

Casa Systems CCAP Services Card (CSC8x10G)



Winning and keeping residential and enterprise video and Internet services customers has never been tougher. Service providers face a range of competition in a business that requires rapid response but is still capital intensive. They need partners who are fast enough to get them ahead of their competition and committed to keeping them there, which is why more and more, leading providers depend on Casa Systems.

Casa has consistently designed today's products with tomorrow in mind, and has proven to be the most reliable partner in the industry in delivering high performance solutions at each technology shift in cable access networks. Casa's award winning CCAP solutions were designed from the beginning to deliver gigabit+ services, enable a smooth transition from DOCSIS® 3.0 to DOCSIS 3.1, and evolve to distributed access architectures rapidly with low operational disruption.

Casa Systems' family of Distributed Access Architecture solutions are designed to help service providers push capacity to the edge to improve the services their subscribers enjoy, extract more value from existing investments, and maintain smooth operations in the transition from centralized to distributed access architectures.

Casa's Distributed Access Architecture (DAA) family includes:

- At the CCAP core, the CCAP Services Card (CSC8x10G), deployable in Casa's C100G or C40G CCAP chassis
- A range of Distributed Access (DA) nodes, which perform DOCSIS and EQAM PHY functions, and can be optimally located based on service provider needs
- 10G Ethernet or 10G EPON transport between the CCAP core and the DA nodes

The CSC8x10G provides the DOCSIS and EQAM MAC functions from the CCAP core in Casa's DAA solution, and performs traffic aggregation for the Distributed Access nodes. With 8x10GbE ports, the CSC8x10G can be used to support at least up to 32 DA nodes per CSC8x10G, and can be used as either a 10G Ethernet card or a 10G EPON card.

Narrowband Digital Forward (NDF) and Narrowband Digital Return (NDR) are supported along with two separate Out-of-Band (OOB) interface pairs for the seamless transport of (i) SCTE 55-1 or 55-2 OOB signaling between legacy set-top boxes and headend set-top management systems, (ii) telemetry to nodes, power supplies and amplifiers over the digital network and, (iii) analog FM radio.

Highlights

Gigabit+ Performance

10G Ethernet or 10G EPON transport delivers 1Gbps+ to subscribers

Distributed Access Node Support

The CSC8x10G provides the DOCSIS and EQAM MAC functions in the CCAP core and performs traffic aggregation for Distributed Access nodes

Scalability

Each CSC8x10G provides 8x10GbE ports and can support at least up to 32 Distributed Access nodes per CCAP Services Card

Legacy Video STB Support

Narrowband Digital Forward (NDF) and Narrowband Digital Return (NDR) provide support for SCTE 55-1 and 55-2, as well as other OOB signaling

Investment Protection

The CSC8x10G can be deployed in a C40G or C100G CCAP chassis alongside a mix of upstream and downstream subscriber cards

Forward Engineered

Smooth transition to virtualized end state by keeping MAC functions centralized

Feature	Benefit
<p>Plug and Play Deployment</p>	<p>At the headend, with a C100G or C40G running software release 8.0 or beyond, plug in the CSC8x10G (CCAP Services Card) and make the necessary fiber connections.</p> <p>At the Distributed Access node site, simply connect the fiber and coax cable, then power on the node.</p> <p>All of the management of the Distributed Access node is done through the CCAP core, either via SNMP or CLI (on the C100G / C40G).</p>
<p>Full CCAP Services Support</p>	<p>Casa's Distributed Access solutions support all CCAP DOCSIS and video functions including SDV, VoD and linear broadcast video. Narrowband Digital Forward (NDF) and Narrowband Digital Return (NDR) are supported for the seamless transport of (i) SCTE 55-1 or 55-2 OOB signaling between legacy set-top boxes and headend set-top management systems (ii) telemetry to nodes, power supplies and amplifiers over the digital network and, (iii) analog FM radio.</p>
<p>Gigabit+ Throughput</p>	<p>Designed for gigabit+ services, Casa's CSC8x10G can deliver 10Gbps on each optical link to the Distributed Access nodes.</p>
<p>Flexible Connectivity Options</p>	<p>Casa's CSC is an 8 x 10G CCAP line card which supports either 10G Ethernet or 10G EPON for maximum flexibility. While Ethernet has distance advantages, EPON has other advantages such as: reduced fiber count via the standard defined WDM for transmit, receive, and analog wavelengths, and bandwidth sharing between nodes using only passive components.</p> <p>Likewise, Casa's Distributed Access nodes can connect to either a 10G Ethernet or an EPON network.</p>
<p>High Density Solution, Scalable to 96 – 192 (or more) Distributed Access Nodes per C100G</p>	<p>Casa's CSC has 8x10G Ethernet/EPON interfaces. The C100G is 13 RU and can house 12 CSCs for a maximum of 96 ports, which means 96 – 192 (or more) Distributed Access nodes per C100G. Casa also offers a smaller full CCAP solution, the 6RU C40G. The C40G can house 4 CSCs for a maximum of 32 ports, which means 32 -192 (or more) Distributed Access nodes per C40G.</p>
<p>Strong Security at Every Point</p>	<p>An advantage of Casa's Distributed Access architecture is that the intelligence is centralized in the headend, making the system as a whole more secure than alternative approaches. Distributed Access nodes are configured and managed through the headend CCAP core. IPsec secures the management/control traffic between the headend C100G and the node, which guards against man-in-the-middle attacks. User data between the CM and the CSC is secured by the DOCSIS BPI+ protocol. DVB Simulcrypt, PME, or PKE secure video traffic, in the same way as in an integrated CCAP.</p>

Technical Specifications

CCAP Services Card (CSC8x10G)

Total Power	250W
Connectors	(8) SFP+

Optional CSC I/O Card (For out-of-band signal support)

Connectors	(4) F-type
Out-of-band Interface pairs	2
Input Level	40 to 60 dBmV
Output Level	-10 to 10 dBmV