-ASI BNC connector, 75 Ohm, up to 16 x  
-GbE – TSoIP: a) RTP & FEC (SMPTE 2022-2/1) b) UDP

**Formats:** MPEG-TS (DVB-T, ATSC, ISDB-T),  
T2-MI (DVB-T2), SPLP, MPLP (up to 16 PLP)

**Max total throughput:** 600 Mbps

## Processing

### OPTIMUX DTH

Enables parallel transmission of DVB-T2 MI or ISDB-T-BTS and DTH signal via the same satellite transmission.

Splits a T2-MI SFN adapted stream into: a) DTH stream and b) T2MI or ISDB-T-BTS reference stream

Built-in multiplexer allows configure of which TV programs will be visible in the DTH stream.

### OPTIMUX AD

Enables the insertion of regional advertisements (or other offline content) into the national TV programs. It supports an unlimited number of regions and an unlimited number of national TV programs with regional advertisement per multiplex.

### OPTIMUX REGION

Concentrates and compresses multiple national transport streams with regional TV programs  
Up to 10 regional transport streams in parallel.

### OPTIMUX EWS

Replaces all TV programming in the region with the live Emergency warning AV content.

### OPTIMUX CONTRI

Enables to cut off regional TV programs from the Source stream, while signaling is still maintained in Reference stream.

### Parallel MUX processing

up to 16 multiplexes (T2MI or SFN adapted MPEG-TS)

## Standards compliancy

ISO-13818 (MPEG-TS), EN 302 755 (DVB-T2 frame structure and channel coding), TS 102 883 (T2-MI)  
EN 300 744 (DVB-T frame structure and channel coding), TS 101 191 (SFN synchronization, Mega-frame), EN 302 304 (DVB-H), EN 300 421 (DVB-S), EN 302 307 (DVB-S2), EN 300 468 (Multiplexing, SI), EN 301 192 (DVB Data, data piping), EN 50083-9, TR 101 891 (DVB-ASI), ABNT NBR 15601 (ISDB-Tb), ABNT NBR 15601-1 (ISDB-Tb SI), ARIB STD-B32 (ISDB), ATSC A/53

## Outputs

### Electrical

-DVB-ASI up to 4 x

-GbE – TSoIP: a) RTP / FEC (SMPTE 2022-2/1) b) UDP

**Formats:** Source stream DTH MPEG-TS, OPTIMUX Reference stream, Source stream MPEG-TS DTH with hidden Reference stream

## Monitoring & Management

-SNMP monitoring v.1, v.2

-NMS WEB management

## Dimensions

1,5 RU or 4 RU depends on configuration - number of ASI-IO

## Power supply

110-240 V, 350-800 W adapter

depends on configuration

## Ordering info:

### OPTIMUX Tx - MD7110-ai,ii,ao,io, SW (n)

ai = number of DVB ASI inputs (1-16)

ii = number of TSoIP-inputs (1-4)

ao = number of DVB ASI outputs (1-4)

io = number of TSoIP-outputs (1-4)

SW = SW modules:

T2-MI in (n), ISDB in(x), DTH (n), AD (n), REG (n), EWS (n), CONTRI (n), Proc (n)

Example:

MD7110-ai 8, ao 2, T2-MI 4, EWS 6, DTH 1

Stands for OPTIMUX Tx adapter with 8 DVB-ASI inputs (4 of them are T2-MI), 2 DVB-ASI outputs, supports EWS for 6 regions, 1 DTH out (1 multiplexer).

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# OPTIMUX Rx adapter

## Inputs

### Electrical

- DVB-S2/S receiver up to 4x FTA, CI
- DVB-ASI up to 4x
- GbE – TSolP: a) RTP / FEC (SMPTE 2022-2/1) b) UDP

### Formats

MPEG-TS DTH, Reference MPEG-TS, MPEG-TS DTH with hidden Reference MPEG-TS

**Max total throughput:** 350 Mbps

## Outputs

### Electrical

- DVB-ASI BNC connector, 75 Ohm, up to 6 x
- GbE – TSolP: a) RTP / FEC (SMPTE 2022-2/1) b) UDP

### Formats

MPEG-TS (DVB-T, ATSC, ISDB-T), T2-MI (DVB-T2), SPLP, MPLP (up to 16 PLP)

**Max total throughput:** 350 Mbps

## Processing

### OPTIMUX DTH

Generates streams (e.g. T2-MI or ISDB-T BTS) by combining DTH “source” stream and “reference” stream (deterministic processing). Both streams can be received either via the same signal or separately via a different distribution networks, e.g. DTH stream via satellite, Reference stream via IP or another satellite signal.

### OPTIMUX AD

Deterministically inserts regional advertisements into national TV programs in SFN networks. AD supports an unlimited number of national TV programs with regional advertisements within the same multiplex.

### OPTIMUX REGION

Reconstructs transport streams with partially national and partially regional TV programs.

### OPTIMUX EWS

Reconstructs transport streams with EWS AV alerts.

### OPTIMUX CONTRI

Enables to multiplex regional TV programs from independent Source stream, with signaling maintained in Reference stream.

### OPTIMUX LOCAL

Enables to recompose content of T2MI stream by multiplexing in local TV programs, while passing through SFN signaling.

### Parallel Multiplexes processing

Allows process up to 6 multiplexes (T2MI or MPEG-TS) within a single Rx adapter. Single OPTIMUX Rx adapter can feed 6 transmitters.

## Monitoring & Management Tx and Rx adapter

- SNMP monitoring v.1, v.2
- WEB management
- Front panel LCD (20x4), 6 control buttons



## Physical parameters

height 65 mm ~ 1,5 RU  
width 435 mm  
depth 407 mm, 430 mm (incl. ears)  
450 mm (incl. connectors)

weight netto 3,8 kg, RoHS, Lead free,

weight brutto 5,1 kg

packaging 145 x 490 x 505 mm

## Environment

Operating temperature 0~50°C

Operation humidity 10% ~ 90%

## Power supply

110-240 V, 150-250 W adapter depends on config.

## Ordering info:

**MD7211 -TSolP** inputs, outputs



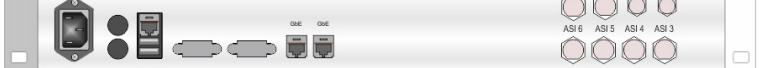
**MD7212 -DVB-ASI, TSolP** inputs, outputs



**MD7213 -DVB-S2 FTA inputs, DVB-ASI, TSolP**



**MD7214 -DVB-S2 CI inputs, DVB-ASI, TSolP**



**MDxxxx - ai, ii, ao, io, si, sco / SW**

**ai** = number of DVB-ASI inputs (1-4)

**ii** = number of TSolP-inputs, (1-4)

**si** = number of DVB-S2 FTA tuners (1-4)

**sci** = number of DVB-S2 FTA tuners with CI (1-2)

**ao** = number of DVB-ASI outputs (1-6)

**io** = number of TSolP-outputs, (1-6)

**SW** = SW modules: **AD, REG, EWS, CONTRI, T2-MI, ISDB-T**

Example: “**MD7211 - si2, ao6 / EWS, T2-MIx6**”

Stands for: OPTIMUX Rx adapter with 2xFTA DVB-S2 tuners,

6xDVB-ASI outputs (6 of them T2-MI), with EWS support