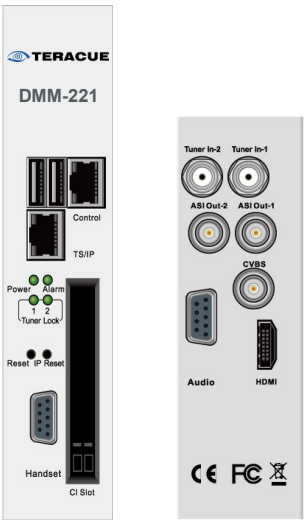
DMM-221 Series

TERACUE
A LEYARD Company

Dual DVB to IP Gateway for IPTV Headends

PRODUCT DESCRIPTION

The DMM-221 is a high-density, modular, cost-effective DVB to IP gateway system for IPTV headends. The DMM-221 IRD is equipped with two independent tuners, that can be DVB-S/S2, DVB-T/T2, DVB-C or ATSC inputs. Besides TS/IP outputs it supports a wide range of applications by its additional ASI, HDMI and CVBS interfaces. The IRD has an integrated H.265 (HEVC), H.264 (AVC), and MPEG-2 decoder. It provides two DVB common interface slots for the most well-known CAS in the market to decrypt multiple pay TV services. The compact dual tuner design and powerful decoding capability make DMM-221 IRDs to one of the most competitive DVB to IP gateways in the industry.



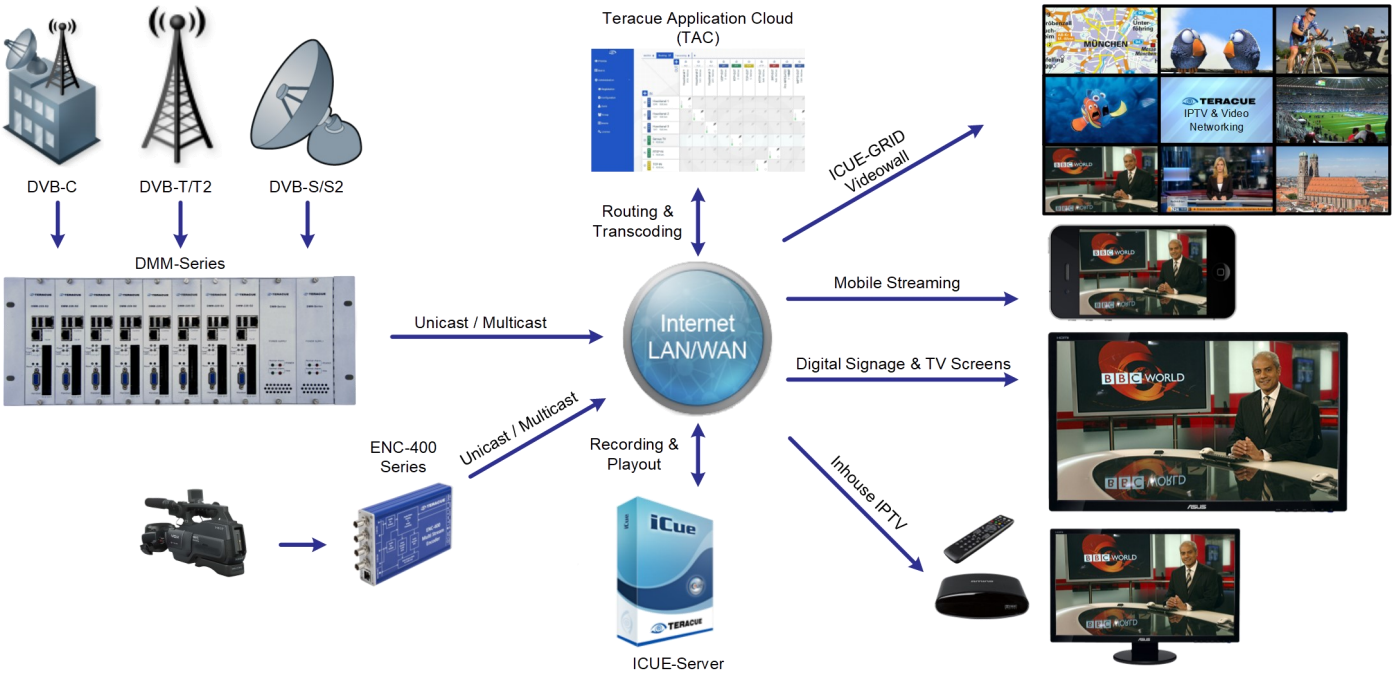
KEY FEATURES

- Dual tuner for DVB-S/S2, DVB T/T2, DVB-C or ATSC
- Dual DVB-CI slots & BISS 1/E decryption
- Remux, PID filtering & dynamic PMT support
- MPTS & SPTS streaming multicast & unicast
- Separate IP port for streaming & management
- H.265, H.264 and MPEG-2 decoder
- EIT Support present/next
- ASI, HDMI and analog A/V outputs
- Remote configuration by web browser & SNMP
- Local configuration by handheld unit
- Stand alone function of each module
- Hot swappable modules

APPLICATION

- IPTV streaming
- OTT streaming
- DVB monitoring
- DVB remultiplexing
- SPTS & MPTS streaming
- Decryption of Pay-TV

WORKFLOW INTEGRATION



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DMM-221 Series

DVB-C TUNER INPUT	
Connector type:	2x F type female 75Ω for input
Input frequency:	51~862MHz
Input level:	45~75dBμV
Symbol rate:	1~7Mbaud (ITU J.83 Annex A)
Constellation:	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth:	6MHz/7MHz/8MHz
Input return loss:	7dB (typ.)
DVB-S/S2 TUNER INPUT	
Connector type:	2x F type female 75Ω for input
Input frequency range:	950~2150MHz
Input level:	-25~-65dBm
Symbol rate:	2~45MS/s for QPSK and 8PSK
Rolling-off factor:	DVB-S QPSK: 0.35 DVB-S2 8PSK: 0.35, 0.25, 0.2
Punctured rates:	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 Polarization:	0, 13V, 18V selectable
LNB Band switching tone:	0/22KHz selectable
DiSEqC:	DiSEqC 1.0
DVB-T/T2 TUNER INPUT	
Connector type:	2x F type female 75Ω for input
Input frequency:	104~862MHz (VHF/UHF)
Input level:	-20~-70dBm
Constellation:	DVB-T: QPSK, 16-QAM, 64-QAM / DVB-T2: QPSK, 16QAM, 64QAM, 256QAM
Bandwidth:	6MHz/7MHz/8MHz
FFT Mode:	DVB-T: 2K, 8K / DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Guard interval:	DVB-T: 1/4, 1/8, 1/16, 1/32 / DVB-T2: 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128
FEC Code rate:	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8 / DVB-T2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Input return loss:	7dB (typ.)
TS OVER IP	
Connector type:	1x RJ45, 10/100/1000M for TS/IP
Useful bitrate:	80Mb/s for full duplex with FEC, without FEC 200Mb/s, up to 600Mb/s simplex
Protocol:	UDP/RTP, Multicast/Unicast, IGMPv2, ARP
Uni/Multicast:	Support maximum 64 channel Uni/Multicast output
TS PROCESSING	
TS Input:	Tuner1, Tuner2 or TS/IP input
TS Output:	2 independent ASI outputs
Remux:	Re-mux services, edit PSI/SI
BISS descramble:	BISS-1, BISS-E
CI slots:	2x PCMCIA slots, comply with most major CAMs in market

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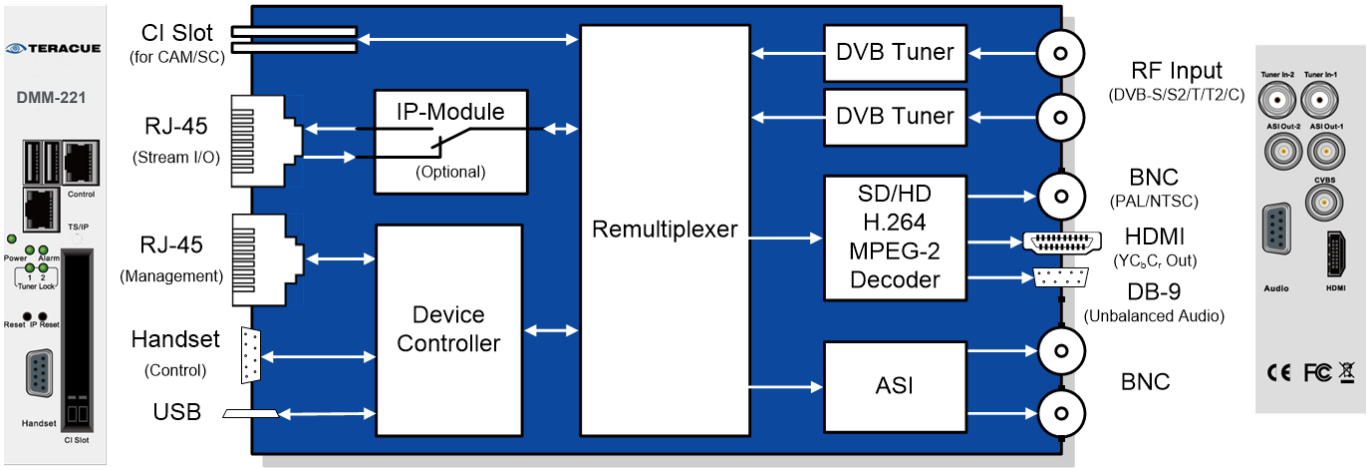
DMM-221 Series

ASI OUTPUT	
Connector type:	2x BNC female, 75Ω
Standard:	DVB-ASI, EN50083-9
Output bitrate:	≤160Mb/s
HDMI OUTPUT	
Standard HDMI:	1x HDMI 1.4 interface (partial)
Video resolution:	1080p60/50, 1080i30/29.97/25, 720p60,/9.94/50, 576p50, 576i25, 480p60, 480i29.97
Audio embedded:	1x Stereo or AC3 pass through
DIGITAL VIDEO/AUDIO PROCESSING	
Video standard:	MPEG-H/H.265 HEVC MPEG-4/H.264 AVC high profile level 4.1 MPEG-2 (MP@ML for SD, MP@HL for HD)
Audio standard:	MPEG-1 Layer-I/II, MPEG-2 Layer-II LC-AAC, HE-AAC, AC3, AC3+
ANALOG VIDEO OUTPUT	
Connector type:	1x BNC female
Video standard:	NTSC, PAL and SECAM
Video bitrate:	≤50Mb/s
ANALOG AUDIO OUTPUT	
Connector type:	1x DB9 on BNC
Output type:	Left, right, dual mono, stereo
BASEBAND DATA OUTPUT	
Subtitle:	DVB/EBU
VBI:	Teletext, WSS
Closed caption:	EIA 608, EIA 708, EIA 608-to-708
A/V MONITOR	
Monitor port:	HDMI, CVBS - user defined conditions
CONTROL & MONITORING	
Connector type:	1x RJ45, 10/100M, for equipment IP control
Remote control:	SNMP, HTTP web
Local control:	Handheld programmer unit DMM-100-CU
Software upgrade:	Webinterface, USB port or FTP upload
GENERAL	
Dimension:	PCB-Board
Agency approvals:	CE, RoHS
Operating temperature / humidity:	0~45°C / 10~90% non-condensed
Power supply / consumption:	AC90~250V, 50Hz/60Hz / maximum 20W
Limited warranty:	1 year standard limited warranty. Warranty extensions for up to 5 years

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DMM-221 Series

BLOCK DIAGRAM



All DMM blades are of pure hardware design and contain no moving parts

FRAMES

DMM-110-FR	**19" 4RU rack mount chassis for 8 boards with redundant power supply**
Power:	AC 90V-250V, 300W, 50-60Hz
Dimensions (H/W/D):	178mm x 483mm x 399mm
Weight:	8 kg
DMM-110-FR-1RU	**19" 1RU rack mount chassis for 2 boards with single power supply**
Power:	AC 90V-250V, 40W, 50-60Hz
Dimensions (H/W/D):	43mm x 477mm x 415mm
Weight:	3 kg

ORDER INFORMATION

DMM-110-FR	19" 4RU rack mount chassis for 8 boards with redundant power supply
DMM-110-FR-1RU	19" 1RU rack mount chassis for 2 boards with single power supply
DMM-100-CU	Control display-panel for local configuration of DMM TV gateway boards
DMM-221-C	Dual channel DVB board for IPTV streaming, re-multiplexing and H.265, H.264, MPEG-2 decoding. 2x DVB-C in with CI and up to 64 TV channels over IP out. ASI, HDMI and analog AV outputs.
DMM-221-S2	Dual channel DVB board for IPTV streaming, re-multiplexing and H.265, H.264, MPEG-2 decoding. 2x DVB-S/S2 in with CI and up to 64 TV channels over IP out. ASI, HDMI and analog AV outputs.
DMM-221-T2	Dual channel DVB board for IPTV streaming, re-multiplexing and H.265, H.264, MPEG-2 decoding. 2x DVB-T/T2 in with CI and up to 64 TV channels over IP out. ASI, HDMI and analog AV outputs.

COMPLEMENTARY PRODUCTS

ENC-400-HDMI/HDMI2	H.264 and MJPEG HD/SD encoder board with single/dual HDMI input, loop through outputs and USB recording.
ENC-400-HDSDI	H.264 and MJPEG HD/SD encoder board with dual HDSDI input, loop through outputs and USB recording.
ICUE-100	IPTV Media Server: Live, VoD and scheduled playout streaming server software.
XPLAYER	PC live stream playback software. Licence packages are available.
DMM-151-C/S2/T2	DVB board for streaming, re-multiplexing and H.264/MPEG-2 SD/HD decoding. DVB-C/S2/T/T2 and ASI input and ASI and analog outputs. Up to 32 IPTV channels out or TS over IP 1x in and 4x out.