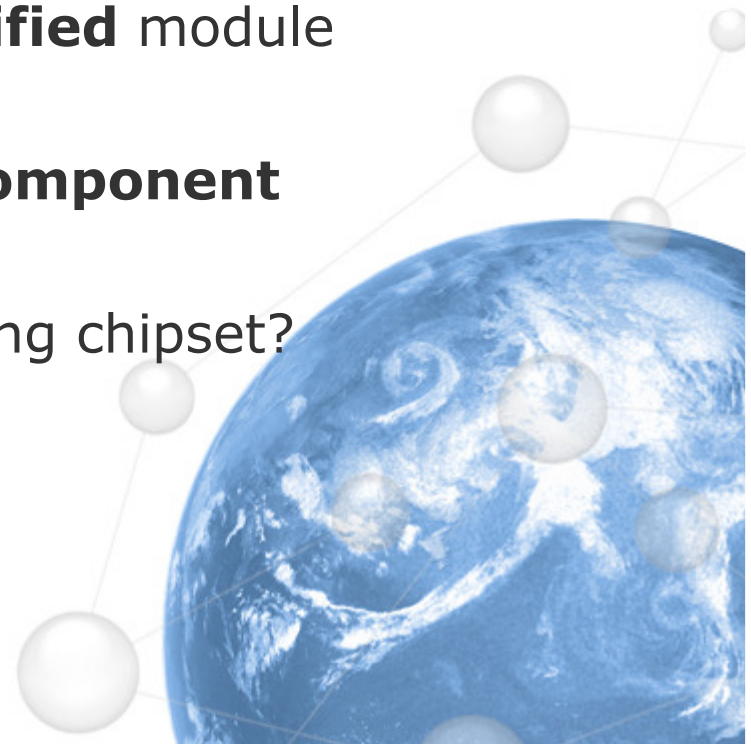




## Advantages of END PRODUCT certified modules

What are the advantages  
for  
using **fully end product certified** module  
versus  
using module **certified as component**  
or  
start project development using chipset?





## **When using an END PRODUCT certified module:**

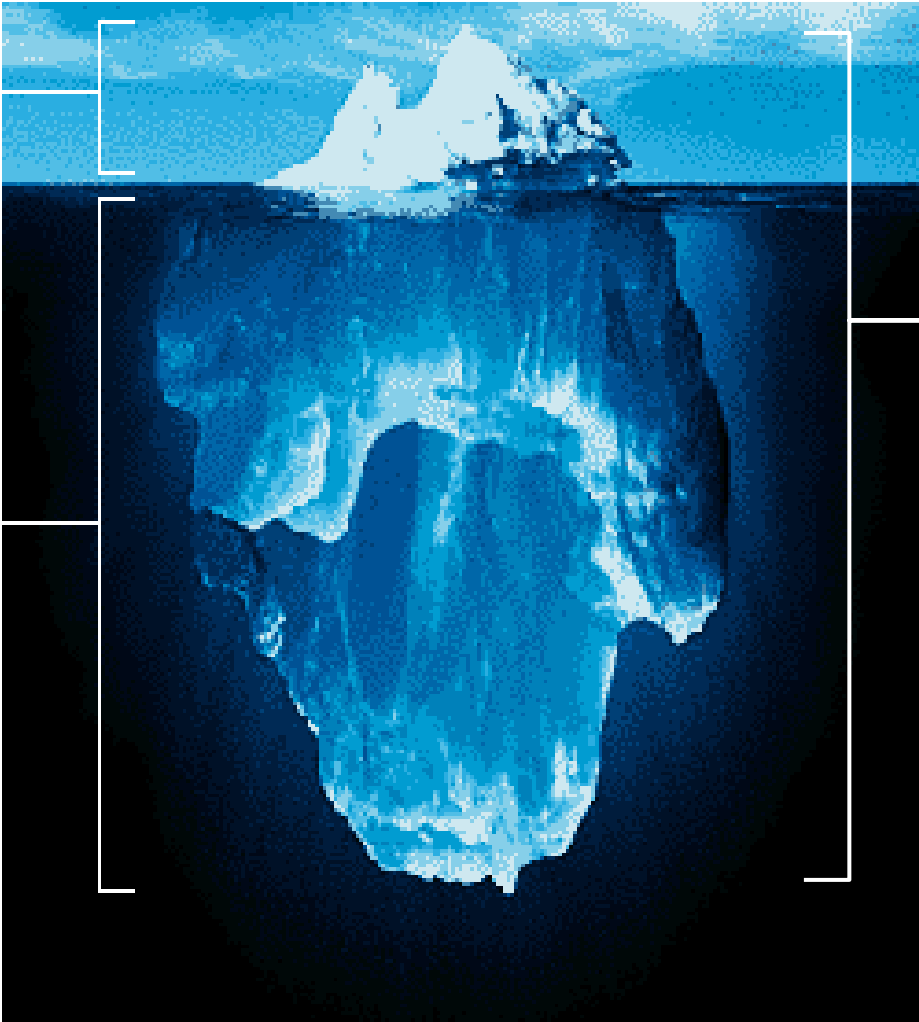
- **your application needs no additional certification at all or only partial certification (depending on module version) for Bluetooth, CE and FCC**
- **you save time to market in development and for the lack of need of certification**
  - **you may use the Bluetooth logo for free**
  - **you may list your product on Bluetooth SIG site**
    - **sourcing requires 1 element only**





**Module price**

**Other costs**



**Total Bluetooth implementation costs**





## Estimation of cost and time

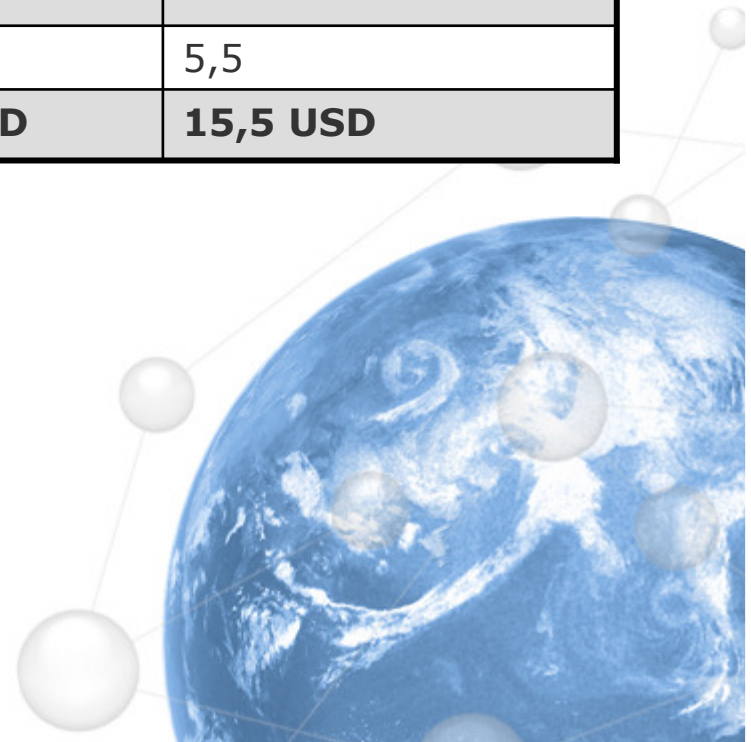
	<b>Bluegiga WT11 and WT12 modules</b>	<b>Non completely integrated modules</b>	<b>Chipsets</b>
Development time Approx cost	0,5 - 3 months 5 - 15k	4 - 6 months 20 - 30k	6 - 12 months 30 - 60k
Development Tools	600	10 - 20k	20 - 30k
Prototyping rounds	1 - 2	2 - 4	3 - 6
Certification	0 - 5k	10 - 40k	20 - 40k
Production testers	0	30k	30k
<b>Total min costs:</b>	<b>5.600</b>	<b>70.000</b>	<b>110.000</b>
Cost/unit for 25k units	0,22	2,8	4,4
Certification time	0 - 4 weeks	1-3 months	2-4 months
Sourcing	1 component	3-4 components	Approx 35 components



## How much for 25k volume?

Area	Bluegiga WT11 and WT12 Modules	Non completely integrated modules	Chipsets
Price per module*	14	12	10
Project cost added	0,22	2,8	5,5
<b>Summary</b>	<b>14,22 USD</b>	<b>14,8 USD</b>	<b>15,5 USD</b>

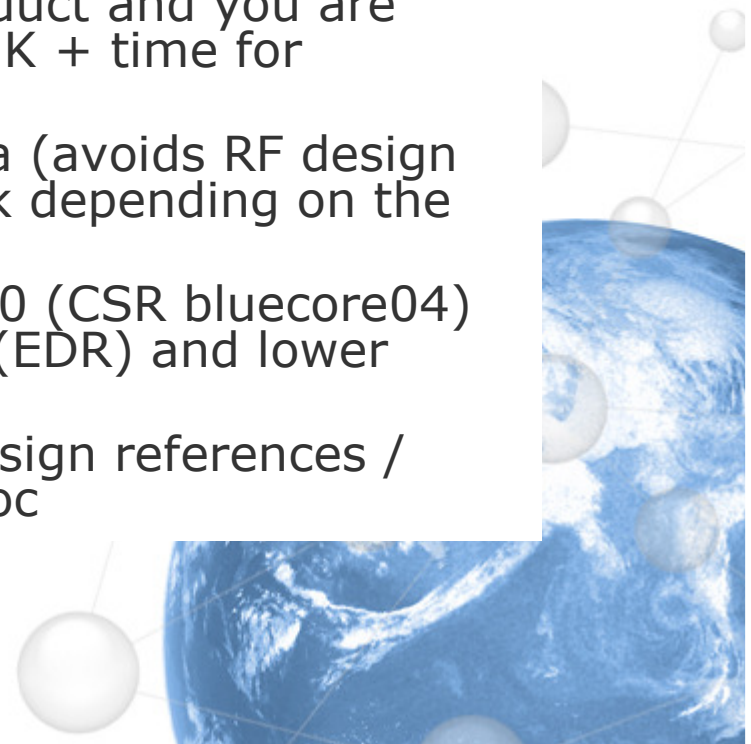
\*Includes: BOM, PCB, manufacturing time and yield





## Important issues to be considered:

- is the module Bluetooth end product certified (if not, add USD 15 K - 30 K for certification costs depending on if you have any pre-qualification or not + time for process)
- also FCC/CE certification costs depending on where you are planning to sell the product and you are manufacturing (add USD 10-20 K + time for process)
- Bluegiga has integrated antenna (avoids RF design costs, minimum 4-8 weeks work depending on the experience of the design house)
- Bluegiga module is Bluetooth 2.0 (CSR bluecore04) which means higher data rates (EDR) and lower power consumption
- also Bluegiga offers support: design references / advice / and design validation foc





## Service aspects

	<b>Bluegiga</b>	<b>Typical Competitor</b>
RF Design Validations	Yes	No
Measurement services	Yes	No
Software support for all Bluetooth layers	Yes	No
Typical Product Life-Span	3-6 Years	1-2 Years
Firmware development	Yes	No
Best total costs of project	Yes	No

