	DO 181D	ED 73C
Shall0033 – Shall0112 Shall0034 – Shall0110 Shall0035 – Shall0111	**2.2.3.4.1 ATCRBS Reply Rate Capability** a. The transponder shall<<shall0033>> be able to continuously generate at least 500 ATCRBS 15-pulse replies per second. b. If intended for installation in aircraft that operate at altitudes above 15,000 feet, the transponder shall<<shall0034>> be capable of a peak reply rate of 1,200 ATCRBS 15-pulse replies per second for a duration of 100 milliseconds. c. If intended for installation in aircraft that operate at altitudes not exceeding 15,000 feet, the transponder shall<<shall0035>> be capable of a peak reply rate of 1,000 ATCRBS 15-pulse replies per second for a duration of 100 milliseconds. Note: A 15-pulse reply includes 2 framing pulses, the 12 information pulses, and the SPI pulse.	**3.4.1 Reply Rate Capability – Mode A/C** a. CLASS 1 Equipment CLASS 1 equipment shall <<shall0110>> be capable of at least 1 200 Mode A/C replies per second for a 15-pulse coded reply (including 2 framing pulses, 12 information pulses and the SPI pulse). b. CLASS 2 Equipment CLASS 2 equipment shall <<shall0111>> be capable of at least 1 000 Mode A/C replies per second for a 15-pulse coded reply (including 2 framing pulses, 12 information pulses and the SPI pulse). **3.4.2 Reply Rate Capability - Mode S** The total reply rate over each time interval specified below, shall <<shall0112>> be the sum of the individual Mode A/C replies at an average rate of 500 per second and the Mode S reply rate over that interval.
Shall0047 – Shall0120	**2.2.4.1.3 ATCRBS-SPI** In addition to the information pulses provided, an SPI pulse, which may be used with any of the other information pulses upon request, shall<<shall0043>> be provided at a spacing 4.35 microseconds following the last framing pulse. The SPI pulse shall<<shall0044>> be initiated by an IDENT switch. Upon activation of the IDENT switch, the SPI pulse shall<<shall0045>> be transmitted when replying to ATCRBS Mode A interrogations for a period of 18 ±1.0 seconds. The SPI pulse shall<<shall0046>> be transmitted only if the IDENT switch is first activated. The SPI pulse shall<<shall0047>> not be transmitted when replying to Mode C interrogations.	**3.5.3 Mode A/C Special Position Identification (SPI) Pulse** a. In addition to the information pulses, a SPI pulse, which may be used with any of the other information pulses upon request, shall <<shall0118>> be provided at a spacing 4.35 µs following the last framing pulse of Mode A replies only. b. The SPI pulse shall <<shall0119>> only be initiated by an IDENT switch. c. Upon activation of the IDENT switch, the SPI pulse shall <<shall0120>> be transmitted when replying to Mode A interrogations for a period of 18 ±1.0 seconds.

	DO 181D	ED 73C
Shall0076 – Shall0161	**2.2.5.1 Side Lobe Suppression, ATCRBS, ATCRBS-Only All-Call, and ATCRBS/Mode S All-Call** The transponder shall<<shall0074>> react to side lobe interrogations as follows: a. Conditions Under Which the Transponder SHALL<<shall0075>> Be Suppressed The transponder shall<<shall0076>> reply to no more than one percent of the interrogations under all combinations of the following conditions: (1) when the pulse interval between P1 and P2 is varied over the range from 1.85 to 2.15 microseconds, (2) when the RF input signal level of P1 is varied from 3 dB above MTL to -21 dBm, (3) when the level of P2 equals or exceeds the level of P1.	**3.8.2 Side Lobe Suppression, Mode A/C, Mode A/C-Only All-Call, and Mode A/C/S All Call** Assuming no lock-out condition is in effect, the transponder shall <<shall0159>> react to side lobe interrogations as follows. a. Conditions Under Which the Transponder SHALL <<shall0160>> Be Suppressed The transponder shall <<shall0161>> reply to no more than 10% of the interrogations if (1) the pulse interval between P1 and P2 is varied over the range from 1.85 to 2.15 µs, and (2) the RF input signal level of P1 is varied from MTL+3dB to -21 dBm, and (3) the level of P2 equals or exceeds the level of P1. NOTE: The transponder will enter suppression if the P1 and P2 preamble pulses of a Mode S interrogation are detected, but a sync phase reversal is not recognised. This requirement prevents the transponder from generating unwanted Mode A and/or Mode C replies to Mode S interrogations that are sidelobe suppressed.

	DO 181D	ED 73C
Shall0112 – Shall0192 & Shall0193	**2.2.7.2.1 Recovery From a Mode S Interrogation If No Reply Is Required** Following a correctly addressed Mode S interrogation which has been accepted and which requires no reply, a transponder shall<<shall0112>> recover sensitivity to within 3 dB of MTL no later than 45 microseconds after receipt of the sync phase reversal.	**3.10.2 Recovery** a. Recovery Time Following desensitisation, the receiver shall <<shall0190>> recover sensitivity to within 3 dB of MTL, within 15 µs after reception of the trailing edge of a desensitising pulse having a signal strength up to MTL+50dB. b. Recovery Rate Recovery shall <<shall0191>> be at an average rate not exceeding 4 dB per µs. c. Recovery From a Mode S Interrogation If No Reply Is Required Following a correctly addressed Mode S interrogation (other than Comm-C, Uplink Format UF=24) which has been accepted and demands no reply, a transponder shall <<shall0192>> recover sensitivity to within 3 dB of MTL no later than 45 µs after receipt of the sync phase reversal. d. Recovery From a Mode S Comm-C Interrogation Following a Comm-C interrogation for which no reply is required, a transponder with Comm-C capability shall <<shall0193>> recover sensitivity to within 3 dB of MTL no later than 45 µs after the receipt of the sync phase reversal.