1 PURPOSE

To provide instructions for the construction of PN 20000001 (IND,AIRCRAFT WIRELESS,830UH).

2 SCOPE

This work instruction shall be used for the referenced part number only. This document is not acceptable for providing to a 3rd-party contract assembler.

3 Required Equipment

Vice	Bench-type vice having copper jaw pads.
Hacksaw	Typical hand hacksaw with sharp blade. *It may be possible to use a hand power-rotating tool with a cutoff blade (e.g., Dremel-type tool), but this is outside the scope of this document.*

4 HEALTH AND SAFETY

Safety glasses must be worn as the ferrite rod can shatter if dropped or mishandled.

5 DEFINITIONS

Ferrite	A powdered, compressed and sintered magnetic material having high resistivity. The high resistance makes eddy current losses low at high frequencies.
VOM	Volt-Ohm-Meter

6 ASSOCIATED DOCUMENTATION

There is no associated documentation.

7 RESPONSIBILITY/AUTHORITY

The assembler is responsible correct assembly of devices according to this work instruction.

8 PROCEDURE

1. Refer to the Bill of Materials and pick the assembly kit. If there are cores already cut to length in the ferrite bin you may use them, otherwise first cut sufficient cores for the build.

    1. Mark the ferrite rod into 35mm divisions using an HB pencil.

    2. Gently clamp the ferrite rod in a bench vice in such a way that it is possible to cut along a division mark.

        The bench vice must have copper jaw cushions in place. Be careful to only tighten the vice enough to hold the rod (the rod will shatter if clamped too tight).

    3. Cut along a division mark using a hacksaw and sharp blade.

    4. Check that the length is 3.5mm +/- 3mm.

2. Remove 10mm of insulating varnish from one end of the wire using sandpaper.

3. Lay the wire across one end of the rod with 80 mm of loose wire extending away from the ferrite rod. Refer to Illustration 1.
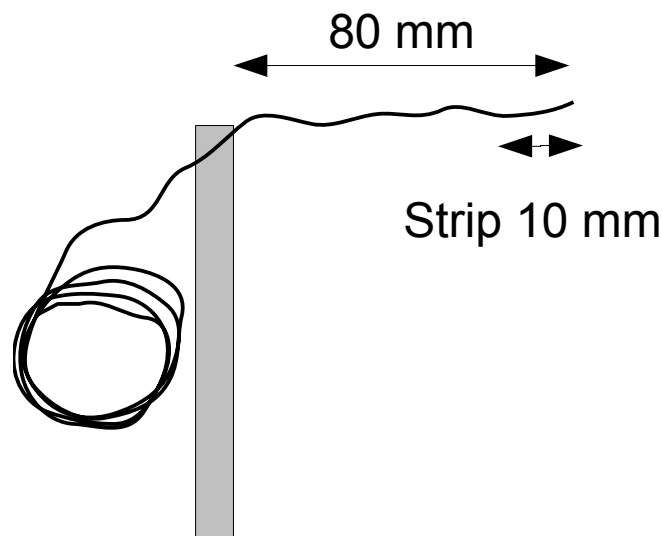

Illustration 1: Strip and lay wire across ferrite

4. Apply 2 wraps of insulating tape over the end of the rod and wire to hold the wire in place. Refer to Illustration 2.
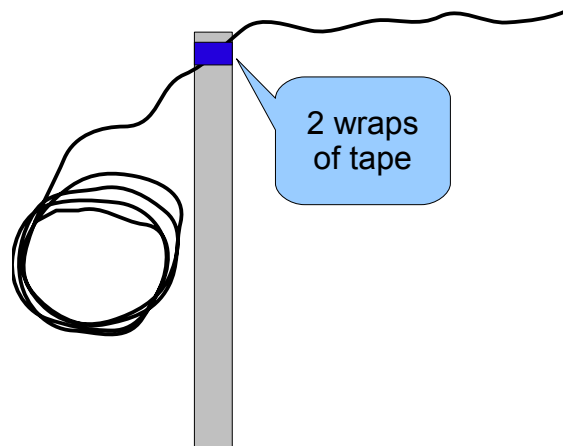

Illustration 2: Fix first end of wire in place

5. Wrap 416 turns of wire around the ferrite rod. Continually push the turns together as you add each wrap - there must be no gaps or over-wraps. Refer to Illustration 3.
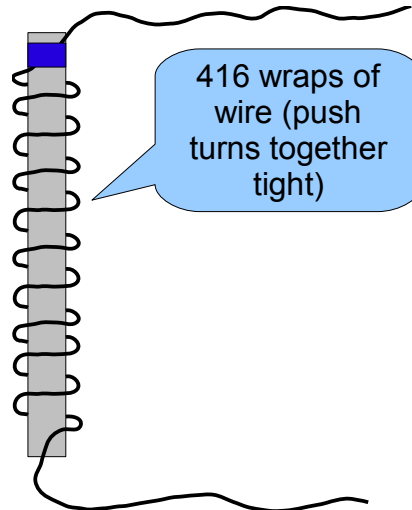
Illustration 3: Wrap wire on ferrite

6. Cut the wire leaving approximately 80 mm of loose wire extending away from the ferrite rod. Refer to Illustration 4.
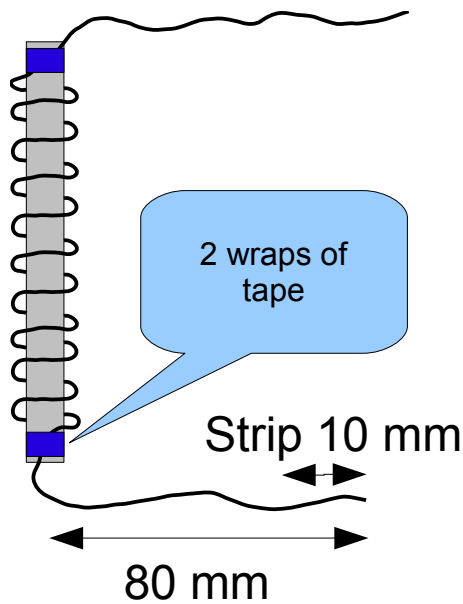

Illustration 4: Cut wire

7. Apply 2 wraps of insulating tape over the end of the rod and wire to hold the wire in place. Refer to Illustration 4.

8. Remove 10mm of insulating varnish from one end of the wire using sandpaper. Refer to Illustration 4.

9. Measure the resistance of the coil using a digital VOM set to the 200 Ohm range (or equivalent). The coil resistance must be between 22 Ohms and 25 Ohms. If it is within the acceptable range, mark the "bottom" of the ferrite rod with yellow paint.
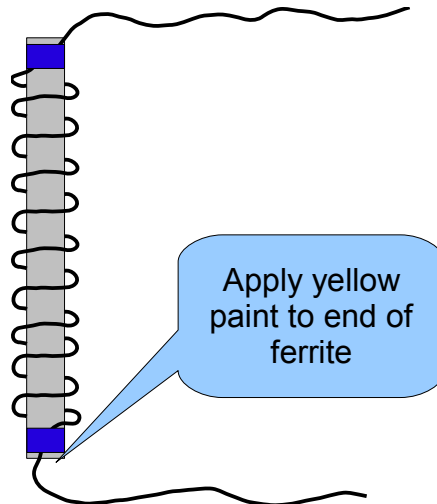

Apply yellow paint to end of ferrite

Illustration 5: Paint end yellow after passing Resistance test

10. Deliver coils that pass the resistance test to the Incoming Inspection Clerk (if a coil does not pass the resistance test, remove the wire from coil and re-wind it using new wire).

9 RECORDS RETENTION

No records are required.

10   ATTACHMENTS

No attachments.

11   REVISION HISTORY

Date	Who, Why
2013-01-01	Hank Baldwin, Creation