PBI

Digital TV Modulators

Brighten Your Digital View!

DCH-4100PM

Professional IRD and Trans-modulator

The DCH-4100PM is an integrated professional IRD and trans-modulator that provide to broadcaster and operator with multiple functions of digital TV signal reception, re-multiplexing, descrambling, decoding and re-modulation. It has a wide range of tuner input DVB-S/S2, DVB-T/T2, DVB-C and is used in digital satellite, cable and terrestrial TV networks. The re-multiplexing function enables creation of new SPTS or MPTS from tuner and ASI inputs. This new transport stream may be output to QAM or COFDM modulator, IP and ASI ports. By using the dual DVB common interfaces, DCH-4100PM can decrypt multiple pay TV services in each of the 2 slots. For security application, this equipment can configured as a TS switch among tuner, ASI and TS/IP. The equipment can be controlled and supervised by SNMP, HTTP WEB and proprietary HDMS software.

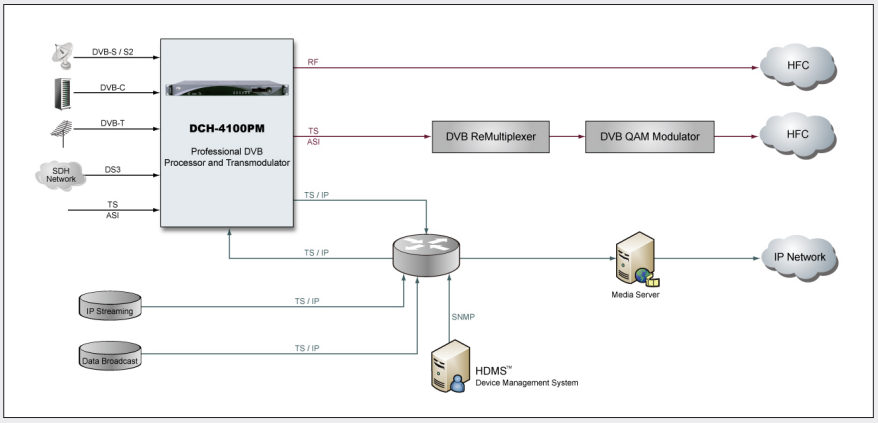
Main Feature

- Multiple inputs DVB-S2/S/C/T, TS/IP, ASI and DS3/E3 (optional)
- DVB-C QAM or DVB-T COFDM RF modulation output
- Redundant TS inputs among Tuner, ASI and TS/IP
- 100M UDP/RTP, Unicast/Multicast, and SPTS/MPTS over IP (half duplex)
- ASI input and output
- Service Drop or PID filtering and Re-mapping
- Flexible re-multiplexing among ASI, Tuner and TS/IP inputs
- PSI/SI adapting and re-generation, including NIT, LCN insertion etc.
- 2 × DVB-CI Slots, Multiple TV program decryption
- Remote Control and Supervision by SNMP,
- HTTP WEB and Proprietary HDMS software
- On Site software update through IP
- RSSI, received Eb/No & BER monitoring

Multiple inputs DVB-S2/S/C/T, TS/IP, ASI or DS3/E3

2x DVB-CI Slots, Multi Programs decryption

QAM or COFDM RF output

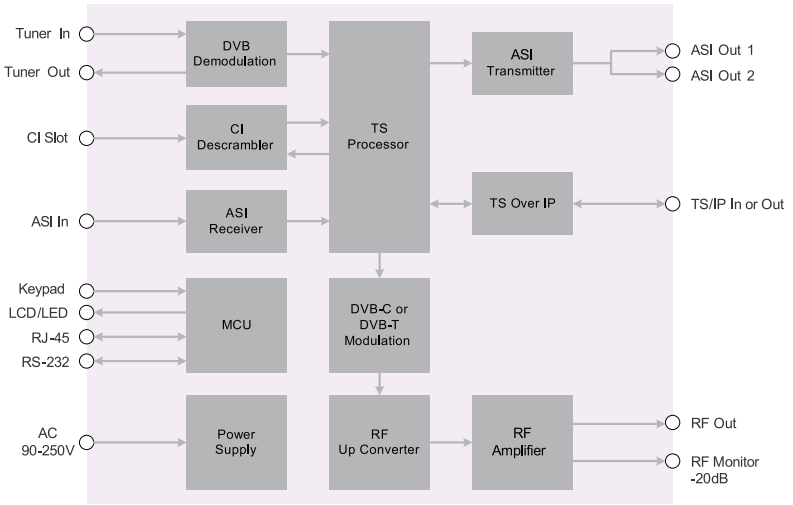


Specification

Tuner Input	
DVB-S/S2 Tuner Input	
Connector Type	1 × F type female 75Ω for Input, 1 × F type female 75Ω for loop through output
Input Frequency Range	950 ~ 2150MHz
Input Level	-25 ~ -65dBm
Symbol Rate	2 ~ 45MBaud
Roll-off Factor	DVB-S QPSK: 0.35 DVB-S2 8PSK: 0.35,0.25, 0.2
FEC Code Rate	DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 7/8
	DVB-S2 QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
	DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LNB Polarity Selection Voltage	0, 13V, 18V selectable
LNB Band Switching Tone	0/22KHz selectable
Satellite Selection Command	DiSEqC 1.0
DVB-C Tuner Input	
Connector Type	1 × F type female 75Ω for Input, 1 × F type female 75Ω for loop through output
Input Frequency Range	48~862MHz
Input Level	45 ~ 75dBμV
Symbol Rate	1 ~ 7MBaud（ITU J.83 Annex A）
Constellation	16/32/64/128/256QAM
Bandwidth	6MHz/7MHz/8MHz
Input Return Loss	7dB (typ.)
DVB-T Tuner Input	
Connector Type	1 × F type female 75Ω for Input, 1 × F type female 75Ω for loop through output
Input Frequency Range	174 ~ 230MHz (VHF); 470 ~ 860MHz (UHF)
Input Level	-20 ~ -70dBm
Constellation	QPSK, 16-QAM, 64-QAM
Carrier Bandwidth	6/7/8 MHz
FTT Mode	2K/8K
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
ASI Input	
Connector Type	1 x BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
Input Bit Rate	≤ 100Mb/s
Package Length	188 or 204 Bytes
DS3 Input (Option)	
Connector Type	2 × BNC female, 75Ω, including loop through
Standard	Compliant with ITU-T G.703
Frame Structure	Compliant with ITU-T G.752 and ITU-T G.804
Bit Rate	44.736Mb/s
TS over IP	
Connector Type	1 × RJ-45, 10/100M or 100/1000M for TS/IP
Effective Bit Rate	70Mb/s for 10/100M/1000M
Protocol	UDP / RTP, Multicast / Unicast, IGMPv2, ARP
TS Processing	
TS Input Management	Remux and demux among Tuner / DS3 (optional) / E3 (optional), ASI and TS/IP Inputs
TS Output Management	Remux and demux for mirrored ASI outputs
Service and PID management	Remux, filtering and remapping
PSI/SI	PSI/SI table regeneration, NIT and SDT edition, LCN Edition and Re-generation
Descrambler	DVB Common Scrambling Algorithm (CSA)
BISS Mode	BISS-1, BISS-E
Common Interface	Double PCMCIA slots, compatible with major CA CAMs in the market
ASI Output	
Connector Type	2 × BNC Female, 75Ω
Standard	DVB-ASI, EN50083-9
TS Processing	mirrored TS Re-multiplexing from Tuner, ASI and TS/IP inputs
DVB-C Re-Modulation	
Constellation	J.83 Annex A: 16/32/64/128/256QAM; J.83 Annex B: 64/256QAM
Symbol Rate	3~7.2MS/s
I/Q Amplitude Error	< 0.3%
I/Q Phase Error	< 0.3°
Phase jitter	< 0.5° RMS
MER	> 35dB
DVB-T Re-Modulation	
Constellation	QPSK/16QAM/64QAM
Bandwidth	5/6/7/8MHz
FFT Mode	2K
Guard Interval	1/4, 1/8, 1/16, 1/32
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
MER	>36dB
RF Output	
Connector Type	1 × F type female, 75Ω (primary output) 1 × F type female 75Ω (-20dB for monitoring)
Output Frequency Range	48~860MHz agile, step by 10 KHz
Output Level	95~120dBμV, step by 1dBμV
Spurious Rejection	55dB (typ.)
Output Return Loss	12dB (typ.)
Control & Monitoring	
Connector Type	1 × RJ-45, 10/100M, for equipment IP Control
Remote Control	SNMP, HTTP (Web Interface), Proprietary HDMS (Headend Device Management System)
Local Control	LCD display and 6-key keypad
Serial Port	1 × RS-232 D-sub female, for debug use only
Software Upgrade	Embedded FTP loader and Telnet
Physical	
Dimension	483 × 399.7 × 44mm
Weight	6Kg
Power Supply	AC 90V ~ 250V 50Hz/60Hz
Power Consumption	30W
Operating Temperature	0 ~ 45℃
Storage Temperature	-10 ~ 60℃
Operating Humidity	10 ~ 90%, non-condensed
Certification	
EMC: EN 55024:1998+A1:2001+A2:2003, EN 55022:2006+A1:2007, EN 61000-3-2:2006, EN 61000-3-3:2008	
FCC: Part 15 Class B	
LVD: EN 60950-1:2006 + A11:2009	

Block Diagram

DCH-4100PM Function al Block Diagram

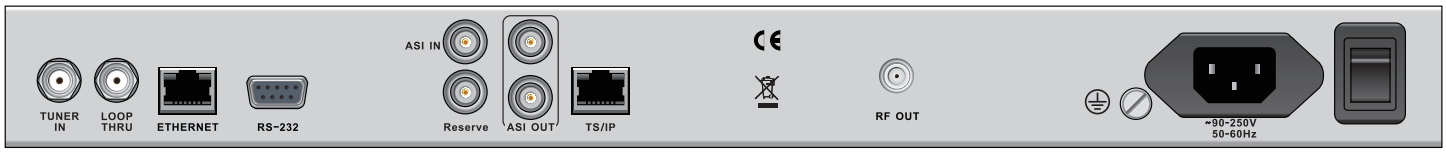


Order Information

Model / Functionality	DCH-4100PM-XX							
	-S2C	-CC	-TC	-DC	-S2T	-CT	-TT	-DT
Tuner Type	DVB-S2	DVB-C	DVB-T	DS3/E3	DVB-S2	DVB-C	DVB-T	DS3/E3
ASI Input	•	•	•	•	•	•	•	•
Built-in Re-mux	•	•	•	•	•	•	•	•
ASI Output (mirrored)	•	•	•	•	•	•	•	•
100M TS/IP Extension Board	•	•	•	•	•	•	•	•
QAM Modulation	•	•	•	•				
COFDM Modulation					•	•	•	•

• Standard configuration

Back panel Interface



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