

## Using and maintaining the remote microphone.

29/10/2019



### Changes made:

The remote microphone has been upgraded to improve water resistance.

. The Allen bolt has gone as users found it difficult to locate the attenuator control inside without causing damage. The unit must be taken apart to make this adjustment, which is rarely made anyway.

. A new material and method of application is in use, this renders the front end waterproof, whilst still transparent to ultrasound.

. Existing microphones can be upgraded at minimum cost.

### Introduction:

The remote microphone can be attached to the handheld RPA(x) bat recorder, or the fully waterproof static recorder, via a standard good quality, stereo 3.5mm jack cable, of lengths from 3mtrs to 10mtrs.

This leaves the recording electronics to be either placed or housed in a dry place, while mic is exposed to the elements..

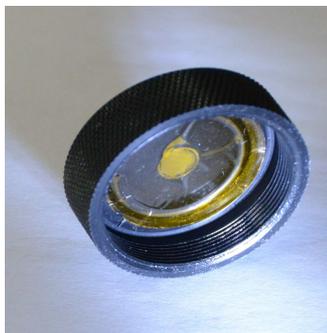
The most costly part of the microphone is the enclosure, this will last for many years under all normal weather conditions.

The electronics is divided into the amplifier/filter board and the microphone disc. The assembly is designed so that it can be taken apart and dried out if necessary, and in the case of a total disaster, replace either mic disc or electronic board without the need for even a screwdriver. Replacement mic discs are about £15 each and there are discounts for a pack of 5 or 10.

Inside the knurled microphone head is an 'o' ring and space for water proofing.



A disc of Kapton film is held against the o'ring inside the microphone front end. It is further sealed against water ingress with automotive instant gasket. A little axle grease is applied to the microphone front end thread to further discourage any seepage of water via the thread. This renders the front end waterproof.



At the back end of the mic the connection is via a 3.5mm jack socket. This is not waterproof to a high IP rating, however water tends to run off at the back of the mic due to a turned ledge. Users can try a little instant gasket to discourage seepage around the jack if required. Although a jack plug connection might seem to be a poor choice of connector ( there are IP67-IP68 connectors available ) , it is chosen as it makes a low cost commonly available cable for the user.

Here can be seen the whole electronic assembly. Note that the microphone disc has a locating hole which aligns with a pin on the enclosure, it is important to assure the pin is secure in the mic disc on assembly, to prevent stress on the connectors inside.



Showing the internal assembly left, and right note the alignment pin on the microphone housing, this locates with the hole in the mic disc.

Input gain is manually controlled on the remote mic. Setting gain digitally on the RPAX bat recorder has no effect. This saves connecting wires and complexity of connectors which would otherwise add much cost.

Gain is set by a 'trim pot' ( the blue component) , and is accessed by unscrewing the front end and pushing the electronics assembly out with a pencil or screwdriver from the jack socket end.

Note that gain is attenuated by a clockwise twist, the factory setting is maximum gain ( also known as sensitivity), generally this is a good starting point. If excessive clipping of the signal is experienced the gain can be taken down. The adjustment is rarely made.

### **Upgrade options:**

Peersonic can supply a ready punched kapton disc to replace the existing barrier. This can be fitted as described buy applying a little instant gasket to the inside of the o'ring, taking care to ensure that it does not flood and obstruct the kapton at the acoustic cavity. This then holds the kapton in place while screwing the knurled end back on.

Alternatively return the knurled end to peersonic for installation of kapton film.

Or return the entire microphone, in which case the following can be done.

- Replace with kapton.
- Test mic disc and replace if necessary
- Make a small adjustment to the amp/filter board to increase higher frequency sensitivity

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