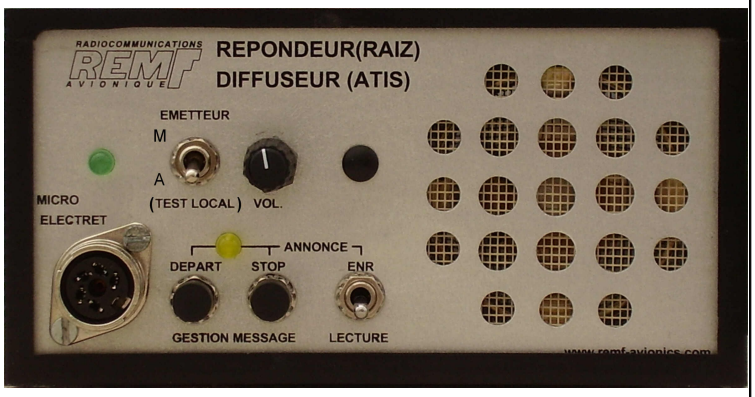
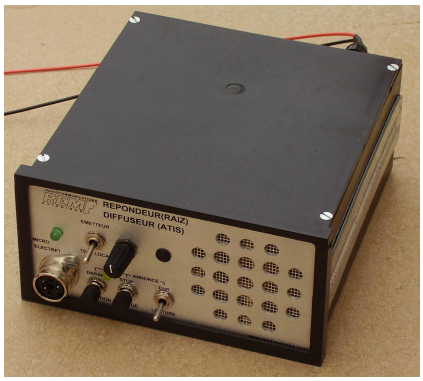
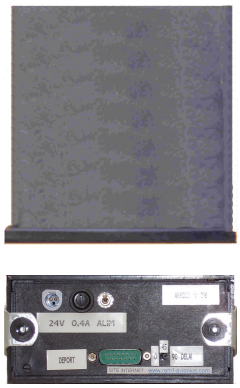
AUTOMATIC ANSWERING RADIO DEVICE (AARD) /ATIS DRIVER

(This product can be use also in “ATIS” function)

Drive box built in DIN IEC 61 554 standard instruments enclosure

		
DIN IEC 61 554 standard instruments enclosure 144 x 72 mm (insertion through the front panel)	Cutting panel window: 137 x 66 mm	Depth 142 mm (Not including connector size))

This device (driver module) is designed to drive external transmitter or built-in stand-alone Answering-transmitter into 19’-2U cabinet to transmit messages (numerically recorded) to aircraft within the aerodrome circuit:

- Either in Automatic response from calls of aircraft on the frequency of the airport (Answering mode).
- Either by repeating continuously the recorded message on dedicated frequency ("ATIS" broadcast mode).

The ATIS mode or Answering (AARD) mode can be factory configured before delivery, or configured by the user (switch).
It is also possible to allow the changeover ATIS / AARD mode by the operator (switch on the front or the rear panel of the equipment (to be determined when ordering).

When the equipment is fixed as an ATIS or as AARD, marking not useful on the front can be masked by a label).

Specific system engineering: design of small towers of fixed and mobile controls towers, control desks and consoles, specific equipment.
Manufacturing of Mobile and Modular control towers: "turn-key" System for nonrecurring needs for secondary airports.
Systems of radio communication: control desks equipped consoles, sets of radio communication.
Standard equipment such as: VHF transceiver ground stations in various cases (19' cabinet, or on desk-table version, fixed and mobile, etc.
Specific equipment and products: manufacturing of equipment according to customer request

REMF - ZAC GAROSSOS BP40071 31700 BEAUZELLE (near Toulouse Blagnac International airport) FRANCE
Ph : (33) 5 61 59 93 37 Fax : (33) 5 61 59 33 85 WEB SITE www.remf-avionics.com E-mail : contact@remf-avionics.com

GENERAL FEATURES

Recording Time

Following the model the term may go 1mn30s to 9 minutes:

- ARR300NG2-30: 3 minutes
- ARR300NG2-45: 4mn30s
- ARR300NG2-60: 6 min
- ARR300NG2-75: 7mn30s
- ARR300NG2-90: 9 min

Enclosing standard versions

- The "standard version" in a type instrument box (DIN IEC 61 554) see size above.
- **Other versions (enclosure or integration solution),**

Automatic answering operation in AARD mode

There are 3 possibilities:

- By use the audio voice output line, the release is activated at the end of aircraft message.
- By using the carrier level detected in the receiver when the signal is available, (at the end of carrier level released when the pilot finish to talk (this is the best solution in terms of response delay).
- By recovery squelch signal level; if this signal is available (this is also the best solution in terms of response delay).

Power supply

- DC : from 10,5VDC up to 32VDC

GENERAL OPERATION IN SERVICE

Beforehand, the controller records the message to be broadcasted later by the AUTOMATIC ANSWERING RADIO DEVICE (AARD):

- **Either in Automatic answering (AARD) on the frequency of the airport tower in the absence of air traffic controller. (Not on a specific frequency).**
- **Either in "ATIS" function: repetitive message broadcasted permanently on a dedicated frequency**

A recording stand-by function is controlling by the PPT loystick of the microphone or a by push button on the front panel of the device.

The maximum duration of the recorded message is 3 minutes to 9 minutes depending on the version (see above).

ANSWERING MODE (AARD):

- The message is sent when the end of his aircraft message is finished.
- The frequency is left free after each response of the AARD for a time adjustable from 1 s to 90 s, to allow users in the airfield to send their information and avoid too replies to each closer messages from the aircraft. The channel is always left free and the pilots can ensure their safety.
- The setting of this period must be stetted (at the back of the box) when you install it for the first time.

BROADCAST/ATIS MODE :

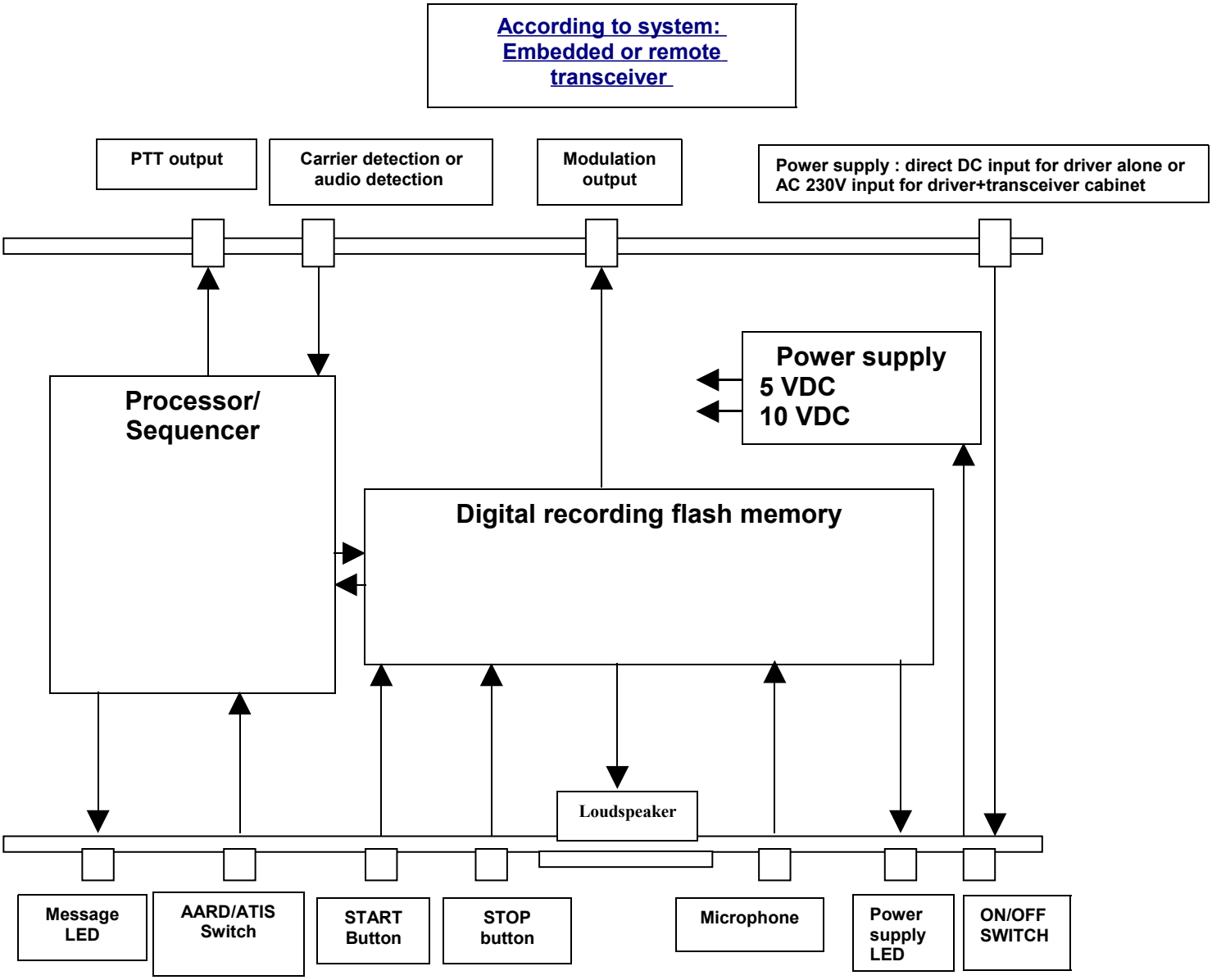
- - The recorded message is repeated in "loop"

BENEFITS

- Information transmitted to pilots in the absence of the controller.
- Benefits of digital recording (no problems dues to tape):
- Increased reliability due to digitally recording
- No lack of time to rewind as in tape solution.
- System immediately operational after the end of each message.

REMF - ZAC GAROSSOS BP40071 31700 BEAUZELLE (near Toulouse Blagnac International airport) FRANCE
Ph : (33) 5 61 59 93 37 Fax : (33) 5 61 59 33 85 WEB SITE www.remf-avionics.com E-mail : contact@remf-avionics.com

DESCRIPTION OF THE SYSTEM



ANSWERING MODE (AARD)

WARNING

The answering machine can replace the controller in his absence.

The messages are recorded under the responsibility of the controller.

The content of the message can be commercial or informative.
The information could not be guaranteed long time after recording is generally prohibited (such as weather parameters, for example) except to indicate explicitly the validity. In any event, it must comply with regulations and practices.

For example, information can be:

Closing hours of the ATC service, closing for exceptional shortage of fuel, suspension of services on the airport, presence of radio remote control lighting system, runways or taxiways closed, presence of bird, unusable runway, ground clearance, requirement of aircraft call sign, etc ... .

HOW TO USE THE SYSTEM

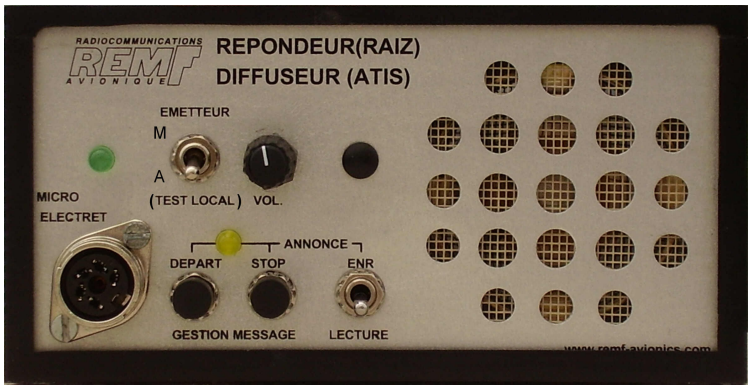
FROM AIRCRAFT

There is no technical protocol or special procedure for the pilot.

This system answers "naturally" as soon as the pilot finished talking and releasing the PTT of his microphone.
At the end of the response of AARD, this last device drives the system for the receiver returns immediately in listening position.
To avoid duplication of responses too closely (several aircraft in the circuit), a time limit the responses by an interval of non-response set from 1 to 90 s. This solution allows managing a “blank” after each response to the pilots ensure their safety on the operation frequency channel.

FROM ATC CONTROLLER

Procedure:



Power up the equipment

- Set the on / off General switch of the "ON" turning the volume button clockwise.
- In some AARD models the ON position is always in operation (setting in installation).

Recording

- Set the switch "Transmit"/Local test on “local test” (transmission not permitted).
- Connect the specific microphone to the "microphone connector input"
- Set the switch "RECord / PLAYback” to "REC" position.
- Press the button "START" (single short pulse), the yellow LED lights, and immediately speak into the microphone.

Recording stand-by:

- To stand-by, press the "PTT" joystick of the microphone. The recording is stopped (yellow LED lights off), to continue recording press again the PTT joystick of microphone (yellow LED lights on again).

End of the recording:

- At the end of the message press the button "STOP". (single short pulse) the yellow LED light goes off.
- Note: It is imperative to press the button "STOP", if not the AARD continues to record ambient noise until the end of memory (3 to 9 minutes depending on the model).
- In addition when pushing "STOP" you generates a internal logic "marker" need for the process.

Recording check:

- Set the switch "REC / PLAY" on "PLAY."
- Press the button "START" (single pulse), the LED yellow light on, the recorded message will be listened into local loudspeaker. At the end of the message recorded on the LED yellow light goes off.

Erasing:

- Set the switch "REC / PLAY" on "REC".
- Press the button "START" (single pulse) LED turned yellow, then immediately press the button "STOP". (single pulse) the LED yellow light goes off.
- This can be replaced by re-recording of another message that "overwrites" the previous one (see Recording Procedures above.)

AARD setting for operation (Transmitting validated):

Initial precautions:

- Disconnect the microphone from the transceiver or VHF radio channel if its audio line is not switched off or always connected to transmitter) to avoid noise coming from this microphone, that can be sent simultaneously by the answering (AARD) because it activates the alternate.
- Check the frequency on the transceiver (if not already).
- Check that the antenna is connected.

On the AARD:

- Set the switch "TRANSMITTER / TEST LOCAL TEST" to "Transmit".

- The launch of the message is automatic; the PTT line is droved automatically at the end of the message from aircraft.
- Checking: Press the button "START" (single pulse), the yellow LED light on, the recorded message will be transmitted on “air”. At the end of the message the PTT line that drive the transmitter will turn off.

Getting OFF of the automatic answering machine (transmitting not allowed):

On the AARD:

- Set the switch "TRANSMITTER / LOCAL TEST" to "LOCAL" (PTT transmit line sopped).

Setting ON AARD (Transmitting validated):

On the AARD:

- Set the switch "TRANSMITTER / LOCAL TEST" to "TRANSMIT".

ATIS MODE (Permanent broadcasted message in loop)

Prerequisite:

- Set the switch "TRANSMITTER / TEST LOCAL" to "LOCAL" (no transmitting).
- Set the mode on “ATIS” If this function of change of Mode “ATIS / AARD” is accessible to the user
- On some models this is fixed in position and ATIS is not accessible by the user.

Power up the equipment:

- Set the General on / off switch to “ON” by turn clockwise the volume button. (In some models the ATIS is configured in permanent operation at the installation).

Recording:

- Set the switch "Transmit/local" to "Local" (local test / transmission not permitted).
- Connect the microphone to the specific "microphone connector input.
- Set the switch "record / playback” (REC/PLAY) to "REC".
- Press the button "START" (single one short pulse). The yellow LED lights immediately and you must speak into the microphone simultaneous.

Record stand-by:

- Press the PTT joystick of the microphone (one short pulse only). The recording is stopped (yellow LED light off)
- To stop the stand-by, press again the PTT joystick microphone (one short pulse only) and the yellow LED lights again, immediately continue to talk into the microphone.

End of recording:

- At the end of the message press the button "STOP». (Single short pulse) the yellow LED light goes off.
- Note: It is imperative to press the button "STOP», if not or the device continues to record ambient noise until the end of memory (3 to 9 minutes depending on model).
- In addition to the press "STOP" generates a "end marker" in the internal logic need for the process.

Recording checking:

- Set the switch "REC / PLAY" to "REC" to reading the recording message on local loudspeaker.
- Put on the button "START» (single short pulse) yellow LED light on, the recorded message will be broadcasted on local loudspeaker.
- At the end of the recorded message, the yellow LED light turns off briefly and then turns on again to broadcast again the message in loop in a repetitive way.

Erasing the message:

- Set the switch "REC / PLAY" to "REC".
- Press the button "START" (single short pulse), the yellow LED turn off, and then immediately press the button "STOP" (single short pulse) the yellow LED light goes off. This can be replaced by re-recording of another message that "overwrites" the previous one (see Recording Procedures above.)

Activation of the ATIS (transmitting validated for normal operation):

Prerequisite:

- Remove the microphone from the transceiver or from the VHF radio system (if it does not have another audio signal connected in parallel on the audio modulation line) to prevent possible retransmit noise simultaneously with the message sent by the ATIS that activates the PTT line of the radio system..
- Check the frequency on the transceiver (if not already).
- Check that the antenna is connected.

Operation:

- Set the switch “TRANSMIT” / LOCAL TEST " to "TRANSMIT " (Order to activate a permanent PTT control) ..
- The initial launching of the message is done by put on the button "start", the message is repeated in loop (yellow LED light on).
- Note: at the end of each message you can see the LED lights ON and OFF and ON again briefly when the message is repeated again.

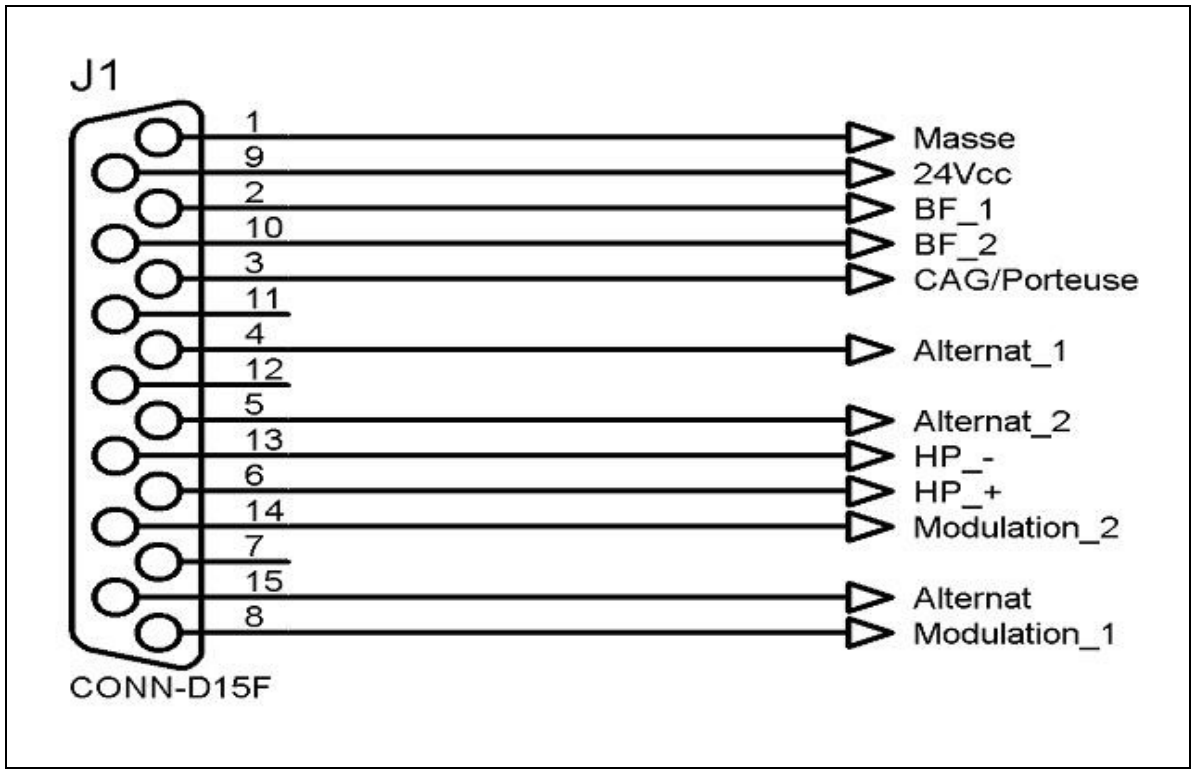
Setting off of the automatic answering machine (transmit not allowed “on air”):

- Set the switch "TRANSMIT / LOCAL TEST” to “LOCAL” (transmit sopped).

(Re) Activation of the ATIS (Emission validated):

- Set the switch "TRANSMIT / LOCAL TEST” to "TRANSMIT".

INTERCONNECTIONS



INTERCONNECTIONS

In answering mode, it is possible to detect calls using the signal detection carrier (preferably) or if it is not available the audio signal reception detection.
There is the possibility to use the PTT control by direct connection to ground or by “floating” independent contact (preferable to the alternate remote commands, to avoid ground interference currents).
The audio input and output are balanced and isolated from the ground (input or output trough a balanced audio transformer).

Pin out:

- Pins 1 and 9: Power supply goes from 10VDC to 30V DC. (1 = ground; 9 = 10VDC to + 27.5 VDC)
- Pins 2 and 10: receiving balanced audio input 0 dBm + / - 6 dB at 600 ohms (isolated from ground).
- Pin 3: + 5V input carrier detection, if this function is otherwise use the audio input (2, 10)
- Pins 4 and 5: PTT contact line (isolated contact from ground.
- Pins 13 and 6: external loudspeaker output (> 16 ohm-100 mW)
- Pins 14 and 8: audio output modulation to transmitter, 0 dBm + / - 6 dB into 100 or 600 ohms balanced line (isolated from ground).
- Pin 15: asymmetric PTT output (open collector/serial diode) connected to ground while transmit.
- Pins 11, 12 and 7: do not connect (factory internal test).

POWER SUPPLY

- It is achieved through a specific connector (reference FRB-306 DA from Hypertac / FRB manufacturer) or through the Sub "D" connector.
- The permissible voltage (DC) ranges from 10.5 VDC to 32VDC.
- The system accepts standard 12VDC (13.75 VDC) and 24V (27.5 VDC).