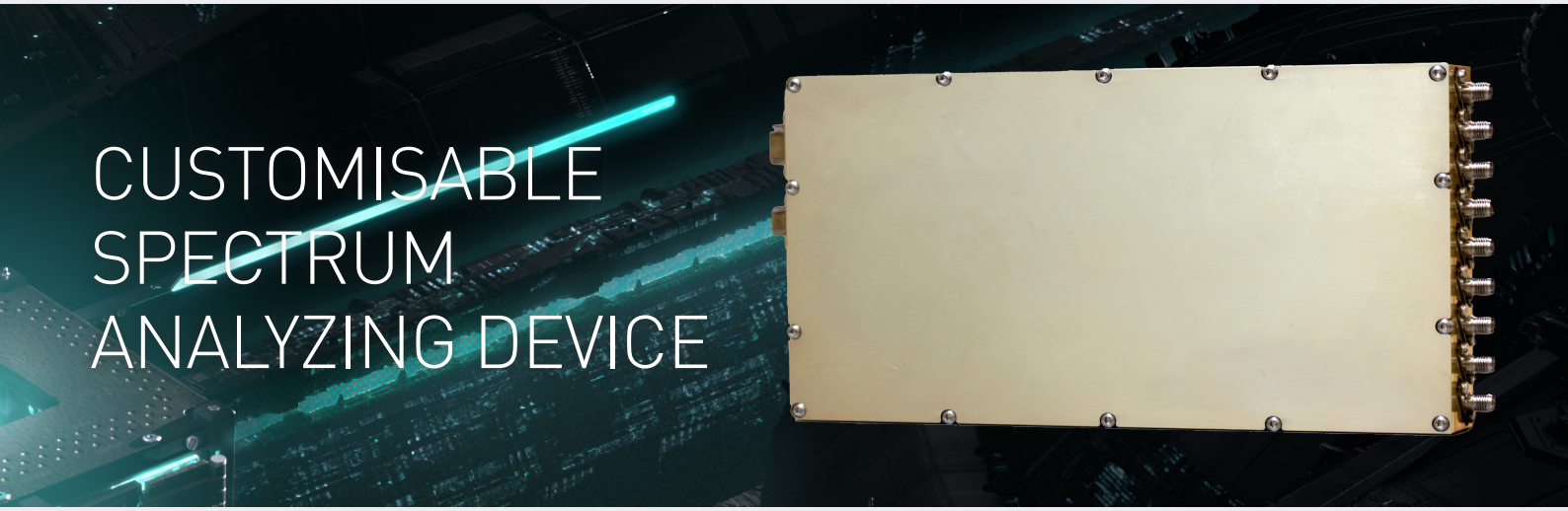
AAC CLYDE SPACE

Spectrometer

FFT2G



CUSTOMISABLE SPECTRUM ANALYZING DEVICE

The 2nd generation of FFT spectrometer is a customisable spectrum analysing device with up to 8 independent inputs and an impressive bandwidth of up to 5 GHz (10 GSps). The FFT2G is a customisable backend particularly for ground based applications and more specifically, radio astronomy and can be customised specifically to your mission requirements. Assembled into a solid aluminium box with analogue SMA connectors on one side and USB and power interface connectors on the other, the FFT2G can be used either as a stand-alone backend measurement device in a laboratory environment or built into a bigger system with multiple modules extending both bandwidth and resolution even further to cope with multi pixel frontend designs.

KEY HIGHLIGHTS:

Input channels	up to 8
Input bandwidth	up to 5000 MHz
FFT frequency resolution	up to 32k channels
Single supply voltage	12 V
Supply power consumption	< 40 W

FLEXIBILITY

A core feature of the FFT2G backend is a configurable signal processing Field Programmable Gate Array. This controls the dual multi-core high speed analogue to digital converter and computes the FFT power spectrums. The flexibility of the FPGA opens an indefinite variety of options or features to be added.

BANDWIDTH

The FFT2G has an impressive 5000 MHz instantaneous bandwidth sampled by high-speed Analog to Digital Converter and processed by a highly effective real-time pipelined and parallel FFT-core.

RESOLUTION

The spectrometer has a 32-bit fine power amplitude resolution for all frequency channels accumulated during FFT integration time.

TECHNICAL SPECIFICATIONS

Dimensions		
Outer dimensions	220 x 115 x 25	mm
Mass	750	g

Electrical / Interface	Min	Typ	Max	Unit
Power consumption[1]	-	40	-	W
Supply voltage	-	12	-	V
General purpose IO voltage	0	3.3	5	V
USB2.0 data	-	480	-	Mbit/s

1 Actual power consumption varies with firmware design and input signal.

Performance	Min	Typ	Max	Unit
IF inputs	1	-	8	-
IF input full scale power	-	-3	-	dBm
IF bandwidth[2]	-	-	5000	MHz
Samling frequency	-	-	10000	MHz
Sampling ADC resolution	-	10	-	bits
FFT frequency resolution	-	-	32768	channels
FFT channel resolution	-	32	-	bits
FFT integration time[3]	0.1	-	10	s

2 To avoid alias sampling, the IF bandwidth should preferably be reduced by approx. 10 %.

3 Maximum Integration time varies with input signal type and power.

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Off-the-shelf firmware		
Part ID	Mode	Description (inputs x bandwidth, channels)
126	IQ	1 x 5000 MHz, 16384 channels
235	IQ	1 x 5000 MHz, 16384 channels, polyphase
277	Real	2 x 2500 MHz, 8192 channels
766	Real	1 x 2500 MHz, 32768 channels
3978	Real	2 x 1250 MHz, 16384 channels
4050	Real	4 x 1250 MHz, 4096 channels
4070	Real	8 x 650 MHz, 2048 channels

To make an enquiry, request a quotation or learn about AAC Clyde Space's other products and services, please contact:
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