

### CHAPTER 3. STANDARDS AND TOLERANCES

**300. GENERAL.** This chapter prescribes the standards and tolerances for the ATCBI-6/6(M) as defined and described in Order 6000.15. Key performance parameters and/or key inspection elements are identified by an arrow (→) placed to the left of each applicable item.

**301. EQUIPMENT CONFIGURATION.** System standards and tolerances include values that are determined during commissioning activities to meet flight inspection requirements outlined in Order OA P 8200.1, United States Standard Flight Inspection Manual, section 215.

**302. REFERENCE MENUS AND PARAGRAPHS.** The references to menus are for the ATCBI-6/6(M) Local Maintenance Terminal (LMT) menus onsite. These menus provide the current site adjustable parameter values and the measured performance values for the last scan. The references to paragraphs are to the ATCBI-6 Technical Instruction Books or the ATCBI-6 Maintenance Handbook.

**303. thru 309. Reserved.**

#### SECTION 1. MSSR TRANSMITTER

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<b>TOLERANCE/LIMIT</b>	
			<i>Initial</i>	<i>Operating</i>
→ 310. <b>TRANSMITTER FREQUENCY .....</b>	Order 6360.xxx, Paragraph 513	1030.0 MHz	± 0.01 MHz	± 0.01 MHz
→ 311. <b>TRANSMITTER POWER CHARACTERISTICS</b>				
<b>a. Sum Forward Power (P1, P3) .....</b>	Order 6360.xxx, Paragraph 519	Commissioned Value	± 1.0 dB	± 1.0 dB
<b>b. Control Forward Power (P2) .....</b>	Order 6360.xxx, Paragraph 519	Commissioned Value	± 1.0 dB	± 1.0 dB
<b>c. Sum Return Loss (P1, P3) .....</b>	Order 6360.xxx, Paragraph 519	12 dB minimum	Same as standard	Same as standard
<b>d. Control Return Loss (P2) .....</b>	Order 6360.xxx, Paragraph 519	12 dB minimum	Same as standard	Same as standard
→ 312. <b>MODULATION CONTROL</b>				
<b>a. P1, P3 Output Pulse Width.....</b>	Order 6360.xxx, Paragraph 520	0.8 µs	± 0.1 µs	± 0.1 µs
<b>b. P1, P3 Power Ratio .....</b>	Order 6360.xxx, Paragraph 520	1 (P1 same as P3)	Between 0.79 and 1.26	Between 0.79 and 1.26
<b>c. P1, P2, P3 Rise Time/Fall Time</b>				
<b>(1). P1, P2, P3 Rise Time.....</b>	Order 6360.xxx, Paragraph 520	0.05 to 0.1 µs	0.05 to 0.1 µs	0.05 to 0.1 µs
<b>(2). P1, P2, P3 Fall Time .....</b>	Order 6360.xxx, Paragraph 520	0.03 to 0.2 µs	0.03 to 0.2 µs	0.03 to 0.2 µs

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<b>d. Pulse Spacing</b>				
(1). Mode 2 .....	Order 6360.xxx, Paragraph 520	5.0 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(2). Mode 3/A .....	Order 6360.xxx, Paragraph 520	8.0 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(3). Mode B .....	Order 6360.xxx, Paragraph 520	17.0 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(4). Mode C .....	Order 6360.xxx, Paragraph 520	21.0 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
<b>e. IISLS (P1, P2)</b>				
(1). Pulse Spacing.....	Order 6360.xxx, Paragraph 520	2.0 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(2). Power Ratio .....	Order 6360.xxx, Paragraph 520	0.50	Between 0.40 and 0.63	Between 0.40 and 0.63
<b>f. P6 (Sync phase reversal) Spacing .....</b>	Order 6360.xxx, Paragraph 520	1.25 $\mu$ s	$\pm 0.04 \mu$ s	$\pm 0.04 \mu$ s
<b>g. P3, P4 Pulse Spacing .....</b>	Order 6360.xxx, Paragraph 520	2.0 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
<b>h. P4 Pulse Width</b>				
(1). ATCRBS Only All Call .....	Order 6360.xxx, Paragraph 520	0.8 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(2). ATCRBS/Mode-S All Call .....	Order 6360.xxx, Paragraph 520	1.6 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
<b>i. P6 Pulse Width</b>				
(1). Mode-S Short Roll Call .....	Order 6360.xxx, Paragraph 520	16.25 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(2). Mode-S Long Roll Call .....	Future use	30.25 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
<b>j. SLS Output Pulse (P2)</b>				
(1). Pulse Width .....	Order 6360.xxx, Paragraph 520	0.8 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(2). Pulse Position .....	Order 6360.xxx, Paragraph 520	2.0 $\mu$ s after P1	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
<b>k. SLS Output Pulse (P5)</b>				
(1). Pulse Width .....	Order 6360.xxx, Paragraph 520	0.8 $\mu$ s	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
(2). Pulse Position .....	Order 6360.xxx, Paragraph 520	0.4 $\mu$ s before sync phase reversal	$\pm 0.1 \mu$ s	$\pm 0.1 \mu$ s
<b>l. IISLS Ouput Pulse (P1)</b>				

	(1). Pulse Width .....	Order 6360.xxx, Paragraph 520	0.8 μs	± 0.1 μs	± 0.1 μs
	(2). Pulse Position .....	Order 6360.xxx, Paragraph 520	Same as directional P1	± 0.1 μs	± 0.1 μs
	m. Mode-4 Pulse Width (BI-6(M) only)	Order 6360.xxx, Paragraph 520	0.5 μs	± 0.1 μs	± 0.1 μs
313. thru 319.	<b>Reserved.</b>				

**SECTION 2. MSSR RECEIVER**

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<b>TOLERANCE/LIMIT</b>	
			<i>Initial</i>	<i>Operating</i>
→ 320. <b>SENSITIVITY TIME CONTROL (STC) CURVE</b>				
a. Initial Level (at 1 Nmi).....	Order 6360.xxx, Paragraph 522	Commissioned value	Same as standard	Same as standard
b. Recovery Rate .....	Order 6360.xxx, Paragraph 522	Commissioned value	Same as standard	Same as standard
→ 321. <b>RECEIVER SENSITIVITY OFFSET &amp; SYNTHETIC TARGET CALIBRATION</b>				
a. Sum .....	Order 6360.xxx, Paragraph 521	-83 dBm	Same as standard	-81 dBm minimum
b. Difference .....	Order 6360.xxx, Paragraph 521	-83 dBm	Same as standard	-81 dBm minimum
c. Control .....	Order 6360.xxx, Paragraph 521	-83 dBm	Same as standard	-81 dBm minimum
→ 322. <b>OVERALL SYSTEM SENSITIVITY</b>	Order 6360.xxx, Paragraph 510	Commissioned value	Same as standard	Within 3 dB of standard (-83 dBm minimum)
323. thru 329.	<b>Reserved.</b>			

**SECTION 3. MSSR ANTENNA**

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<b>TOLERANCE/LIMIT</b>	
			<i>Initial</i>	<i>Operating</i>
330. <b>MSSR ANTENNA TILT .....</b>	Order 6360.xxx, Paragraph 514	Commissioned value	+/- 0.1 degrees	+/- 0.1 degrees
331. <b>CABLING</b>				

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	<b>a. Feeder Cable Phasing .....</b>	Order 6360.xxx, Paragraph 523	±7.0 degrees at 1090 MHz	Same as standard	Same as standard
	<b>b. Interrogator Cable Phasing .....</b>	Order 6360.xxx, Paragraph 523	±7.0 degrees at 1090 MHz	Same as standard	Same as standard
	<b>b. Insertion Loss .....</b>	Order 6360.xxx, Paragraph 523	Commissioned value	Same as standard	1 dB increase maximum
332.	<b>AZIMUTH PULSE GENERATOR</b>				
	<b>a. IACP jitter .....</b>	Order 6360.xxx, Paragraph 512	20%	Same as standard	Same as standard
	<b>b. APG Offset .....</b>	Order 6360.xxx, Paragraph 517	≤12 acps	Same as standard	Same as standard
333. thru 339.	<b>Reserved.</b>				

**SECTION 4. MSSR SIGNAL PROCESSOR**

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<b>TOLERANCE/LIMIT</b>	
			<i>Initial</i>	<i>Operating</i>
→ 340. <b>PARROT POSITION</b>				
<b>a. Range .....</b>	Order 6360.xxx, Paragraph 511	Commissioned value	Same as standard	+/- 1/8 Nmi
<b>b. Azimuth .....</b>	Order 6360.xxx, Paragraph 511	Commissioned value	Same as standard	+/- 0.18 deg. (+/- 2 ACPs)
→ 341. <b>REAL TIME QUALITY CONTROL (RTQC)</b>				
<b>a. Search RTQC</b>				
<b>(1) Range .....</b>	Order 6360.xxx, Paragraph 518	Commissioned value	Same as standard	+/- 1/8 Nmi
<b>(2) Azimuth .....</b>	Order 6360.xxx, Paragraph 518	Commissioned value	Same as standard	+/- 0.18 deg. (+/- 2 ACPs)
<b>b. Beacon RTQC</b>				
<b>(1) Range .....</b>	Order 6360.xxx, Paragraph 518	Commissioned value	Same as standard	+/- 1/8 Nmi
<b>(2) Azimuth .....</b>	Order 6360.xxx, Paragraph 518	Commissioned value	Same as standard	+/- 0.18 deg. (+/- 2 ACPs)
342. thru 349.	<b>Reserved.</b>			

**SECTION 5. MSSR CONTROL AND MONITOR SYSTEM (CMS)**

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<b>TOLERANCE/LIMIT</b>	
			<i>Initial</i>	<i>Operating</i>
350. <b>CONTROL AND MONITOR SYSTEM (CMS)</b>				
<b>a. CMS Display Is Fault Free .....</b>	Order 6360.xxx, Paragraph 516 a	No faults	Same as standard	Same as standard
<b>b. CMS Channel Text Is Black .....</b>	Order 6360.xxx, Paragraph 516 b	Black text	Same as standard	Same as standard
351. thru 359. <b>Reserved.</b>				

**SECTION 6. MSSR POWER SUPPLIES**

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<b>TOLERANCE/LIMIT</b>	
			<i>Initial</i>	<i>Operating</i>
360. <b>INTERROGATOR POWER SUPPLIES</b>				
<b>a. Transmitter PS (PSU-1)</b>				
<b>+52 VDC .....</b>	EQM-Sec. 4, 4.9	+52 Vdc	± 2.5 Vdc	± 2.5 Vdc
<b>b. Multi Output PS (PSU-2)</b>				
<b>(1) +5 VDC .....</b>	EQM-Sec. 4, 4.10	+5 Vdc	± 0.2 Vdc	± 0.2 Vdc
<b>(2) -5.2 VDC .....</b>	EQM-Sec. 4, 4.10	-5.2 Vdc	± 0.3 Vdc	± 0.3 Vdc
<b>(3) +15 VDC .....</b>	EQM-Sec. 4, 4.10	+ 15 Vdc	± 0.7 Vdc	± 0.7 Vdc
<b>(4) -15 VDC .....</b>	EQM-Sec. 4, 4.10	-15 Vdc	± 0.7 Vdc	± 0.7 Vdc
<b>(5) +28 VDC .....</b>	EQM-Sec. 4, 4.10	+28 Vdc	± 1.4 Vdc	± 1.4 Vdc
361. thru 369. <b>Reserved.</b>				

**SECTION 7. MONOPULSE REMOTE SITE MONITOR (MRSM)**

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<b>TOLERANCE/LIMIT</b>	
			<i>Initial</i>	<i>Operating</i>
370. <b>TRANSMITTER OUTPUT POWER ....</b>	Order 6360.xxx, Paragraph 515b	Commissioned value	± 2.0 dB	± 2.0 dB
371. <b>RECEIVER VIDEO LEVELS .....</b>	Order 6360.xxx, Paragraph 515a	0.5 V	+/- 0.1 V	+/- 0.1 V
372. thru 399. <b>Reserved.</b>				