



airscreen tality™

Professional Hospitality Video Headend

Conceived to address the unique needs of hotels, schools, hospitals and MDUs, airScreen tality™ offers the flexibility, reliability and features required to deploy a secure CATV and/or IPTV solution simply, quickly and at an affordable budget.

Compact & Powerful

The convenient 4 RU package can host up to 16 hot-swappable modules to address the full range of functionalities required to deliver video over coax or IP networks including receiving, de-scrambling, encoding, multiplexing, re-scrambling and modulating a Transport Stream over QAM, OFDM or IP.

For smaller scale deployments, a 1 RU solution with up to 6 hot-swappable modules can be used.

Reliable & Energy efficient

airScreen tality™ boasts a compact form factor and an energy efficient system design. A built-in service level monitoring and dual power supply guarantee a non-stop 24/7 operation. Consequently, airScreen tality™ is an environmental, reliable and space saving designed to keep your OPEX low for years to come.

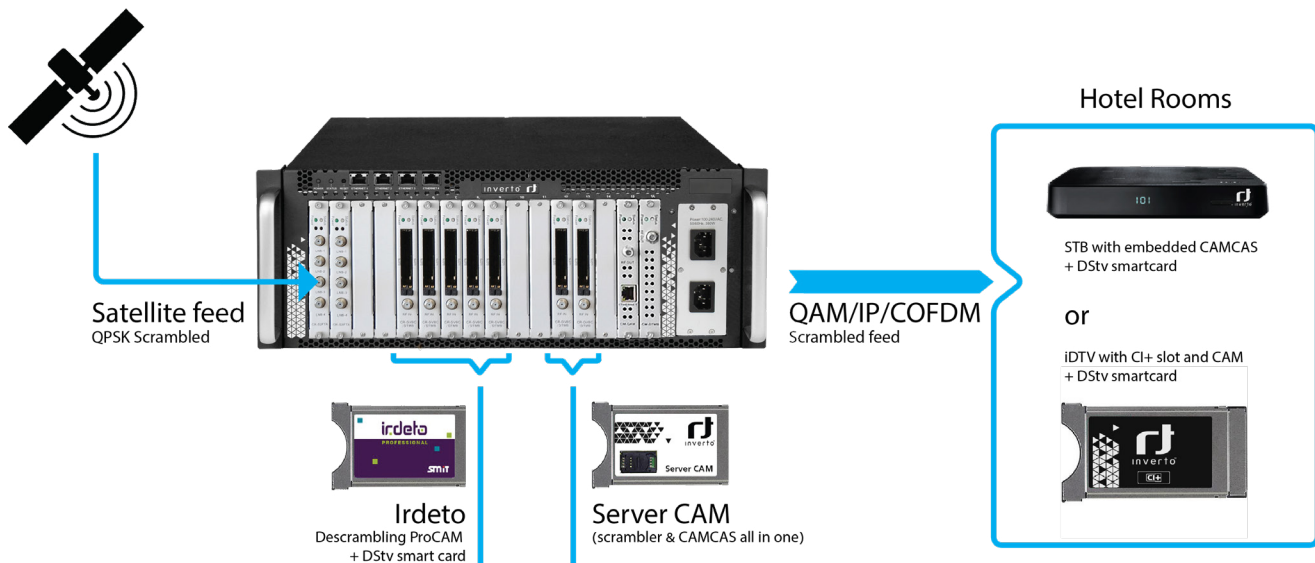
Product Features:

- 4 RU with up to 16 functional modules
- Service level multiplexing
- SI/PSI analysis and regeneration
- Web-based configuration
- Flexible and scalable
- Low noise design
- Up to 64 receive frequencies (DVB-C/T/T2/S/S2, 8VSB, DTMB, ISDBT)
- Up to 64 channels HD encoding (via HDMI in inputs)
- Up to 96 channels SD encoding (via CVBS inputs)
- Up to 256 QAM modulated frequency outputs

Reliability Features:

- Hot-swappable modules
- Service level monitoring
- Dual redundant power supply
- Low power consumption and high reliability
MTBF ≥100,000 hours

airScreen tality™ solution: case study as applied to DStv Business* market needs



airScreen tality™ is a perfect choice for MATV/CATV/IPTV systems requiring secure, cost-effective and reliable distribution of video with a simple and easy to use centralized management.

The example illustrated above describes the application of airScreen tality™ to Multichoice's* DStv Business hospitality TV deployments:

airScreen tality™ receives signals from a DVB-S/S2 source, descrambles the encrypted programs utilizing CI CAMs. The programs are then multiplexed into new streams and QAM modulated over multiple channels. In this specific DStv Business case, they are also re-encrypted in real-time basis using an Inverto exclusive CAMCAS solution that is approved by MultiChoice and its studios and content owners. The output frequencies are then simply delivered via the traditional coaxial cable network or alternatively via an IP network (DVB TS over IP) to the hotel rooms:

Coax networks: with re-encryption, the content is displayed using either an HD zapper box or a Conditional Access Module (CI+ CAM) inserted in the TV set to de-scramble the transport stream.

IP networks: with re-encryption; the IP output will be sent, as multicast streams, to an IPTV zapper-box with HDMI out to the TV.

When in the clear, video can be streamed over IP (UDP/RTP) to users' PC or mobile devices using supporting player applications. All of this in 4 RU package, saving space and operating costs. On top, airScreen tality™ seamlessly integrates with existing or third-party solutions eg VOD, ad insertion or billing systems to offer a complete solution in a turnkey package (TBD on a case-by-case basis).

Chassis (Item 5767)

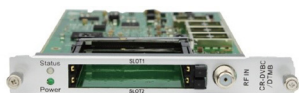
- 16 hot-swappable slot
- Dual redundant power supplies
- Service level multiplexing
- 4 x Gigabit RJ45 (embedded):
 - MPEG TS over UDP/RTP multicast/unicast
 - SPTS/MPTS
 - Max. 120 inputs and 120 outputs

Physical & Environment

Input Voltage	100 VAC ~ 240 VAC
Power	350 W
Chassis dimension (W x H x D)	(480 x 177 x 345) mm, 4 HE
Operating temperature	0°C ~ 50°C
Storage temperature	-10°C ~ 70°C
Operating Humidity	<95%
MTBF	≥100,000 h

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Receiver Modules



Module	DVB-C Receiver	DVB-C/ISDB-T Receiver		DVB-T/T2 Receiver
	DVB-C Mode	DVB-C Mode	ISDB-T Mode	
Item	5813	5812	5812	5811
Input	4 channels via 1 RF female connector	4 channels via 1 RF female connector	4 channels via 1 RF female connector	4 channels via 1 RF female connector
LNB Power				
LNB Voltage				
LNB Current				
CI	2 x PCMCIA CI slots	2 x PCMCIA CI slots	2 x PCMCIA CI slots	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different Supports mainstream CAS	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different Supports mainstream CAS	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different Supports mainstream CAS	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different Supports mainstream CAS
QAM Mode	Annex A/C	Annex B		
Frequency Range	47 MHz ~ 862 MHz	47 MHz ~ 862 MHz	177.143 MHz ~ 863.143 MHz	47 MHz ~ 862 MHz
Bandwidth	6/7/8 MHz	6/7/8 MHz	6/7/8 MHz	6/7/8 MHz
Modulation				
Constellation	16QAM / 32QAM / 64QAM / 128QAM / 256QAM	64QAM / 256QAM	DQPSK, QPSK, 16QAM, 64QAM	DVB-T: QPSK / 16QAM / 64QAM DVB-T2: QPSK / 16QAM / 64QAM / 256QAM
Guard Interval				DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2: 1/4, 1/8, 1/16, 1/32, 1/128, 19/256, 19/128
FEC			1/2, 2/3, 3/4, 5/6, 7/8, Automatic	
FFT Size				DVB-T: 2k, 8k DVB-T2: 1k, 2k, 4k, 8k, 16k, 32k
Symbol Rate	3.6 Ms/s ~ 6.952 Ms/s	3.6 Ms/s ~ 6.952 Ms/s		
Signal Level	40 dB μ V ~ 80 dB μ V	40 dB μ V ~ 80 dB μ V	-80 dBm ~ -20 dBm	-80 dBm ~ -20 dBm
Roll-off Factor				

Receiver Modules



Module	DVB-S/S2 FTA Receiver	DVB-S/S2 with CI Receiver	8VSB Receiver Module (ATSC)
Item	5809	5808	5807
Input	C/Ku Band, 4 channels via 4 RF female connectors	C/Ku Band, 4 channels via 2 RF female connectors, CH1 & CH2 via LNB-1, CH3 & CH4 via LNB-2	4 channels via 4 RF female connector
LNB Power	Independent power supplies for LNB-1 & LNB-3	Independent power supplies for each LNB	
LNB Voltage	13 V/18 V	13 V/18 V	
LNB Current	Max. 400 mA	Max. 400 mA	
CI		2 x PCMCIA CI slots	
CAM		Descrambled channel quantity depends on CAM capability, 2 CAMs could be different Supports mainstream CAS	
QAM Mode			
Frequency Range	950 MHz ~ 2150 MHz	950 MHz ~ 2150 MHz	50 MHz ~ 860 MHz
Bandwidth			6 MHz
Modulation			8VSB
Constellation	QPSK, 8PSK	QPSK, 8PSK	
Guard Interval			
FEC	DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	
FFT Size			
Symbol Rate	DVB-S: 1 Msps ~ 45 Msps DVB-S2: 1 Msps ~ 45 Msps	DVB-S: 1 Msps ~ 45 Msps DVB-S2: 1 Msps ~ 45 Msps	
Signal Level	-70 dBm ~ -20 dBm	-70 dBm ~ -20 dBm	-80 MHz ~ -20 dBm
Roll-off Factor	0.15, 0.20, 0.25, 0.35	0.15, 0.20, 0.25, 0.35	

HDMI Encoder Modules



Module	Professional HDMI Encoder	Commercial HDMI Encoder
Item	5806	5805
Input	4 channels via 4 HDMI female connectors (HDMI 1.4)	4 channels via 4 HDMI female connectors (HDMI 1.4)
Video	H.264/AVC HD: MP/HP @L4.0 SD: MP/HP@L3.0 MPEG-2 SD: MP@ML	H.264/AVC HD: H.264/AVC HD: MP/HP @L4.0/4.1/4.2 SD: MP/HP@L3.0/3.1/3.2
Resolution	SD: 576i50, 480i59.94 HD: 1080p- 25/30/25/30/50/59.94/60 1080i-50/59.94/60 720p-50/60	SD: 576i50, 480i59.94 HD: 1080p-25/30/50/59.94/60 1080i-50/59.94/60 720p-50/60 *Output supports progressive only, and resolution supports up to 1920*1080p30
Bitrate Control	CBR/VBR	CBR
Video Bitrate	1,000 Kbps ~ 14,000 Kbps	600 Kbps ~ 12,000 Kbps
GOP Structure	IBBP, IPPP, IBP	IPPP
GOP Size	6 ~ 63	1 ~ 99
Aspect Ratio	Automatic or Manual	Automatic or Manual
Audio	MPEG-1 Layer II, AAC, AC3	MPEG-1 Layer II, AAC, AC3
Audio Bitrate	32 Kbps ~ 384 Kbps	32 Kbps ~ 384 Kbps
Audio Mode	Stereo (2.0, including downmix)	Stereo (2.0, including downmix)
Audio Sampling Rate	48 kHz	48 kHz
Audio Volume Leveling	-20 dB ~ 20 dB	-20 dB ~ 20 dB
OSD Overlay		Text, image, QR code

HDMI Encoder Modules



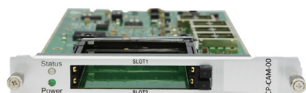
Module	HEVC HDMI Encoder (4-CH)	HEVC HDMI Encoder (8-CH)
Item	5804	5803
Input	4 channels via 4 HDMI female connectors (HDMI 1.4)	8 channels via 8 HDMI female connectors (HDMI 1.4)
Video	H.264/AVC MP/HP@4.2 H.265/HEVC MP@L4.1	H.264/AVC MP/HP@4.2 H.265/HEVC MP@L4.1
Resolution	HD: 1080p - 29.97/30/50/59.94/60 1080i - 29.97/30/50/59.94/60 720p - 50/59.94/60 SD: 576i50 576p50 480i - 59.94/60 480p - 59.94/60 *Output supports progressive only, and resolution supports up to 1080p30	HD: 1080p - 29.97/30/50/59.94/60 1080i - 29.97/30/50/59.94/60 720p - 50/59.94/60 SD: 576i50 576p50 480i - 59.94/60 480p - 59.94/60 *Output supports progressive only, and resolution supports up to 1080p30
Bitrate Control	CBR	CBR
Video Bitrate	600 Kbps ~ 20000 Kbps	600 Kbps ~ 20000 Kbps
GOP Structure	IPPP	IPPP
GOP Size	1 ~ 60	1 ~ 60
Aspect Ratio	Automatic or Manual	Automatic or Manual
Audio	MPEG-1 Layer II, AAC, AC3	MPEG-1 Layer II, AAC, AC3
Audio Bitrate	32 Kbps ~ 192 Kbps	32 Kbps ~ 192 Kbps
Audio Mode	Stereo 2.0	Stereo 2.0
Audio Sampling Rate	48 kHz	48 kHz
Audio Volume Leveling	-20 dB ~ 20 dB	-20 dB ~ 20 dB
OSD Overlay	Text, image, QR code	Text, image, QR code

HDMI Encoder Modules



Module	HDMI Encoder with CC	HDMI Encoder with YPbPr/CC
Item	5802	5801
Input	2 channels via 2 HDMI Female connectors (HDMI1.4) CC via RCA connector	2 channels via 2 HDMI Female connectors (HDMI1.4) CC via DB15 port
Video	H.264/AVC HD: MP/HP@L4.0 SD: MP/HP@L3.0 MPEG-2 SD: MP @ML HD: MP@HL	H.264/AVC HD: MP/HP@L4.0 SD: MP/HP@L3.0 MPEG-2 SD: MP @ML HD: MP@HL
Resolution	SD: 576i50, 480i59.94 HD: 1080p - 25/30/50/59.94/60 1080i - 50/60 720p-50/60 *The maximum output resolution is 1080i60	SD: 576i50, 480i59.94 HD: 1080p - 25/30/50/59.94/60 1080i - 50/60 720p-50/60 *The maximum output resolution is 1080i60
Bitrate Control	CBR	CBR
Video Bitrate	1,000 Kbps ~ 18,000 Kbps	1,000 Kbps ~ 18,000 Kbps
GOP Structure	IBBP, IPPP, IBP	IBBP, IPPP, IBP
GOP Size	6 ~ 63	6 ~ 63
Aspect Ratio		
Audio	MPEG-1 Layer II, AAC-LC/HE, AC3	MPEG-1 Layer II, AAC-LC/HE, AC3
Audio Bitrate		
Audio Mode	Stereo (2.0, including downmix)	Stereo (2.0, including downmix)
Audio Sampling Rate	48 kHz	48 kHz
Audio Volume Leveling		
OSD Overlay		

CI Scrambler/Descrambler



Module	CI Scrambler/Descrambler
Item	5795
Standard	EN 50221
Interface	2 PCMCIA CI slots
CAM Scrambling	Support Xcrypt CAMCAS
CAM Descrambling	Supports mainstream CAS Descrambled channel quantity depends on CAM capability, 2CAMs could be different

CVBS Encoder



Module	CVBS Encoder
Item	5798
Input	16 channels via 4 DB15 connectors, each DB15 for 4 channels, 4 x RCA-DB15 adaptor cables come along with module
Video	H.264/AVC SD: MP/HP@L3.0/3.1/3.2
Resolution	SD: 576i50, 480i59.94
Bitrate Control	CBR
Bitrate	1.000 Kbps ~ 8.000 Kbps
GOP Structure	IPPP
GOP Size	1 ~ 99
Aspect Ratio	Automatic or manual
Audio	MPEG-1 Layer II
Audio Bitrate	32 Kbps ~ 384 Kbps
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48 kHz
Audio Volume Leveling	-20 dB ~ 20 dB
OSD Overlay	Text, image, QR code

OFDM/QAM Modulation Modules



Module	QAM Modulation	QAMA Modulation	OFDM Modulation	QAMB Modulation
Item	5794 (A/C) / 5900 (B)	5793 (4ch) / 5792 (8ch)	5791 (4ch) / 5790 (8ch)	5789 (4ch) / 5788 (8ch)
Output	16 non-adjacent frequencies via 1 RF female connector 75 Ω	4/8 frequencies via 1 RF female connector 75 Ω	4/8 frequencies via 1 RF female connector 75 Ω	4/8 frequencies via 1 RF female connector 75 Ω
1 x RJ45	Reserved for scrambling			
Standard	ITU-T J.83 Annex A/B/C	ITU-T J.83 Annex A/C	ETSI EN 300744	ITU-T J.83 Annex B
Frequency Range	47 MHz ~ 862 MHz	47 MHz ~ 862 MHz	47 MHz ~ 862 MHz	47 MHz ~ 862 MHz
Bandwidth	6/7/8 MHz	6/7/8 MHz	8 MHz	6/7/8 MHz
Constellation	16QAM / 32QAM / 64QAM / 128QAM / 256QAM	16QAM / 32QAM / 64QAM / 128QAM / 256QAM	QPSK / 16QAM/64QAM	64QAM / 256QAM
Guard Interval			1/4, 1/8, 1/16, 1/32	
FFT Size			2k, 8k	
Code Rates			1/2, 2/3, 3/4, 5/6, 7/8	
Symbol Rate	3.6 Ms/s ~ 6.9 Ms/s	3.6 Ms/s ~ 6.9 Ms/s		3.6 Ms/s ~ 6.9 Ms/s
Output Level	Max. 106 dB μ V	Max. 105 dB μ V	Max. 105 dB μ V	Max. 105 dB μ V
MER	>40 dB	\geq 32 dB	\geq 32 dB	\geq 32 dB

airScreen tality™ modules and references:

Item	Description	Model
5767	airScreen tality™ - Professional Hospitality Video Headend Chassis with PSU	IDLA-CHASO1-4RU00-OPW
5899	airScreen tality™ rear attachment bracket for 4RU	IDLA-ACC4R1-BRCKT-OPW
5898	airScreen tality™ fan for 4RU	IDLA-ACC4R1-OOFAN-OPW
5807	airScreen tality™ Module 8VSB Receiver (ATSC)	IDLA-R8VSB1-ATSCO-OPW
5813	airScreen tality™ Module DVB-C Receiver	IDLA-RDVBC1-00000-OPW
5812	airScreen tality™ Module DVB-C/ISDB-T Receiver	IDLA-RDVBC1-ISDBT-OPW
5811	airScreen tality™ Module DVB-T/T2 Receiver	IDLA-RDVBT1-T2000-OPW
5808	airScreen tality™ Module DVB-S/S2 with CI Receiver	IDLA-RDVBS1-S2CIO-OPW
5809	airScreen tality™ Module DVB-S/S2 FTA Receiver 4 Ch	IDLA-RDVBS1-S2F4C-OPW
5810	airScreen tality™ Module DVB-S/S2 FTA Receiver 8 Ch	IDLA-RDVBS1-S2F8C-APW
5806	airScreen tality™ Module Professional HDMI Encoder	IDLA-EHDMI1-00000-PPW
5805	airScreen tality™ Module Commercial HDMI Encoder	IDLA-EHDMI1-00000-OPW
5800	airScreen tality™ Module Professional CVBS Encoder 6 Ch	IDLA-ECVBS1-6CV2-PPW
5799	airScreen tality™ Module Commercial CVBS Encoder 8 Ch	IDLA-ECVBS1-08CV2-OPW
5798	airScreen tality™ Module Commercial CVBS Encoder 16 Ch	IDLA-ECVBS1-16CV4-APW
5802	airScreen tality™ Module HDMI Encoder with CC	IDLA-EHDMI1-CC000-OPW
5801	airScreen tality™ Module HDMI Encoder with YPbPr/CC	IDLA-EHDMI1-YPCCOO-OPW
5804	airScreen tality™ Module HEVC HDMI Encoder 4 Ch	IDLA-EHDMIC1-HEVC4-OPW
5803	airScreen tality™ Module HEVC HDMI Encoder 8 Ch	IDLA-EHDMIC1-HEVC8-APW
5797	airScreen tality™ Module SDI Encoder 2 Ch	IDLA-ESDIO1-2CV20-OPW
5796	airScreen tality™ Module EAS Processing	IDLA-PEASO1-00000-OPW
5795	airScreen tality™ Module CI Scrambler/Descrambler	IDLA-SCAMO1-00000-OPW
5794	airScreen tality™ Module QAM Modulation Annex A/C non-adjacent 16 Ch	IDLA-MCAMX1-00000-OPW
5900	airScreen tality™ Module QAM Modulation Annex B non-adjacent 16 Ch	IDLA-MQAMA1-16CHOO-OPW
5793	airScreen tality™ Module QAM Modulation Annex A/C 4 Ch	IDLA-MQAMA1-4CHOO-OPW
5792	airScreen tality™ Module QAM Modulation Annex A/C 8 Ch	IDLA-MQAMA1-8CHOO-APW
5789	airScreen tality™ Module QAM Modulation Annex B 4 Ch	IDLA-MQAMB1-4CHOO-OPW
5788	airScreen tality™ Module QAM Modulation Annex B 8 Ch	IDLA-MQAMB1-8CHOO-APW
5791	airScreen tality™ Module OFDM Modulation 4 Ch	IDLA-MQFDM1-4CHOO-OPW
5790	airScreen tality™ Module OFDM Modulation 8 Ch	IDLA-MQFDM1-8CHOO-APW
5859	airScreen tality™ XCrypt-embedded DVB-C HD zapper with HDMI output and IR extender	IDLA-XSTB1-OOHIR-OPR
5860	airScreen tality™ XCrypt CAMCAS server CAM for scrambling up to 16 services	IDLA-XCAM1-OO16X-OPR
5861	airScreen tality™ XCrypt CI+CAM	IDLA-XCIM1-00000-OPR
	Depending on configuration and expansion stages, licenses may be required	

For purpose of brevity, some product descriptions in this sheet remain at platform level and may not be referred to as detailed datasheets of the products. Inverto Digital Labs reserves the right to amend, omit or add products, product-lines, and / or features without notice.

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