

# REVISION HISTORY

Refer to the DCA and associated markups for a complete description of the changes incorporated in a revision.

| REV | DCA    | DATE      | DRAWN                                   | CHECKED                         | APPROVED                            | PUBLISHED                        |
|-----|--------|-----------|---|---------------------------------|-------------------------------------|----------------------------------|
| A   | W11820 | 10/24/11  | John Rodriguez                          | Robert DeLong                   | John Rodriguez for Jay Jensen       | L. Andujo                        |
| B   | W11834 | 10/27/11  | John Rodriguez                          | Robert DeLong                   | John Rodriguez                      | L. Andujo                        |
| C   | W14396 | 12/1/2014 | John Rodriguez<br><i>John Rodriguez</i> | Jay Jensen<br><i>Jay Jensen</i> | Robert Davis<br><i>Robert Davis</i> | Linda Andujo<br><i>L. Andujo</i> |
|     |        |           |   |                                 |                                     |                                  |
|     |        |           |   |                                 |                                     |                                  |
|     |        |           |   |                                 |                                     |                                  |
|     |        |           |   |                                 |                                     |                                  |



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### DOCUMENT TITLE

**INFORMATION BULLETIN, CIB  
RT-5000-44 AEC TEST SPECIFICATIONS**

SIZE

**A**

LRU

**RT-5000**

DOCUMENT NUMBER

**150-043488**

REV

**C**

Typed signatures indicate approval. Handwritten signature approval of this document is on file at Wulfsberg Electronics, Prescott, Arizona.

SCALE: NONE

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# INFORMATION BULLETIN

EQUIPMENT: RT-5000

DATE: 10/27/11

NOTIFICATION NUMBER: CIB RT-5000-44

REVISION: C

## 1. PLANNING INFORMATION

### **1.1 Compliance**

Upon next scheduled maintenance

### **1.2 Description**

This information bulletin describes the procedure for testing the RT-5000 PN 400-015525-xxxx (All RT-5000 LRUs) to meet the specifications outlined by Airbus Helicopters (Germany and US). This procedure combines the customer requirements and applies them to the test data sheet provided by Airbus Helicopters in order to meet their requirements.

An ATE (automated test equipment: 'Big Foot') test has been developed and is acceptable to use in place of, or in conjunction with, the manual test procedure in Section 2-5 of this document. Use 650-043491 Procedure, 320-043491-03 Program.

### **1.3 Applicability**

This Bulletin affects all Serial Numbers of RT-5000 Part Number 400-015525-xxxx.

### **1.4 Reason**

To implement a temporary additional test procedure for all RT-5000s returned from Airbus Helicopters. This test is to ensure the units meet the customer's requirements as defined in their test procedure. This procedure will not be needed once the ATP, 650-017612 has been updated to include the Airbus test requirements.

### **1.5 Approval**

The customer, Airbus Helicopters, is requiring the following test be performed before returning their units to service following repair.

## 2. FM RECEIVER TESTS

Input parameters

RT-5000 Bandwidth: Standard  
Input level: -47 dBm, (1mV)  
Modulation freq.: 1,000 Hz  
FM Modulation: 3 kHz deviation  
All Audio volume: Max

Use a Psophometric filter such as a CCITT filter for measurement 2.1 and 2.2.

### 2.1 Distortion ( $\leq 5\%$ )

| Freq./MHz | Measurement (%) | Freq./MHz | Measurement (%) |
|-----------|-----------------|-----------|-----------------|
| 55.000    |                 | 456.000   |                 |
| 113.000   |                 | 659.000   |                 |
| 156.000   |                 | 883.000   |                 |
| 310.000   |                 |           |                 |

### 2.2 S+N/N ( $\geq 35\text{dB}$ )

| Freq./ MHz | Measurement (dB) | Freq./ MHz | Measurement (dB) |
|------------|------------------|------------|------------------|
| 55.000     |                  | 456.000    |                  |
| 113.000    |                  | 659.000    |                  |
| 156.000    |                  | 883.000    |                  |
| 310.000    |                  |            |                  |

Input parameters

RT-5000 Bandwidth: Standard  
Input level: 0.9 $\mu$ v (-107.9 dBm  $\pm$ 0.5dB)  
Audio Freq.: 1,000 Hz  
FM Modulation: 3 KHz deviation  
All Audio volume: Max

Press test knob during measurement and use a Psophometric filter such as a CCITT filter.

### 2.3 Sensitivity FM ( $\geq 12\text{dB SINAD}$ )

| Freq./ MHz | SINAD (dB) | Squelch Open (dBm) | Squelch Close (dBm) |
|------------|------------|--------------------|---------------------|
| 29.7       |            |                    |                     |
| 55.000     |            |                    |                     |
| 87.975     |            |                    |                     |
| 108.000    |            |                    |                     |
| 113.000    |            |                    |                     |
| 117.975    |            |                    |                     |
| 138.000    |            |                    |                     |
| 156.000    |            |                    |                     |
| 173.975    |            |                    |                     |
| 220.000    |            |                    |                     |
| 310.000    |            |                    |                     |
| 399.975    |            |                    |                     |
| 400.000 *  |            |                    |                     |
| 512.000 *  |            |                    |                     |
| 806.000 *  |            |                    |                     |
| 959.975 *  |            |                    |                     |

\* = High Split

### 3. 3.0 AM RECEIVER TEST

Input parameters

RT-5000 Bandwidth: Standard  
 Input level: -47dBm (1mV)  
 Audio Freq.: 1,000 Hz  
 AM Modulation: 85%  
 All Audio volume: Max

Use a Psophometric audio filter such as CCITT filter for this measurement.

#### 3.1 Distortion ( $\leq 5\%$ )

| Freq./MHz | Measurement (%) | Freq./MHz | Measurement (%) |
|-----------|-----------------|-----------|-----------------|
| 113.000   |                 | 135.000   |                 |

#### 3.2 S+N/N ( $\geq 35\text{dB}$ )

| Freq./MHz | Measurement (dB) | Freq./MHz | Measurement (dB) |
|-----------|------------------|-----------|------------------|
| 113.000   |                  | 135.000   |                  |

Input parameters

RT-5000 Bandwidth: Standard  
 Input level: 0.9uv (-107.9 dBm ±0.5dB)  
 Audio Freq.: 1000 Hz  
 Modulation: 30%  
 All Audio volume: Max

Press test knob during measurement and use a Psophometric filter such as CCITT filter.

**3.3 Sensitivity AM (SINAD ≥6dB)**

| Freq./MHz | SINAD (dB) | Squelch Open (dBm) | Squelch Close (dBm) |
|-----------|------------|--------------------|---------------------|
| 108.000   |            |                    |                     |
| 113.000   |            |                    |                     |
| 117.975   |            |                    |                     |
| 118.000   |            |                    |                     |
| 135.000   |            |                    |                     |
| 156.000   |            |                    |                     |
| 220.000   |            |                    |                     |
| 310.000   |            |                    |                     |
| 399.975   |            |                    |                     |

**4. 4.0 FM TRANSMITTER TEST**

Input parameters

RT-5000 Bandwidth: Standard  
 Mic Input level: 0.707V p-p (0.25 Vrms)  
 Audio Modulation: 1000 Hz

**4.1 Deviation (3 ±0.5KHz)**

| Freq./MHz | Measurement (kHz) | Freq./MHz | Measurement (kHz) |
|-----------|-------------------|-----------|-------------------|
| 29.700    |                   | 310.000   |                   |
| 55.000    |                   | 399.975   |                   |
| 87.975    |                   | 400.000*  |                   |
| 138.000   |                   | 512.000*  |                   |
| 156.000   |                   | 806.000*  |                   |
| 173.975   |                   | 959.975*  |                   |
| 220.000   |                   |           |                   |

\* = High split

Use a Psophometric audio filter such as CCITT filter for this measurement.

**4.2 Distortion (≤ 5%) \*Demodulated Audio**

| Freq./MHz | Measurement (%) | Freq./MHz | Measurement (%) |
|-----------|-----------------|-----------|-----------------|
| 55.000    |                 | 456.000 * |                 |
| 156.000   |                 | 659.000 * |                 |
| 310.000   |                 | 883.000 * |                 |

\* = High split

Use a Psophometric audio filter such as CCITT filter for this measurement.

### 4.3 S+N/N ( $\geq 35\text{dB}$ ) \* Demodulated Audio

| Freq./MHz | Measurement (dB) | Freq./MHz | Measurement (dB) |
|-----------|------------------|-----------|------------------|
| 55.000    |                  | 456.000 * |                  |
| 156.000   |                  | 659.000 * |                  |
| 310.000   |                  | 883.000 * |                  |

\* = High split

Input parameters

RT-5000 Bandwidth: Standard

Mic Input level: 0V

### 4.5 FM CW Transmit Power

| Freq./MHz | Measurement (Watts) | Min. (Watts) |
|-----------|---------------------|--------------|
| 29.700    |                     | 7.9 Watts    |
| 55.000    |                     | 7.9 Watts    |
| 87.975    |                     | 7.9 Watts    |
| 138.000   |                     | 7.9 Watts    |
| 156.000   |                     | 7.9 Watts    |
| 173.975   |                     | 7.9 Watts    |
| 220.000   |                     | 7.9 Watts    |
| 310.000   |                     | 7.9 Watts    |
| 399.975   |                     | 5.0 Watts    |
| 400.000 * |                     | 5.0 Watts    |
| 512.000 * |                     | 5.0 Watts    |
| 806.000 * |                     | 5.0 Watts    |
| 959.975 * |                     | 5.0 Watts    |

\* = High split

## 5. AM TRANSMITTER TEST

Input parameters

RT-5000 Bandwidth: Standard  
Mic Input level: 0.707 V<sub>p-p</sub> (0.25V<sub>rms</sub>)  
Audio Freq: 1,000 Hz  
All Audio volume: Max

### Modulation (85% ±5%) 70-90%-ECD

Do not use a Psophometric filter such as CCITT filter for modulation measurement.

| Freq./MHz | Measurement (%) | Freq./MHz | Measurement (%) |
|-----------|-----------------|-----------|-----------------|
| 118.000   |                 | 220.000   |                 |
| 135.000   |                 | 310.000   |                 |
| 156.000   |                 | 399.975   |                 |

### TX Distortion (≤ 5%) \*Demod.HF

Use a Psophometric filter such as CCITT filter for distortion measurement.

| Freq./MHz | Measurement (%) | Freq./MHz | Measurement (%) |
|-----------|-----------------|-----------|-----------------|
| 118.000   |                 | 220.000   |                 |
| 135.000   |                 | 310.000   |                 |
| 156.000   |                 | 399.975   |                 |

### S+N/N (≥35dB) \*Demod. Audio

Use a psophometric filter such as CCITT filter for distortion measurement.

| Freq./MHz | Measurement (dB) | Freq./MHz | Measurement (dB) |
|-----------|------------------|-----------|------------------|
| 118.000   |                  | 220.000   |                  |
| 135.000   |                  | 310.000   |                  |
| 156.000   |                  | 399.975   |                  |

Bandwidth: Standard, 3KHz

### AM CW Transmit Power (15w Nominal)

| Freq./MHz | Measurement (Watts) | Limit       |
|-----------|---------------------|-------------|
| 118.000   |                     | >11.9 Watts |
| 135.000   |                     | >11.9 Watts |
| 156.000   |                     | >11.9 Watts |
| 220.000   |                     | >11.9 Watts |
| 310.000   |                     | >11.9 Watts |
| 399.975   |                     | >11.9 Watts |