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User Manual

Basic Configuration

Dragon PTN Bandwidth Overview



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1. INTRODUCTION

1.1 General

This document is valid as of Dragon PTN Release 4.0DR.

This document shows the bandwidth information for a specific interface module (=IFM). It means the following, and this per IFM:

- ▶ **Maximum Front Bandwidth:** The maximum bandwidth that an application can [inject into/extract from] the IFM via its front panel;
- ▶ **Maximum Back End (=Network) Bandwidth (or slot speed):** The maximum bandwidth that the IFM can [inject into/extract from] the Dragon PTN network via the CSM and node backplane. This bandwidth depends on the following:
 - ▶ The used node type;
 - ▶ The used CSM type in the node;
 - ▶ The used IFM slot in the node in which the IFM has been plugged;

1.2 Manual References

Table 1 is an overview of the manuals referred to in this manual. '&' refers to the language code, '*' refers to the manual issue. All these manuals can be found in the HiProvision (=Dragon PTN Management System) Help function.

Table 1 Manual References

Ref.	Number	Title
[1]	DRA-DRM821-&-*	Dragon PTN and HiProvision Operation
[2]	DRA-DRM801-&-*	Dragon PTN Installation and Operation
[3]	DRB-DRM802-&-*	Dragon PTN Aggregation Nodes: PTN2210, PTN2206, PTN1104, PTN2209
[4]	DRD-DRM803-&-*	Dragon PTN Central Switching Module: PTN-CSM310-A
[5]	DRA-DRM810-&-*	Dragon PTN General Specifications

2. IFM (=INTERFACE MODULE) SLOTS

All peripherals are connected to the Dragon PTN Network via IFMs, which are available for a wide range of applications in the areas of data and LAN.

Each IFM has its own manual, which can be found on the Portal <https://hiprovision.hirschmann.com> via Shortcuts → Manuals.

Different Dragon PTN node types are available to provide a minimum of 4 IFM slots up to a maximum of 10 IFM slots:

- ▶ Node XT-1104-A: 4 IFM slots;
- ▶ Node XT-2206-A: 6 IFM slots;
- ▶ Node XT-2209-A: 9 IFM slots;
- ▶ Node XT-2210-A: 10 IFM slots;

Different IFM slot speeds are available per node type. A slot speed is the maximum bandwidth that an IFM can [inject into/extract from] the Dragon PTN network via that slot. The slot speed is the result of backplane lines or back end ports that terminate in this slot.

Table 2 Available IFM Slot Speeds per Node Type

IFM Slot Speed (G = Gbps)	XT-1104-A	XT-2206-A	XT-2209-A	XT-2210-A
X = Available; --- = Not Available;				
1G	X	X	X	X
3G (=3x1G)	---	---	X	X
4G (=4x1G)	X	X	X	X
10G	---	X	X	X
14G (= 4x1G + 10G)	---	---	X (*)	---
(*): optimized for L3 IFMs				

Each individual IFM slot provides a mix of these speeds. In the figures below, find which speeds are available per IFM slot per node type. The slot speed that is finally used depends on the IFM that has been plugged in into that slot.

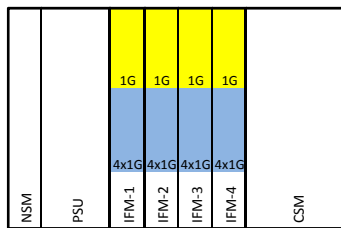


Figure 1 XT-1104-A: Node Slot Speeds

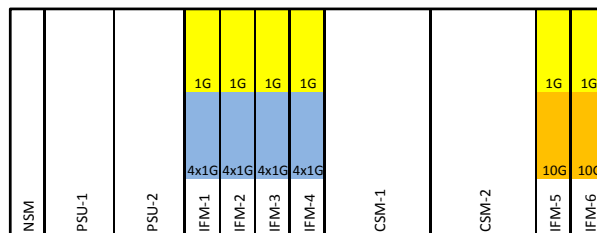


Figure 2 XT-2206-A: Node Slot Speeds

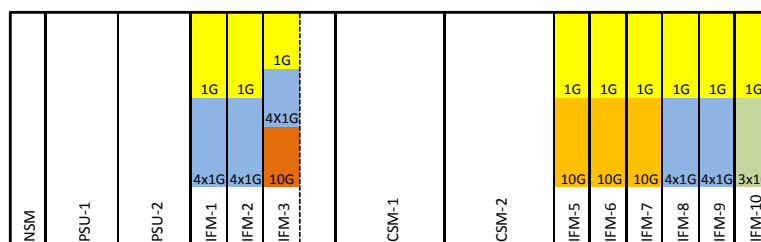


Figure 3 XT-2209-A: Node Slot Speeds (10G in IFM-3 only for 9-L3A-L)

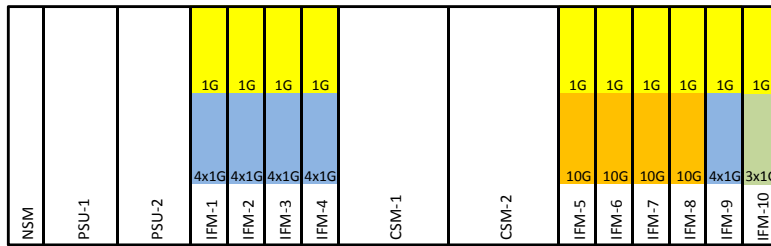


Figure 4 XT-2210-A: Node Slot Speeds

For the correct programming of the IFMs, see the module manuals and HiProvision.

3. MAPPING/ IFM FRONT FRONT ↔ IFM BACK END PORTS

The table and figures below show how the IFM front ports are mapped to the IFM back end ports towards the CSM.

IFM Type	Mapping Front Ports ↔ Back End Ports
Low Bandwidth	
Ethernet LAN/WAN	
Ethernet Advanced L2 Ethernet L3	
<p>Note: the amount of back end ports (and speed) depends on the used IFM, CSM type, node type and slot position in which the IFM has been plugged. These values can be found in the previous tables.</p>	

4. IFM BANDWIDTH VIA CSM310-A (NODE XT-1104-A/XT-2206-A/XT-2209-A/XT-2210-A)

IFM	Maximum Front Bandwidth (G=Gbps/M=Mbps)	Maximum Back End (=Network) Bandwidth (G=Gbps)																													
		Node XT-1104-A				Node XT-2206-A						Node XT-2210-A										Node XT-2209-A (optimized for L3 IFMs)									
		S1	S2	S3	S4	S1	S2	S3	S4	S5	S6	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10
Low Bandwidth IFMs																															
4-E1-L	4x2M	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
4-T1-T	4x1.5M	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
16-E1-L	16x2M	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
16-T1-L	16x1.5M	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
2-C37.94	4x2M	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
7-SERIAL	4x1.92M (Sync) / 3x0.115M (Async)	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
4-2/4WEM	analogue: 3400Hz	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
2-OLS	4x2M	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
4-CODIR	4x64K	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
8-FXS	analogue: 3400Hz	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	1G	0	1G	1G	1G	1G	1G	1G
Ethernet LAN/WAN IFMs																															
4-GC-LW	4x1G	4G	4G	4G	4G	4G	4G	4G	4G	1G(c)	1G(c)	4G	4G	4G	4G	1G(c)	1G(c)	1G(c)	1G(c)	4G	3G(b)	4G	4G	4G	0	1G(c)	1G(c)	1G(c)	4G	4G	3G(b)
4-GCB-LW	4x1G	4G	4G	4G	4G	4G	4G	4G	4G	1G(c)	1G(c)	4G	4G	4G	4G	1G(c)	1G(c)	1G(c)	1G(c)	4G	3G(b)	4G	4G	4G	0	1G(c)	1G(c)	1G(c)	4G	4G	3G(b)
4-GO-LW	4x1G	4G	4G	4G	4G	4G	4G	4G	4G	1G(c)	1G(c)	4G	4G	4G	4G	1G(c)	1G(c)	1G(c)	1G(c)	4G	3G(b)	4G	4G	4G	0	1G(c)	1G(c)	1G(c)	4G	4G	3G(b)
4-DSL-LW	20M	4G	4G	4G	4G	4G	4G	4G	4G	1G(c)	1G(c)	4G	4G	4G	4G	1G(c)	1G(c)	1G(c)	1G(c)	4G	3G(a)	4G	4G	4G	0	1G(c)	1G(c)	1G(c)	4G	4G	3G(a)
1-10G-LW	1x10G	0	0	0	0	0	0	0	0	10G	10G	0	0	0	0	10G	10G	10G	10G	0	0	0	0	0	0	10G	10G	10G	0	0	0
Ethernet Advanced L2 IFMs																															
6-GE-L	6x1G	4G	4G	4G	4G	4G	4G	4G	4G	1G(z)	1G(z)	4G	4G	4G	4G	1G(z)	1G(z)	1G(z)	1G(z)	4G	3G(z)	4G	4G	4G	0	1G(z)	1G(z)	1G(z)	4G	4G	3G(z)
Ethernet L3 IFMs																															
9-L3A-L (=Main) (*)	8x1G+1x10G	4G	4G	4G	---	4G	4G	4G	---	1G(z)	---	4G	4G	4G	---	1G(z)	1G(z)	1G(z)	1G(z)	4G	---	---	---	14G	---	1G(z)	1G(z)	1G(z)	4G	4G	---
9-L3EA-L (=Ext.)	8x1G+1x10G	0	0	0	---	0	0	0	---	0	---	0	0	0	---	0	0	0	0	0	---	(e)	0	0	---	0	0	0	0	0	---

0 = No bandwidth in this IFM slot. / --- = not possible, does not fit mechanically in this slot.
 Note (a): front port1,2,3 operational; front port4 only when bonded with port1, 2 or 3.
 Note (b): front port1,2,3 operational; front port4 not operational.
 Note (c): only front port 1 operational.
 Note (e): only bandwidth when 9-L3A-L (=Main) has been plugged into S3. The combined network bandwidth of both IFMs is 14G.
 Note (z): all front ports operational.
 Note (*): this IFM is 2 slots wide and only uses the slot bandwidth of the left-hand slot. E.g. if this IFM is plugged in slot[3-4] of the XT-2210-A node, it has 4G available and not 8G (=4G+4G).

5. WEEE GUIDELINES

The Dragon PTN nodes are compliant with the European guidelines 2002/96/EG (WEEE = Waste of Electrical and Electronic Equipment). This compliancy is indicated at the back of the node by a crossed-bin symbol in Figure 5.



Figure 5 Crossed-Bin Symbol

The equipment that you bought required the extraction and use of natural resources for its production. It may contain substances that are hazardous to human health and the environment.

In order to avoid the dissemination of those substances in our environment and to reduce the pressure on the natural resources, we encourage you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials of your end-of-life equipment in a sound way.

The crossed-bin symbol invites you to use those systems.

If you need more information on the collection, reuse and recycling systems, please contact your local or regional waste administration. You can also contact us for more information on the environmental performances of our product.

6. ABBREVIATIONS

CSM	Central Switching Module
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interference
IEEE	Institute of Electrical and Electronics Engineers
IFM	InterFace Module
LAN	Local Area Network
MPLS-TP	Multiprotocol Label Switching – Transport Profile
MTBF	Mean Time Between Failures
NSM	Node Support Module
PTN	Packet Transport Network
SHDSL	Symmetrical High Bitrate Digital Subscriber Line
U	Rack Unit
WAN	Wide Area Network
WEEE	Waste of Electrical and Electronic Equipment