Please answer the following questions as soon as possible pertaining to this application:

1. What is the max altitude you are intending to fly?

We can't really plan to be at a certain altitude when testing—we have to work with whatever ATC assigns to us or has available for us to use at the time of testing. In our experiences thus far, a realistic max altitude would be 45kft for high altitude long range performance assessments.

2. What is the PRR capability of the equipment (i.e. does this operate on a fixed PRR that can be assigned and if so what is the range of PRR's that can be assigned, does this stagger or jitter the PRR and if so describe, any other PRR info that you feel will help us ensure that you do not cause interference).

Our system operates on a fixed PRR defined by the Mode being used. Interrogations are pilot initiated and modes can be individually enabled or disabled for interrogation by the pilot.

Interrogator (1030 MHz) maximum PRR:
SIF (Modes 1, 2, 3A, & 3C) maximum mode rate of 1200 pps sets the maximum interrogations per second at 400. The Mode 4 maximum rate of 7200 pps allows up to 200 interrogations per second. However, the maximum interrogation repetition frequency **for any combination of Modes** 1, 2, 3/A, C, and 4 does not exceed 450 interrogations per second, averaged over one second (per DoD AIMS 97-1000, para 3.8.2).

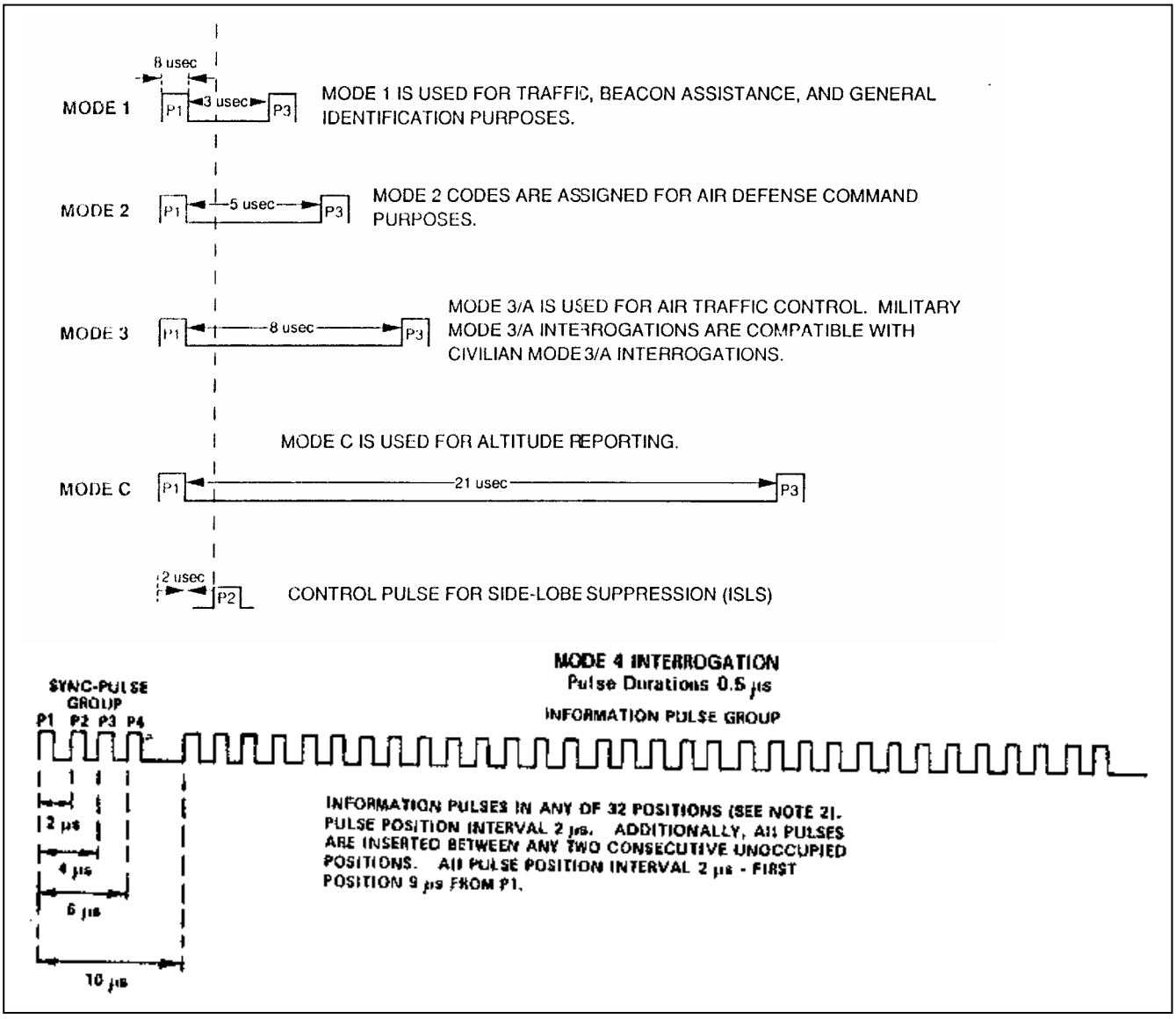



Figure 1: Interrogation Pulse Spacing for Modes 1, 2, 3A, 3C, and 4.

Transponder (1090 MHz) maximum PRR:
18 Kpps is peak pulse rate for IFF Modes 1, 2, 3/A, C replies (per RTCA/DO-181B, para. 2.2.3.4.1 b). 3.6 Kpps is max pulse rate for IFF Mode 4 replies. 7.0 pps is max pulse rate for IFF Mode S replies.

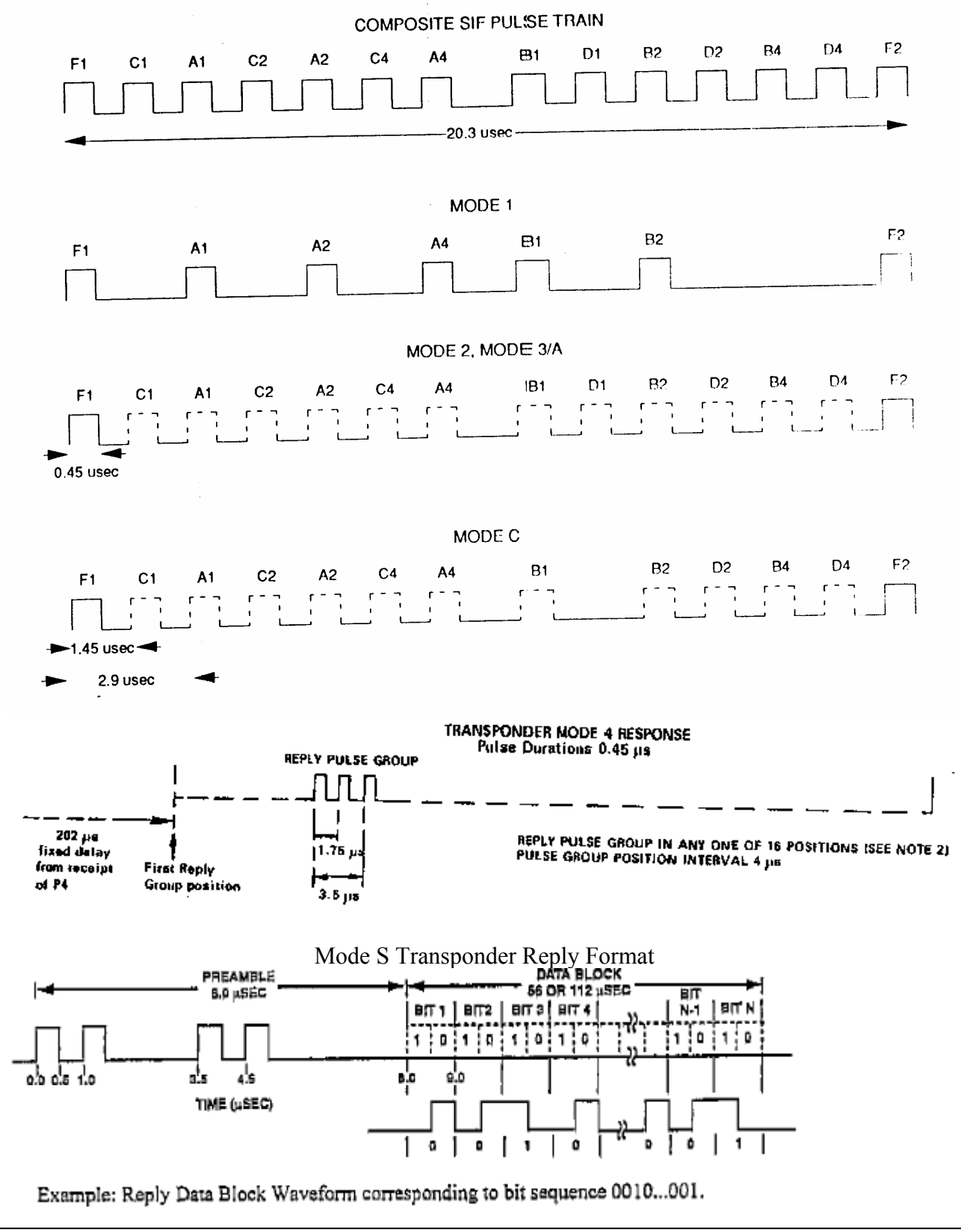



Figure 2: Transponder Pulse Spacing for Modes 1, 2, 3A, 3C, S and 4.

3. What is the pulse width?

Interrogator (1030 MHz) pulse widths are:

| Mode | P1, P3 Pulse Width | P2 Pulse Width | Comments |
|---|---|---|---|
| 1 | 0.8 ±0.1 µs | 0.8 +0.05, -0.1 µs | Per DoD AIMS 97-1000, para. 3.4.4.2 |
| 2 | 0.8 ±0.1 µs | 0.8 +0.05, -0.1 µs | Per DoD AIMS 97-1000, para. 3.4.4.2 |
| 3A | 0.8 ±0.1 µs | 0.8 +0.05, -0.1 µs | Per DoD AIMS 97-1000, para. 3.4.4.2 and RTCA/DO-181B, para. 2.1.11.3.1 |
| 3C | 0.8 ±0.1 µs | 0.8 +0.05, -0.1 µs | Per DoD AIMS 97-1000, para. 3.4.4.2 and RTCA/DO-181B, para. 2.1.11.3.1 |
| 4 | All Mode 4 pulses: 0.5 ±0.1 µs | All Mode 4 pulses: 0.5 ±0.1 µs | Per DoD AIMS 97-1000, para. 3.4.6.2 |
| 5 | N/A | N/A | Mode 5 will not be used. |
| S | N/A | N/A | No Mode S Interr. Capability |

Transponder (1090 MHz) pulse widths are:

| Mode | Reply Pulse Width | Comments |
|---|---|---|
| 1 | 0.45 ±0.1 µs | Per DoD AIMS 97-1000, para. 3.6.4 |
| 2 | 0.45 ±0.1 µs | Per DoD AIMS 97-1000, para. 3.6.4 |
| 3A | 0.45 ±0.1 µs | Per DoD AIMS 97-1000, para. 3.6.4 and RTCA/DO-181B, para. 2.1.11.3.1 |
| 3C | 0.45 ±0.1 µs | Per DoD AIMS 97-1000, para. 3.6.4 and RTCA/DO-181B, para. 2.1.11.3.1 |
| 4 | 0.45 ±0.1 µs | Per DoD AIMS 97-1000, para. 3.6.4 |
| 5 | N/A | Mode 5 will not be used. |
| S | 0.5 ±0.05 µs | Per RTCA/DO-181B, para 2.2.4.2.1; Transponder is capable of Mode S Level 1 replies. |

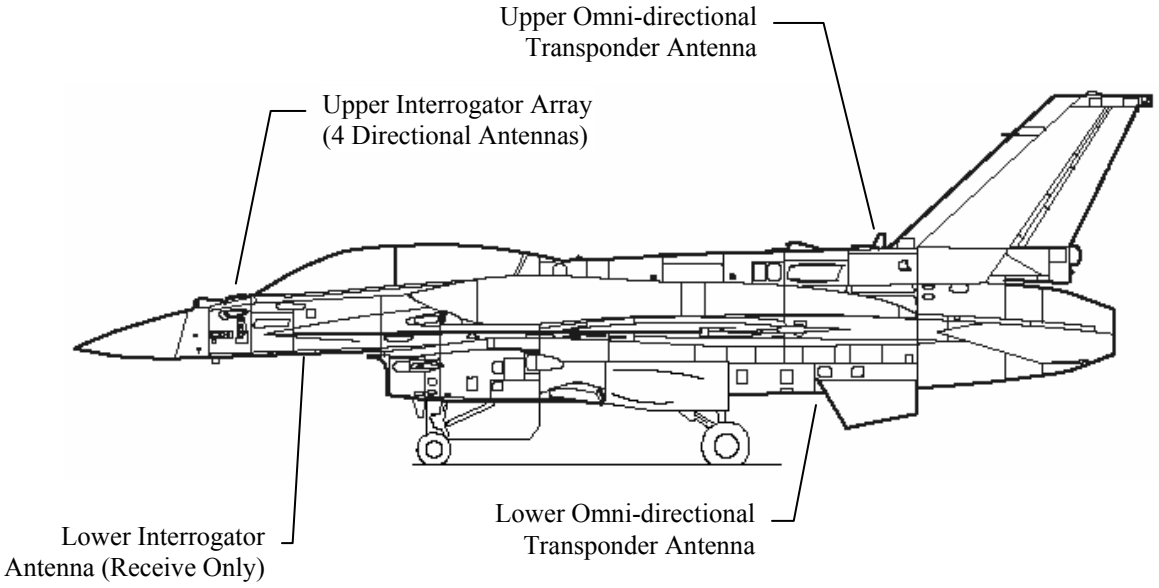
4. What Modes are you looking to operate in (Modes 1, 2, 3A, 3C, 4, 5, Mode--S)?
Note: If you are looking to use Mode-4 or 5, can you operate on a "tag to interrogate" basis or how is that you want to operate (Mode-4/5 testing on a large scale is difficult if not impossible to support).

The most commonly used modes will be 1, 2, 3A, and 3C. 99% of all IFF testing will be accomplished with these modes. Mode S transponder will be used on a very limited basis only to verify that Air Traffic Control can receive code/altitude data correctly. Mode 5 will not be used in any capacity because the aircraft is not equipped for it. Mode 4 will be used on a very limited basis (less than 1% of total test time) with no more than two aircraft (one target aircraft and the test aircraft) operating at one time. Mode 4 requires that a special encryption module be installed on the aircraft—of which the Block 60 program only has two. The AIFF Interrogator Field of Regard can be adjusted, essentially narrowing the Interrogator beam around a particular target or group of targets if necessary.

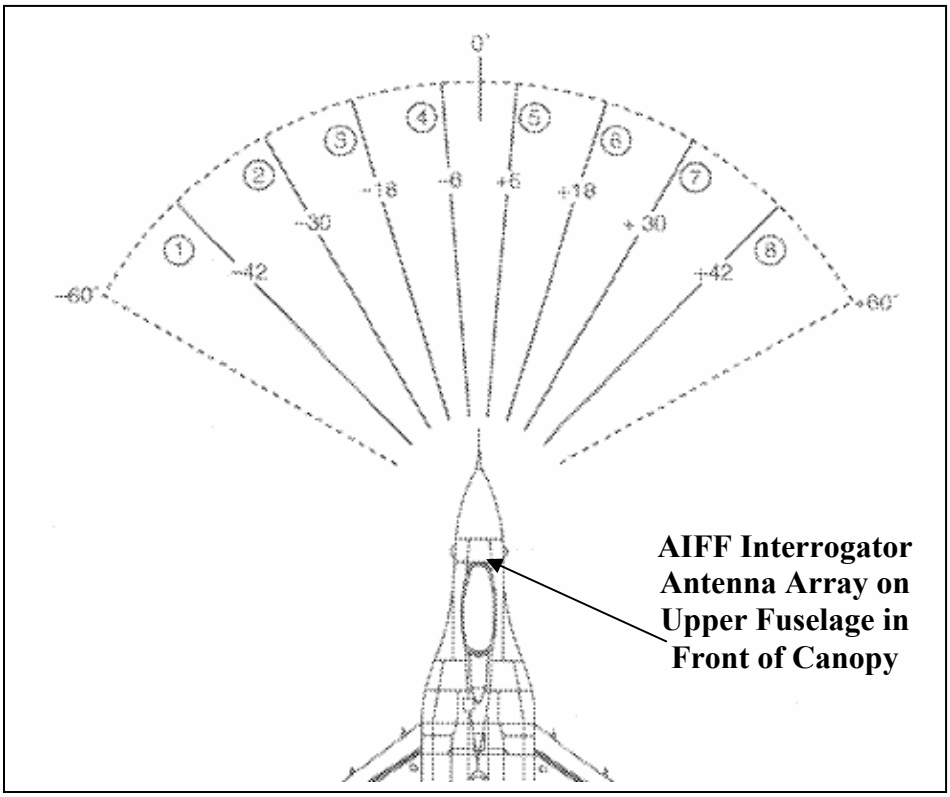
| Mode | Interr-ogator (1030MHz) | Trans-ponder (1090MHz) | Comments |
|---|---|---|---|
| 1 | Yes | Yes | |
| 2 | Yes | Yes | |
| 3A | Yes | Yes | |
| 3C | Yes | Yes | |
| 4 | Yes | Yes | Very limited use—no more than two aircraft at once. |
| 5 | No | No | Mode 5 will not be used. |
| S | No | Yes | Transponder Mode S Level 1 |

5. What are the antenna characteristics (omni direction, rotating, etc.)

All AIFF antennas on the Block 60 aircraft are fixed to the airframe, i.e., no physical rotation. See figure below for antenna locations.



**Eight beams at the angles indicated below provide a +/- 60 degree Azimuth Field of View**




**The interrogator antenna provides a +/- 60 degree Elevation Field of View, however due to obscuration from the nose radome, range performance drops significantly below -20 degree in elevation.**