# Tiger USB to RS232 converter module

V1.1

1. Description
This simple module allows live readings from the Tiger to be outputted as RS232. The module requests data from the Tiger USB and outputs the reading via RS232 at once per second regardless of a host device being present of not.
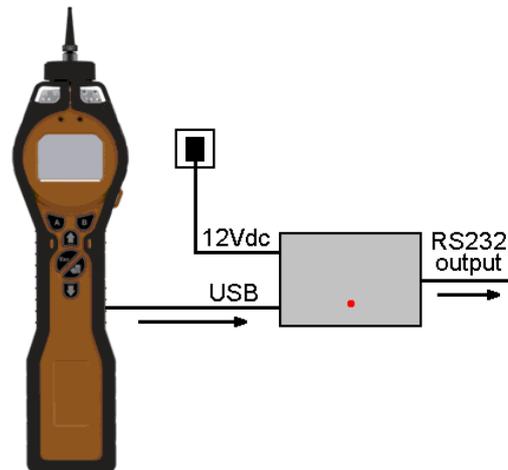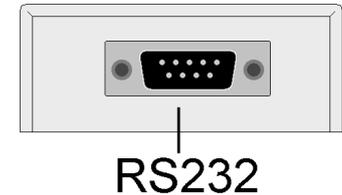
2. Connection
The module requires a 12Vdc power supply (100 mA).
The 12Vdc Tiger power supply can be used. The USB cable supplied with the Tiger can also be used to connect the Tiger to the module.
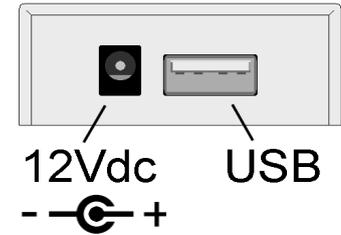
A suitable RS232 connector (not supplied) is required to connect between the module and other equipment such as data loggers and telemetry systems.

3. Configuration

3.1 Tiger firmware version	0.9.22 (or higher)
3.2 Update frequency RS232	1/second
3.3 RS232 configuration	8N1
3.4 Baud rate	9600.

4 LED
A red LED indicates the status of the module and is visible from the box lid.

LED	Status	Action
Off	Power off	Check power supply to module
Flash fast	Error	Check USB connection
		Check Tiger firmware version
Flash slow	Transmitting data	N/A (Working correctly)

5. Content of data

The data structure and format from this module is fixed and cannot be adjusted.

Data	Content
IRN	Internal Reference Number; unique to each Tiger instrument
Reading	VOC reading followed by selected measurement units
Status	'OK' if running correctly or fault condition

6. IRN (Internal reference Number)
Example of IRN: IRN T0000001D9B2E

7. VOC reading
The VOC reading consist of 4 digits, decimal place followed by the measurement units.
The table below shows the selectable formats.

Tiger display	Data from RS232	Measurement setting
0.000 ppm	0.000 ppm	High sensitivity, ppm units selected
0.0 ppm	0.0 ppm	Low sensitivity, ppm units selected
512 ppb	512 ppb	High sensitivity, ppb units selected
123 mg/m3	123 mg/m3	Low sensitivity, mg/m^3 units selected
432 µg/m3	432 µg/m3	High sensitivity, µg/m^3 units selected

8. Status
The RS232 VOC reading is followed by a status comment. See the table below.

Data status	Status
OK	Instrument is working correctly (no fault conditions)
Error: Lamp	Lamp has failed to strike (Replace lamp)
Error: Flow	Pneumatic flow is low (Probe blocked)
Error: Gas	The gas selected has no response factor (Select alternative gas)
Error: Cal	SPAN calibration error (Recalibrate instrument)
Error: Zero	ZERO calibration error (Recalibrate instrument)

An example of the data output is shown in the graphic below using YAT3 (an open source terminal program)