

CW-4151 CW-4156 QAM MODULATOR



In the television technology, developing efficient compression techniques and standardizing the MPEG-2 format made it possible to transmit the programs in digital way. Standardizing the modulation and the encoding for the distribution of the signals through both satellite transmission, terrestrial transmission and cable has also been accomplished.

The QAM modulator is the basic unit of the cable transmission, allowing the radio and television programs packed in a transport stream to be transposed to a high frequency carrier and transmitted to the subscribers. Since at elaborating the relevant standards, the future's vast data transmission needs have also been reckoned with, these devices are suitable without any modification for the fast transmission of the data signals of computers, routers and other data processing equipment.

CableWorld's CW-415x series QAM modulator is a device of high quality digital cable TV systems which can be used well in computer data transmission networks, too.



Main features:

- QPSK, 16-, 32-, 64-, 128- and 256-QAM operation mode
- Automatic synchronisation to the transport stream
- Parallel TS input, LVDS input level
- Widely variable bit rate (6 ... 56 Mbit/sec)
- Variable bandwidth and roll-off factor by digital filter
- Variable IF frequency
- Programmable output frequency
- High output level, high signal purity
- Meets the requirements of the DVB and DAVIC standards and the ITU-T J.83 Annex A, B, C

Technical data:

Input signal	DVB standard transport stream
Output signal	QAM modulated RF carrier
Transmission characteristics	
Modulation modes	QPSK, 16-, 32-, 64-, 128- and 256-QAM
Encoding and error protection	according to the DVB-C standard (ETS 300 429)
Nominal IF frequency	36.15 MHz
Roll-off factor	12 %, 15 %, 18 % (variable)
Input data	
Input bit rates	1 ... 7 MBaud
QPSK	6 ... 14 Mbit/s
16 QAM	12 ... 28 Mbit/s
32 QAM	15 ... 35 Mbit/s
64 QAM	18 ... 42 Mbit/s
128 QAM	21 ... 49 Mbit/s
256 QAM	24 ... 56 Mbit/s
Packet format	188 or 204 bytes
Input signal level	LVDS synchronous parallel, complies with DVB-TM1449
Input impedance	100 Ω
Input signal	
max. amplitude	2.0 V _{p-p}
min. amplitude	0.2 V _{p-p}
common mode voltage	1.125 ... 1.375 V
Output data	
Number of RF outputs	1
Nominal output impedance	75 Ω
Nominal output level	120 dB μ V
Variable range	0 ... -12 dB
Output frequency ranges	
model CW-4151	48 ... 63 MHz
model CW-4152	76 ... 94 MHz
model CW-4153	150 ... 300 MHz
model CW-4154	300 ... 470 MHz
model CW-4155	470 ... 860 MHz
model CW-4156	110 ... 150 MHz

Frequency accuracy	better than 1×10^{-4} (synthesized)
Output level stability	better than ± 0.5 dB
Signal purity	
harmonic amplitude	less than -60 dB
other products	less than -60 dB
IF loop through	
nominal voltage level	102 dB μ V
nominal impedance	75 Ω

Programmable parameters

1. Output signal frequency
 - raster 50 kHz
2. Output signal level in 99 steps
3. RF output signal on/off
4. QAM modulation modes see the User's Guide

Additional data

Bandwidth	$B = 1.15 S / \log^2 n$
where B:	bandwidth (MHz)
S:	data bit rate (Mbit/s)
n:	constellation factor (4, 16, 32, 64, 128, 256)

General data

Service period	continuous
Power	230V +10 % ... -15 % 50/60 Hz
Power consumption	max. 75 VA
Connectors	
- TS input	25 pin D-socket
- RF output	F-socket
- IF input, IF output	F-socket
Physical dimensions	19" \times 1 module height
width \times height \times depth	486 \times 43.6 \times 473 mm
Mass	3 kg
Environmental data	
Operating	
to fulfil the specifications	+10 ... +35 $^{\circ}$ C
to maintain operation	0 ... +40 $^{\circ}$ C
relative humidity	max. 80 %
Nonoperating	
relative humidity	-25 ... +45 $^{\circ}$ C max. 95 %, noncondensing

Budapest XI., Kondorfa u 6/B
Hungary
H-1519 Budapest, Pf. 418
Phone.: +36 1 204 7740
Fax: +36 1 204 7839
E-mail: cworld@matavnet.hu
Internet: www.cableworld.hu

CableWorld[®] Ltd.