Vecima
TC ■□ TERRACE

The **Terrace TC600E** MDU gateway is a multi-channel digital to analog RF converter with support for MPEG-2 and MPEG-4 AVC / H.264 content from QAM and IP sources. The TC600E accepts any combination of up to 36 QAM channels and up to 36 Multicast or Unicast IP streams up to a maximum total input bitrate of 940 Mbps. Up to 36 programs sourced from the QAM inputs can be decrypted using 6 Multi-Stream CableCARDs™. Multicast and Unicast IP streams must not be encrypted. The TC600E can decode up to 36 MPEG-2 HD/SD, 36 MPEG-4 AVC / H.264 SD, or 24 MPEG-4 AVC / H.264 HD programs, and output up to 36 NTSC analog channels. The Terrace TC600E is a flexible, compact and cost effective way to bring a digital lineup back into the analog realm for a commercial or MDU bulk account.

Features

■ Highly integrated - Combines QAM demodulation, IP input, decryption, NTSC modulation and RF upconversion

■ Supports MPEG-2 and MPEG-4 AVC / H.264 video decoding

■ Demodulate up to 36 QAM channels and/or receive up to 36 IP streams

■ Convert up to 36 MPEG-2 HD/SD, 36 MPEG-4 AVC / H.264 SD, or 24 MPEG-4 AVC / H.264 HD programs to analog channels

■ Supports up to 6 Multi-Stream CableCARDs to decrypt up to 36 QAM streams

■ SCTE-18 Force Tune EAS Support

■ SCTE-20,21 Closed Captioning / VBI support

■ Integrated DOCSIS 3.0 cable modem

■ Supports IPv4 and IPv6 on Ethernet Management Port

■ Supports unencrypted Unicast and Multicast IP Input

■ Scalable – Generate up to 90 contiguous channels with 3 co-located units

■ Compatible with HITS QT+

■ Compact 1RU design saves space and power

Terrace: TC600E - Specifications

RF Input Port

Connector	F-Connector, female
Input Impedance	75 Ω
Return Loss	15 dB (5 - 42 MHz and 54 - 1002 MHz)
Modulation	64, 256 QAM (Annex B)
Frequency	54 - 1002 MHz (Band Edges)
Channels	36
Number of QAM Tuners	36 discrete
Input Level	-12 to 15 dBmV

Conditional Access System

Type	MediaCipher®, PowerKEY™
Format	CableCARD™

Video

Format	MPEG-2, MP@ML MPEG-2, HP@HL H.264, High Profile, Level 4.0
Bitrate	Up to 17 Mbps

Audio

Audio Formats	MPEG1 layer 2 (MUSICAM) Dolby® Digital (AC3)
Bitrate	Up to 512 kbps
Sample Rates	32 kHz, 44.1 kHz, 48 kHz
Downmix	Multichannel downmix to stereo or mono

Ethernet Management Port

Connector	RJ45
Speed	10/100BASE-T Ethernet

Craft Interface Port

Connector	USB Type B, receptacle

Emergency Alert System (EAS)

EAS Compliance	ANSI/SCTE-18 2007 Force-Tune

Closed Captioning / VBI

Input Format	ANSI/SCTE-20 2004 ANSI/SCTE-21 2001
Output Format	CEA-608-E R-2014

RF Output

Connector	F-Connector, female
Impedance	75 Ω
Return Loss	13 dB (54 to 600 MHz)
Video	NTSC
Audio	Licensed BTSC/SAP
Frequency	54 to 600 MHz (EIA channels 2 to 86, 95 to 99)*
Channels	36 channels within a 48 channel (294 MHz) frequency block
Output Level	26 dBmV ± 2.5 dB
Carrier-to-Noise Ratio	> 49 dB/4 MHz
Composite Triple Beat	< -52 dBc
Composite Second Order	< -55 dBc
Cross Modulation	< -52 dBc
Inband Spurious (-0.75 to +4.2 MHz relative to video carrier)	< -51 dBc

FCC and per channel offsets supported

Ethernet Media Port

Connector	RJ-45, 10/100/1000 Ethernet
Format	MPEG-2 TS 188 byte TS packets Unicast, Multicast (IGMPv2, IGMPv3 with single source IP address)
Max Line Rate	940 Mbps
Max Program Bitrate	20 Mbps
Encryption	Clear only

Control & Management

Supported Protocols	HTTPS, SSH, DHCP, TFTP, TACACS+, SNMP, IPv4/IPv6 (Ethernet Management Port), IPv4 (Ethernet Media Port)

Chassis / Power / Environmental

Dimensions (H x W x D)	4.5 cm x 48.3 cm x 55.9 cm (1.7 in. x 19 in. x 22 in.)
Weight	5.8 kg (12.75 lbs.)
Input Voltage	100 to 240 VAC, 47 to 63 Hz
Power Consumption	< 175 W
Temperature (Operational)	0 to 50°C (32 to 122°F)
Humidity (Operational)	5 to 95% non-condensing
Temperature (Storage)	-40°C to 70°C (-40°F to 158°F)
Humidity (Storage)	5 to 95% non-condensing
ROHS & WEEE Compliant	Yes

Regulatory Standards Compliance

Safety	CAN/CSA-C22.2 No. 60950-1-07, 2nd Ed. ANSI/UL Std No. 60950-1-2011, 2nd Ed.
EMC Emissions	FCC Part 15 Class B (ANSI C63.4: 2009) ICES-003 Issue 5: 2012

TC600E supports flexible channel plans[1]

TC600E Channel Plan	Contiguous Lineup (with FM)	Contiguous Lineup (no FM)	Number of CableCARDs Required*
Single Unit	**36 Channels**		**6 Total**
TC600E (EIA = 2)	2-32, 95-99	2-37	6
TC600E (EIA = 33)	33-68 ... 42-77	33-68 ... 42-77	6
TC600E (EIA = 39)	42-77 ... 51-86	42-77 ... 51-86	6
Dual Stack	**72 Channels**		**12 Total**
TC600E (EIA = 2)	2-32, 95-99	2-37	6
TC600E (EIA = 33)	33-68	38-73	6
Triple Stack	**90 Channels**	**85 Channels**	**15 Total**
TC600E (EIA = 2)	2-32, 95-99	2-37	6
TC600E (EIA = 33)	33-68	38-73	6
TC600E (EIA = 39)	69-86	74-86	3

* CableCARDs required assumes fully encrypted channel lineup with 6 channels per CableCARD. Unencrypted channels are not counted against the CableCARD decryption limit.

[1] The TC600E supports flexible channel plans via web gui and console port. Select the lowest EIA number of the desired Channel Plan and the TC600E will derive the appropriate channels for that plan.

The TC600E can output up to 36 channels within a 294 MHz (48 channel) frequency block allowing the user to enable 36 non-contiguous channels
 For example: 2, 4-7, 9-15, 17-30, 33-41, 45

[2] The Ethernet Media Port functionality requires Release 6.x firmware.

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