



WDQ-3254

4 in 1 Modulator With Multiplexing and Scrambling

■ **Description**

WDQ-3254 is a new generation of Multi/Scram-functional 4 in 1 QAM modulator, which can receive TS from the 8 ASI interfaces, and then multiplex, scramble and 4-channel modulate. It adopts our newly developed functions such as “Module Management”, device scrambling, and channel modulation. The flexible customization and high expansibility can satisfy the user’s current and future DTV system requirements.

■ **Features**

- Support ITU- T J.83 Annex A /B,/C modulation, output frequency range: 54MHz~860MHz
- QAM modulation: 16/32/64/128/256
- Support different configurations by software authorization
- Support up to 4 simul-crypt CAS and DVB-CSA scrambling
- Support SI/PSI auto-generation and manual uploading during re-multiplexing
- Support auto-generation or manual editing of network information, as well as local network information sectors uploading
- Adopt extra-large cache memory for both constant and inconstant input bit stream at ASI
- Support PID filtering, mapping and pass-through
- Support PCR auto-correction
- Output bitrate range: single channel 15.5~51.6Mbps
- RF output symbol rate range: single channel 4.2~7Mbaud/s
- Output electrical level range: 95dBuV~115dBuV (8 channels, step 0.25dB)
- Support gain tuning function, tuning range: -2.5~10.5dB
- Provide -20dB RF test interface
- Tracking filter circuit to ensure excellent external band suppression performance

- Support working parameter import and export
- Support Web-based network management, with online upgradable embedded programs
- Multi-lingual management user interface and documentation to suit both regional and overseas markets
- Support monitoring of operation temperature & power supplies

■ **Application**

- Re-multiplex for all DVB program Transport Stream related application
- DVB-C QAM modulation

■ **Compatible**

- EN 50083-9
- ETSI TR 101 154
- ETSI TR 101 891
- EN 300 429
- ITU-T J.83A/B/C

■ Recommended Operating Conditions

Stress in excess of the maximum absolute ratings can cause permanent damage to the device (See Table 1)

Table 1 – Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage ^{Note}	V	90	250	V
Supply Frequency	F	50	60	Hz
power consumption	C		55	W
Ambient Operating Temperature	Tw	5	+40	°C
Storage Temperature	Ts	-25	+55	°C
Operating Humidity	H	10	75	%

Note: Support both 110V and 220V supply voltage standards, but please let us know which one do you need when you release order.

■ Specifications

Table 2 – Technical Specifications

Characteristic	Properties	Specification
Interfaces		
Data Input Interface	Connector	BNC
	Quantity	8
	Data Format	188
	Impedance	75Ω
	MAC	IEEE 802.3 1000BASET
	Input Data Rate	0~270Mbps
Management Port	Connector	RJ45
	Quantity	1
	Functionality	Management and CAS
	MAC	IEEE 802.3 1000BASET
	Network Protocol	TCP/IP
	Application	HTTP4.0/HTML1.1/XML/CGI(Web Management) NTP
Multiplexing Specifications		
TS input	Input TS number	0~8
	Total services number(total)	0~512
	Service number per input TS	0~64
TS output	Output TS number	0~4
	Total services number(total)	0~256
	Service number per output TS	0~64
PSI for output TS	Standard(syntax and send period)	ISO/IEC 13818-1
		DVB SI(ESI EN300468)
	Table type	PAT/PMT: Generated automatically
		SDT: Generated automatically or use uploaded files

		NIT/BAT: Use uploaded files
		TDT/TOT: Optional
Scrambling & CAS interfaces		
Scrambling	Scrambling algorithm	DVB-CSA
	Embedded scramblers number	4
	Table update	CAT/PMT
CAS Interface	Simul-Crypt CAS number	0~4
	SCS interface	ETSI TS 103 197
	ECMG interface	TCP
	EMMG interface	TCP/UDP
	EMM bandwidth	0~3Mbps/TS
RF Output Technical Specifications		
RF Output	Output Frequency	54MHz~860MHz
	Maximum Output EPL (main)	90-110dBuV (4 Channels, 0.5dB as step size)
	Maximum Output EPL (monitoring)	70-90dBuV (4 Channels, 0.5dB as step size)
	Impedance	75Ω
	Reflection Loss	≥12dB
	Carrier Suppression	>58dB
	MER	≥38dB (QAM Constellation: 64QAM Symbol Rate: 6.857MBaud)
	SNR (Out of band)	≥50dB
	Gain fine-tune	0.00~5.00dB (Step size is 0.25dB)
	Phase Noise@1KHz	≥90dBc/Hz
	Phase Noise@10KHz	≥100dBc/Hz
	Phase Noise@100KHz	≥105dBc/Hz
	Accuracy of center frequency	±25KHz

■ Panel Diagram

Front panel:



Rear panel:

