

Product Description

Aster A-XFE is Microtel Innovation top performing appliance for mobile data traffic **Advanced Packet Brokering, powered by a double Network Processor fabric, supporting up to 20X100Gb/s ports.**

Combined with the Streamliner Suite applications, A-XFE works as a **powerful Advanced Packet Broker with GTP balancing and filtering functionalities**, also providing **Advanced Packet Manipulation (APM) capabilities.**

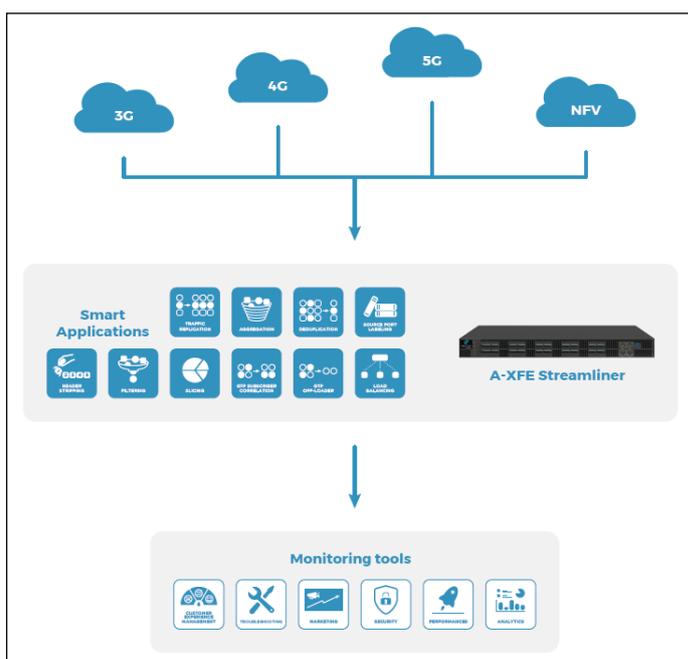
It allows for top performances, with **20X100Gb/s input/output ports**, and up to **200Gb/s total GTP traffic** to be correlated and filtered.

L2-L7 filtering with A-XFE Streamliner

Aster A-XFE Streamliner **allows for L2-L7 filtering.** It includes a powerful **L2-L4 Network Packet Broker**, and the **GTP Advanced Load Adapter**, capable to **filter GTP traffic based on L5-L7 parameters**, like Inner IP, IMSI, APN, QCI, ..., forwarding different traffic flows to different probes in a coherent way, i.e. granting that the whole subscriber session is sent to the same interface.

Several use cases may be implemented, **to adapt the continuously growing mobile data traffic to actual monitoring tools.**

For example, **VoLTE and Video traffic can be sent to two different dedicated probes**, while **VIP traffic**, including control and user plane, selected using IMSI and/or Inner IP white list, **can be forwarded to a third probe.**



Aster A-XFE Streamliner



Streamliner Suite Applications

- **L2-L4 Network Packet Broker**, with 20X100Gb/s interface, each one to be used as 100Gb, 40Gb/s or 4X10Gb/s ports, any mixed configuration is possible
- **Advanced Packet Manipulation (APM)**, which can smartly reduce the traffic towards the monitoring tools: Deduplication, Header Stripping, VLAN Tagging and Packet Slicing
- **GTP Load Balancer**, capable to balance the GTP traffic load across multiple probes in a coherent way, i.e. granting that the whole subscriber session is sent to the same tool
- **GTP Advanced Load Adapter**, implementing powerful session based GTP traffic filtering and sampling, with the goal to significantly reduce the probe workload. Several parameters can be used as filtering criteria, between them IMSI, APN, IMEI, RAT, ULI, QCI
- **Easy to order**, all ports enabled, no additional licences needed

A-XFE Streamliner: L2-L4 Network Packet Broker

- **Input/output ports:**
 - * **20x100Gb/s** in/out cages
 - each one can be used as 1x100Gb/s, 1x40Gb/s or 4x10Gb/s,
 - * **2 Tb/s** Switching Capacity.
- **Filtering and Aggregation:**
 - * Filtering based on a variety of L2, L3, L4 header,
 - * Selective aggregation: Any to Any, Many to One, One to Many,
 - * Traffic replication.
- **Management:**
 - * GUI for local and remote management,
 - * Real time statistics, counters and SNMP alarms.

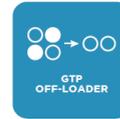


A-XFE Streamliner: Advanced Packet Manipulation (APM)

- **Packet deduplication:**
 - * Enable/Disable De-Duplication function “per” Input port,
 - * Protocol can be selected: IP, VN-TAG, VLAN, MPLS, VxLAN, GRE, GTP-U, GTP-C,
 - * Field selectable: Frame length, FCS, MAC Src/Dst, IP Src/Dst, Ether type, IP Id, IP Protocol/Next Header, Total Length/Payload Length.
- **Detunnelling/Header Stripping:**
 - * Protocol can be selected: VN-TAG, VLAN, MPLS, VxLAN, GRE, GTP-U, GTP-C.
- **Packet slicing:**
 - * Protocol can be selected: IP, VN-TAG, VLAN, MPLS, VxLAN, GRE, GTP-U
 - * Slicing can start:
 - after N bytes (N configurable),
 - after the packet header, plus N bytes (N configurable).
 - * Ethernet frame CRC recalculated.
- **VLAN tagging:**
 - * Configurable, for example based on
 - protocols: IP, VN-TAG, VLAN, MPLS, VxLAN, GRE, GTP-U
 - A-XFE input port
 - * It can be used to give context to data flows, allowing tools to know from which input port the packet arrived (**Source Port Labelling**).



A-XFE Streamliner: GTP Advanced Load Adapter



Aster A-XFE can be combined with the **Streamliner GTP Advanced Load Adapter Application**, in this way implementing a powerful **GTP session aware L5-L7 filtering engine**, which can also provide **sampling capabilities**.

It performs **stateful correlation of GTP-C with GTP-U messages**, based both on the subscriber ID (IMSI) and the corresponding tunnel ID (TEID); it can manage **200Gb/s data throughput and up to 10 Million users**, to support future traffic growth driven by 5G and OTT applications.

Key features

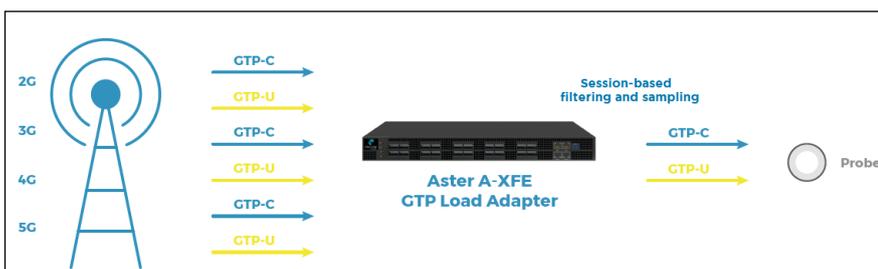
- **20x100Gb/s** input/output cages, each one to be used as 1x100Gb/s, 1x40Gb/s or 4x10Gb/s;
- **Manage 200Gb/s** total traffic and **10 million users**;
- **Perform stateful correlation, load balancing, session aware filtering and sampling** of GTP traffic;
- **Session based filtering** is possible on several parameters (see complete list in the right): **up to three filtering parameters can be combined on the same time**, to select the requested output traffic;
- **Recognize "no GTP"** traffic and balance it towards some specific monitoring ports or to the same ones used for the GTP traffic;
- **Network protocols and interfaces:**
 - * GTPv1-C, GTPv2-C, GTPv1-U,
 - * 2G, 3G, 4G, 5G interfaces,
 - * IPV4 and IPV6 supported,
 - * IP packet fragmentation managed.
- **Device Management:**
 - * CLI and GUI for local and remote management,
 - * Real time statistics, counters and SNMP alarms.

Highlights

- **Ensure complete visibility into subscriber experience:** Aster A-XFE GTP Load Adapter can filter all the incoming traffic, performing **session-aware** correlation of
 - * **Inner IP** session based filtering (White/Black List)
 - * **IMSI** session based filtering (White/Black List)
 - * **VoLTE SIP** filtering (combining APN and QCI)
 - * **VoLTE RTP** filtering (combining APN and QCI)
 - * **Video** traffic filtering (using QCI)
 - * **Voice** traffic filtering (using QCI)
- **L5-L7 session aware filtering is provided.** A few examples:
 - * **Inner IP** session based filtering (White/Black List)
 - * **IMSI** session based filtering (White/Black List)
 - * **VoLTE SIP** filtering (combining APN and QCI)
 - * **VoLTE RTP** filtering (combining APN and QCI)
 - * **Video** traffic filtering (using QCI)
 - * **Voice** traffic filtering (using QCI)

Filtering capabilities:

- White and Black List with following parameters:
 - * **IMSI**
 - * **APN**
 - * **IPV4 and IPV6 Inner IP**
 - * **IMEI**
 - * **MSISDN**
- Other parameters:
 - * **GTP**
 - * **GTPv1-C, GTPv2-C**
 - * **GTP-U**
 - * **VoLTE**
 - * **ULI (CGI, SAI, RAI, TAI, ECGI, LAI)**
 - * **RAT**
 - * **Serving Network**
 - * **QCI**



A-XFE Streamliner: GTP Load Balancer

When combined with the **Streamliner GTP Load Balancer Application**, Aster A-XFE implements a powerful GTP correlation engine which can manage **200Gb/s data throughput and up to 10 Million users**, to support future traffic growth driven by 5G and OTT applications.

It performs **stateful correlation of GTP-C with GTP-U messages**, based both on the subscriber ID (IMSI) and the corresponding tunnel ID (TEID), so enabling **coherent distribution of 2G, 3G, 4G and 5G mobile traffic load** across multiple instances of the monitoring tools.

Key features

- **20x100Gb/s** input/output cages, each one to be used as 1x100Gb/s, 1x40Gb/s or 4x10Gb/s;
- **Manage 200Gb/s** total traffic and **10 million users**;
- **Perform stateful correlation and load balancing** of GTP-C with GTP-U messages, based both on the subscriber ID (IMSI) and the related tunnel ID (TEID):
 - * All GTP-C/GTP-U packets **correlated to the same IMSI are dispatched to the same destination Output Port**,
 - * Load Balancing packets distribution **takes into account the port speed capability** (10/40/100Gb/s).
- **Recognize "no GTP"** traffic and balance it towards some specific monitoring ports or to the same ones used for the GTP traffic;
- **Device Management:**
 - * CLI and GUI for local and remote management,
 - * Real time statistics, counters and SNMP alarms.
- **Network protocols and interfaces:**
 - * GTPv1-C, GTPv2-C, GTPv1-U,
 - * 2G, 3G, 4G, 5G interfaces,
 - * IPV4 and IPV6 supported.



Highlights

- **Face the dramatic explosion of GTP data traffic, also in case it is overcoming 100Gb/s** in the same site, **by leveraging your existing Monitoring System**, as you can simply add more probes to manage ever growing data loads;
- **Optimized for VoLTE traffic:** also if VoLTE calls dramatically increase **the number of subscriber tunnels in GTP protocol**, this is properly managed by Aster A-XFE that can handle up to 10 Millions users
- **Ensure complete visibility into subscriber experience** as Aster A-XFE GTP Load Balancer balances all the incoming traffic (GTP & no-GTP), performing session-aware correlation of the GTP part
- **Future-proof:** 20x100Gb/s or 40Gb/s ports are available, ready for your upcoming network capacity improvements

