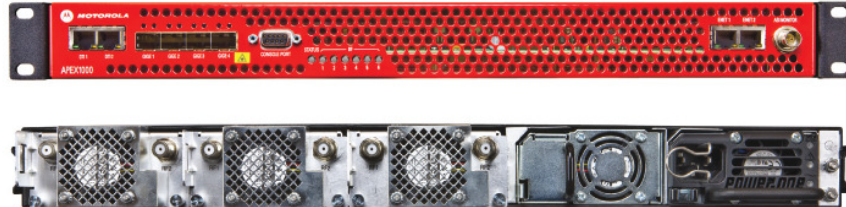## ARRIS   APEX 1000

All-Purpose Edge QAM

APEX 1000 von Arris ist ein universeller Edge QAM und bietet Flexibilität, hohe Verfügbarkeit, hohe QAM-Dichte, Möglichkeit für Scrambling sowie geringen Energieverbrauch in einer kostengünstigen 1-HE-Plattform. Bis zu drei austauschbare und Hot-Swap-fähige QAM-Module können im Chassis installiert werden. Jedes Modul bietet zwei RF-Anschlüsse, die jeweils bis zu 6 QAM-Kanäle unterstützen. Jeder der verfügbaren 36 QAM-Kanäle kann für Broadcast, Video-on-Demand (VOD), Switched Digital Video (SDV) oder Docsis 3.0 (durch Unterstützung für die M-CMTS-Architektur) verwendet werden.

The APEX1000, Arris' next-generation all-purpose edge QAM, provide flexibility, high availability, high QAM density, encryption capability and low power in an extremely cost-effective 1 RU platform. Up to three removable and hot-swappable QAM modules can be installed in the chassis. Each module provides two RF ports, which support up to 6 QAM channels each. Any of the 36 QAM channels available can be used for video on demand (VOD), switched digital video (SDV), broadcast services, or DOCSIS® high-speed data (through support for the M-CMTS architecture).

Features

- 1 HE-Chassis für bis zu 36 QAM-Kanäle mit 8 MHz, bis zu drei austauschbare und Hot-Swap-fähige QAM-Module pro Gehäuse
- QAM-Module – verfügbar in SD- oder HD-Konfiguration; Umkonvertierung über SW-Upgrade möglich
- Extrem geringe Leistungsaufnahme
- Vier GbE-Schnittstellen (SFP) mit Unterstützung für IGMPv3 und Transportstrom-Redundanz
- bis zu zwei Hot-Swap-fähige, redundante Netzteile mit Lastteilung; unterstützt zwei AC- bzw. DC-Netzteile
- SDV- und VOD-Standards - Unterstützt die NGOD- und ISA-Spezifikationen
- M-CMTS-Standards – Unterstützung von M-CMTS-Schnittstellen, einschließlich DTI, DEPI und ERMI
- Unterstützung für Verschlüsselung durch DVB Simulcrypt
- Volle Video EQAM-Funktionalität
  - De-Jittering von CBR- und VBR-Input- Datenströmen
  - Empfang von MPTS oder SPTS
  - Übertragen von MPTS
  - Unterstützung für MPEG-Remultiplexen, PID-Remapping und PSI-Generierung
  - Externer SI-Generator möglich
  - Unterstützt SNMP für Konfiguration und Steuerung

Features

- *Physical Chassis – 1 RU chassis with support up to 36 8-MHz QAM channels or up to three removeable and hot-swappable QAM modules*
- *QAM-Modules – available in standard-density (SD) configuration, high-density (HD) configuration and a QAM module software upgrade to field-convert a SD module to a HD module*
- *Power Consumption – extremely low power consumption*
- *GigE Interface – four GigE Interfaces with support for IGMPv3 and transport stream reduncdancy*
- *Power Supplies – Supports up to two hot-swappable redundant load-sharing power supplies; supports two AC, two DC or either 1 AC or 1 DC*
- *SDV and VOD Standards – Standards based solutions*
- *M-CMTS Standards – Software upgradeable to support the M-CMTS interfaces, including DTI, DEPI and ERMI*
- *capable of supporting encryption through DVB Simulcrypt*
- *Full Video EQAM Feature Set*
  - *De-jittering of CBR and VBR input streams*
  - *Receive either MPTS or SPTS*
  - *Transmit MPTS*
  - *Support for MPEG remultiplexing, PID remapping, PSI generation*
  - *Support for external DVB SI generator*
  - *Supports SNMP for configuration and control*

Spezifikationen / *Specifications*

Modular Chassis		Gigabit Ethernet Input/Output	
Chassis Height	1 RU	GigE MPEG Data	Receive only
Dimensions	4,3 cm x 48,3 cm x 63,2 cm	Physical Ports	Four SFP slots
Weight	10,4 kg (fully loaded)	IGMPv3	Supported
QAM Modules	Up to three per chassis: SD purchase standard-density (SD) or high density (HD) modules; software upgrade to HD	Optical SFP Support	850, 1310, 15xx nm
		Electrical SFP Support	1000Base-T
		Fast Ethernet Input/Output	
		Physical Ports	Two RJ-45 Ethernet
		RF Output	
Hot-Swappable	Yes	ITU J.83 Annex A, B, C; DRFI	
RF Ports	Two per QAM module	QAM Constellations	256 QAM and 64 QAM
QAM Channel per RF Port		Center Frequency Range	57 to 999 MHz
SD-Module	Up to four		
HD-Module	Six 8 MHz or eight 6 MHz	Carrier Frequency Step Size	250 KHz
Power			
Power Supplies	Up to two per chassis	RF Level Step Size	0,2 dB
Load Sharing	Yes	Maximum RF Output Level	
Redundant	Yes	One active channel	60 dBmV
Hot Swappable	Yes	Two active channels	56 dBmV
Configurations	One or two AC / One or two DC	Four active channels	52 dBmV
		Six active channels	50 dBmV
AC Power Supply	100 to 240 VAC, 50/60 Hz	Eight active channels	49 dBmV
DC Power Supply	-40 to -75 VDC	Input Impedance	75 Ω
Power Consumption	5 to 7 W/QAM channel (240 W total when fully loaded)		
Environmental			
Operating Temperature	0 °C to 40 °C		
Storage Temperature	-40 °C to 70 °C		
Cooling	Five fans, front to back airflow		
Operating Humidity	5% to 95%		

Individual Components		
Component	**Description**	**Part Number**
APEX 1000 Chassis	QAM modules and power supply modules sold separately	540274-001
APEX 1000 Chassis with Broadcast Licence	QAM modules and power supply modules sold separately. Broadcast license included.	540274-003
QAM Module SD (2x3)	Two RF ports per module enable up to 4 QAMs per port	540273-001
QAM Module HD (2x6)	Two RF ports per module enable up to 6 QAMs per port	540273-002
Power Supply Module (AC)	AC power supply	540272-001
Power Supply Module (DC)	DC power supply	540271-001
Set Configurations		
APEX 1000 V48 AC Narrowcast configuration	Includes one APEX chassis, one AC power supply module, 3 2x6 QAM modules	541928-001
APEX 1000 V48 DC Narrowcast configuration	Includes one APEX chassis, one DC power supply module, 3 2x6 QAM modules	541928-002
APEX 1000 V24 AC Narrowcast conf.	Includes one APEX chassis, one AC power supply module, 3 2x3 QAM modules	541928-003
APEX 1000 V24 DC Narrowcast conf.	Includes one APEX chassis, one DC power supply module, three 2x3 QAM modules	541928-003
APEX 1000 V48 AC Broadcast conf.	Includes APEX 1000 V48 AC along with the Broadcast support license	541928-005
APEX 1000 V24 AC Broadcast conf.	Includes APEX 1000 V24 AC along with the Broadcast support license	541928-007
QAM Upgrade		
QAM Module Upgrade	Field-convert a 2x3 SD to a 2x6 HD module	540400-001

Note: QAM module configuration considers PAL (8 MHz) channels