

# ARQ FAE IN 141A AND ALE400 EASY WITH MULTIPSK (4.5)

Updated the 7th of February 2018.

## Introduction

In this document it will be found 5 forms (snapshots of Multipsk screen with indications to the « how to operate ») which shows the basic functions of ARQ FAE in 141A and ALE400 modes. Auxiliary options are neglected (descriptions will be found in the manual) . It is based on ALE400 and applicable to 141A (except that in 141A, there is no need to manage the Slave/Master mode, the AFC and the RS ID detection).

## Notes about the help in Multipsk:

- \* for the contextual help, click on the right button of the mouse, with the focus over the mode button "ALE400", for example).
- \* use also the button hints (wait a fraction of second over a button).

## **List of the forms** *These ones (except the first) are a bit old, but still applicable*

- Simplest way to use ARQ FAE in « Non selective QSO »
- Non selective QSO in ARQ FAE
- Selective call in ARQ FAE
- APRS in FAE
- Mail in ARQ FAE

## **Differences between 141A and ALE400**

The ALE400 system has exactly the same functions as the ones of the 141A of Multipsk except that:

- \* the bandwidth is 400 Hz instead of 2000 Hz as in 141A (so ALE400 can be transmitted anywhere where 500 Hz digital modes are authorized),
- \* the modulation speed (50 bauds instead of 125 bauds) and consequently the text throughput are 2.5 slower,
- \* no fix frequency (as in MFSK16...), the automatic tuning being able to be done thanks to the RS/ID transmission,
- \* the S/N is 5 dB better: - 11.5 dB (- 13.5 dB with many repetitions) for ARQ FAE.

## **ARQ FAE beacon (Multipsk 4.11)**

It is subject to a specific « easy » help file which name is «The\_ARQ\_FAE\_beacon\_easy\_with\_Multipsk.pdf »

MULTIPSK V. 4.33 RX/TX screen Patrick LINDECKER (F6CTE) 4, avenue du Square BURES-SUR-YVETTE 91440 FRANCE

### SIMPLEST WAY TO USE ARQ FAE IN "Non selective QSO in ARQ FAE"

Configuration Adjustments Opti

TCP/IP SdR spectrum Transceiver Country/Loc World QSO Mail Tune Beacon ID CPU Level: 5%

Where? Number? Search Look-up DXK DXView Pathfinder Where? -->PSKReporter Options are in the logbook

2 Call Name Freq Mhz Mode Ur RST My RST R S Locator QTH Notes Clear Logbook QSO->Log

▼ ALE41 599 599 Cluster L A DXKeeper Cont F

MESSAGE ID TX Text

Call ID RS ID Video ID QRGs RX RS ID RX Call ID Mode Slave Master Mail CQ End

TX: ALE400 MODE RX: ALE400 Aux. functions Answer

TX frequency RX frequency Fr. difference FRM: Photo Transmit 0 %

1624.8 Hz 1624.8 Hz 0.0 Hz His: B?? S?? AFC Options JPG file selection Stop TX Photo display

200 500 1000 1500 2000 2500 Spectrum Waterfall High

Band KHz (P450=+) Rewind

2.5 3.3 4.3

PAT TEST C'est en 1 HEURE NORMAN 3 NORMANDI Normandie Anglais RX time + callsign + mode Color

Set 2 Sets File Macros Clear Repeat UTC NORMANDIE Louise Anglais co CARAC HELL 10 AGC Grey

Once connected, you can transmit a small JPG photo (<2 kbytes). You must first select the JPG file, before transmitting it. The transmission and the reception is automatic.

In "message mode", the message is prepared and then sent when it is ready (with the "Send" button or <Esc> key or <Alt> key) The "Transmission on <Enter>" option is ignored.

If not in "message mode", the message is sent as and when it is written.

Message mode Send 07/02/18 23:09:00 UTC SpotC. Off Commander

# Non-selective QSO in ARQ FAE

Help TCP/IP Mdem Oscillo Spectrum Transceiver Country/Lo... PSK31 63 125 PSKFEC31 PSK10 MT63  
 QPSK31 63 125 CHIP64/128 PSK63F DIGISSTV  
 PSKAM10 31 50 PSK220F CW/CCW(COOK-FSK)  
 PACKET+APRS Pactor1 1382 ASCII  
 RTTY 45 50+SYNOPSIS 75 100 GMDSS DominoF  
 Amtor FEC-Navtex Amtor ARQ SITOR A DominoEX  
 THROBX THROB MFSK16 MFSK8 Contestia  
 PAX/PAX2 DTMF 141A ALE400 OLIVIA RTTYM  
 FM HELL PSK H FELD HELL HELL 80 VOICE  
 Analysis Binaural HF FAX SSTV

Call ? Name Freq Mhz Mode Ur RST M  
 141A 599 599

Modes RS ID Video ID QRGs RS ID detection Sound card Mode  
 TX: ALE400 MODE RX: ALE400

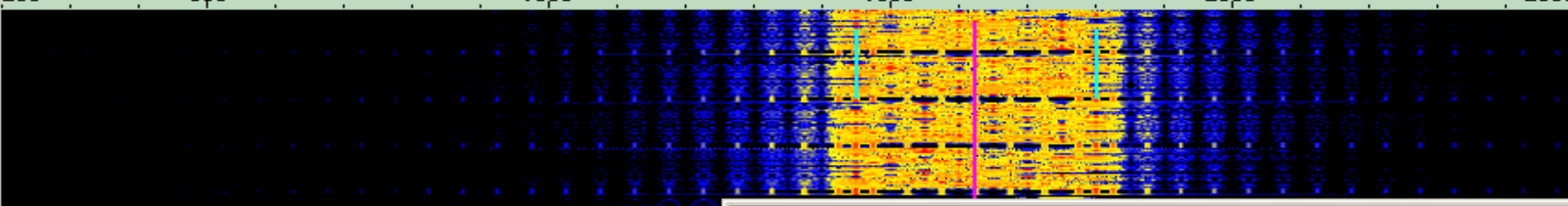
TX frequency RX fr  
 1625.0 Hz 1624.2 Hz

200 500 1000 1500 2000 2500

Spectrum Waterfall High

Band KHz (P450=+)  
 2.5 3.3 4.3

Color 10 AGC Grey



CQ CQ 500 "8" CALL NORMAN  
 File MACROS Clear Repeat UTC/GMT NORMANDIE

You type in this window

CQ DE F6CTE

On connection  
 Note: it rings on connection

[End of TX] ARQ FAE CQ  
 F6CTE DE F9XYZ  
 [Connection done with F9XYZ] Louise and Philip plan to visit Washin  
 overland trip to the airplane. On the other hand, she feels discomfort  
 And renting a car is out of the question since they don't have an int

Received text

Note: the protocol being full-duplex, there is no need to wait his/her turn for typing.

Auxiliary functions for the 141A mode (AMD and ARQ FAE messages and answer to open net calls)

This panel opens with the button "Aux. functions" on the RX/TX screen. Help S/N max=30 dB Addressee:  
 Management of calls Add this call to the list: Call See the file Lists up-to-date CALL10  
 AMD message to send: Send End in THIS...  
 Open nets on which you want an automatic answer: QRZ HFL Mail (RX/TX)  
 Connection done with F9XYZ Erase  
 Selective call in ARQ FAE Call-> CALL10 End From: To:  
 APRS position transmission in FAE mode APRS RX authorized APRS transmission APRS window  
 0% Authorized File to send + folder Send mail (+ file) Attached file  
 Link established Erase Reset link or connection attempt  
 ARQ FAE mail to send:  
 ARQ FAE SMTP server (IP: 127.0.0.1 / Port 25)  
 Outlook Express Disconnection Reset transmission  
 To authorize Multipsk (as a SMTP server) to import the mails from Outlook Express (or equivalent), click on the button "Outlook Express".  
 To forbid data exchange, click on "Disconnection".

Snapshot Print Fonts Clear Double Height 76 STOP 31/10/07 21:07:17 UTC SpotC. Off Commander

Démarrer C:\RXTXMULTIPSK... Gestionnaire des t... ARQ FAE S\_N.bmp... Microsoft Word 2 MULTIPSK 3 MULTIPSK 22:07



# SELECTIVE CALL IN ARQ FAE

Help TCP/IP Mdem Oscillo Spectrum Transceiver Country

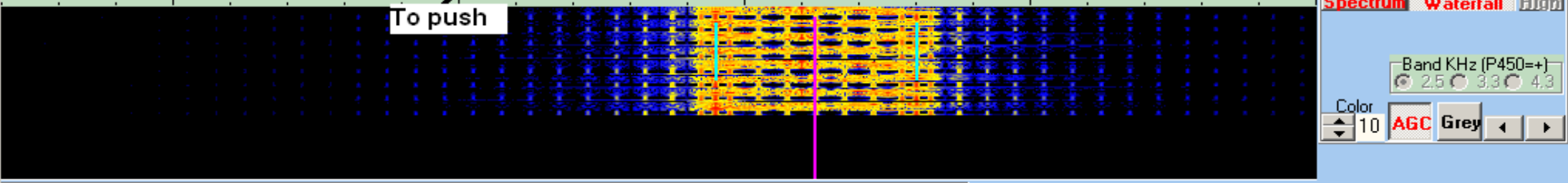
About Personal CPU Sampling freq PC (>=) MHz Mixer Level 19% Over Panoramic: PSK31 63 125 PSKFEC31 PSK10 MT63  
 QPSK31 63 125 CHIP64/128 PSK63F DIGISSTV  
 PSKAM10 31 50 PSK220F CW/CCW(OOK-FSK)  
 PACKET+APRS Pactor1 1382 ASCII  
 RTTY 45 50+SYNOPSIS 75 100 GMDSS DominoF  
 FEC-Navtex Amtor ARQ SITOR A DominoEX  
 THROBX THROB MFSK16 MFSK8 Contestia  
 PAX/PAX2 DTMF 141A ALE400 OLIVIA RTTYM  
 FELD HELL HELL 80 VOICE  
 Filters Analysis Binaural HF FAX SSTV

To push if you answer To check if you answer ? QTH Push for ARQ FAE Push to end

Modes RS ID Video ID ORGs RS ID detection Sound card Mode ARQ FAE CQ End Mail TX  
 TX: ALE400 To check if you call Aux. functions Slave Master Unproto Answer PSE LQA

TX frequency RX frequency Fr. difference My: B?? S?? FRM: F9XYZ  
 1625.0 Hz 1624.5 Hz 0.5 Hz B30 S30 AFC Options Answer to FHM Stop End

The answer is automatic if the other Ham is called.



CQ	CQ	500 "8"	CALL	NORMAN	3 NORMANDI	Normandie	Anglais
File	MACROS	Clear	Repeat	UTC/GMT	NORMANDIE	Louise	Anglais co

Ham to call

trip to the airplane. On the other hand, she feels discomfort of on  
 And renting a car is out of the question since they don't have an  
 one of her brainstorm...

are getting advice from a travel agent on the best way to go. Lou  
 another on the bus or the train.  
 And renting a car is out of the question since they don't have an

[End of TX] ARQ FAE selective call  
 F6CTE DE F9XYZ  
 [Connection done with F9XYZ] Test message to F6CTE.

Auxiliary functions for the 141A mode (AMD and ARQ FAE messages and answer to open net calls)

This panel opens with the button "Aux. functions" on the RX/TX screen. Help S/N max=-1 db Adressees: F9XYZ

Management of calls Add this call to the list: F9XYZ See the file Lists up-to-date

AMD message to send: HERE IS AN AMD TEST MESSAGE (90 CHARACTERS MAXIMUM IN CAPITAL). Send End in THIS... IS WAS

Open nets on which you want an automatic answer: QRZ HFL Mail (RX/TX)

Push to call Connection done with F9XYZ Push to end Erase

Selective call in ARQ FAE Call-> F9XYZ End From: To:

APRS position transmission in FAE mode APRS RX authorized APRS transmission APRS window

0% Authorized File to send + folder Send mail (+ file) Attached file  
 Link established Erase Reset link or connection attempt

ARQ FAE mail to send:

ARQ FAE SMTP server (IP: 127.0.0.1 / Port 25)

Outlook Express Disconnection Reset transmission

To authorize Multipsk (as a SMTP server) to import the mails from Outlook Express (or equivalent), click on the button "Outlook Express". To forbid data exchange, click on "Disconnection".

**Building of the APRS frame you wish to transmit**  
 The frame correspond to a fixed station (QRA) or to a GPS station.  
 Data with their button non-clicked will not be sent  
 Your call must be written in the field "Sender" in the RX/TX window.  
 The APRS destination is "APZMU3" (experimental APRS adress)

**Your position and possible weather information**

Your latitude/longitude  
 d-m.c (N/S) d-m.c (W/E)  
 48-41.98N 002-09.35E

Frame type  
 "Position" (+ altitude)  "Weather" (+ position)  
 "GPS position"  "GPS position + altitude"

**Pieces of information for "Position" frame ("Comment" also for GPS)**

Altitude   feet (0 to 999999)  m (0 to 304799)  
 Comment

**Pieces of information for "Weather" frame (not for GPS)**

Wind direction  degrees (0 to 359)  
 Wind speed   knots (0 to 999)  km/h (0 to 999)  
 Gust speed   mph (0 to 999)  km/h (0 to 999)  
 Temperature   F (-99 to 999)  C (-72 to 537)  
 Rainfall (24h)   1/100 inch (0 to 999)  mm (0 to 253)  
 Snowfall (24h)   inch (0 to 999)  cm (0 to 999)  
 Humidity  % (1 to 100)  
 Pressure  1/10 mbar (hPa) (0 to 99999)

Data checking   
   
   
 Beacon with interval, in minutes, of:

Push to transmit your position

Transmission window (to fill with your information)

**FAE APRS frames decoding/coding**

The pieces of data are saved in the file APRS.SER

Reduced Maps Map definition Clear the map Auto Units Display Ring Help GPS Off Tra

01/11/07 00:20:35 UTC de F6CTE

GPS COM port

Stations in chronological order Display all  
 F6CTE n: 1 d= 0 km UTC time  
 48^41.98'N| Long=002^09.35'E|Precis=0.005'|H  
 Az.=0deg|Comment:APRS test message| Frame:/0  
 APRS test message|

Stations in alphabetical order  
 Display hour

X=23 Y=125 Lat=49^15.30' N Long=005^10.20' W S. X=1042 km E. Y=1018 km

de F6CTE Time/date 00:20 UTC the 1st  
 Lat. 48^41.98'N Long. 002^09.35'E Prec. 0.005'  
 "Icône" House (HF)  
 Direction (deg.)  
 Speed (km/h)  
 Gust (km/h)  
 Temperature (C) Pressure (mBar)  
 Rainfall during last hour (mm)  
 Rainfall during last 24 hours (mm)  
 Rainfall since midnight (mm)  
 Snowfall during last 24 hours (cm)  
 Humidity (%) Luminosity (Watt/m2)  
 APRS test message

Other information  
 Distance=0 km / Az.=0deg

Reception window

Management of Conn

AMD message to send:  End in THIS...

Open nets on which you  Push to authorize automatic display of received APRS positions

Selective call in ARQ FAE Call-> F9XYZ End From: To: Erase

APRS position transmission in FAE mode

0%   + folder   Attached file

ARQ FAE mail to send:

Démarrer C:\\_ALE Gestionnaire de 01:23

Push to authorize automatic display of received APRS positions

To open the APRS window, for position transmission

**Mail with or without attached file in ARQ FAE**

Help TCP/IP Mdem Oscillo Spectrum Transceiver Coun... KFEC31 PSK10 MT63

About Personal CPU Sampling freq PC (>=) MHz Mixer Level Over Panoramic: PSK CW RTTY

Licence Clocks 16 bits Identifiers To check if you answer 18 %

To push if you answer ide Ur Notes Opt. ? Clear Logbook Record

0 14 599 599 Cluster L A DXKeeper Cont F

Modes RS ID Video ID QRGs RS ID detection Sound card Mode Slave Master ARQ FAE CQ End Mail TX

TX: ALE400 MODE RX: ALE400 Aux. functions Unproto Answer PSE LQA

TX frequency RX To check if you send the mail 1625.0 Hz 16

200 500 1000 1500 2000 2500 Spectrum Waterfall High

AFC Options Answer to FRM Stop End QRZ

Band KHz (P450=+) 2.5 3.3 4.3

Color 10 AGC Grey

CQ CQ 500 "8" CALL NORM Auxiliary functions for the 141A mode (AMD and ARQ)

File MACROS Clear Repeat UTC/GMT NORMAN

The mails sent and received are stored in the mailbox.

Select here the Ham who is going to receive your mail

Call See the file Lists up-to-date Addressee: F9XYZ

AMD message to send: Push to send the message (+ the file) Send End in THIS... IS WAS

Open nets on which you want an automatic answer: Mail (RX/TX)

Transmission of the message in progress Erase

Selective call in ARQ FAE Call-> F9XYZ End From: To attach the file

APRS position transmission in FAE mode Selection of the file APRS transmission APRS window

TX 28 % -> 6 mn 36 s more Authorized File to send + folder Send mail (+ file) Attached file

ARQ FAE mail to send: Link established BtnHorizontal.bmp Erase Reset link or connection attempt

From F6CTE, test message transferred with the file "BtnHorizontal.bmp"

Louise and Philip plan to visit Washington, DC. They are getting advice from a scenic overland trip to the airplane. On the other hand, she feels discomfort And renting a car is out of the question since they don't have an international take the bus, Nancy turns up and soon has one of her brainstorms...

File to send

Message to send

Must not be used except if the sender wants to interrupt the transmission for any reason.