



Crystalfontz

CFA835

Command Appendix



Hardware Version: v2.0

Firmware Version: v1.6

Release: 2022-02-11

Crystalfontz America, Inc.

12412 East Saltese Avenue
Spokane Valley, WA 99216-0357

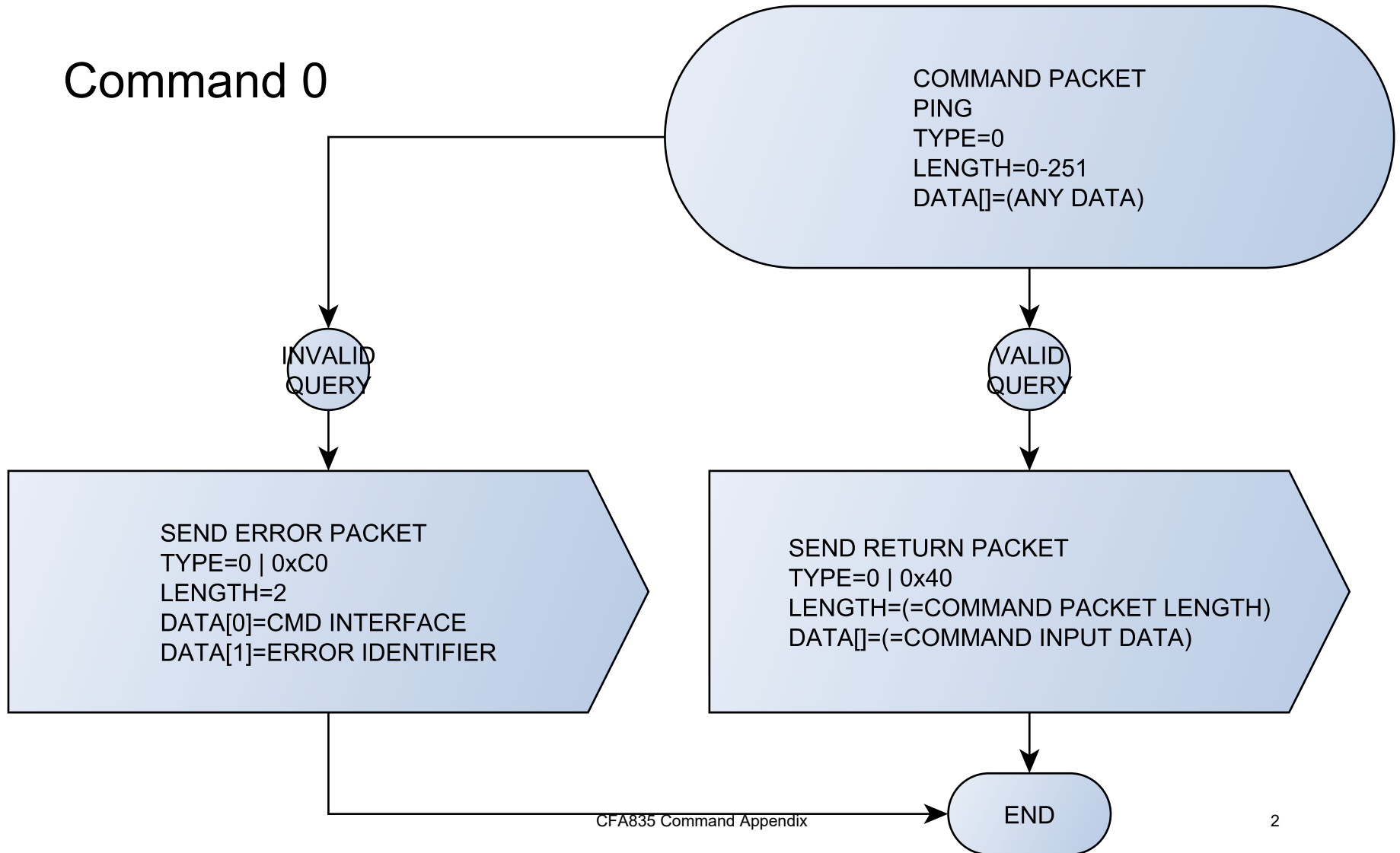
Phone: 888-206-9720

Fax: 509-892-1203

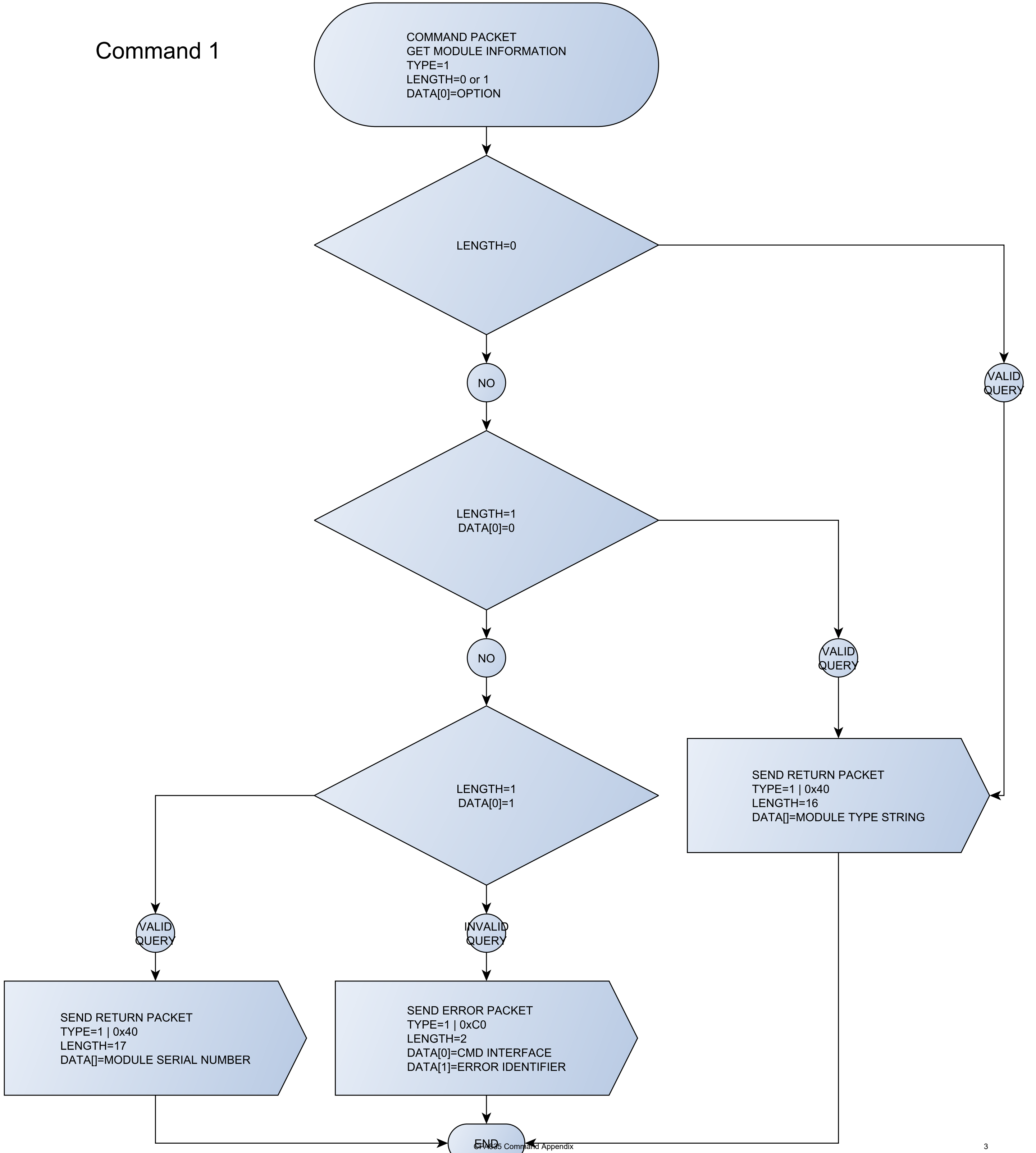
Email: support@crystalfontz.com

URL: www.crystalfontz.com

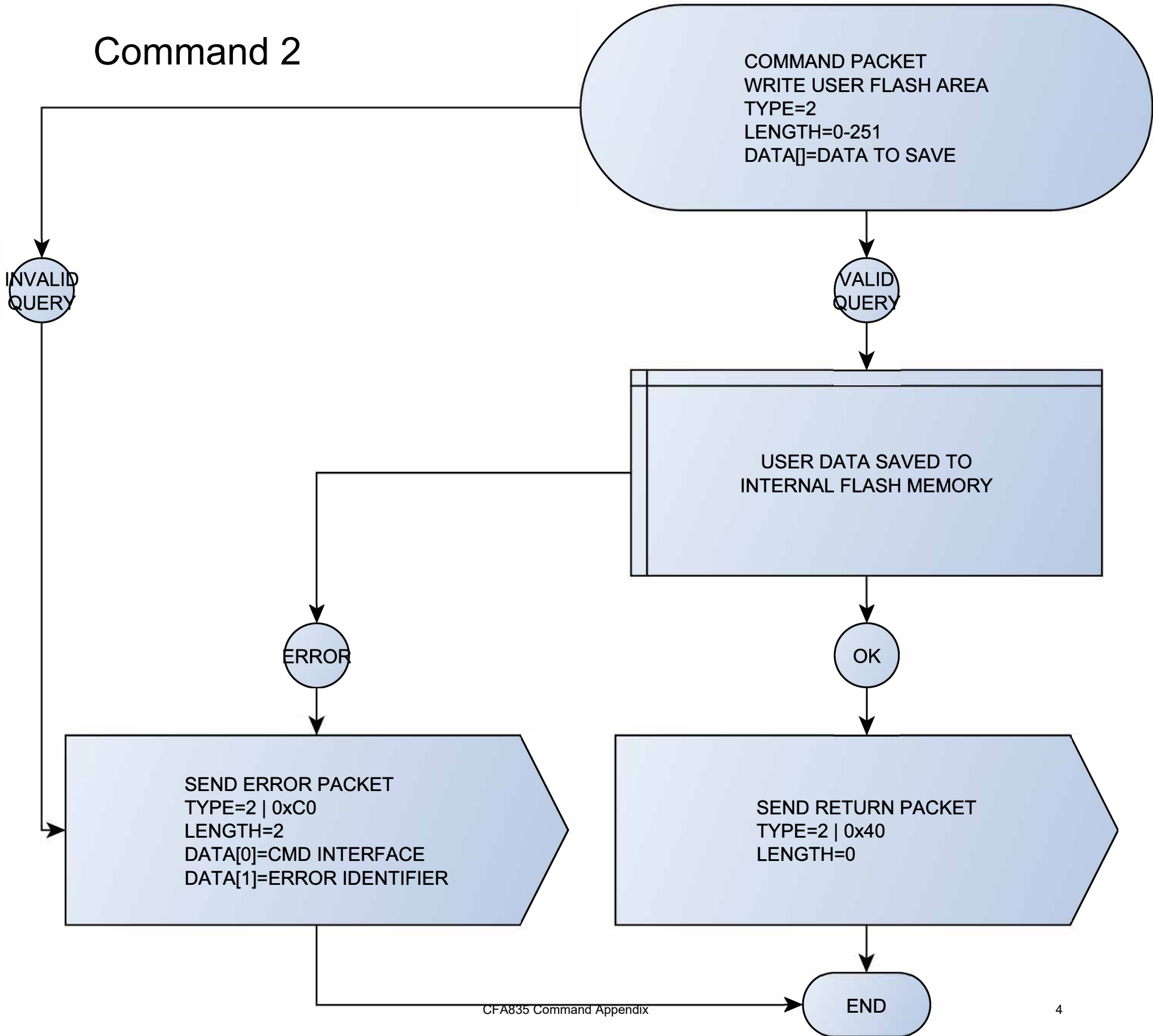
Command 0



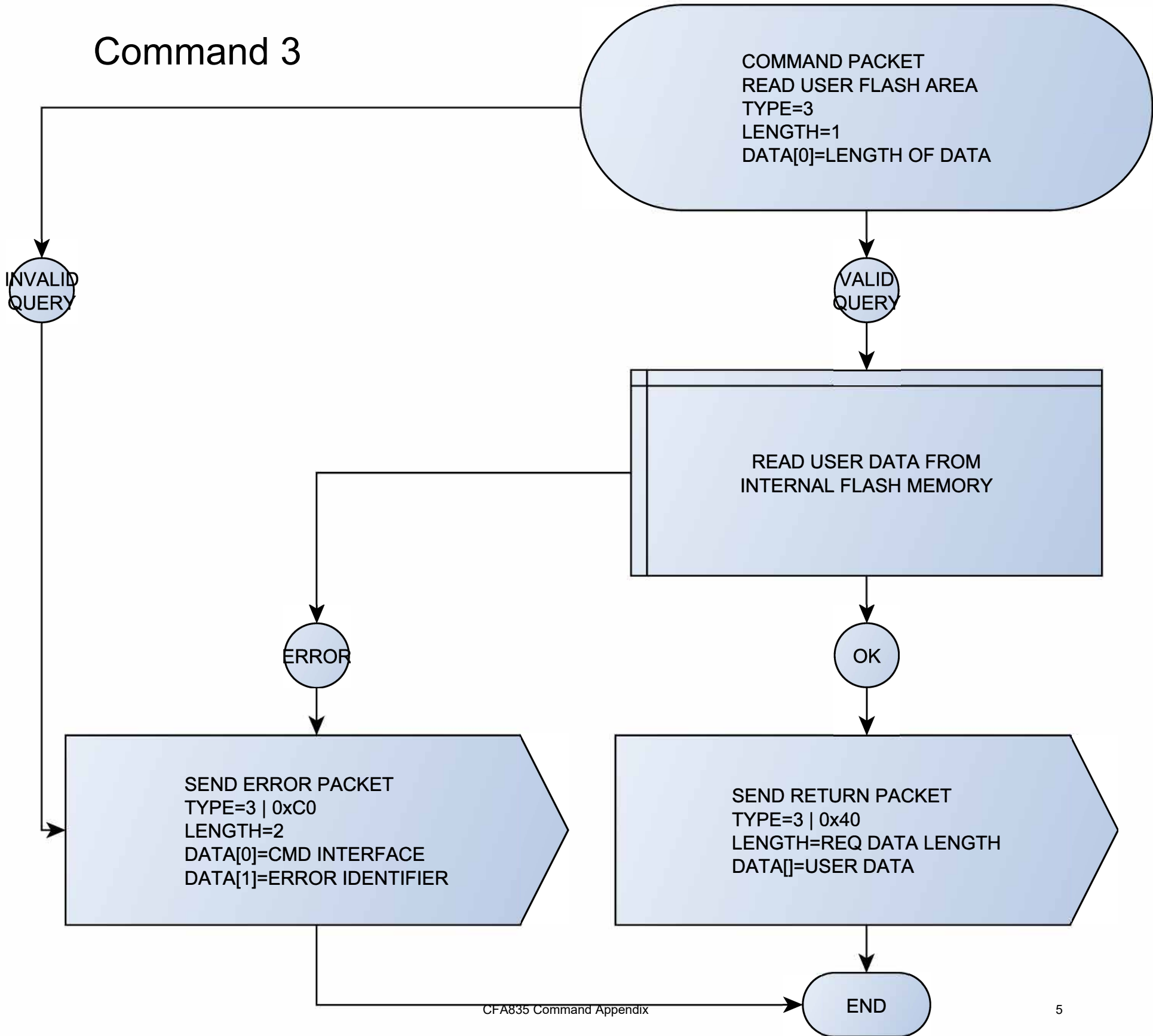
Command 1



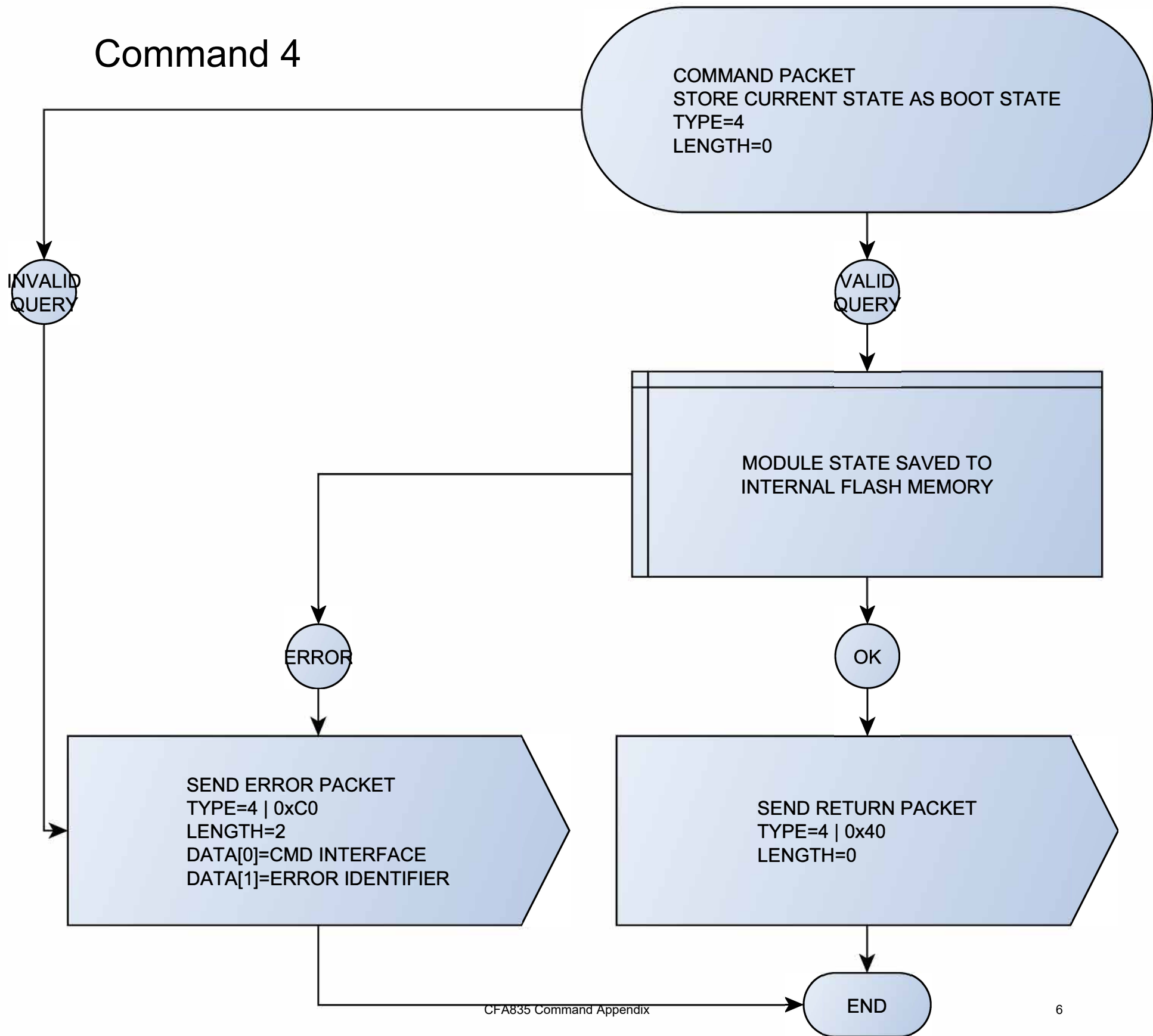
Command 2

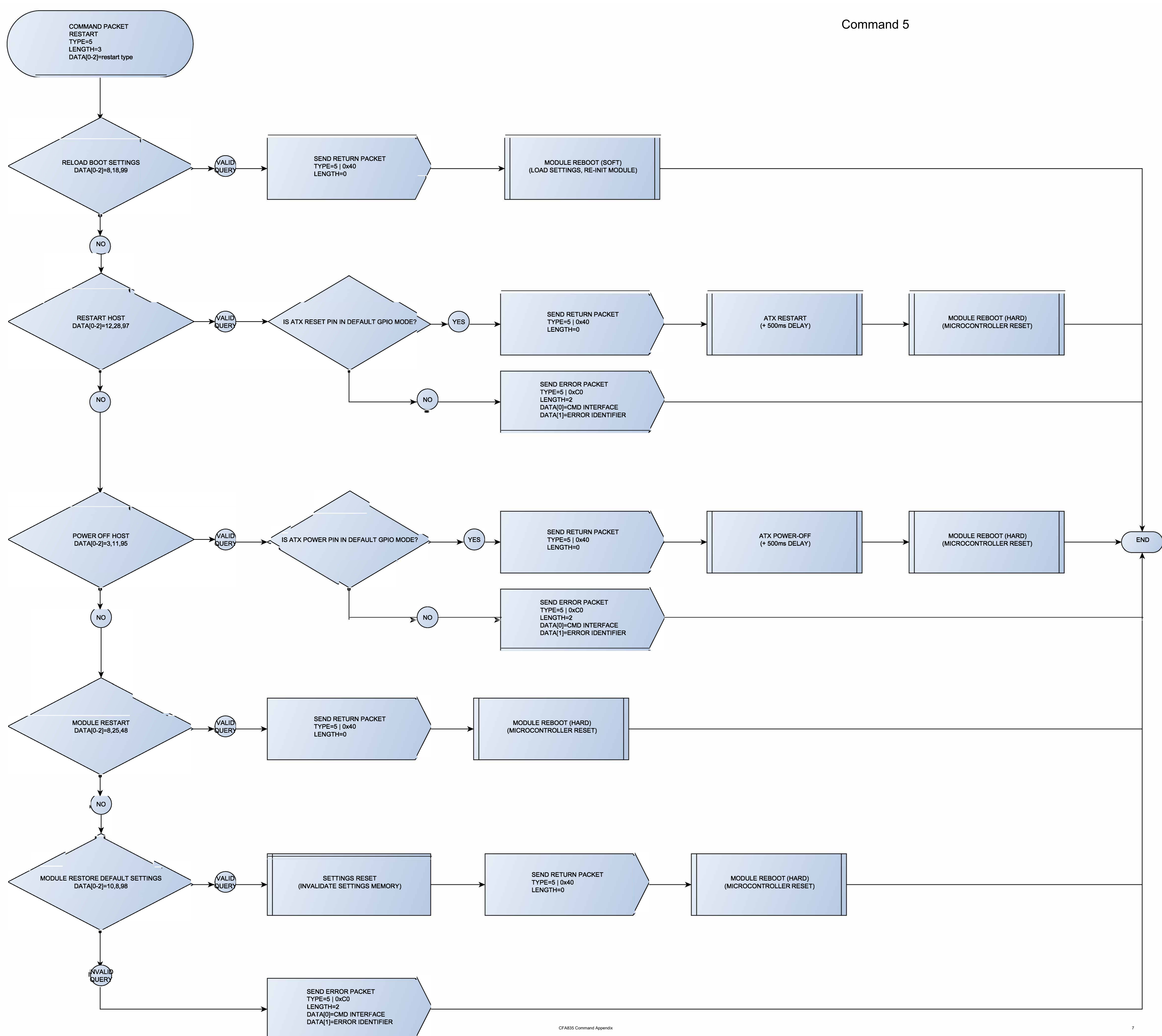


Command 3

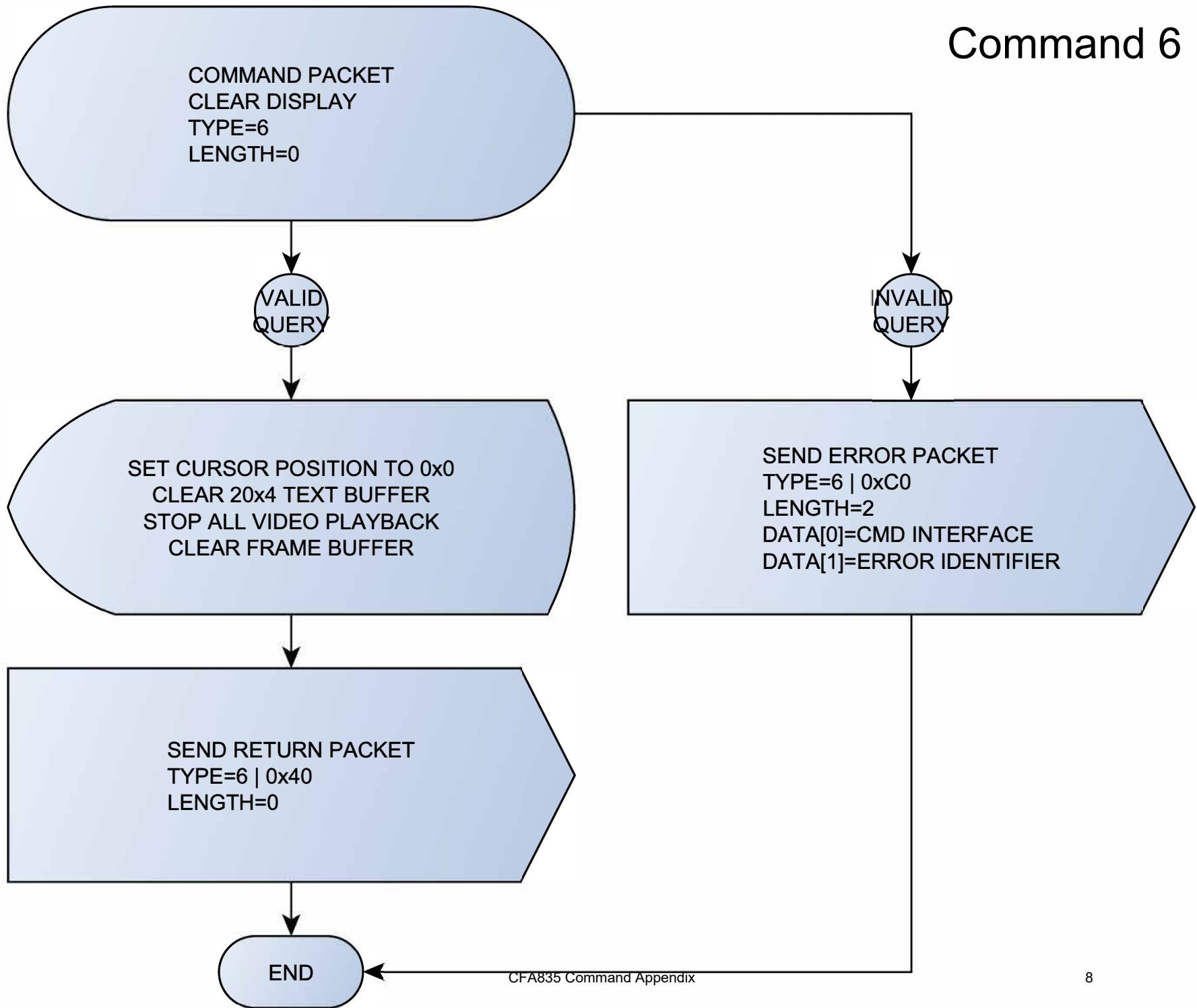


Command 4

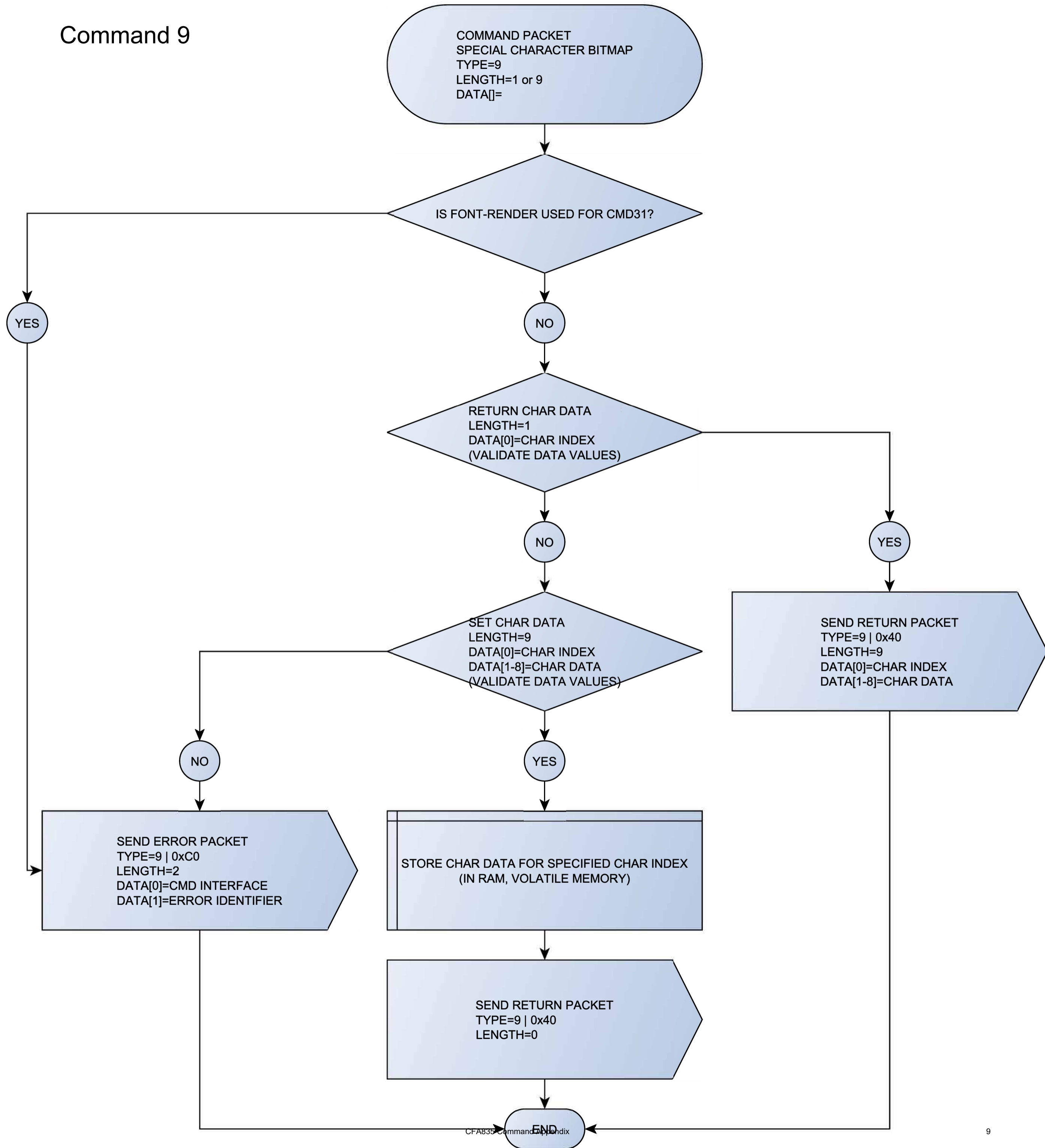




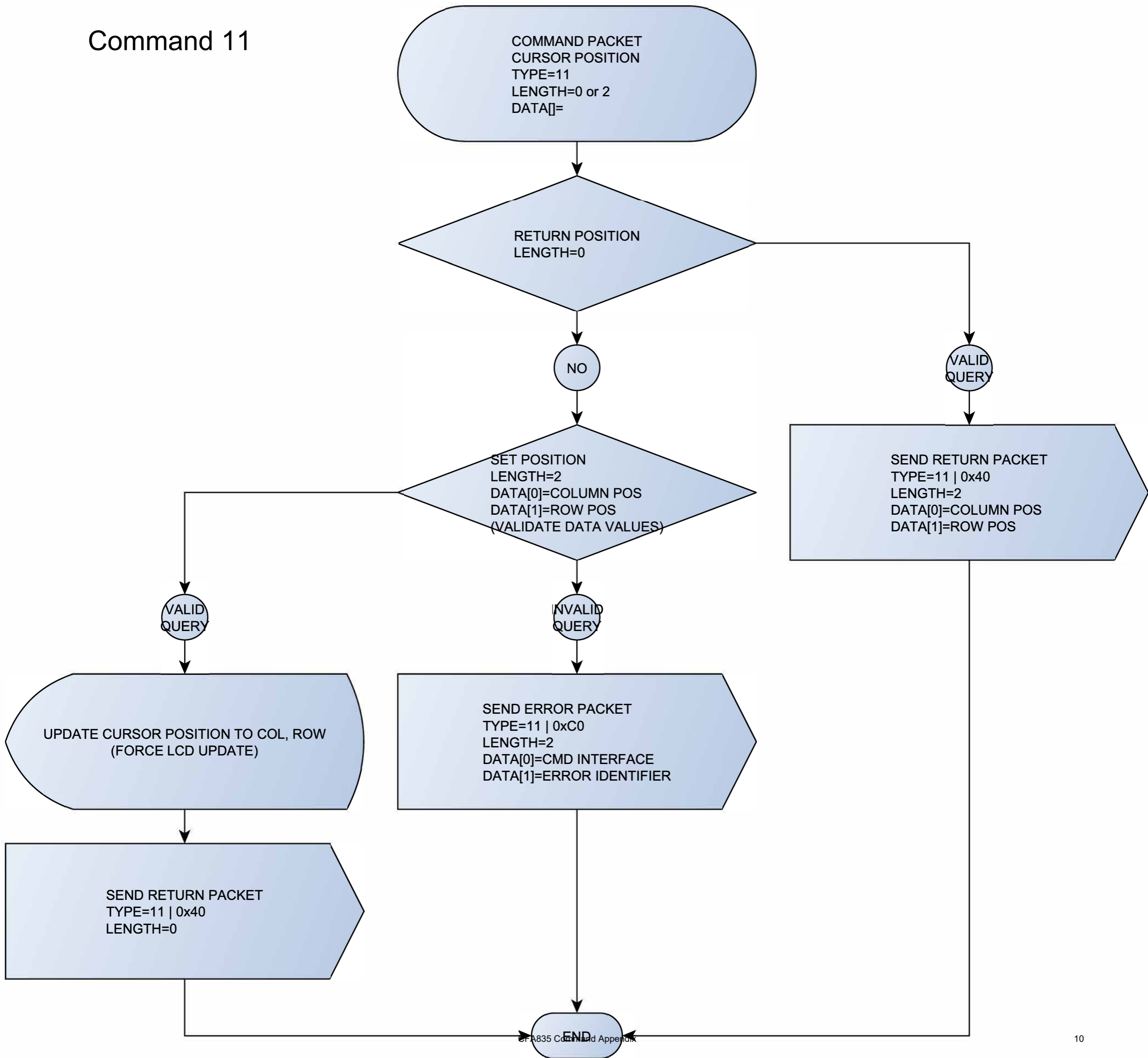
Command 6



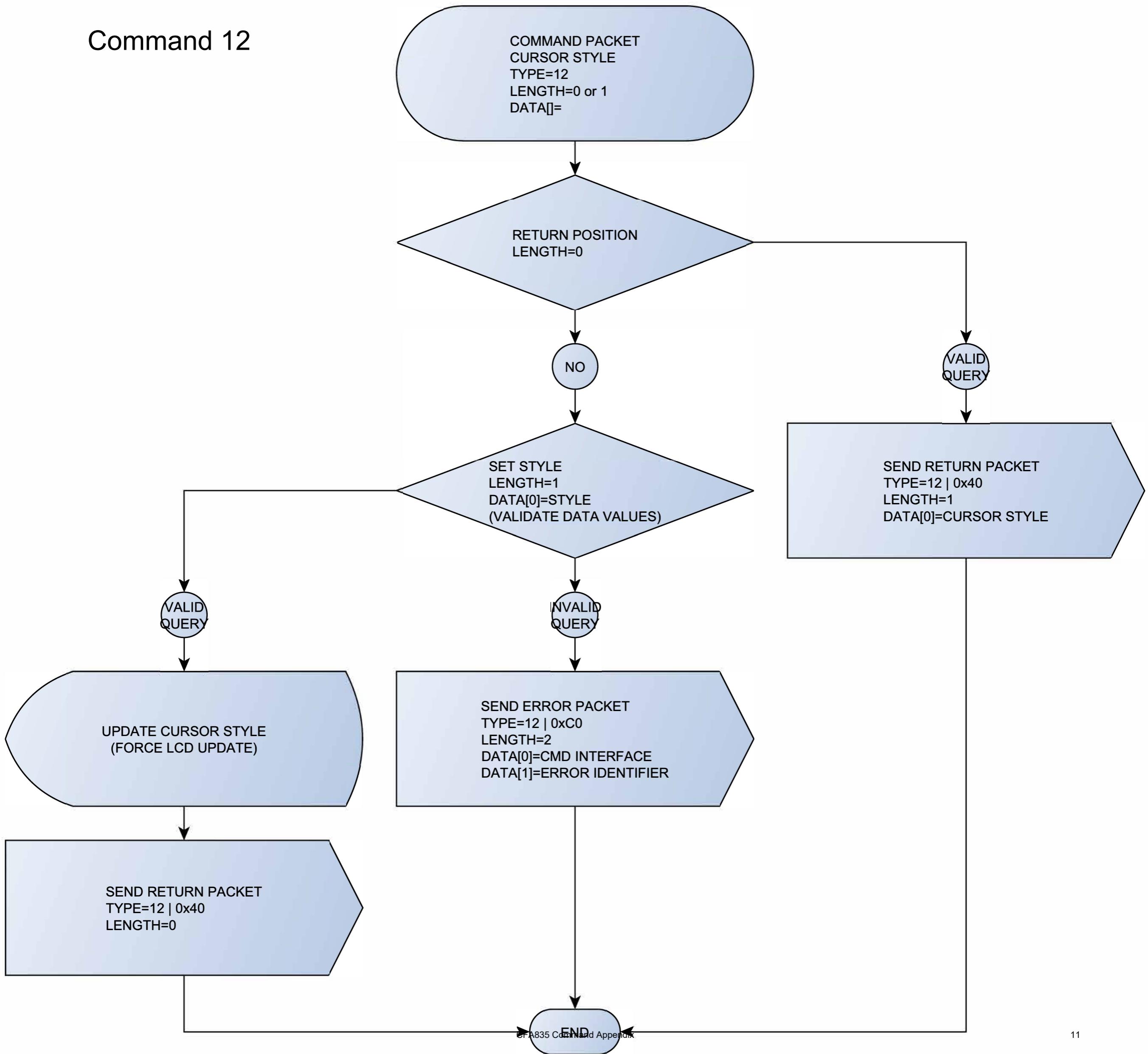
Command 9



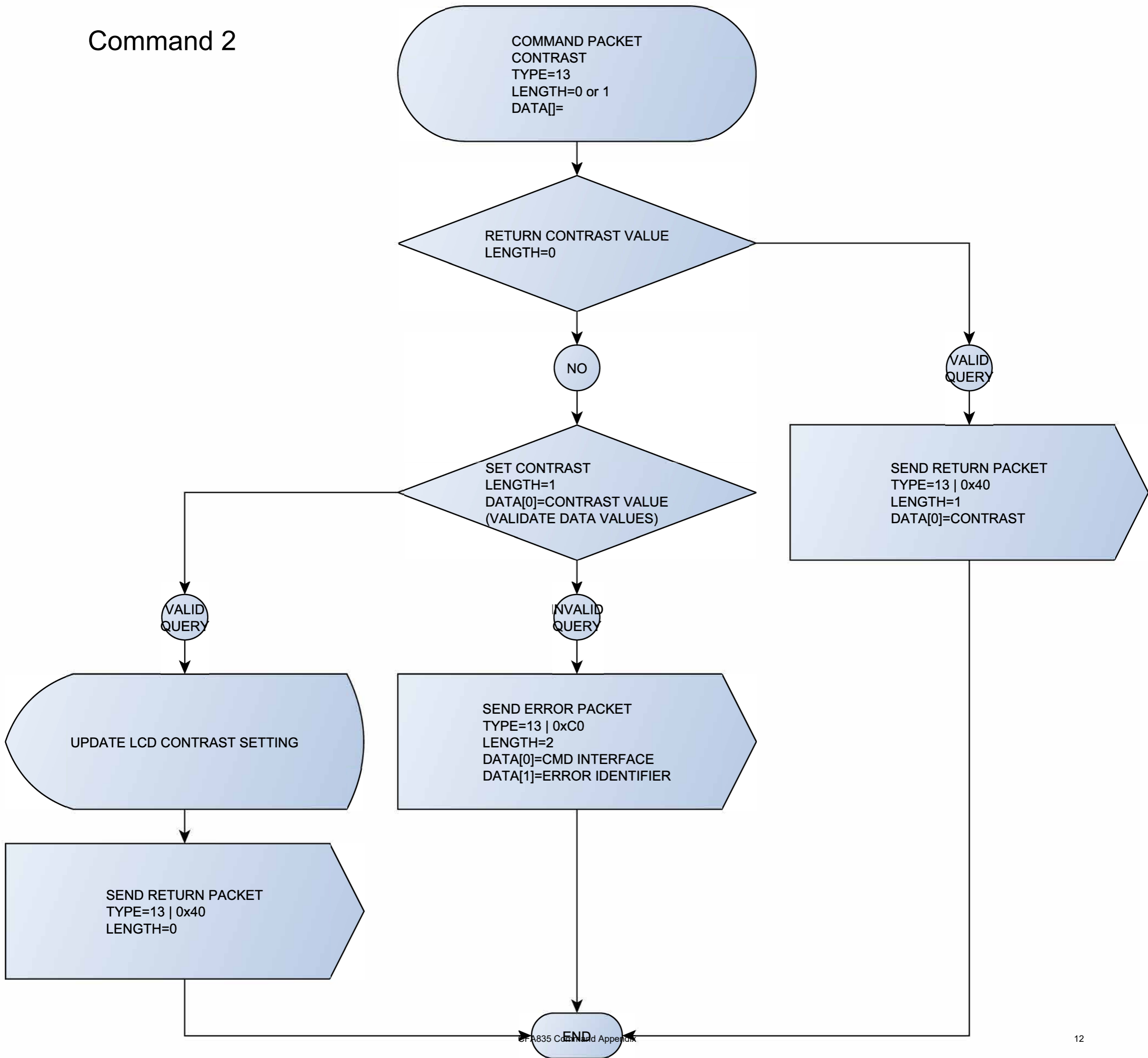
Command 11



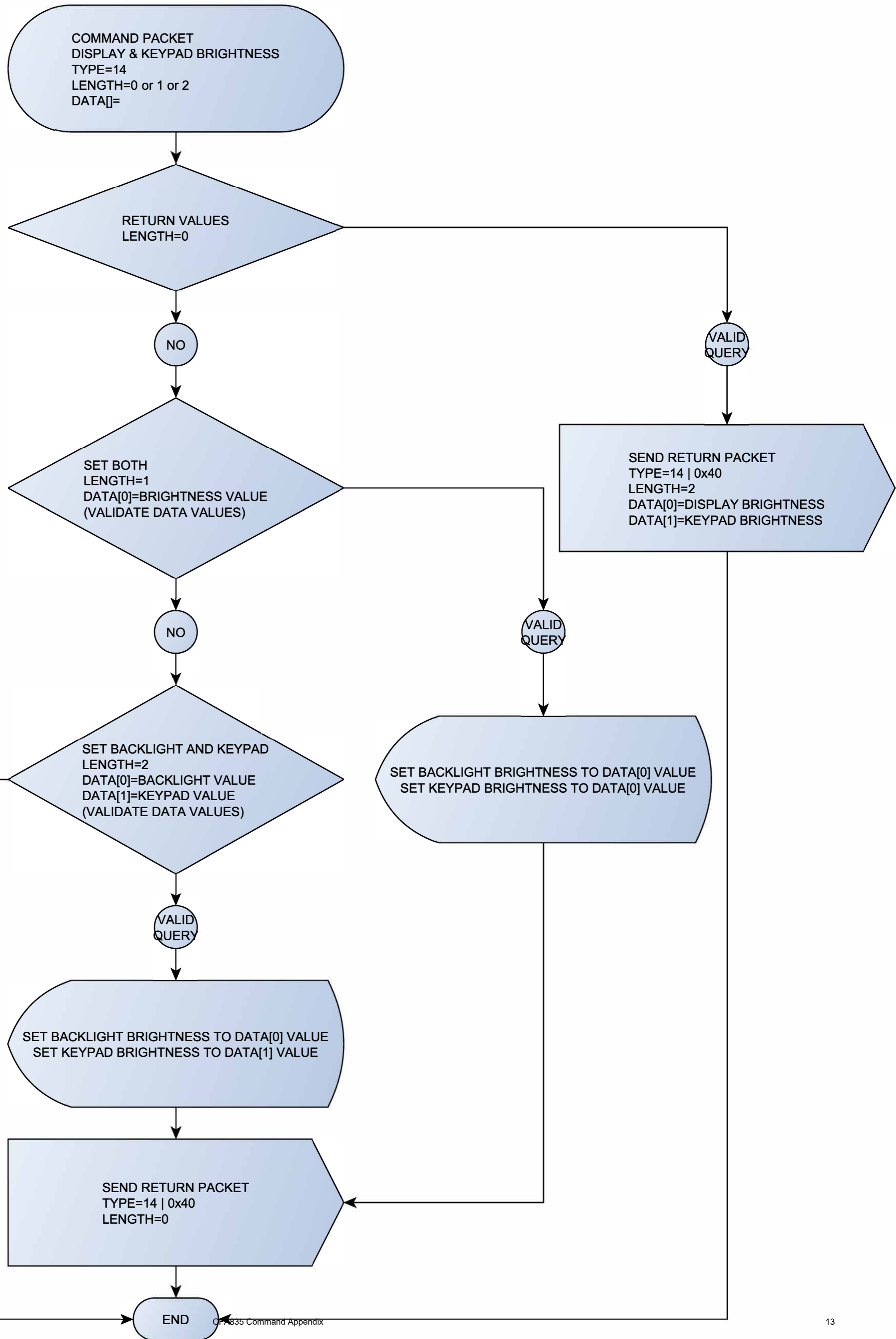
Command 12



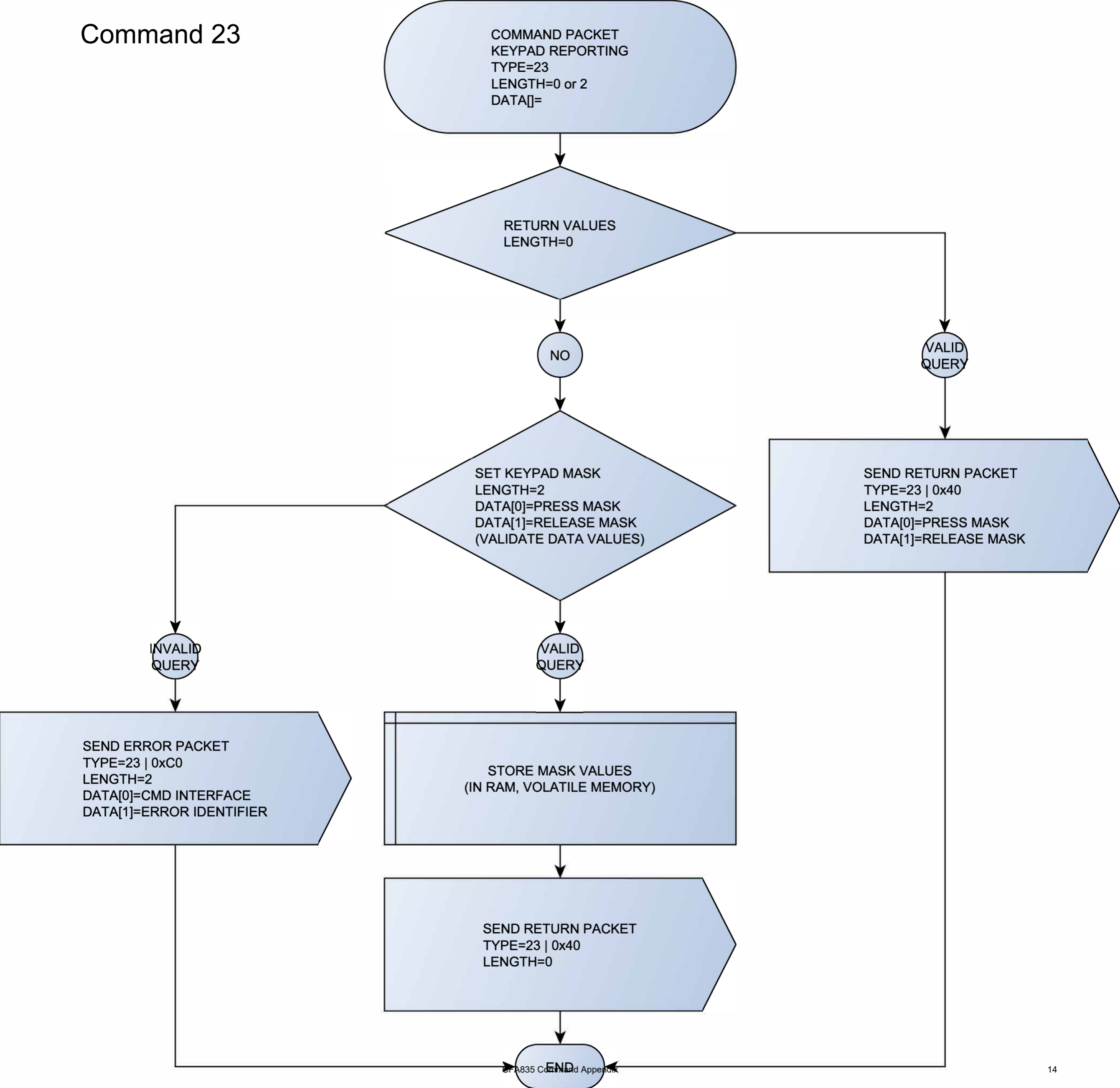
Command 2



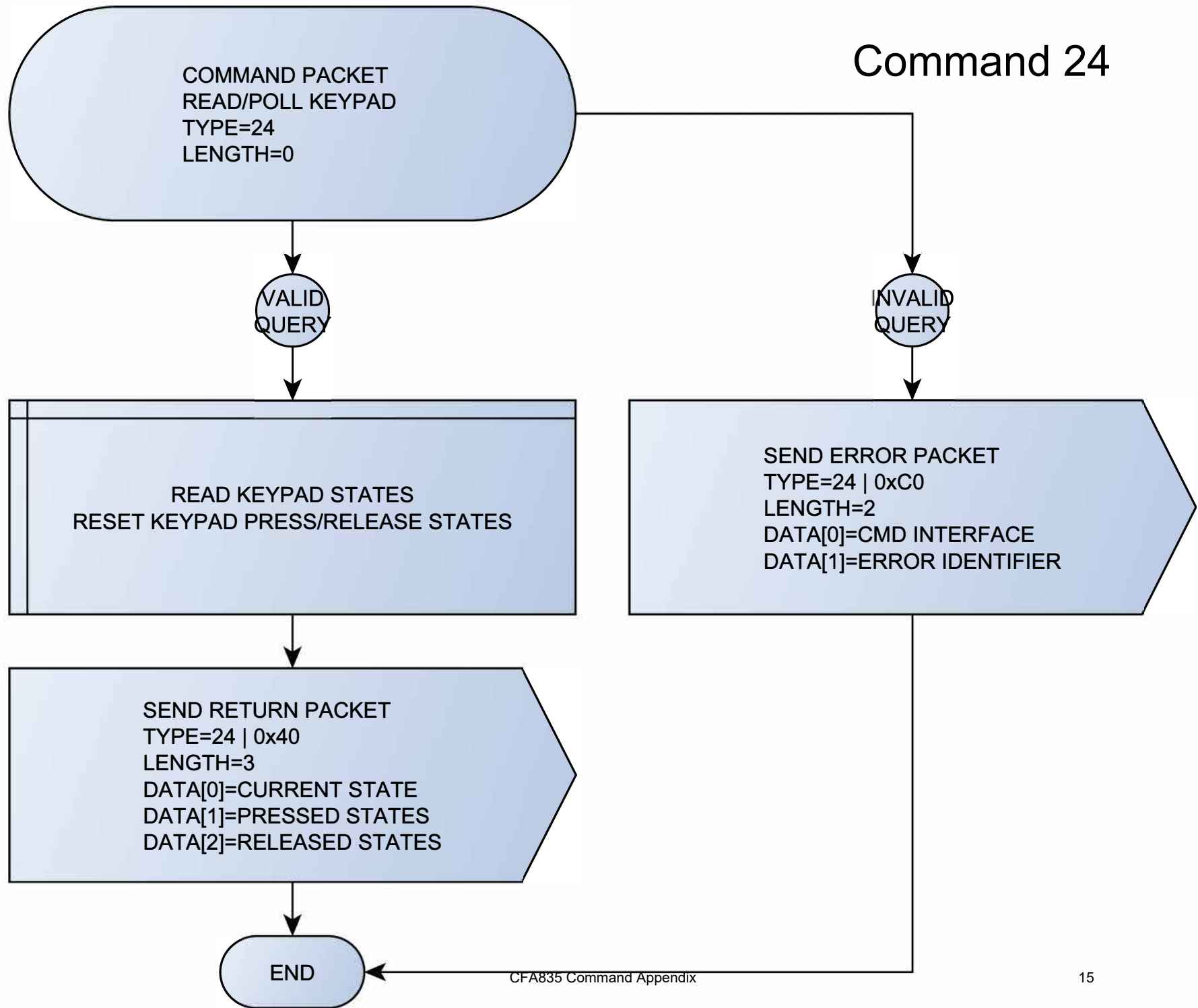
Command 14



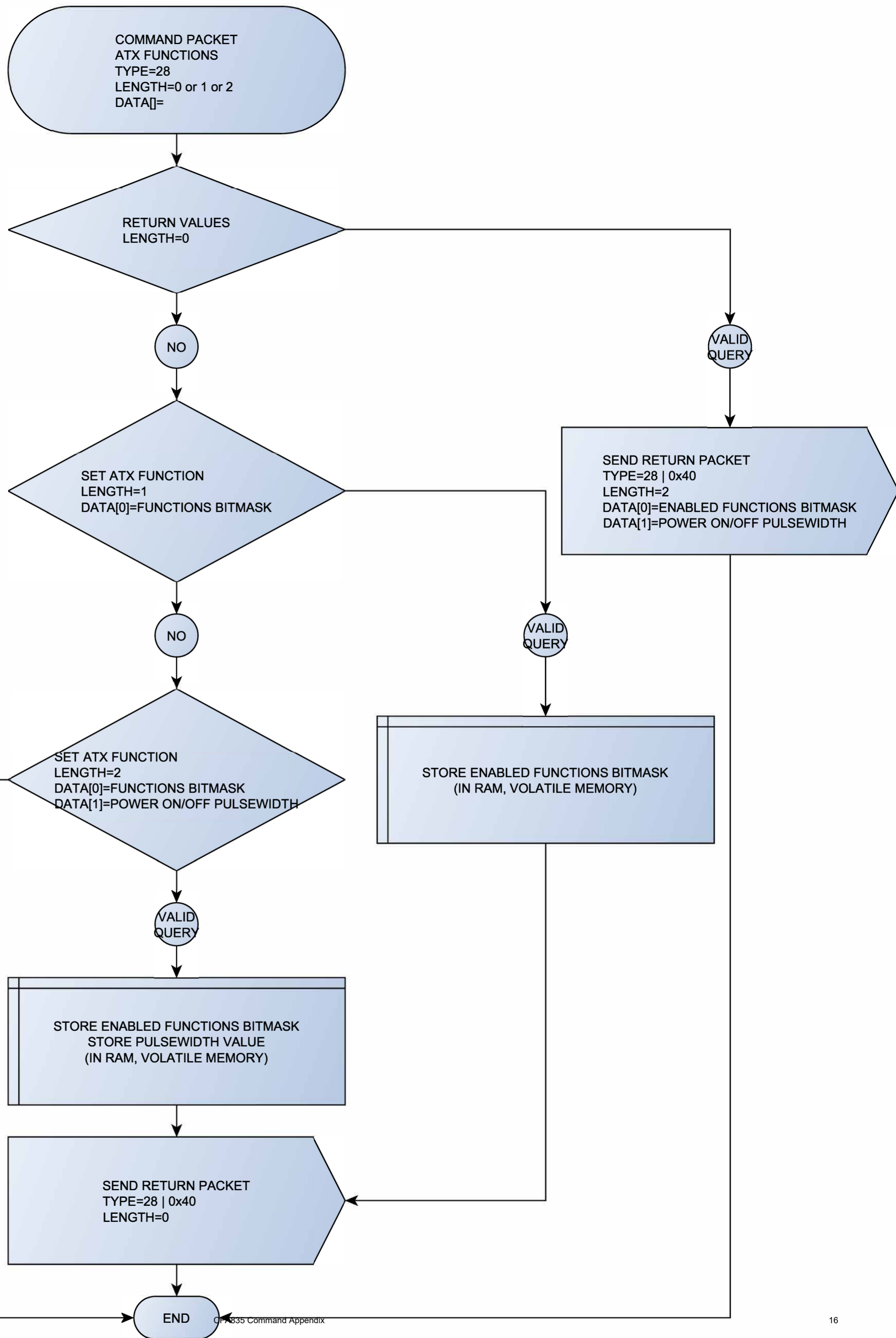
Command 23



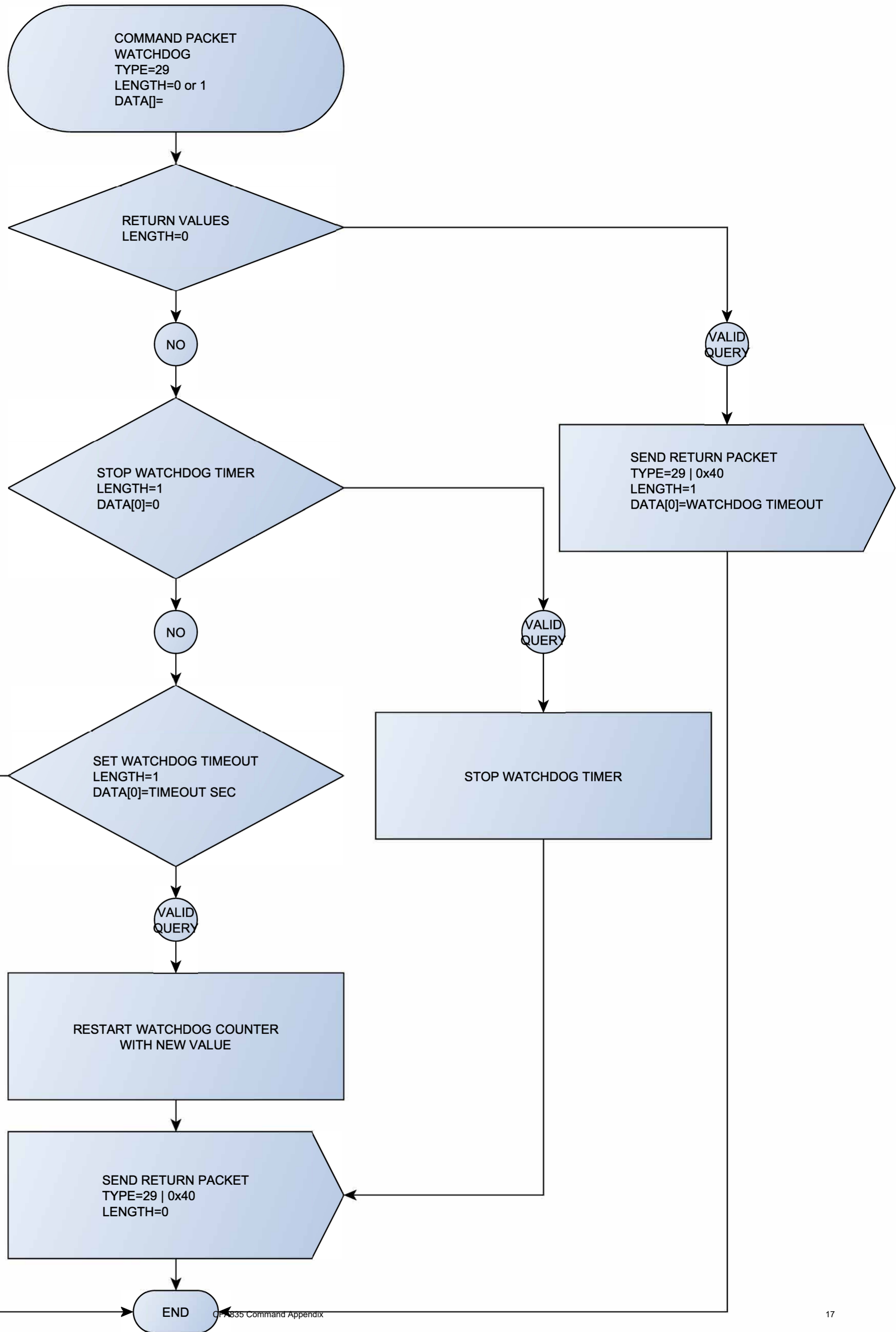
Command 24



Command 28



Command 29



Command 31

COMMAND PACKET
WRITE TEXT TO LCD
TYPE=31
LENGTH=3 to 22
DATA[0]=COLUMN
DATA[1]=ROW
DATA[2-21]=TEXT

VALID X,Y OR COL,ROW
POSITION AND TEXT LENGTH?

YES

STORE TEXT IN 635/735 COMPATIBLE
20x4 TEXT BUFFER
(IN RAM, VOLATILE MEMORY)

FONT RENDERER REPLACE CMD31 ENABLED
FONT RENDERER FONT OPEN
FONT RENDERER MONOSPACE FONT
FONT RENDERER NOT PROPORTIONAL

YES

RENDER TEXT TO FRAMEBUFFER
FROM FONT FILE SPECIFIED
BY COMMAND 38, SUBCOMMAND 0
AT POSITION X,Y PIXEL, OR COL,ROW

ERROR

SEND ERROR PACKET
TYPE=31 | 0xC0
LENGTH=2
DATA[0]=CMD INTERFACE
DATA[1]=ERROR IDENTIFIER

OK

SEND RETURN PACKET
TYPE=31 | 0x40
LENGTH=0

END

NO

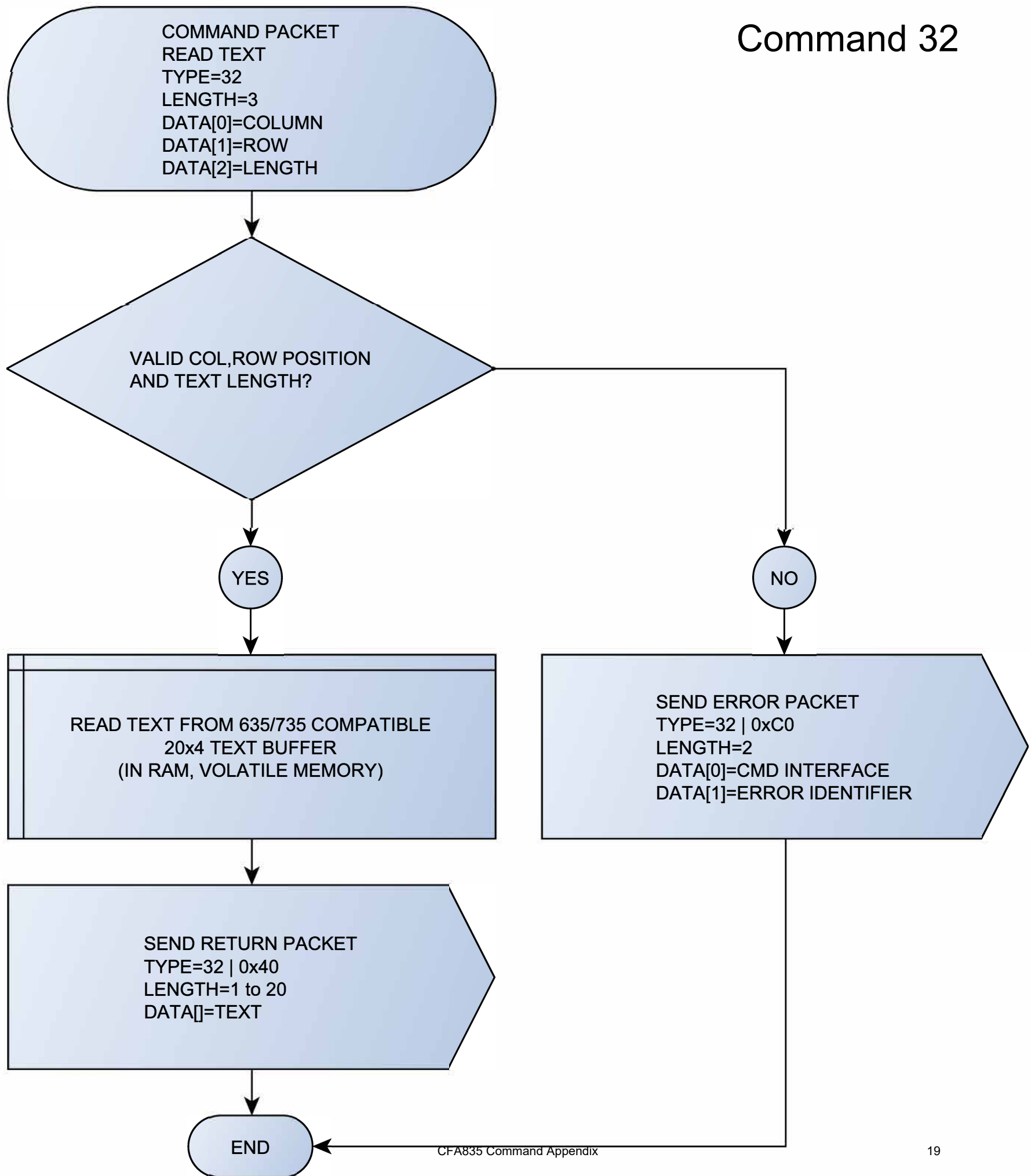
SEND ERROR PACKET
TYPE=31 | 0xC0
LENGTH=2
DATA[0]=CMD INTERFACE
DATA[1]=ERROR IDENTIFIER

NO

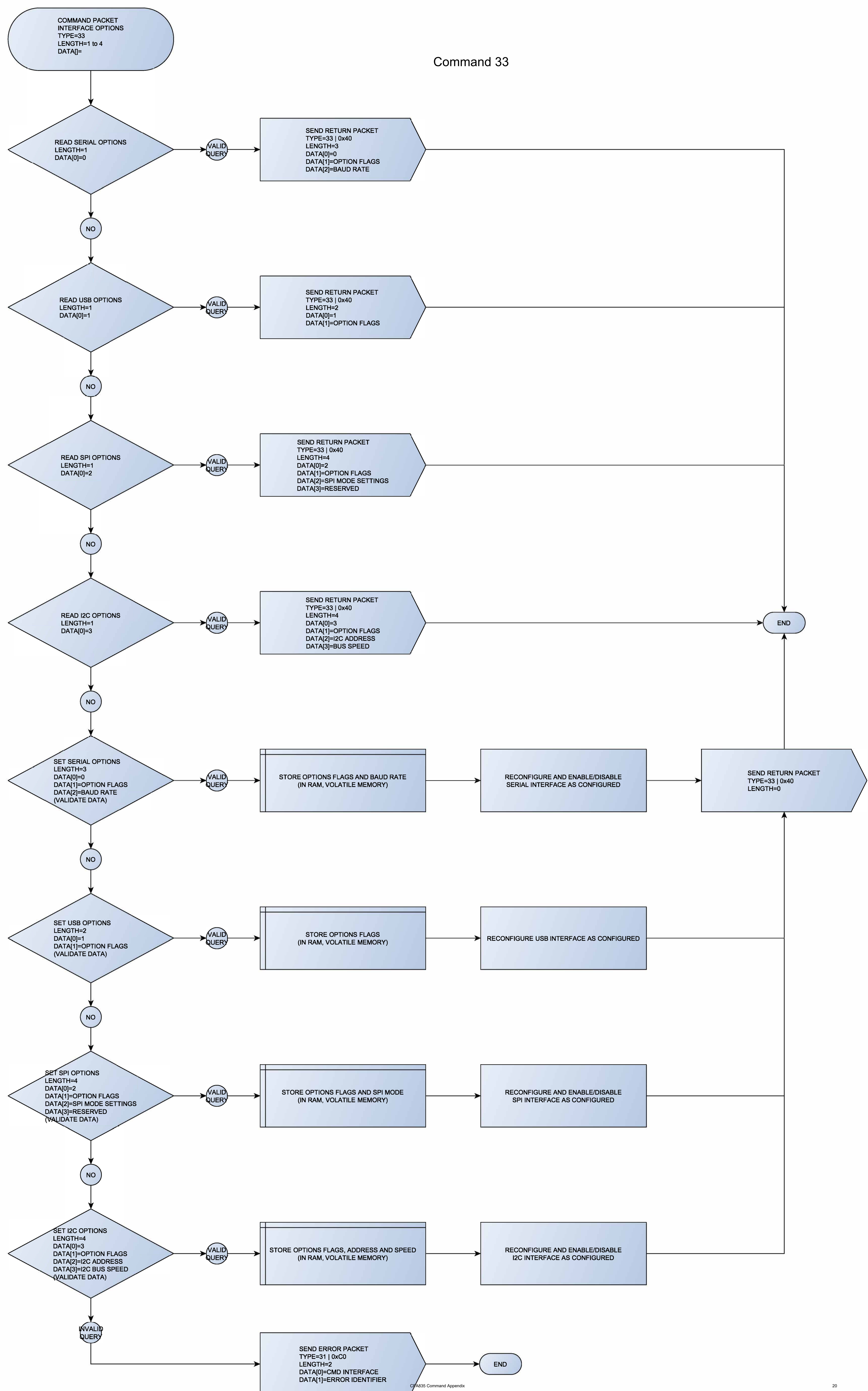
RENDER TEXT IN CFA635/735 COMPATIBLE
FONT TO FRAMEBUFFER
AT POSITION COL,ROW

SEND RETURN PACKET
TYPE=31 | 0x40
LENGTH=0

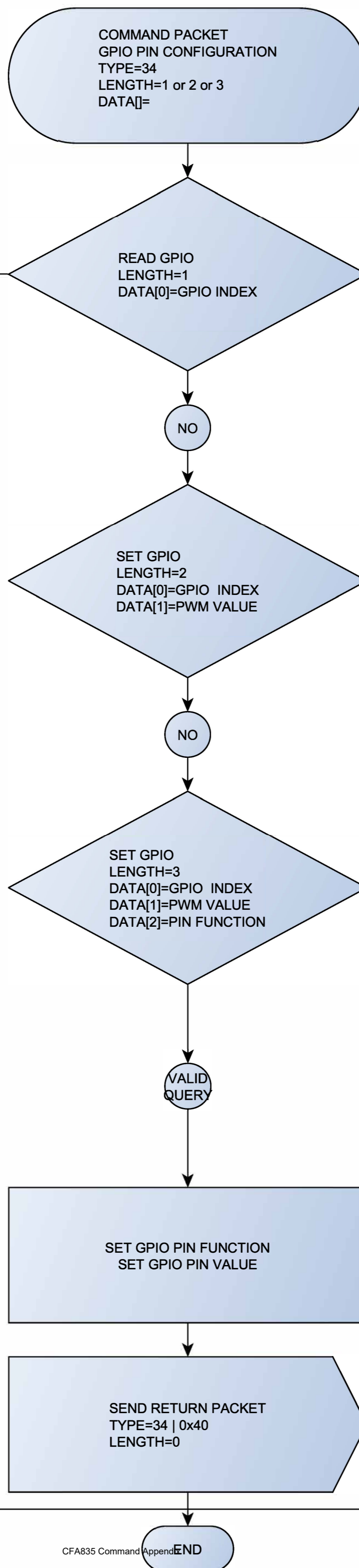
Command 32



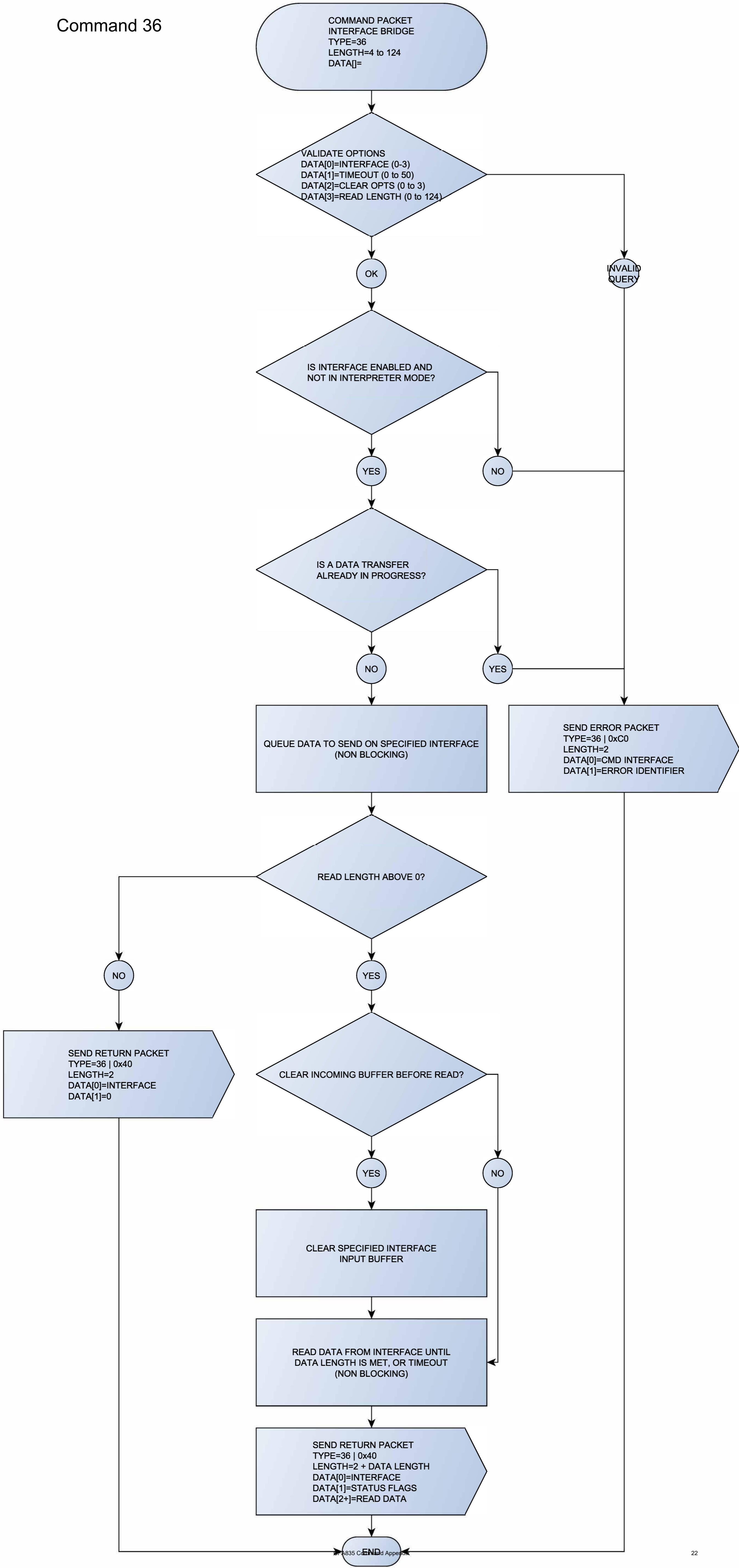
Command 33



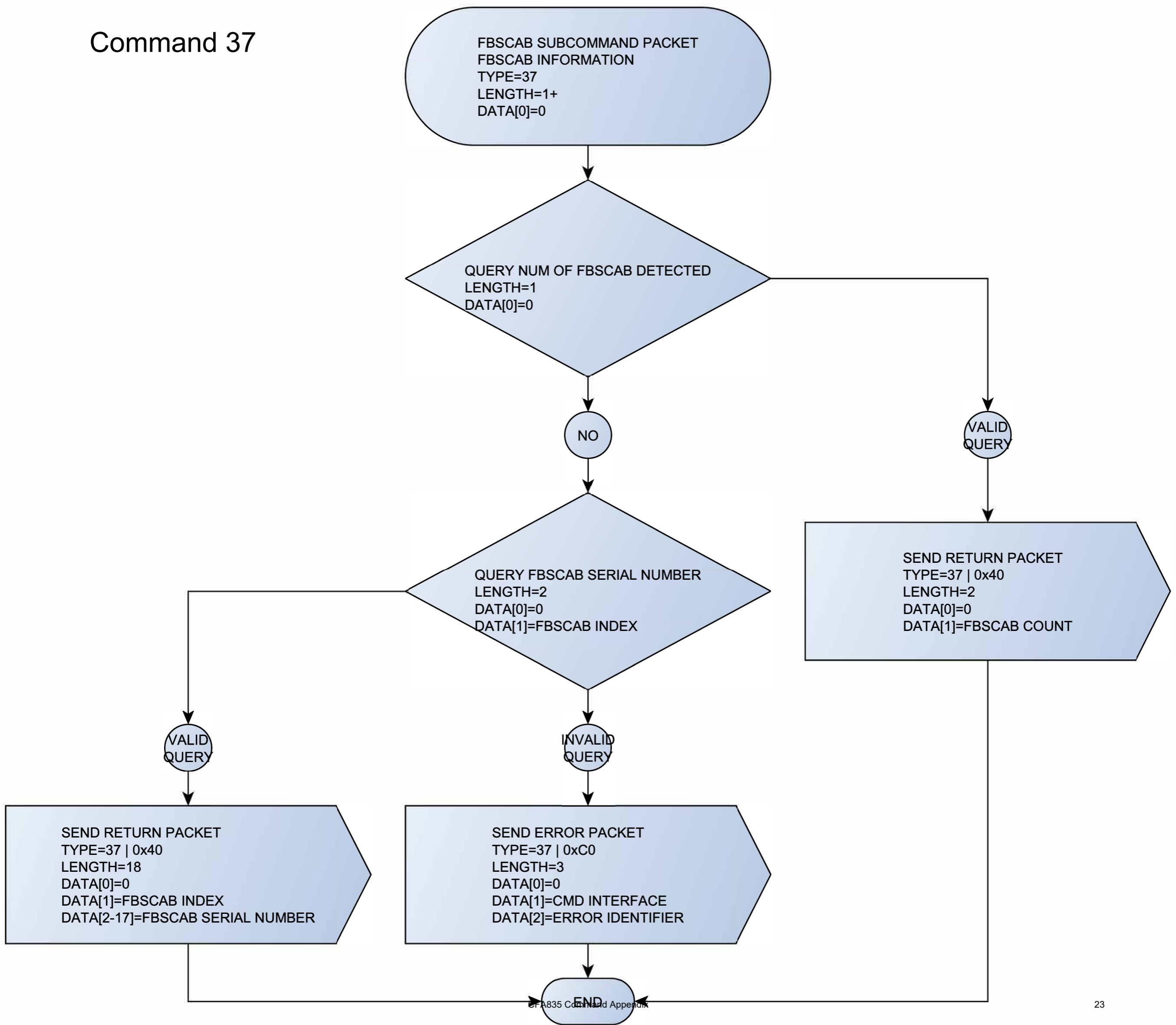
Command 34



Command 36



Command 37



FBSCAB SUBCOMMAND PACKET
 FAN SETTINGS
 TYPE=37
 LENGTH=1+
 DATA[0]=1

READ FAN SETTINGS
 LENGTH=2
 DATA[0]=1
 DATA[1]=FBSCAB INDEX

NO

SET FAN POWER
 LENGTH=6
 DATA[0]=1
 DATA[1]=FBSCAB INDEX
 DATA[2-5]=FAN1/2/3/4 POWER

VALID QUERY

SET FAN POWER AND FAILSAFE
 LENGTH=8
 DATA[0]=1
 DATA[1]=FBSCAB INDEX
 DATA[2-5]=FAN1/2/3/4 POWER
 DATA[6]=FAILSAFE BITMASK
 DATA[7]=FAILSAFE TIME

NO

SET FAN POWER AND FAILSAFE
 LENGTH=12
 DATA[0]=1
 DATA[1]=FBSCAB INDEX
 DATA[2-5]=FAN1/2/3/4 POWER
 DATA[6]=FAILSAFE BITMASK
 DATA[7]=FAILSAFE TIME
 DATA[8-11]=FAN1/2/3/4 GLITCH DELAYS

VALID QUERY

INVALID QUERY

HAS FBSCAB BEEN DETECTED AT REQUESTED INDEX?

YES

NO

SEND SETTINGS PACKET TO FBSCAB AT SPECIFIED INDEX AND WAIT FOR A REPLY (200ms TIMEOUT)

OK

ERROR

SEND RETURN PACKET
 TYPE=37 | 0x40
 LENGTH=1
 DATA[0]=1

SEND ERROR PACKET
 TYPE=37 | 0xC0
 LENGTH=3
 DATA[0]=1
 DATA[1]=CMD INTERFACE
 DATA[2]=ERROR IDENTIFIER

SEND ERROR PACKET
 TYPE=37 | 0xC0
 LENGTH=3
 DATA[0]=1
 DATA[1]=CMD INTERFACE
 DATA[2]=ERROR IDENTIFIER

HAS FBSCAB BEEN DETECTED AT REQUESTED INDEX?

YES

NO

SEND RETURN PACKET
 TYPE=37 | 0x40
 LENGTH=18
 DATA[0]=1
 DATA[1]=FBSCAB INDEX
 DATA[2-17]=FBSCAB SERIAL NUMBER

END

VALID QUERY

NO

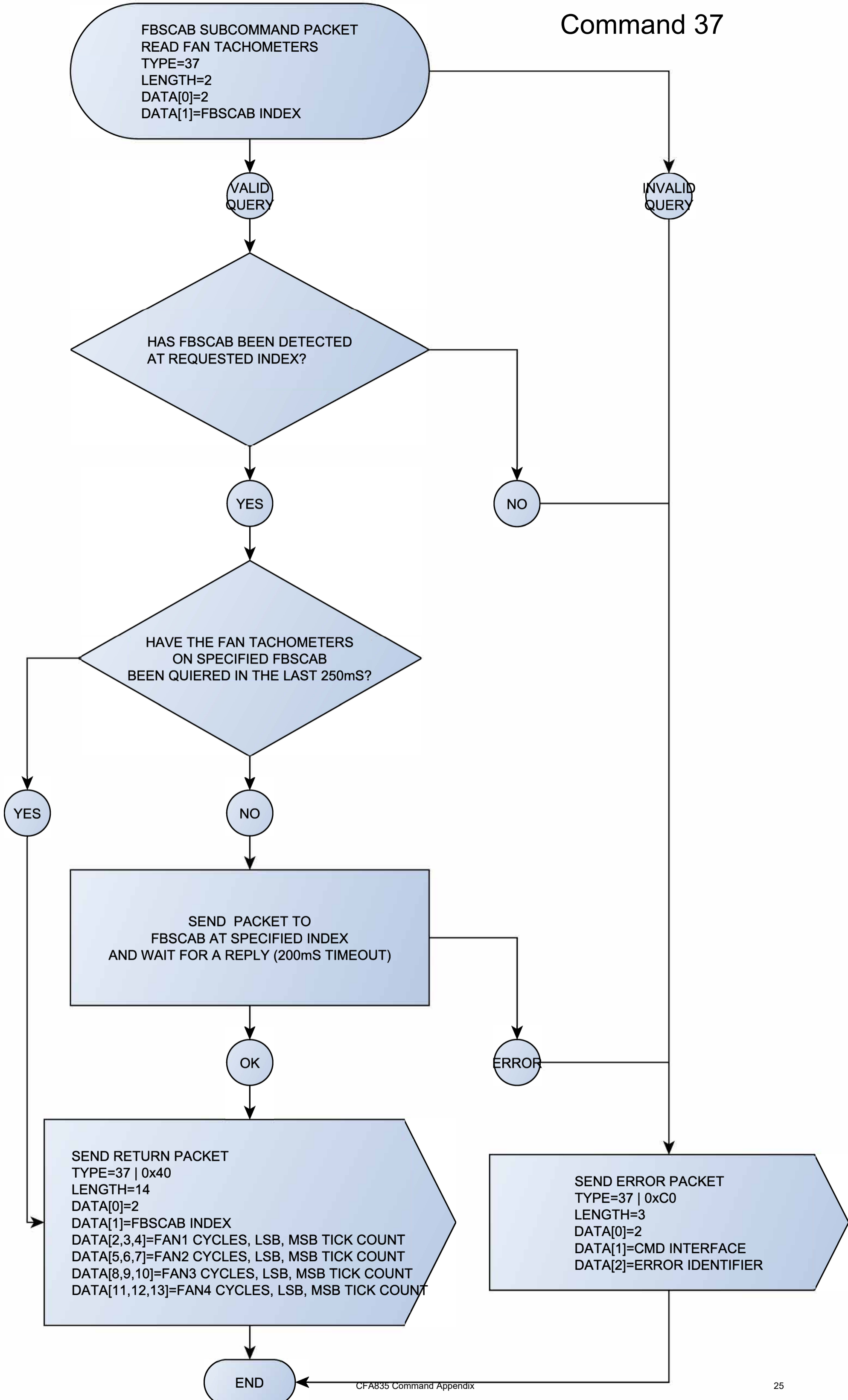
NO

VALID QUERY

NO

NO

Command 37



Command 37

FBSCAB SUBCOMMAND PACKET
READ DOW INFORMATION
TYPE=37
LENGTH=3
DATA[0]=3
DATA[1]=FBSCAB INDEX
DATA[2]=DOW DEVICE INDEX

VALID
QUERY

INVALID
QUERY

HAS FBSCAB BEEN DETECTED
AT REQUESTED INDEX?

YES

NO

SEND SETTINGS PACKET TO
FBSCAB AT SPECIFIED INDEX
AND WAIT FOR A REPLY (200mS TIMEOUT)

OK

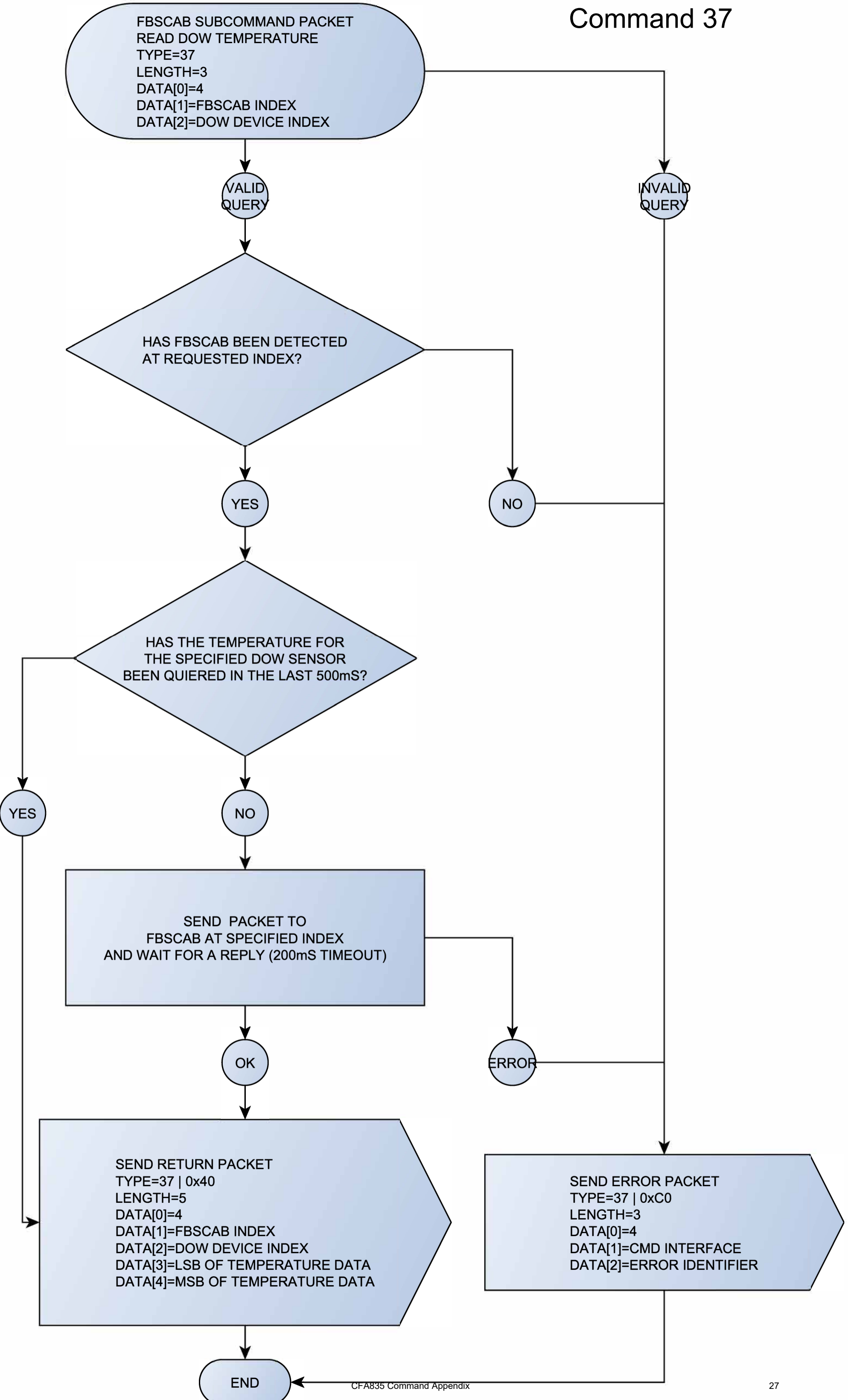
ERROR

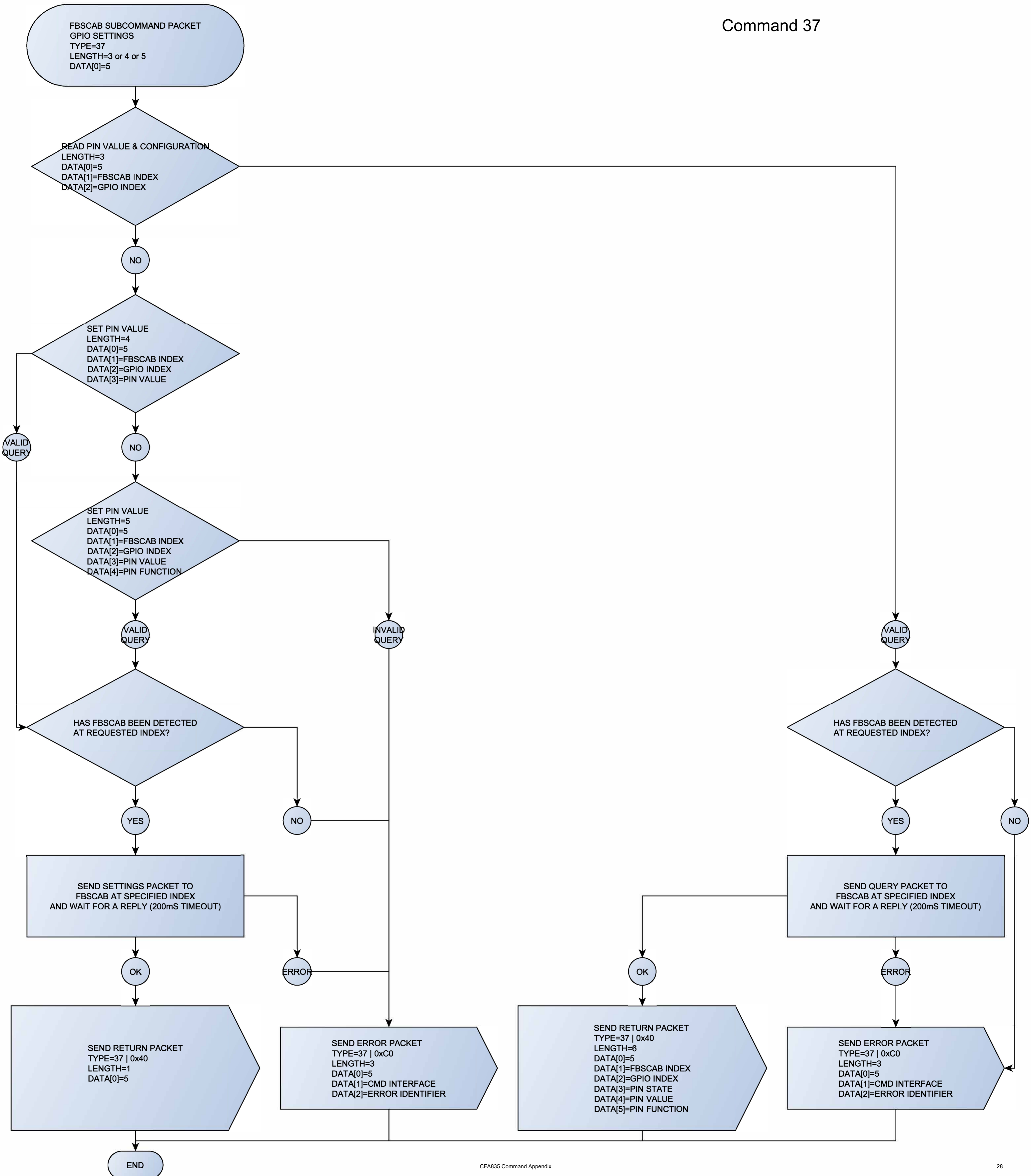
SEND RETURN PACKET
TYPE=37 | 0x40
LENGTH=11
DATA[0]=3
DATA[1]=FBSCAB INDEX
DATA[2]=DOW DEVICE INDEX
DATA[3-10]=DOW ROM ID

SEND ERROR PACKET
TYPE=37 | 0xC0
LENGTH=3
DATA[0]=3
DATA[1]=CMD INTERFACE
DATA[2]=ERROR IDENTIFIER

END

Command 37





Command 37

FBSCAB SUBCOMMAND PACKET
RESET AND SEARCH
TYPE=37
LENGTH=1
DATA[0]=6

VALID
QUERY

SEND RESET PACKET TO ALL
ATTACHED FBSCAB MODULES
(BLOCKING - 320mS)

RE-START SEARCH FOR
FBSCAB MODULES
(NON-BLOCKING)

SEND RETURN PACKET
TYPE=37 | 0x40
LENGTH=1
DATA[0]=6

END

INVALID
QUERY

SEND ERROR PACKET
TYPE=37 | 0xC0
LENGTH=3
DATA[0]=6
DATA[1]=CMD INTERFACE
DATA[2]=ERROR IDENTIFIER

Command 37

FBSCAB SUBCOMMAND PACKET
LIVE DISPLAY
TYPE=37
LENGTH=2 or 3 or 9
DATA[0]=7

READ LIVE DISPLAY SETTINGS
LENGTH=2
DATA[0]=7
DATA[1]=LIVE DISPLAY SLOT

NO

VALID QUERY

SET LIVE DISPLAY SETTINGS
LENGTH=3
DATA[0]=7
DATA[1]=DISPLAY SLOT INDEX
DATA[2]=SET ITEM TYPE

NO

VALID QUERY

SEND RETURN PACKET
TYPE=37 | 0x40
LENGTH=9
DATA[0]=7
DATA[1]=DISPLAY SLOT
DATA[2]=ITEM TYPE
DATA[3]=FBSCAB INDEX
DATA[4]=SENSOR INDEX
DATA[5]=DIGITS
DATA[6]=DISPLAY COLUMN
DATA[7]=DISPLAY ROW
DATA[8]=UNITS

SET LIVE DISPLAY SETTINGS
LENGTH=9
DATA[0]=7
DATA[1]=DISPLAY SLOT INDEX
DATA[2]=SET ITEM TYPE
DATA[3]=FBSCAB INDEX
DATA[4]=SENSOR INDEX
DATA[5]=DIGITS
DATA[6]=DISPLAY COLUMN
DATA[7]=DISPLAY ROW
DATA[8]=UNITS

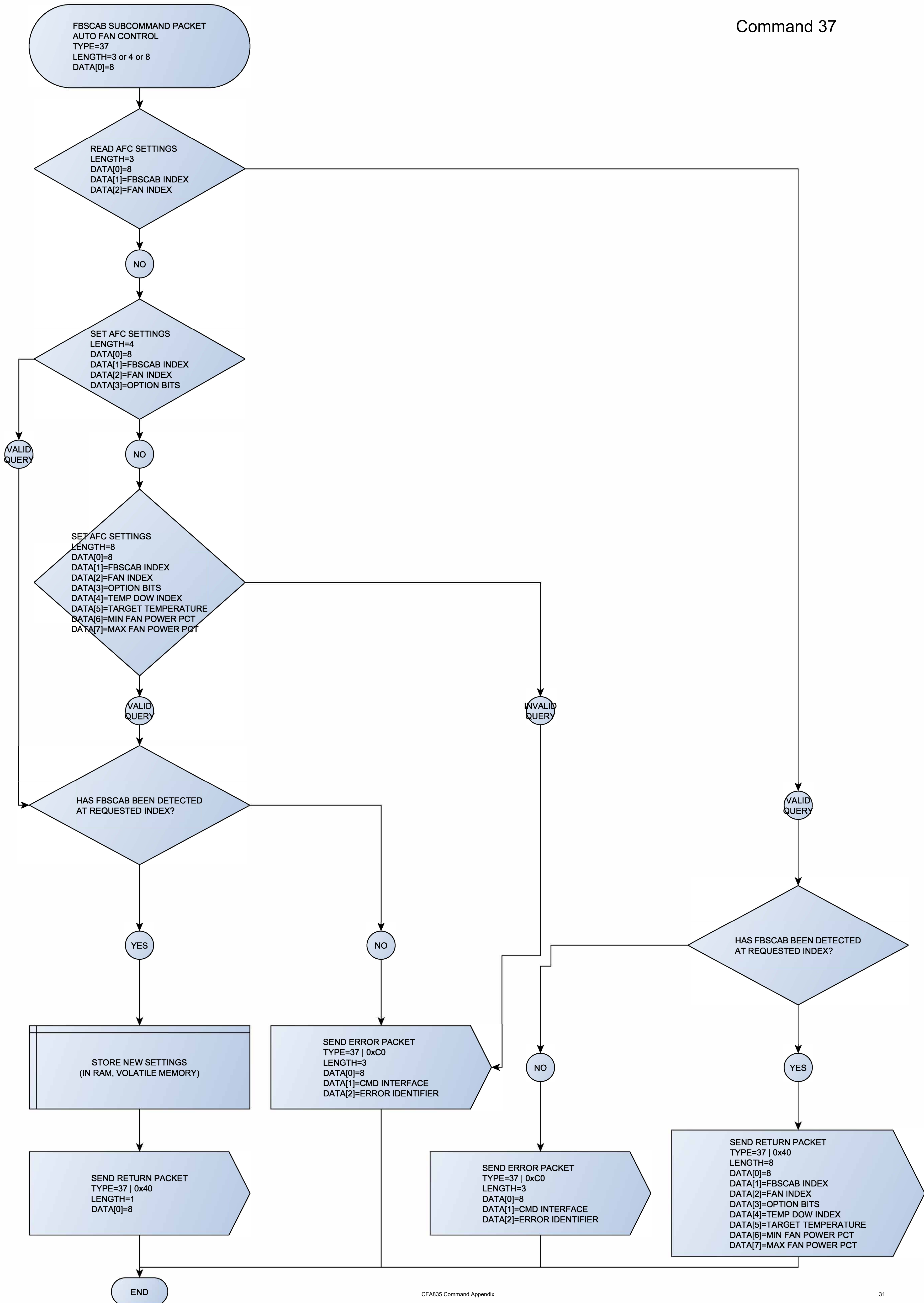
INVALID QUERY

VALID QUERY

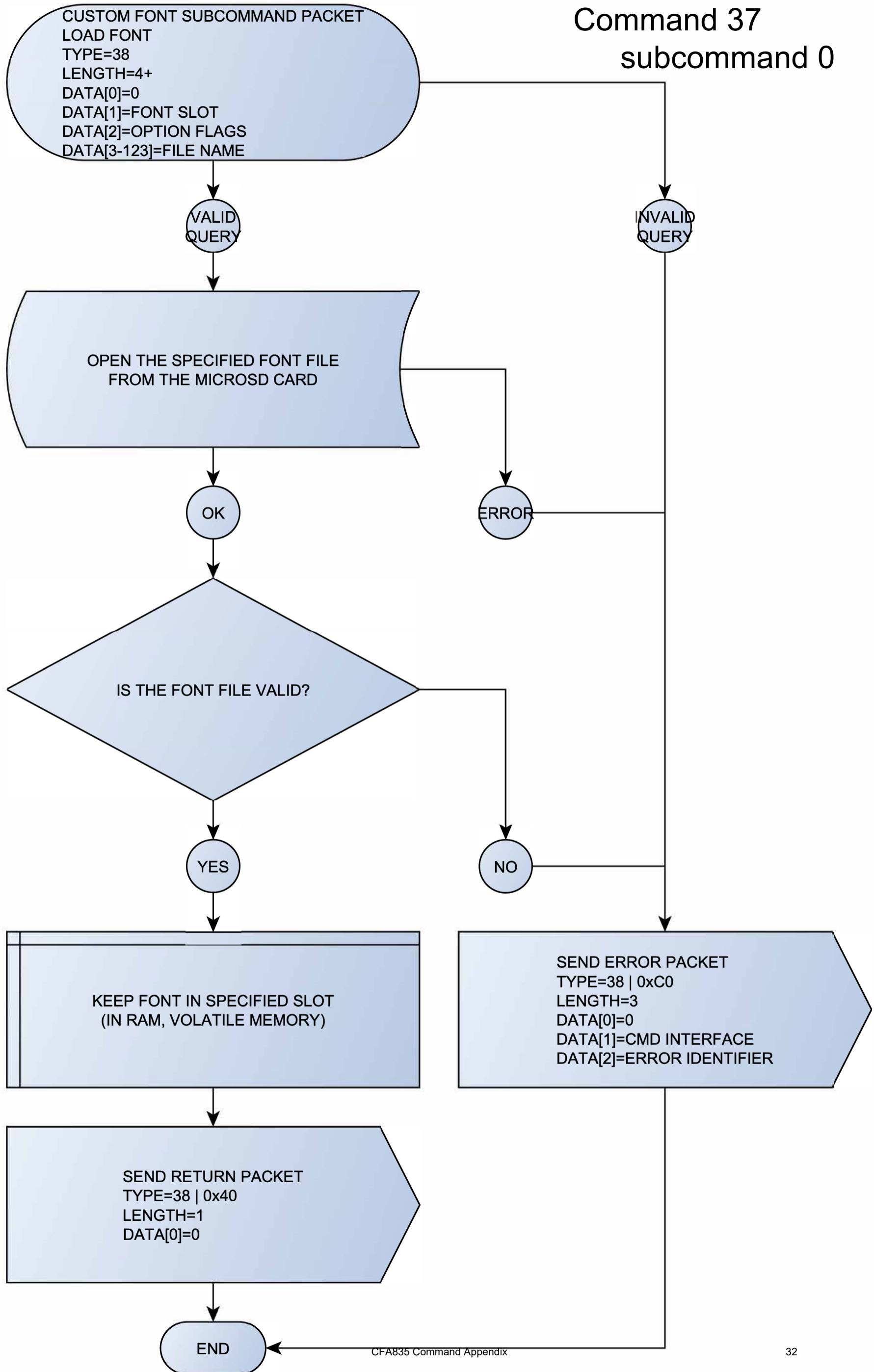
SEND ERROR PACKET
TYPE=37 | 0xC0
LENGTH=3
DATA[0]=7
DATA[1]=CMD INTERFACE
DATA[2]=ERROR IDENTIFIER

STORE NEW SETTINGS
(IN RAM, VOLATILE MEMORY)

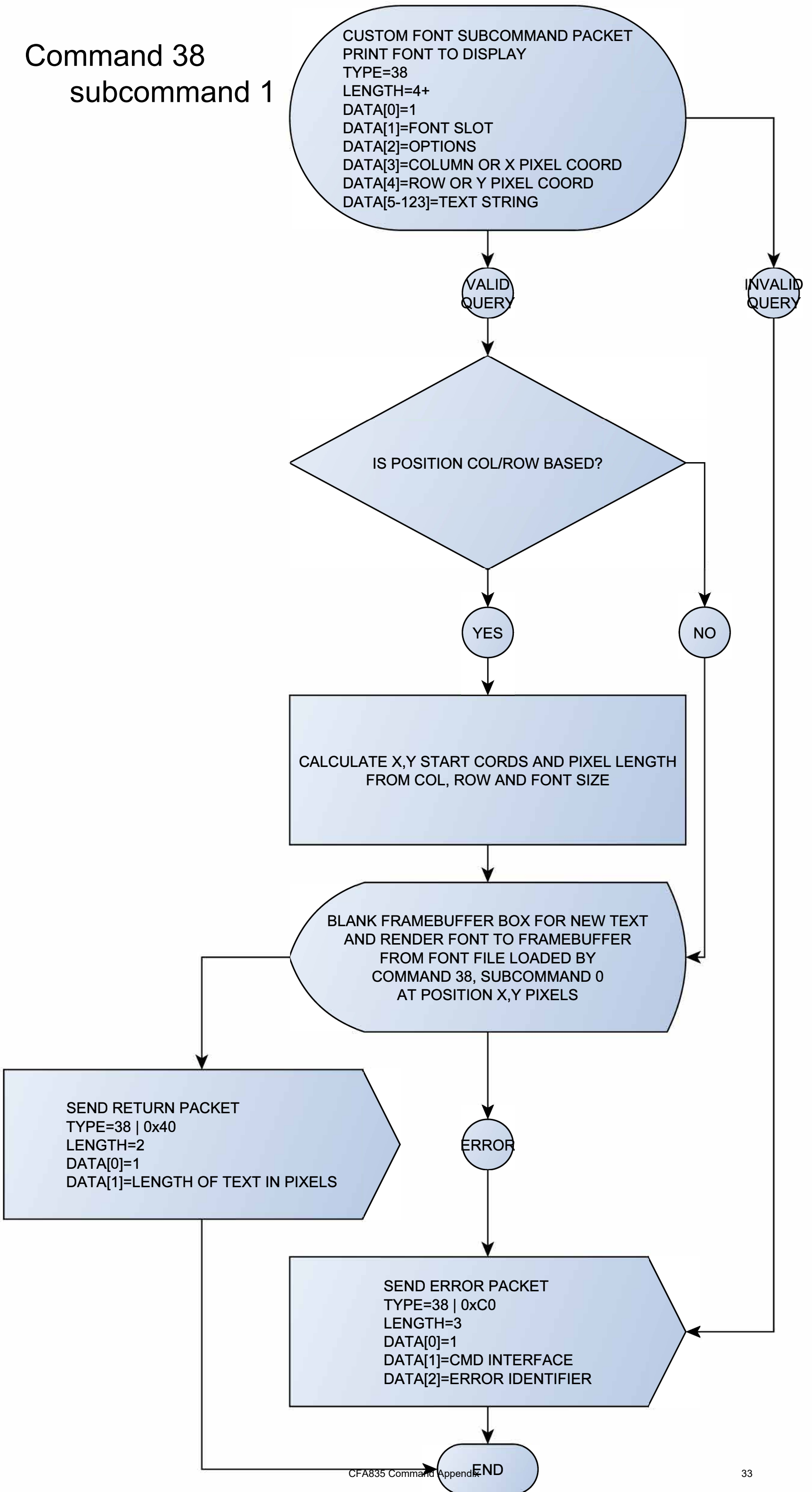
END

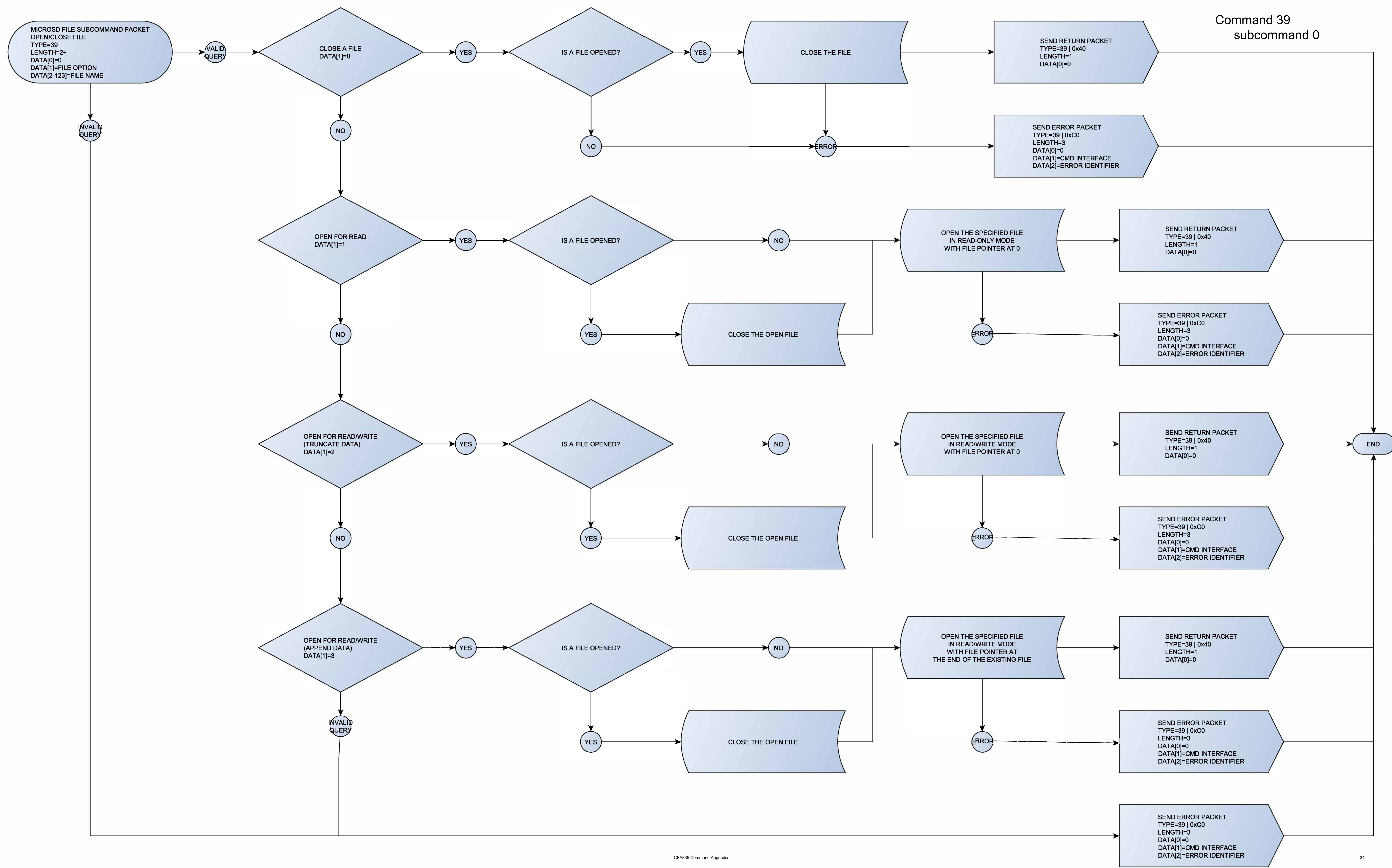


Command 37 subcommand 0

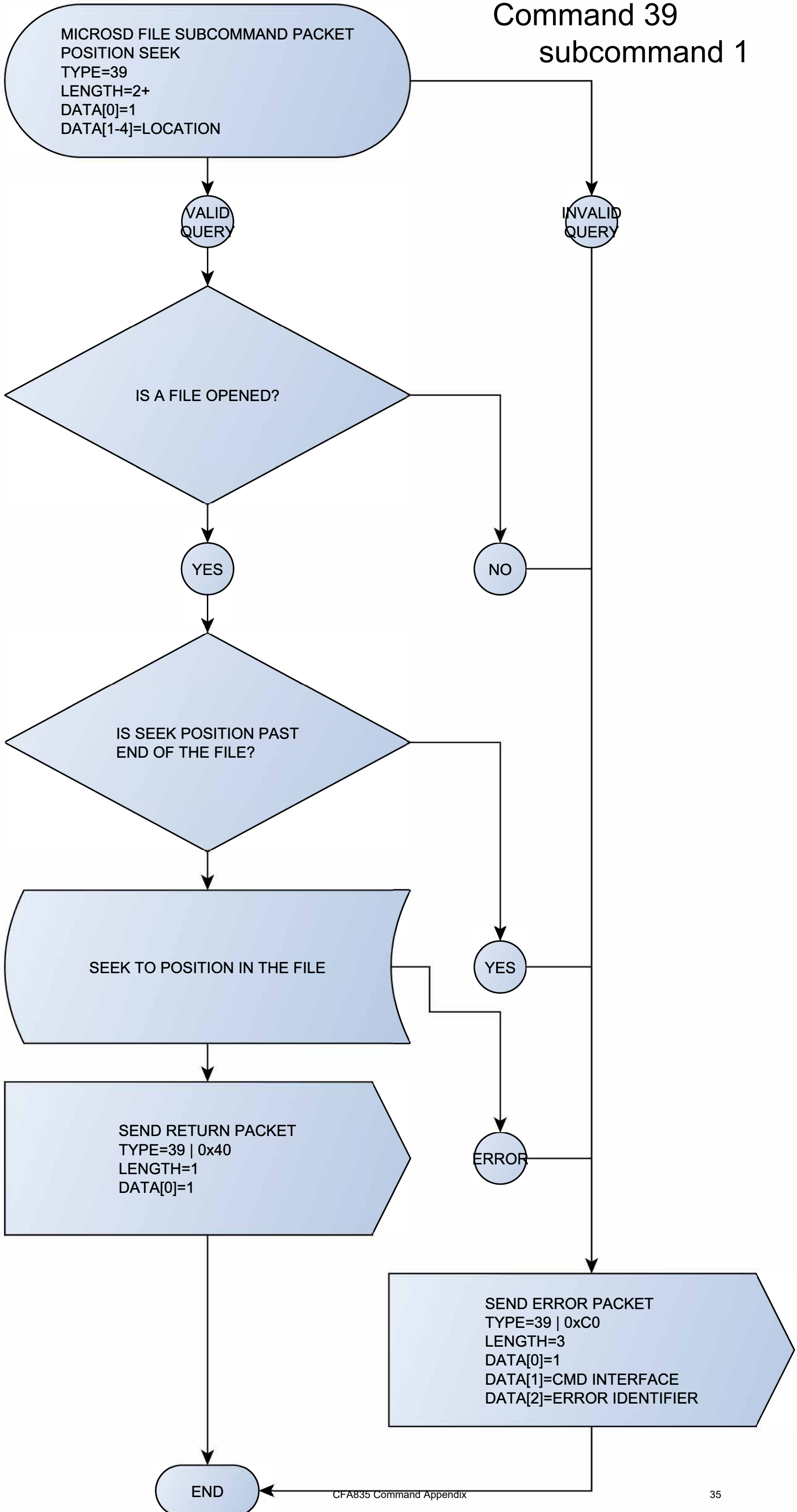


Command 38 subcommand 1

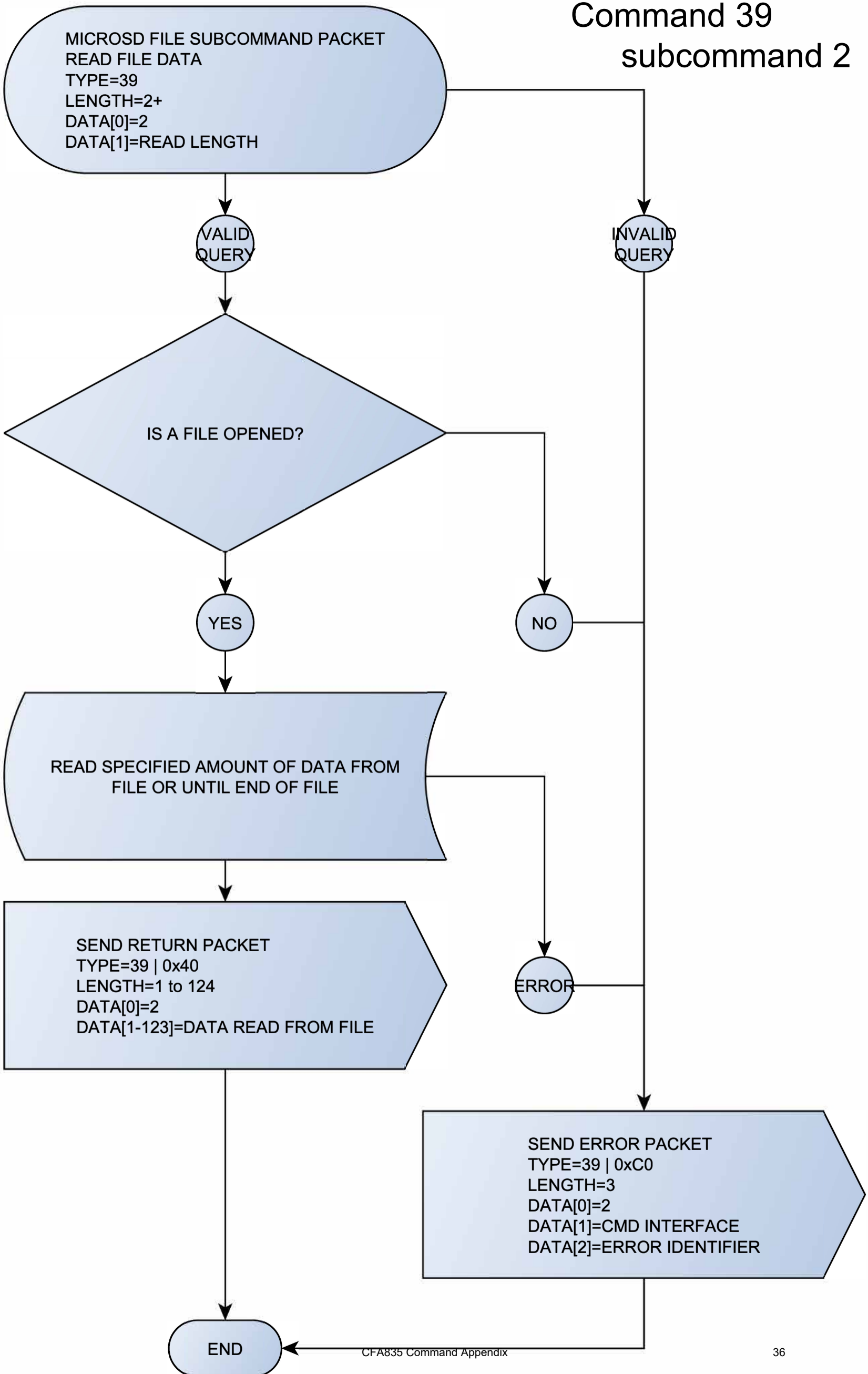




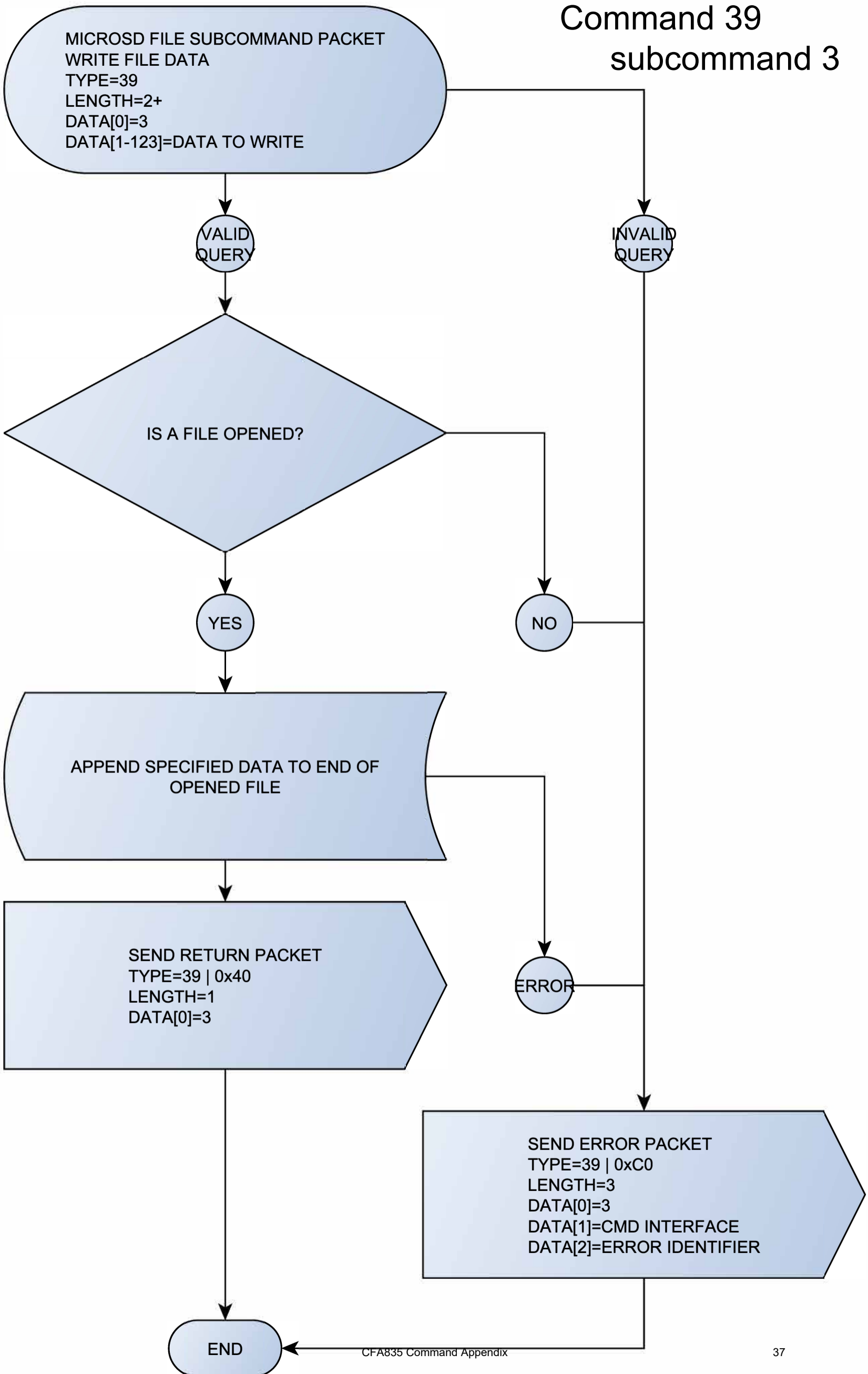
Command 39 subcommand 1



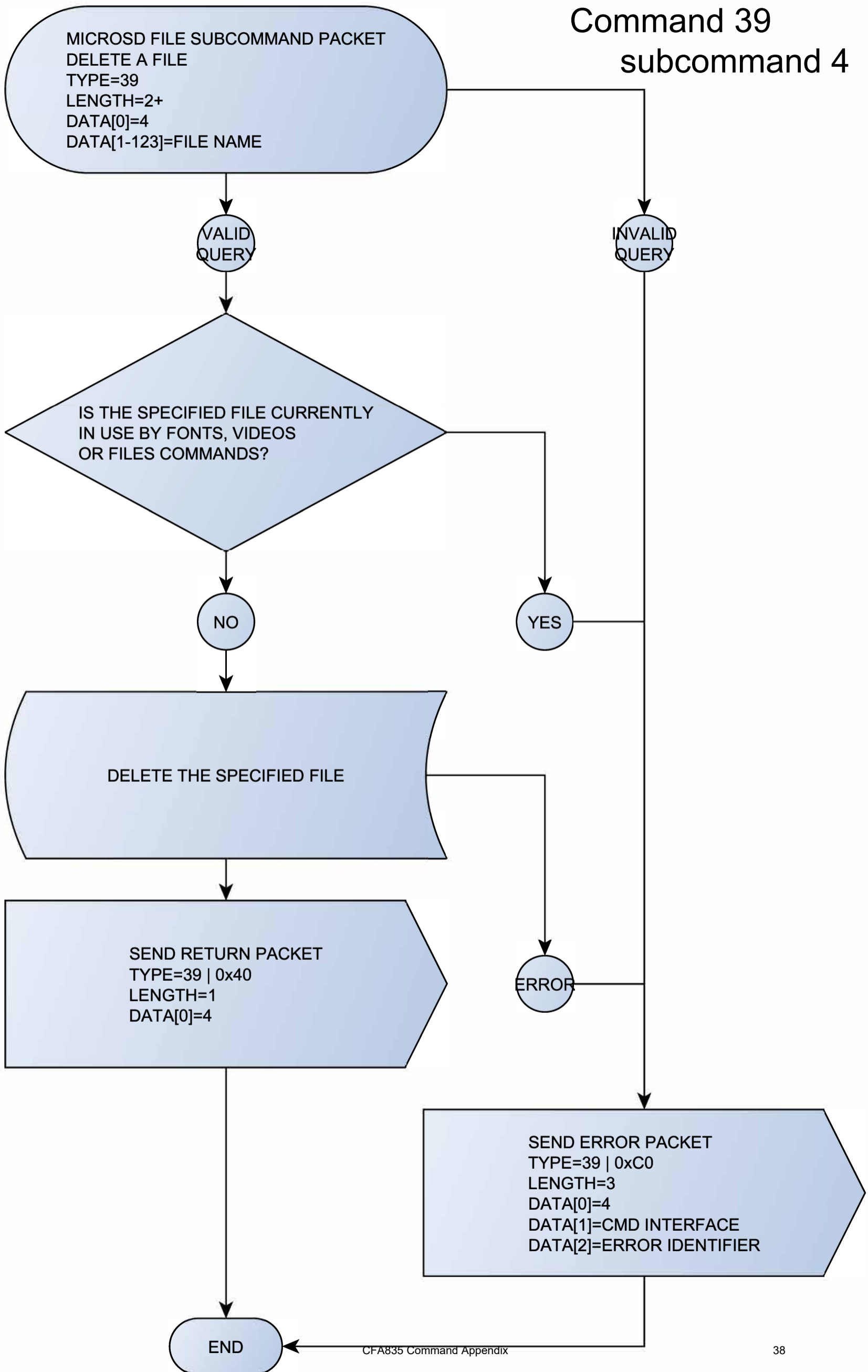
Command 39 subcommand 2



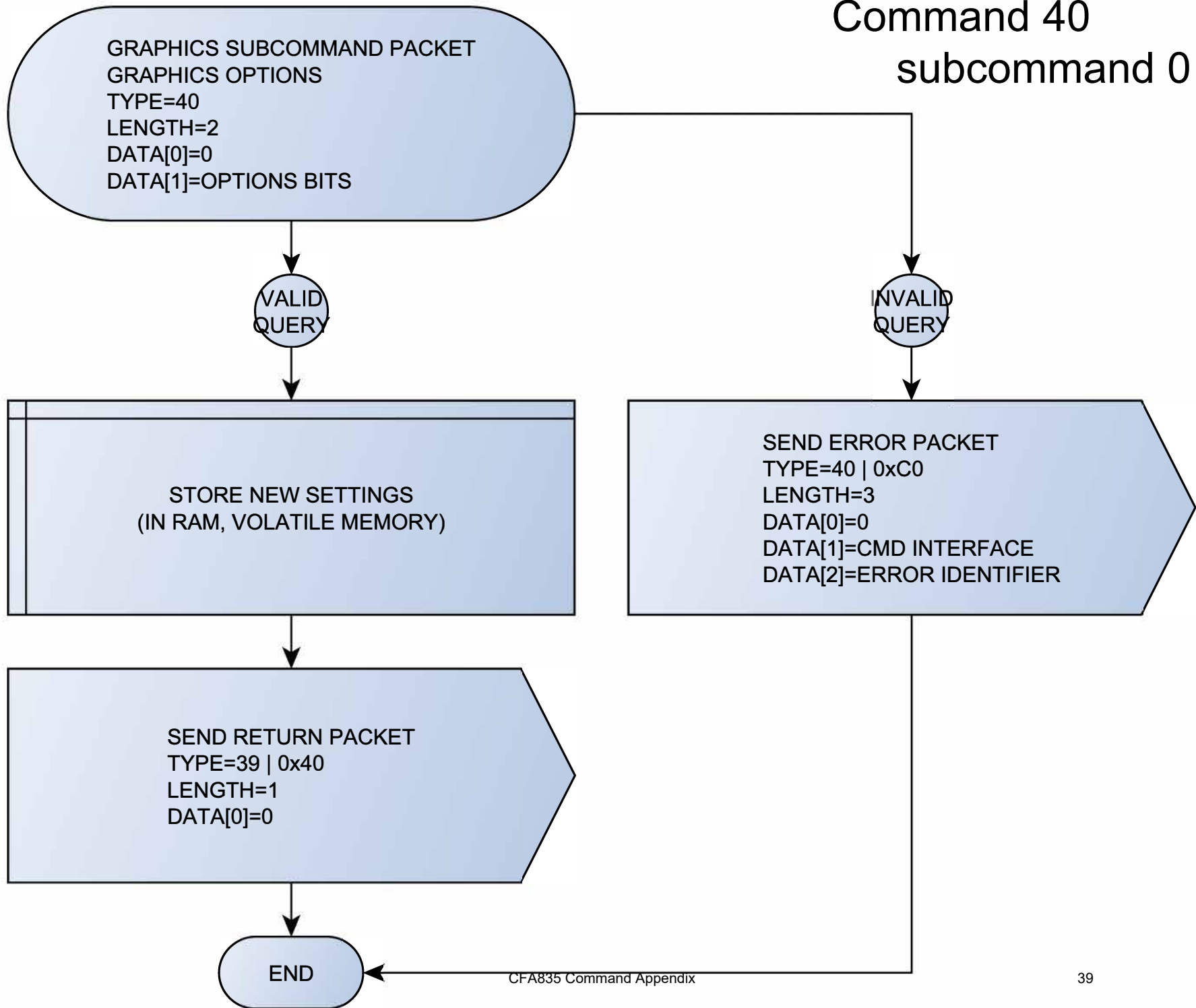
Command 39 subcommand 3



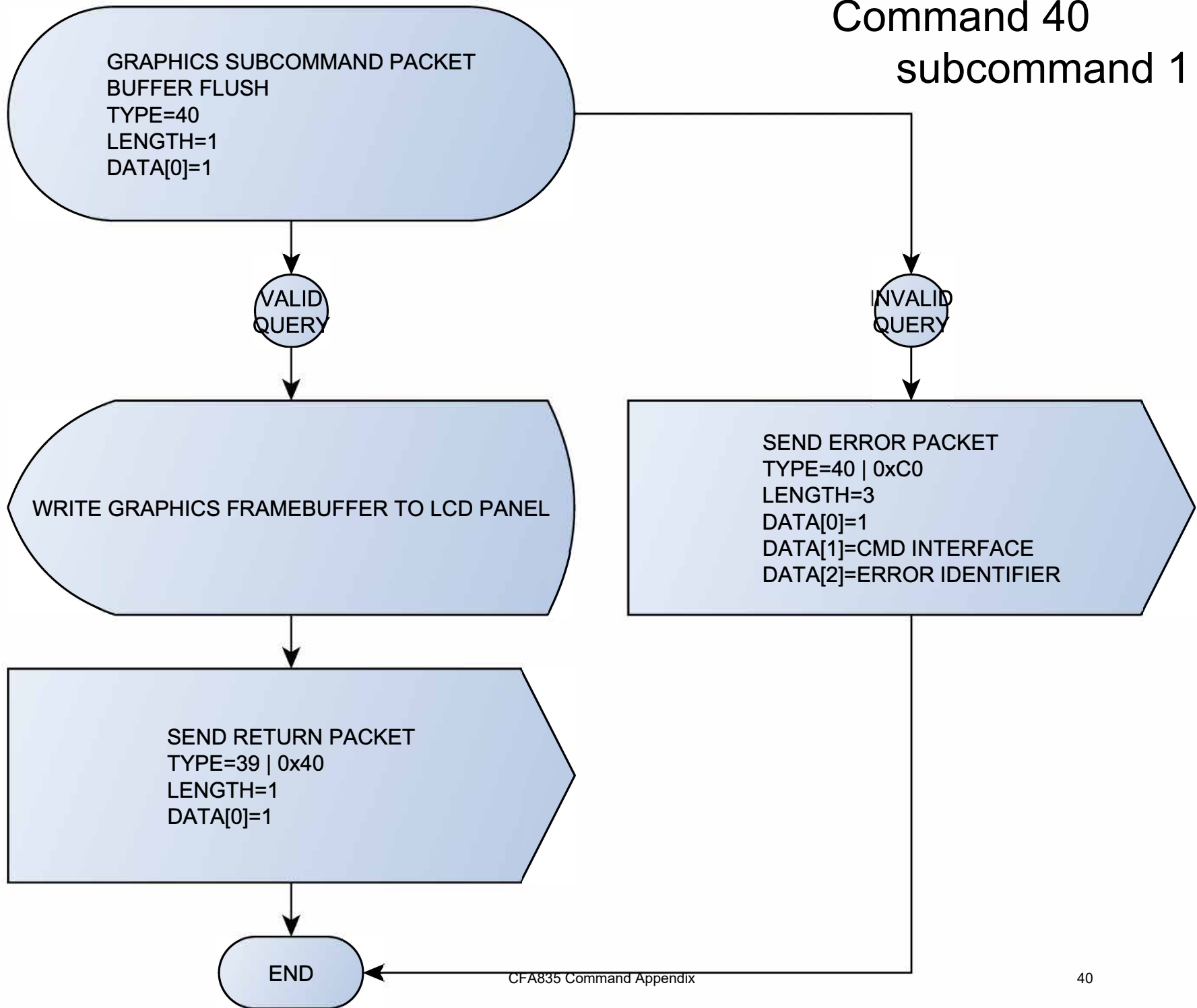
Command 39 subcommand 4



Command 40 subcommand 0



Command 40 subcommand 1



Command 40 subcommand 2

GRAPHICS SUBCOMMAND PACKET
DISPLAY IMAGE FROM HOST
TYPE=40
LENGTH=6
DATA[0]=2
DATA[1]=OPTION FLAGS
DATA[2]=X PIXEL LOCATION
DATA[3]=Y PIXEL LOCATION
DATA[4]=IMAGE WIDTH
DATA[5]=IMAGE HEIGHT

VALID
QUERY

INVALID
QUERY

IS AN IMAGE DATA STREAM IN PROGRESS?

NO

YES

ARE IMAGE DIMENSIONS
WITHIN DISPLAY BOUNDS?

YES

NO

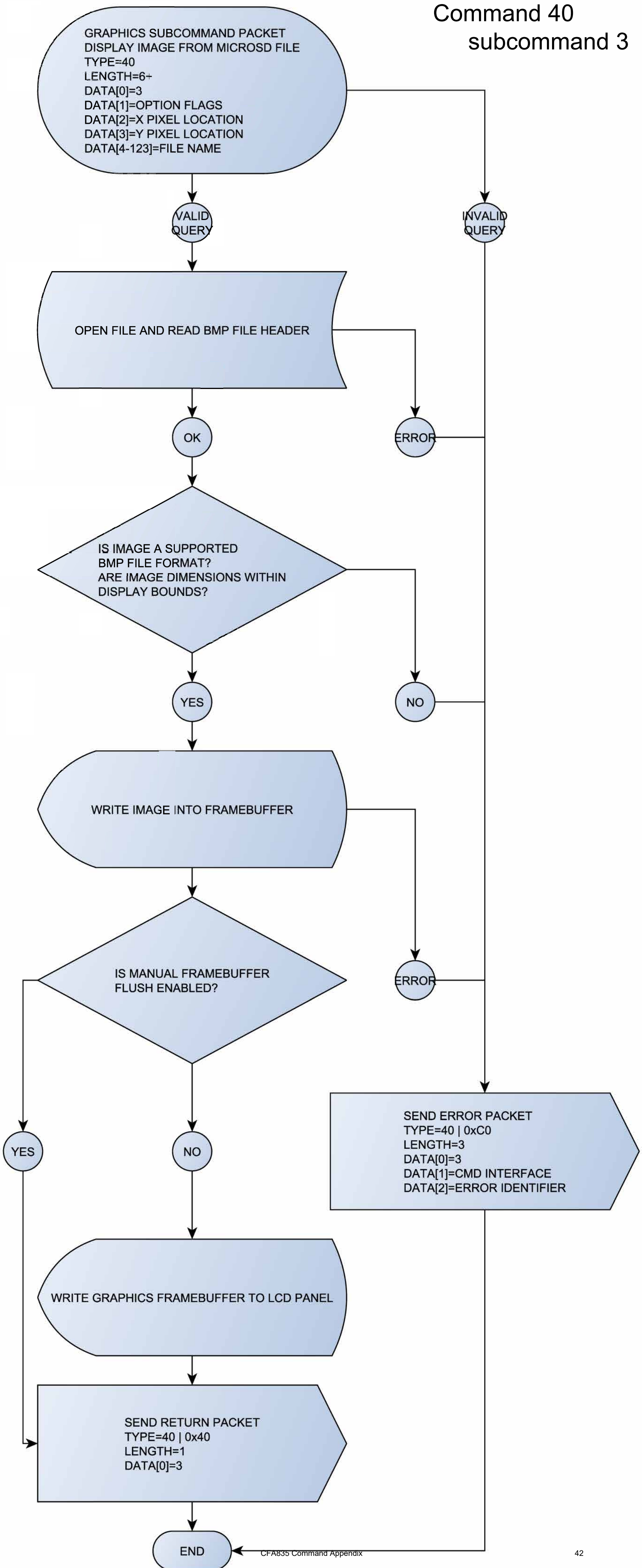
SEND RETURN PACKET
TYPE=39 | 0x40
LENGTH=1
DATA[0]=3

SEND ERROR PACKET
TYPE=40 | 0xC0
LENGTH=3
DATA[0]=2
DATA[1]=CMD INTERFACE
DATA[2]=ERROR IDENTIFIER

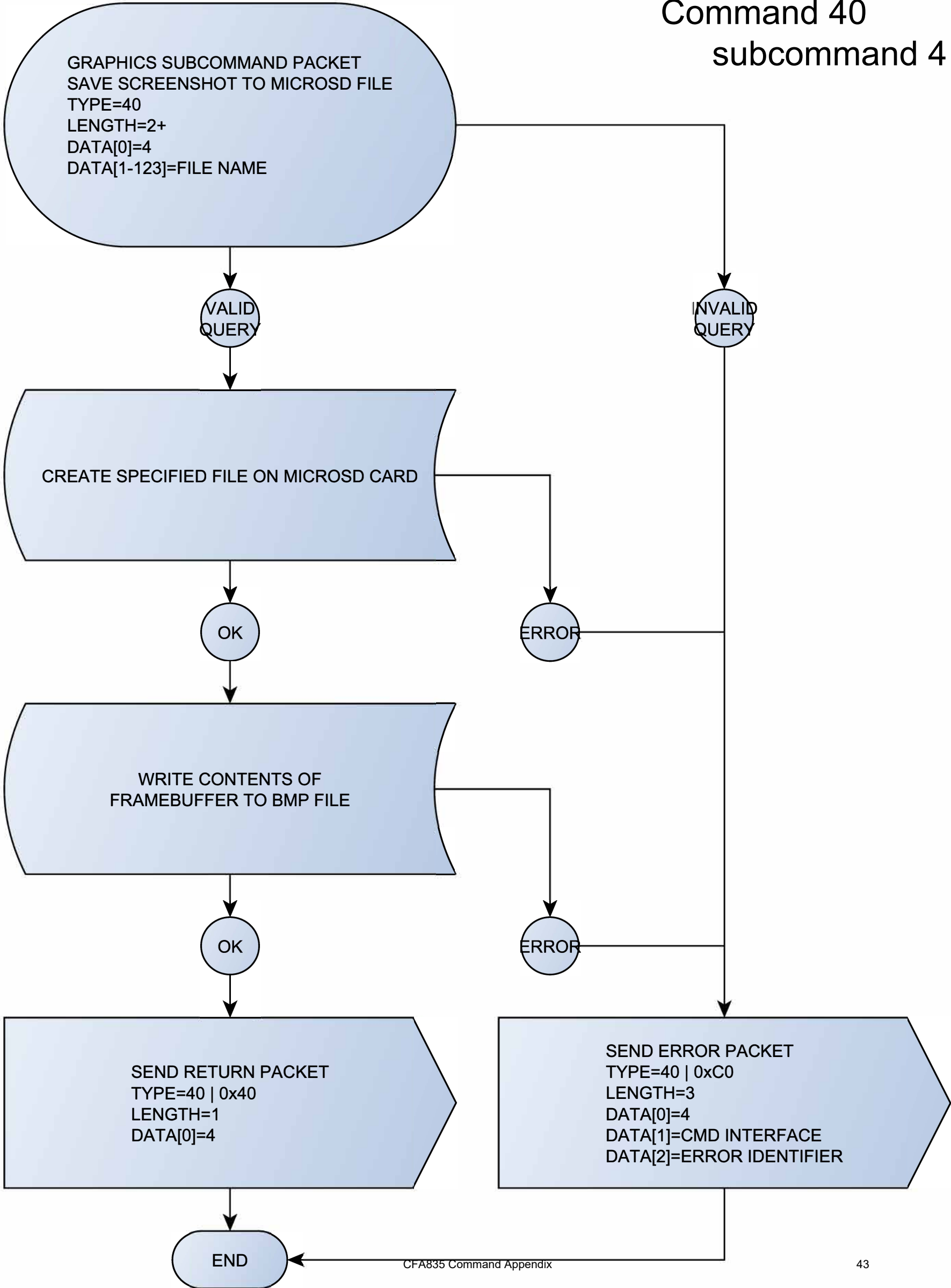
PUT INTERFACE INTO SEPECIAL "DATA STREAMING" MODE.
PROCESS ALL DATA FROM THIS INTERFACE AS UN-COMPRESSED
OR RLE COMPRESSED GRAPHICS DATA UNTIL IMAGE SIZE IS MET
OR TIMEOUT OCCURS

END

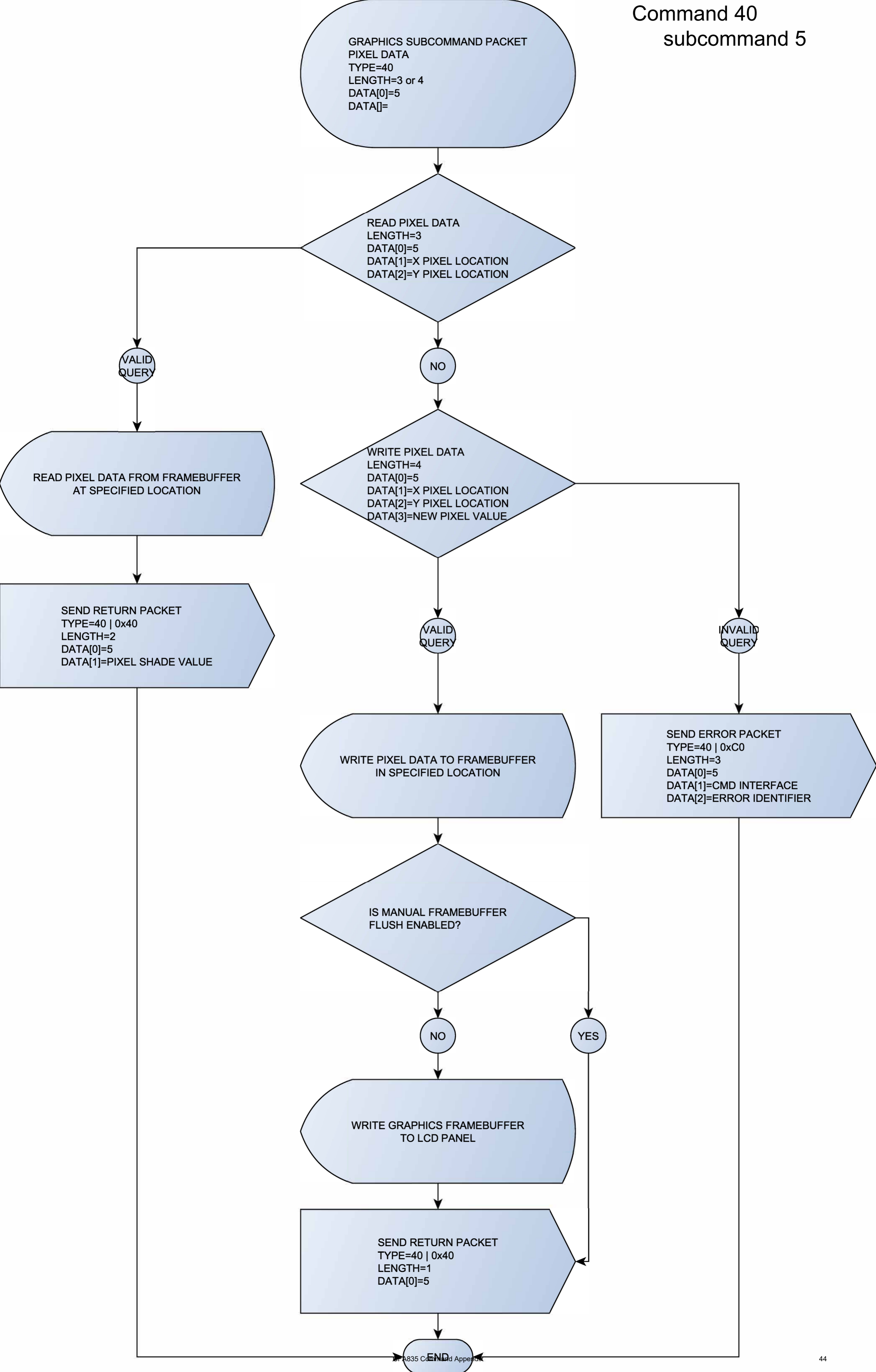
Command 40 subcommand 3



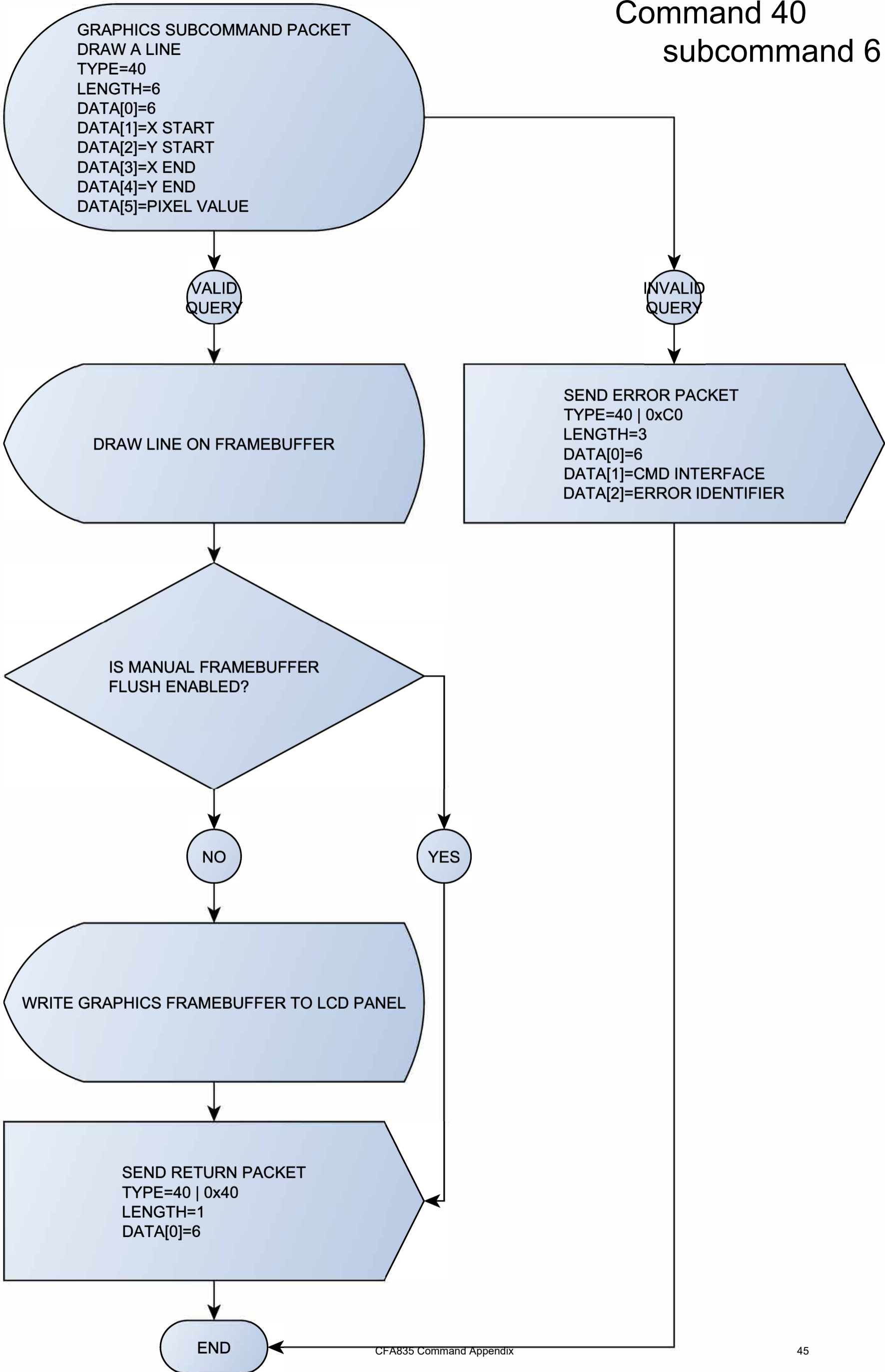
Command 40 subcommand 4



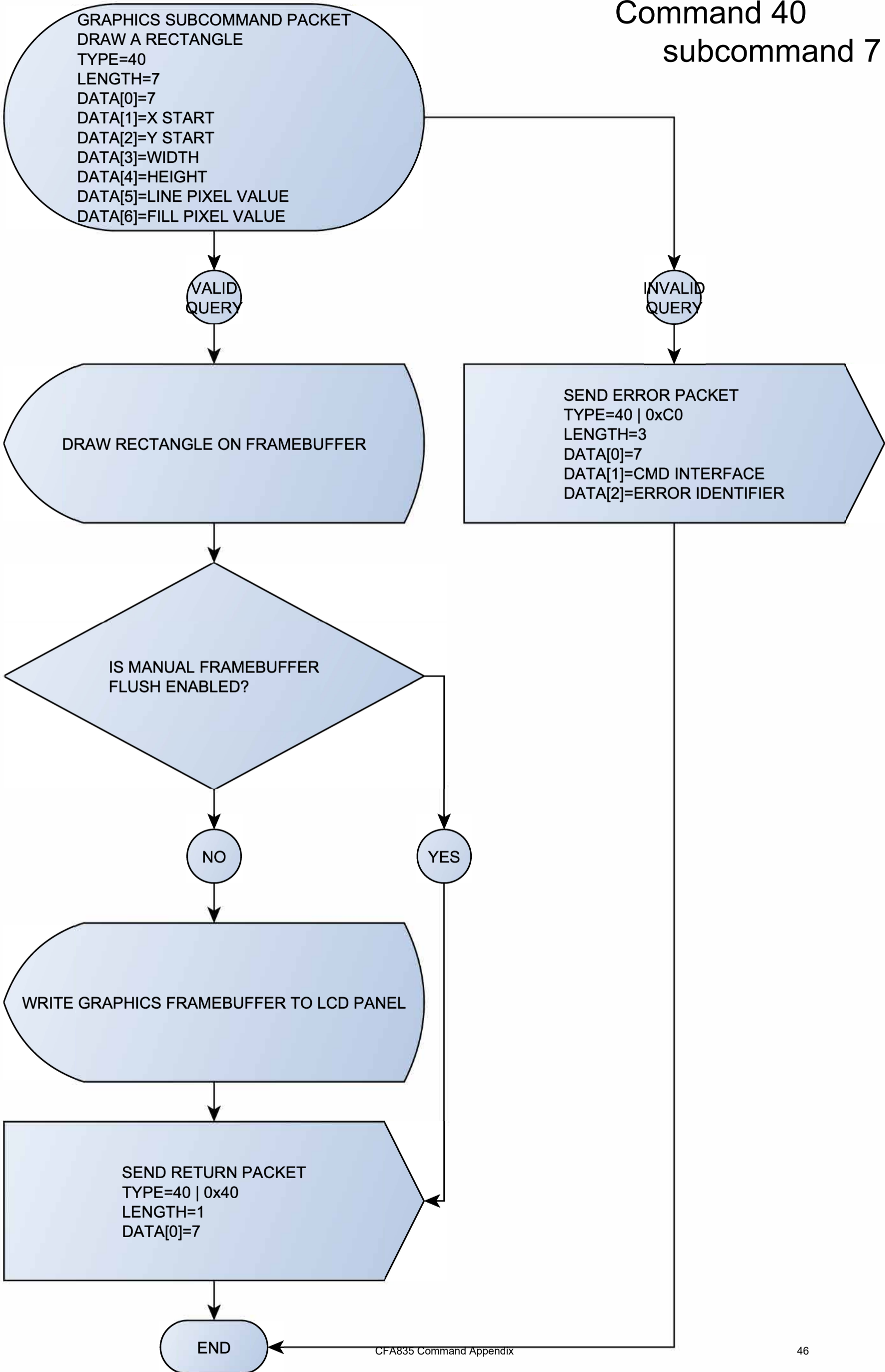
Command 40
subcommand 5



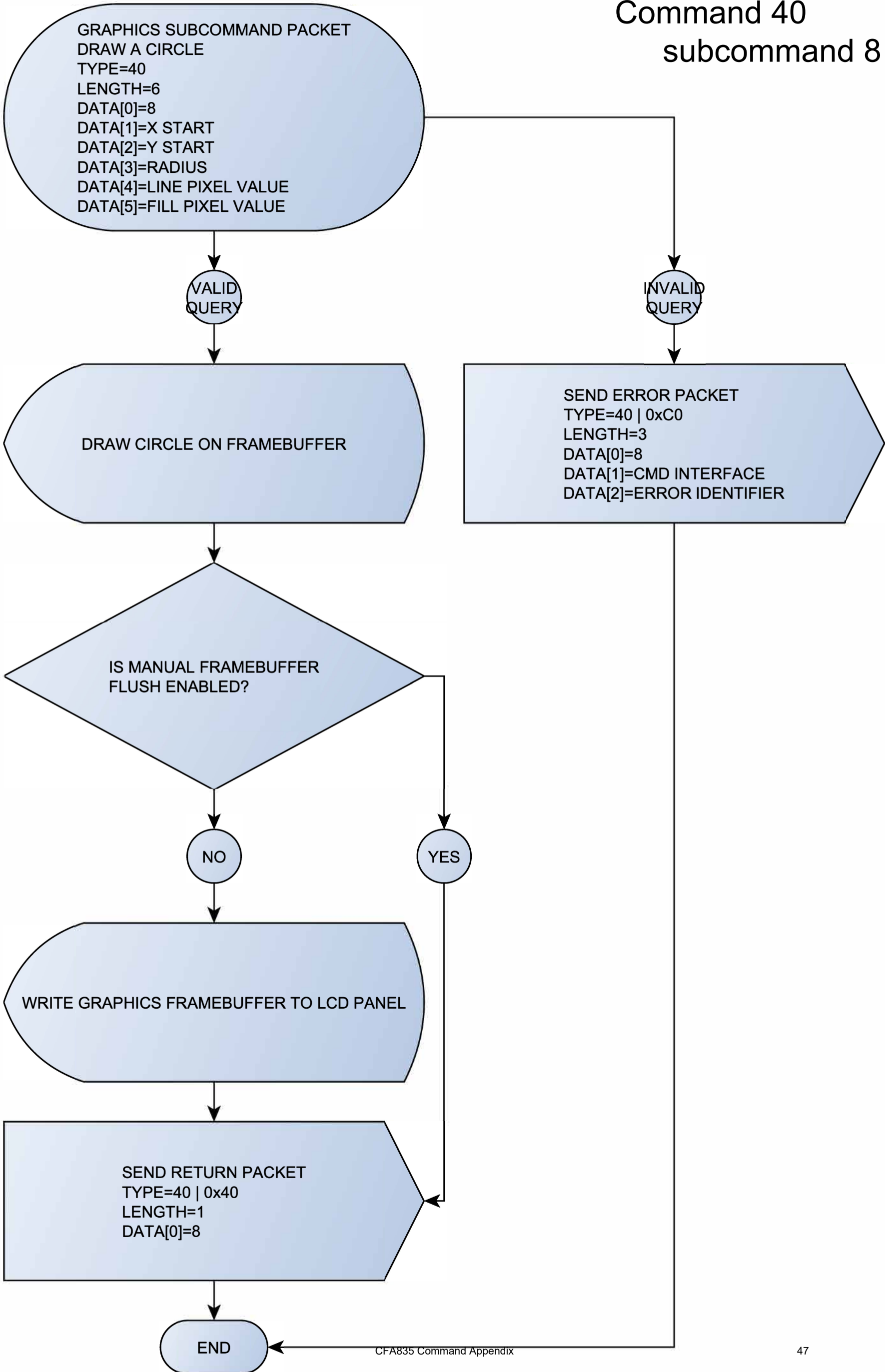
Command 40 subcommand 6



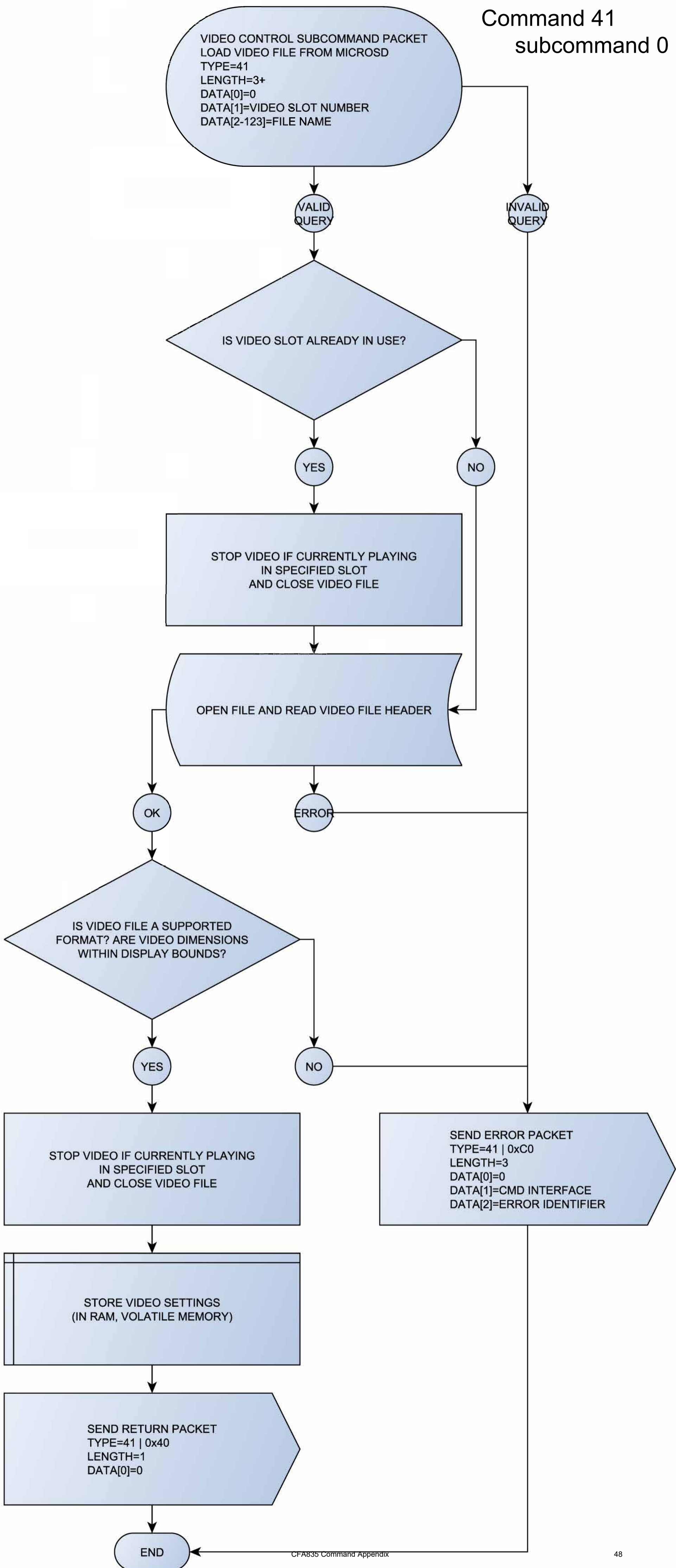
Command 40 subcommand 7



Command 40 subcommand 8



Command 41 subcommand 0



Command 41
subcommand 1

