

DESCRIPTION

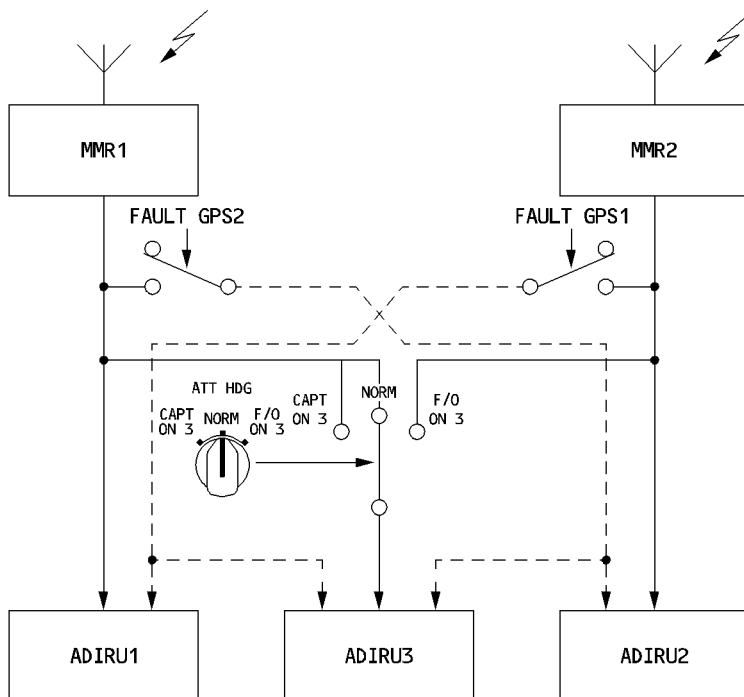
The Global Positioning System (GPS) is a satellite based radio navigation aid.

Worldwide 24 satellites broadcast accurate navigation data that the aircraft can use for the precise determination of its position.

The aircraft has two independent GPS receivers. Each GPS receiver is integrated in a modular avionics unit called MMR (Multi Mode Receiver) (GPS1 receiver in MMR1, GPS2 receiver in MMR2).

The MMR processes the data received and transfers them to the ADIRUs, which then perform a GP-IRS hybrid position calculation. The FMGCs use the hybrid position. The GPS MONITOR page on MCDU1 or MCDU2 can display pure GPS position, true track, ground speed, estimated position, accuracy level, and mode of operation for the information and use of the flight crew.

Note : Flight crew can use the MCDU NAVAID page to deselect the use of GPS data for calculating position. (See FCOM 4.03.20).

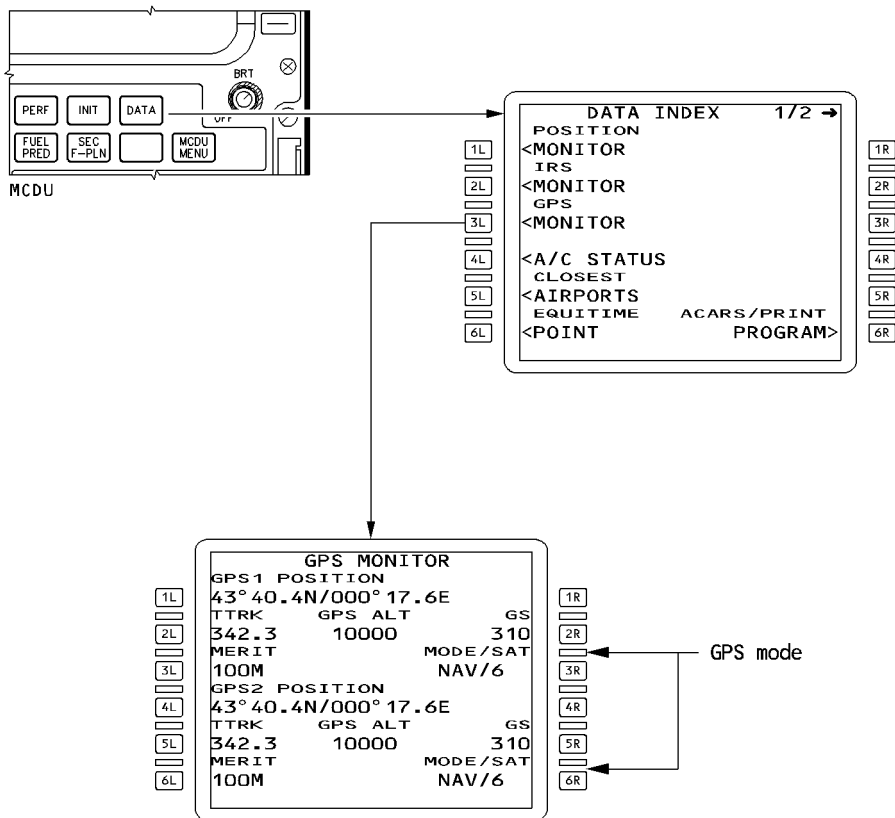


FFCS-01-3415-001-A110AA

NORMAL OPERATION

In normal operation, the GPS receiver 1 supplies ADIRU 1 and ADIRU 3, the GPS receiver 2 supplies ADIRU 2.

The MMR operates in different modes which are indicated on the GPS MONITOR page :



– Initialization mode (INIT)

When this mode is entered, the MMR hardware and software are initialized.

– Acquisition mode (ACQ)

The MMR enters in this mode after power up or during long periods of lost satellite signal. It remains in this mode until it is able to track at least four satellites, then transfers to NAV mode. To enter navigation mode more quickly, the MMR uses initial position, time and altitude from IRS.

– **Navigation mode (NAV)**

In navigation mode the MMR tracks more than 4 satellites simultaneously and supplies the data to the ADIRUs continually.

– **Altitude Aiding (ALTAID)**

If the MMR can track at least four satellites, it uses the GPS altitude and the IR altitude to calculate an altitude bias.

If the number of satellites drops to three, the altitude bias is frozen and the MMR enters ALTAID mode using the IR altitude corrected with the altitude bias.

If after 2 minutes it has not acquired a fourth satellite, the MMR reverts to ACQ mode.

– **Fault mode (FAULT)**

The fault mode is entered when a failure has been detected which may prevent the MMR from transmitting valid data.

OPERATION IN CASE OF FAILURE

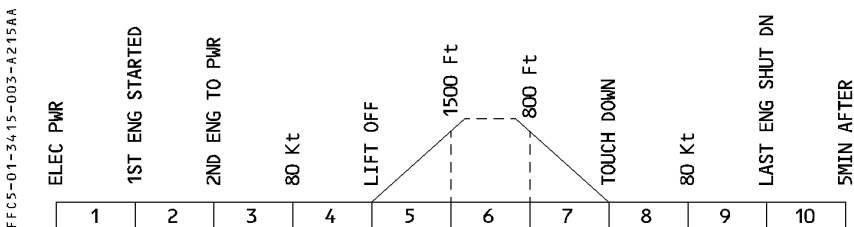
If one GPS receiver fails, the three ADIRUs automatically select the only operative GPS receiver.

If ADIRU 1 fails, ADIRU 3 is supplied by MMR 1 and ADIRU 2 by MMR 2.

In order to keep the side 1 and side 2 segregation in case ADIRU 2 fails the ATT HDG selector has to be selected to F/O ON 3 so that ADIRU 3 will be supplied with MMR 2 data.

If two ADIRUs fail, the remaining ADIRU is supplied by its own side GPS receiver.

WARNINGS AND CAUTIONS



E / WD: FAILURE TITLE conditions	AURAL WARNING	MASTER LIGHT	SD PAGE CALLED	LOCAL WARNING	FLT PHASE INHIB
GPS 1 (2) FAULT	SINGLE CHIME	MASTER CAUTION	NIL	NIL	4, 5, 7, 8
FM/GPS POS DISAGREE					1, 3, 4, 10
GPS PRIMARY LOST (No ECAM warning)	TRIPLE CLICK During non ILS approach only	NIL	NIL	NIL	2, 3, 4, 5, 8, 9, 10