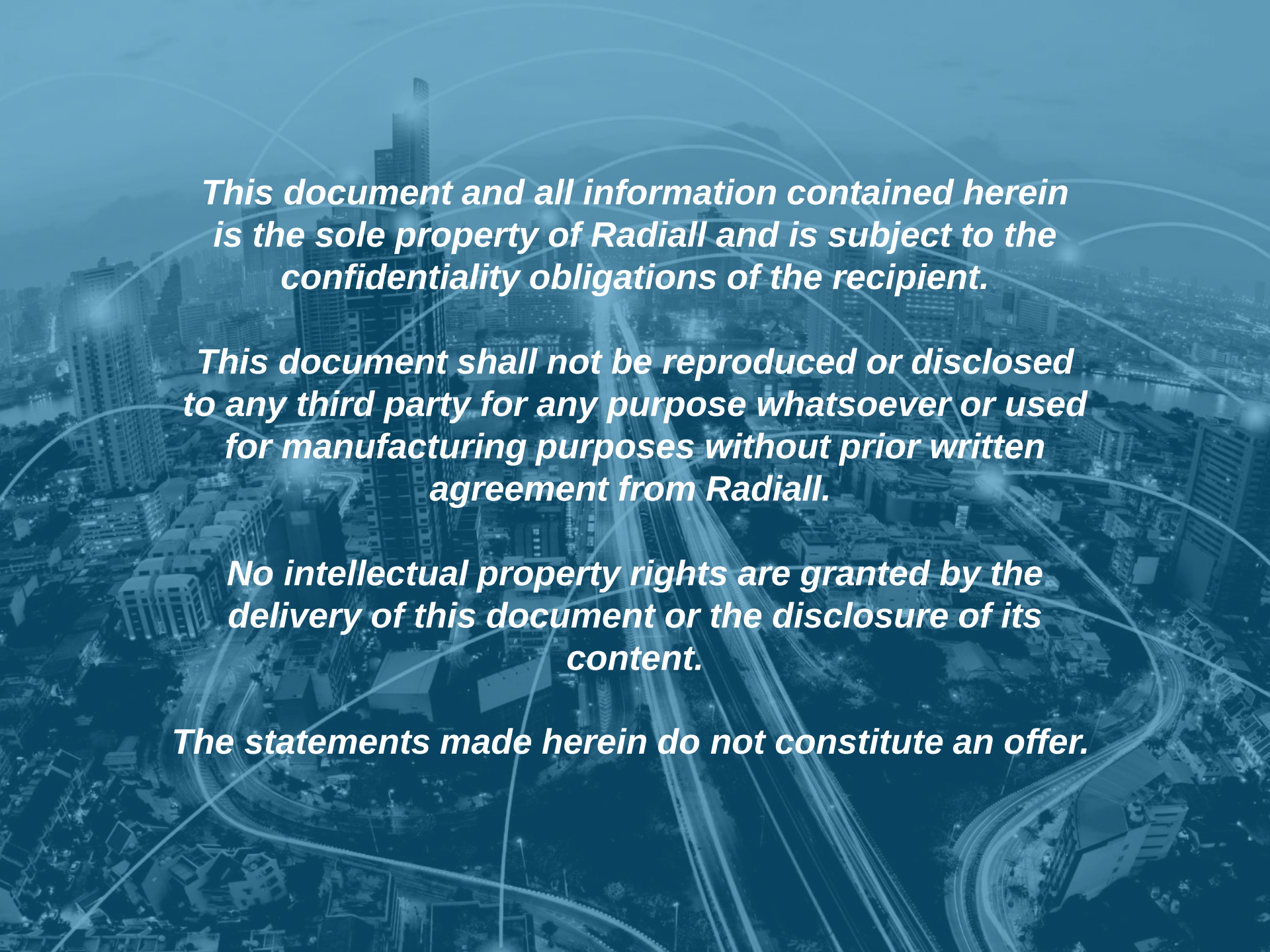
Radiall

SIMPLIFICATION *is our* INNOVATION

E-Light 5G : Key differentiating features

Harsh Environment Optical Transceiver

EXTERNAL PRESENTATION



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Key points

- Radiall E-Light 5G transceiver offers higher value than equivalent competitor's solutions on each of the attributes listed below :
  - Ruggedizzed transceiver for harsh environnements
  - High optical budget
  - Small packaging
  - Electrical installation
  - Tool-less optical interconnect
  - Low power consumption
  - No export control constraint



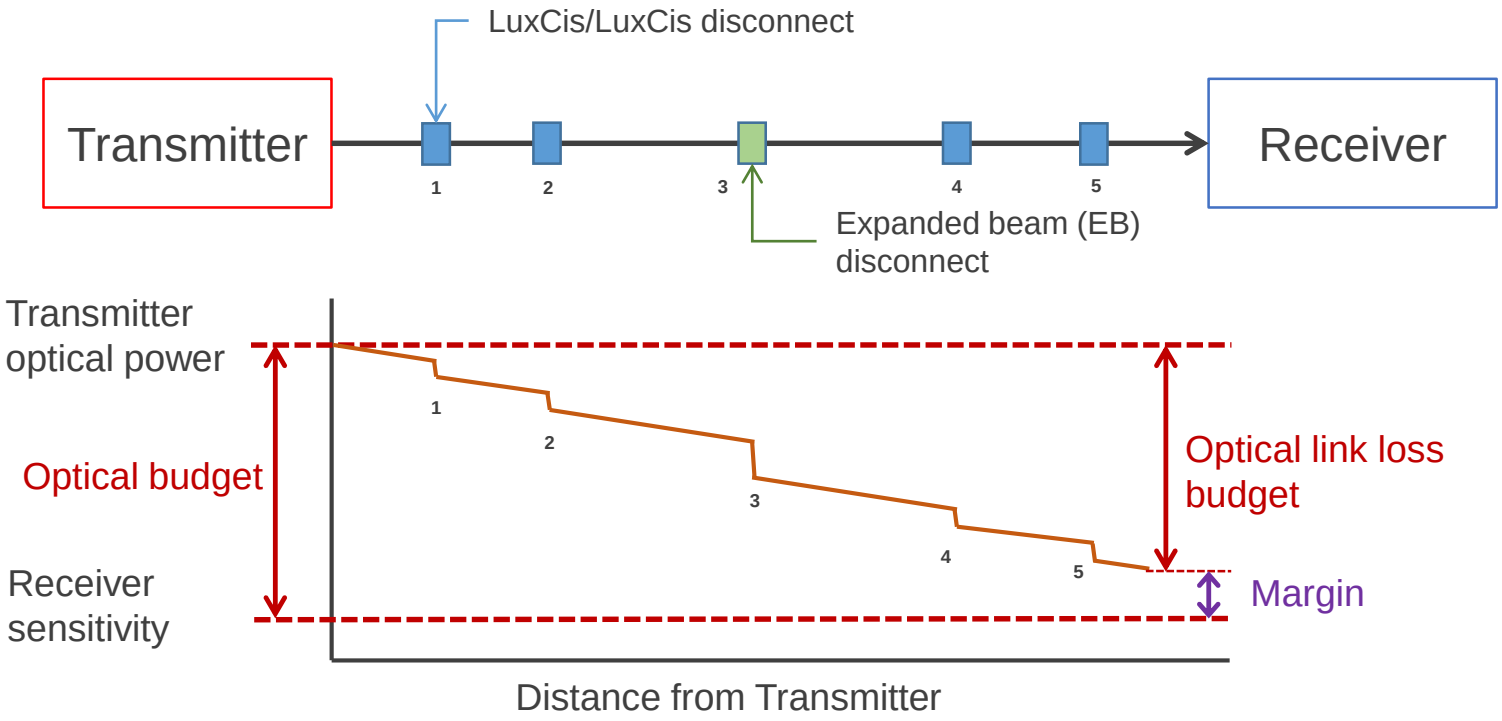
A ruggedized design

- E-Light has been designed to withstand harsh environment with a high reliability

Plateform	Customer's requirements					Suitable transceiver supplier
	Temperature	Humidity	Vibration	Mechanical shock	Reliability	
Telecom	Ambiant temperature No rapid variation	No	No	No	Medium (easy replacement)	Competitors
Civil aircraft cabin display	Ambiant temperature No rapid variation	No	No	No	Medium	Competitors
Aircraft sensors	[-40;+90°C] with variation > 2-8°C per mn	Yes	Yes	Yes	High	RADIALL E-Light / Competitors
Aircraft cockpit	[-40;+90°C] with variation > 2-8°C per mn	No	Yes	Yes	High	RADIALL E-Light / Competitors
Ground military systems	[-40;+90°C] No rapid variation	Yes	No	No	High	RADIALL E-Light / Competitors

A high optical budget

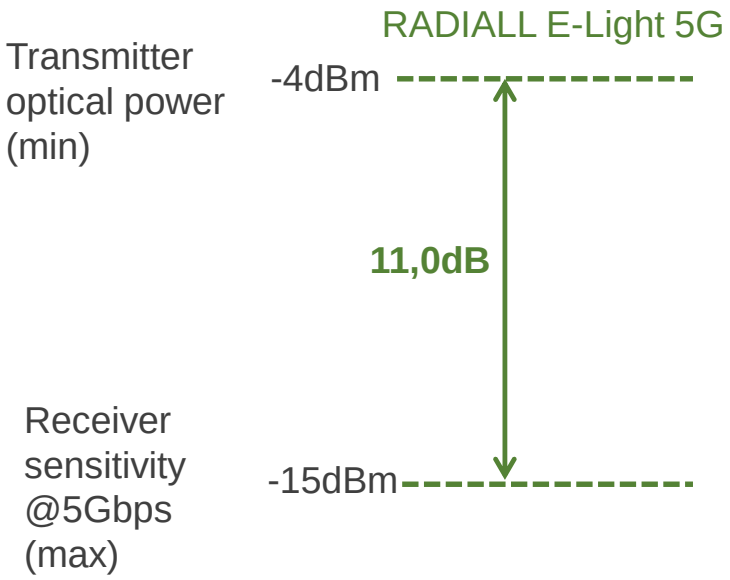
- What is an optical budget ?



- If the optical budget guaranteed by the transceiver is lower than the link loss budget and the minimum margin required by the customer → the link is not working

A high optical budget

- What is the optical budget for the E-Light 5G?



Competitor	Optical budget vs E-Light 5G
A	-2,0dB
B	Unknown
C	-6,0dB

The high optical budget for the E-Light 5G offers more flexibility for the link architecture

- Example for the E-Light 5G @5Gbps:
  - compliant with 8 LuxCis/LuxCis disconnect (8x0,5dB) + 2 EB disconnect (2x2,0dB) + 3dB margin

A small packaging

- Transceiver footprint
  - The PCB density is more and more critical on embedded systems
  - A small transceiver is a key advantage

RADIALL E-Light 5G

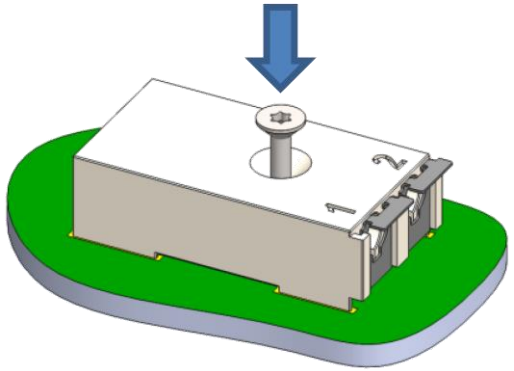
~328 mm²

- Transceiver height
  - The compacity of current embedded equipements requires a reduced thickness as well
  - E-Light 5G is the smallest with a thickness **<8mm**

Competitor	Footprint vs E-Light 5G	Thickness vs E-Light 5G
A	+5%	+26%
B	+6%	+23%
C	+3%	+36%

Easy installation

- The E-Light is electrically pluggable and screw-mounted

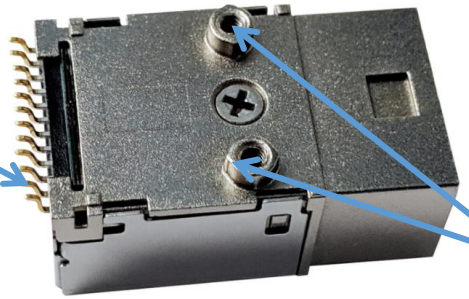


Easily installed and disconnected

- The competitors propose a hand solderable packaging



Soldering pins



Manual process:
Almost impossible to replace the transceiver

Screws

A tool-less LuxCis® optical interconnect

- A tool-less innovative clip to hold the LuxCis® (ARINC801) contact

Contact insertion

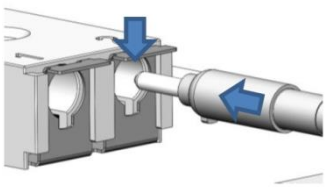


Figure 1



Figure 2

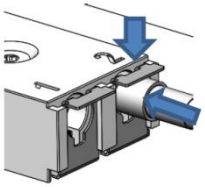


Figure 3

Contact extraction

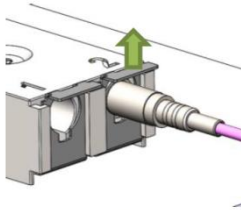


Figure 4

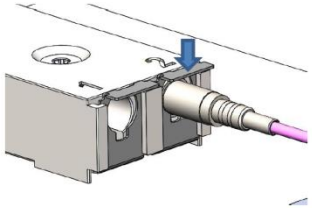


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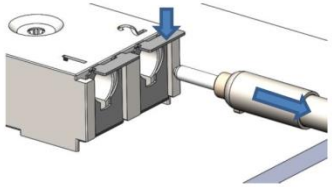
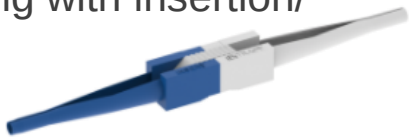


Figure 2

- Competitors :

➢ A less convenient handling with insertion/ extraction LuxCis® tool



➢ A specific contact for manual insertion / extraction but much longer than the ARINC801



➢ With a simple LC contact, the insertion/ extraction is easy but the environmental performances (temperature, vibrations, shocks) are lower



Radiall™

Low power consumption

- For embedded system, the global electrical consumption of the equipment is a major matter :
  - Power supply size & weight
  - Power dissipation size & weight

- *E-Light 5G* consumption is lower than the competition : 600mW max

Competitor	Consumption vs E-Light 5G
A	+21%
B	Unknown
C	+52%

No export control constraint

Transceiver	Country of design & manufacturing	Export control US (internal evaluation)
E-Light 5G		No EAR ECCN, no EAR99, no ITAR

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THANK YOU