ID-1 Control Command Specifications

Rev 2.3

Icom. Inc

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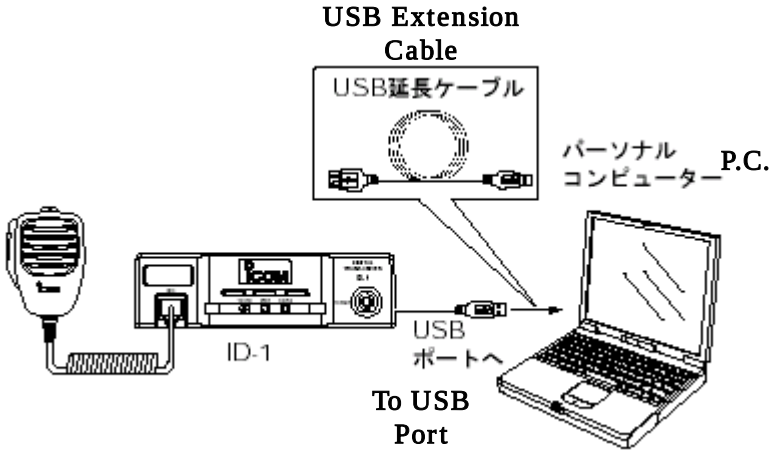
Connection to the PC:



The ID-1 is connected to the PC by the USB cable.

The ID-1 uses FTDI's USB serial conversion IC chip, and the ID-1 is recognized on the PC side as being connected to the COM port.

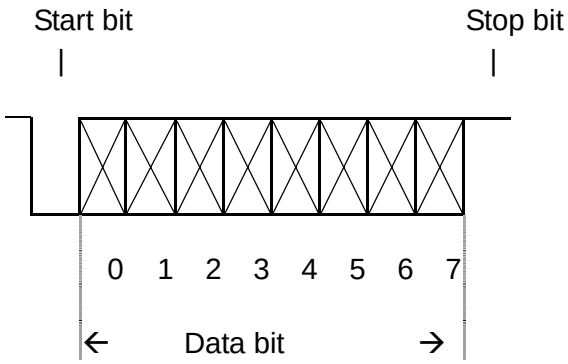
At the moment the ID-1 is connected to the PC, the USB serial conversion IC chip in the ID-1 carries out device assignment as a new COM port on the PC side.

The assignment of the new COM port sometimes differs depending on the PC, therefore it is necessary to confirm which COM port the assignment has been made to. An example of this confirmation on a Windows OS system is shown below.

E.g.: Windows 98
Open [Control Panel] → Click [System] → Click [Device Manager] → Click [Port]

Communication Format:

1. The Format of a Byte Unit



- Transfer Method
  Non-synchronized serial NRZ
- Structure of 1 Byte
  Start Bit =1 bit, Data bit= 8 bits, No parity, Stop bit = 1 bit
- Transfer Speed
  19,200bps fixed

2. Command Format

- Basic Format

Txr→Controller

(1) Pre-amble	(1) Pre-amble	(2) Rx Address	(3) Tx Address	(4) Command	(5) Sub Command	(6) Data area		(7) Post Amble
F E	F E	Controller Address	Transceiver Address	X X	X X	X X	X X	F D

Controller→Txr

(1) Pre-amble	(1) Pre-amble	(2) Rx Address	(3) Tx Address	(4) Command	(5) Sub Command	(6) Data area		(7) Post Amble
F E	F E	Transceiver Address	Controller Address	X X	X X	X X	X X	F D

(1) Preamble : With the insertion of a synchronous code at the start of the data, and it uses a hexadecimal FE.

(2) Rx Address : The ID-1's address is set as 01 hex, and the controller's (control software)
(3) Tx Address address uses hexadecimal 7F.

(4) Command : The functions that can be controlled are indicated as commands indicated in hex.

(5) Sub-command : The supplement to the command that is indicated in hex. (Depending on the type of command, there are cases where the sub-command does not exist)

(6) Data Area : This is the area that handles the frequency or call-sign data etc., and depending on the command, the data length can vary.

(7) Post-amble : The code that indicates the end of the message, and it uses a hexadecimal FD.

Caution:
When using this command format and a command operation that does not exist in these disclosed contents is performed, the specified product(s) of Icom incorporated may be damaged.

Command List

Command type	Communication Direction	Meaning
Transceive	ID-1 --> PC	Transfers the command automatically according to the status, and the side that receives the command does not reply with an ACK
Read out	PC --> IC-1	The command request that reads out the setting values inside the ID-1.The ID-1 resplies with the setting values with ACK command.
ACK	ID-1 --> PC	The ACK command that responds to the read-out command.
Mode	PC --> IC-1	The command that sets the setting values in the inside the ID-1. The ID-1 replies with an OK ACK or an NG ACK to indicate whether it has accepted the setting values or not.
OK ACK	ID-1 --> PC	Responds with an OK ACK when the setting has been carried out correctly.
NG ACK	ID-1 --> PC	Responds with an NG ACK when the setting has not been carried out correctly.

Operation		Command Type	Command	Subcommand	Data	Data length
Program frequency		Transceive	00		BCD (5bytes) (See frequency data details)	1~5
		Set	05		BCD (5bytes) (See frequency data details)	1~5
Mode setting	FM	Transceive	01		05 01	2
		Set	06		05 01	2
	Digital voice	Transceive	01		D0 01	2
		Set	06		D0 01	2
	Digital data	Transceive	01		D1 01	2
		Set	06		D1 01	2
Ffrequency Read out		Read out	03			0
		Ack	03		BCD (5bytes) (See frequency data details)	5
Mode Read out		Read out	04			0
		Ack	04		xx 01 Type of Mode (See Mode setting for details)	2
Memory Write	Memory Ch	Transceive	09	00	0 ,BCD BCD,BCD (00~99, 100, 101 Ch) PA=100 PB=101	2
	Call C1	Transceive	09	01	00 01	2
	Call C2	Transceive	09	01	00 02	2
	Call C3	Transceive	09	01	00 03	2
Memory Write	Memory Ch	Set	09	00	0 ,BCD BCD,BCD (00~99, 100, 101 Ch) PA=100 PB=101	2
	Call C1	Set	09	01	00 01	2
	Call C2	Set	09	01	00 02	2
	Call C3	Set	09	01	00 03	2
Memory->VFO		Set	0A			0
Offset frequency Read out		Read out	0C			0
		Ack Transceive	0C		BCD (3bytes) (See Offset frequency data details	3
Program offset frequency		Set	0D		BCD (3bytes) (See Offset frequency data details	3
Scan Read out		Read out	0E			0
		Ack Transceive	0E	ww Scan Mode (See Scan setting details)	xx yy Scan direction UP=00 DN=01 Scan status RUN=00 PAUSE=01	2

Operation	Command Type	Command	Subcommand	Data	Data Length
Scan setting — Scan cancel	Set	0E	00	00	1
Program Scan Start	Set	0E	02	xx Scan direction UP=00 DN=01	1
Memory Scan Start	Set	0E	22	xx Scan direction UP=00 DN=01	1
Mode Select Scan Start	Set	0E	24	xx Scan direction UP=00 DN=01	1
PRIO Scan Start	Set	0E	42	xx Scan direction UP=00 DN=01	1
RP (DUP) Read out	Read out	0F			0
	Ack Transceive	0F	ww RP type (See RP setting)		0
RP (DUP) setting	Set	0F	ww Simp.=00 RP-=11 RP+=12 RPS=13	 <-- Simplex <-- RP-(DUP-) <-- RP+(DUP+) <-- RPS	0
TS Read out	Read out	10			0
	Ack Transceive	10	ww TS type (See Setting)		0
TS setting	Set	10	ww 5kHz=00 10kHz=01 12.5kHz=02 20kHz=03 25kHz=04 50kHz=05 100kHz=06 6.25kHz=07		0
AF VOL Knob Read out	Read out	14	01		0
	Ack Transceive	14	01	0 ,BCD BCD,BCD (00~255 level)	2
AF VOL Knob setting	Set	14	01	0 ,BCD BCD,BCD (00~255 level)	2
SQL Knob Rread out	Read out	14	03		0
	Ack Transceive	14	03	0 ,BCD BCD,BCD (00~255 level)	2
SQL Knob Setting	Set	14	03	0 ,BCD BCD,BCD (00~255 level)	2
RF Power Read out	Read out	14	0A		0
	Ack Transceive	14	0A	0 ,BCD BCD,BCD (00~255 level)	2
RF Power setting	Set	14	0A	0 ,BCD BCD,BCD (00/255 level) Hi Power =255 Low Power =0	2

Operation	Command Type	Command	Subcommand	Data	Data Length
Noise SQL Open/Close Read out	Read out	15	01		0
	Ack Transceive	15	01	xx close=00 open=01	1
S-meter Level Read out	Read out	15	02		0
	Ack Transceive	15	02	0 ,BCD BCD,BCD (00~255 level) Indicates the S-meter resolution	2
AFC Read out	Read out	16	4A		0
	Ack Transceive	16	4A	xx yy OFF=00 center=00 ON=01 up=01 dn=02	2
AFC Setting	Set	16	4A	xx OFF=00 ON=01	1
Power Switch Read out	Read out	18		During Power Switch read out, the number of preamble FE required is 15 times. When there is no ACK, the command is repeated 15 times.	0
	Ack Transceive	18		xx (See Power Switch Setting details)	1
Power Switch Setting	Set	18		xx OFF=00 ON=01 During Power Switch read out, the number of preamble FE required is 15 times. When there is no ACK, the command is repeated 15 times.	1
ID Read out	Read out	19		The ID Read out also uses the control software in judging the version. During ID read out, the number of preamble FE required is 15 times. When there is no ACK, the command is repeated 15 times.	
	Ack Transceive	19		25, 06, RR, RR, CC,CC, SS,SS,SS 25,06= Fixed value (hexidecimal) RR, RR=Rev information CC, CC=Version information 00=JPN 01=USA SS, SS, SS=Firmware checksum information	9
Memory Channnel Information Read out	Read out	1A	00	xx yy, yy xx= M/C yy, yy= Ch. number (See Command 1A 00 for details)	3
	Ack	1A	00	xx yy, yy zz~ xx= M/C yy, yy= Ch. number zz~= Memory Ch. Info Contents (See Command 1A 00 for details)	55
Memory Ch. Info. Setting Memory Clear	Set	1A	00	xx yy, yy zz~ xx= M/C yy, yy= Ch. number zz= 0xff (Memory Ch. clear value) (See Command 1A 00 for details)	4
Memory write	Set	1A	00	xx yy, yy zz~ xx= M/C yy, yy= Ch. number zz~= Memory Ch. Info Setting Contents (See Command 1A 00 for details)	55
Memory Channel SKIP Read out	Read out	**1A**	01		0
	Ack Transceive	**1A**	01	xx (See Memory Ch. SKIP Setting for details)	1
Memory Channel SKIP Setting	Set	**1A**	01	xx OFF=00 ON=01	1

Operation	Command Type	Command	Subcommand	Data	Data Length
TONE Read out	Read out	1A	02		0
	Ack Transceive	1A	02	xx (See TONE Setting details)	yy PBEEP Call Rx=01 No Rx=00	2
TONE Setting	Set	1A	02	xx OFF=00 TONE=01 PBEEP=02 TSQL=03		1
MUTE Read out	Read out	1A	03	00		1
	Ack Transceive	1A	03	00	yy OFF=00 ON=01	2
MUTE Setting	Set	1A	03	00	yy OFF=00 ON=01	2
MONI Read out	Read out	1A	03	01		1
	Ack Transceive	1A	03	01	yy OFF=00 ON=01	2
	Set	1A	03	01	yy OFF=00 ON=01	2
Current Status Read out	Read out	1A	04	00		1
	Ack Transceive	1A	04	00	yy (See Current Status Setting details)	2
Current Status Setting	Set	1A	04	00	yy VFO=00 Memo=01 CALL=02	2
Memory Channel Read out	Read out	1A	04	01		1
	Ack Transceive	1A	04	01	0 ,BCD BCD,BCD (See Current Status Setting details)	3
Memory Channel Setting	Set	1A	04	01	0,BCD BCD,BCD (00~99, 100, 101Ch) PA=100 PB=101	3
Call Channel read out	Read out	1A	04	02		1
	Ack Transceive	1A	04	02	BCD,BCD (See CALL Ch. Setting details)	2
CALL Channel Setting	Set	1A	04	02	BCD,BCD (01~03Ch.)	2
VFO/Memo Status Read out	Read out	1A	04	03		1
	Ack Transceive	1A	04	03	yy (See VFO/Memo Status Setting detai	2
VFO/Memo Status Setting	Set	1A	04	03	yy VFO=00 Memo=01	2
TX INH Read out	Read out	1A	05	00		1
	Ack Transceive	1A	05	00	yy (See TX INH Setting details)	2
TX INH Setting	Set	1A	05	00	yy TX INH=00 TX Enable=01	2

Operation	Command Type	Command	Subcommand	Data	Data Length
BEEP Read out	Read out	1A	05	02	1
	Ack Transceive	1A	05	02 yy (See BEEP Setting details)	2
BEEP Setting	Set	1A	05	02 yy OFF=00 ON=01	2
Cooling FAN Read out	Read out	1A	05	03	1
	Ack Transceive	1A	05	03 yy (See Cooling FAN Setting details)	2
Cooling FAN setting	Set	1A	05	03 yy OFF=00 ON=01	2
Auto Repeater Read out	Read out	1A	05	04	1
	Ack Transceive	1A	05	04 yy (See Auto Repeater Setting details)	2
Auto Repeater Setting	Set	1A	05	04 yy OFF=00 ON2=01 <--for USA ON1=02 OFF=00 ON=01 <--for JPN	2
Dimmer Read out	Read out	1A	05	05	1
	Ack Transceive	1A	05	05 yy (See Dimmer Setting details)	2
Dimmer Setting	Set	1A	05	05 yy Bright=00 Dark=01 OFF=02	2
Scan Resume Timer Read out	Read out	1A	05	06	1
	Ack Transceive	1A	05	06 yy (See scan Resume Timer Setting details)	2
Scan Resume Timer Setting	Set	1A	05	06 yy P-2=00 T-5=01 T-10=02 T-15=03	2
Standby Beep Read out	Read out	1A	05	07	1
	Ack Transceive	1A	05	07 yy (See Standby Beep Setting details)	2
Standby Beep Setting	Set	1A	05	07 yy OFF=00 ON=01	2
Memory Name Read out	Read out	1A	06		0
	Ack Transceive	1A	06	xx (See Memory Setting details)	1
Memory Name Setting	Set	1A	06	xx OFF=00 ON=01	1
All Status Read Read out	Read out	1A	09		0
	Ack	--	--	The ID-1 outputs all command ACK values	--
All Memory Clear ACK	Ack Transceive	1A	0A	41, 4C, 4C When the memory clear is made from the RC-24, the ID-1 transmits the ACK command.	3
All Memory Clear Setting	Set	1A	0A	41, 4C, 4C	3

Operation	Command Type	Command	Subcommand	Data	Data Length
Lock Read out	Read out	1A	10		0
	Ack Transceive	1A	10	xx (See Lock Setting details)	1
Lock Setting	Set	1A	10	xx OFF=00 ON=01	1
Repeater Tone Frequency Read out	Read out	1B	00		0
	Ack Transceive	1B	00	BCD (2bytes) (See tone frequency data details)	2
Repeater Tone Frequency Setting	Set	1B	00	BCD (2bytes) (See tone frequency data details)	2
CTCSS Tone Frequency Read out	Read out	1B	01		0
	Ack Transceive	1B	01	BCD (2bytes) (See tone frequency data details)	2
CTCSS Tone Frequency Setting	Set	1B	01	BCD (2bytes) (See tone frequency data details)	2
TX(PTT) Read out	Read out	1C	00		0
	Ack Transceive	1C	00	xx RX=00 TX=02 TX NG=01	1
D-Star Header FLAG (RX) Read out	Read out	1D	00	00	1
	Ack Transceive	1D	00	00 yy zz Top Flag Bottom Flag (See Command 1D 00 for details)	3
DSQL Read out	Read out	1D	01		0
	Ack Transceive	1D	01	xx yy (See DSQL Setting) C/DBEEP Call Rx=01 No RX=00	2
DSQL Setting	Set	1D	01	xx OFF=00 DBEEP=01 DSQL=02 CBEEP=03 CSQL=04	1
My Callsign Memory Ch Read out	Read out	1D	02		0
	Ack Transceive	1D	02	xx (See My Callsign Setting details)	2
My Callsign Memory Ch. Setting	Set	1D	02	xx (00~05) Indicates My Callsign Memory Ch. no.	1
My Callsign Read out	Read out	1D	03		0
	Ack Transceive	1D	03	ASCII (10bytes) 8 characters are valid (Last 2 chara are ingnored)	10
My Callsign Setting	Set	1D	03	ASCII (10bytes) 8 characters are valid (Last 2 chara are spaces)	10

Operation	Command Type	Command	Subcommand	Data	Data Length
RX Callsign Read out	Read out	1D	04		0
	Ack Transceive	1D	04	ASCII (32bytes) RPT2(8) + RPT1(8) + Called(8) + Caller(8) ( ) indicates no. of bytes ID-1 extracts the Callsign received	32
TX Callsign Read out	Read out	1D	05		0
	Ack Transceive	1D	05	ASCII (24bytes) (See TX Callsign Setting)	24
TX Callsign Setting	Set	1D	05	ASCII (24bytes) RPT2(8) + RPT1(8) + YOUR(8) ( ) indicate no. of bytes ID-1 sets the Callsign transmitted	24
TX Callsign All History Read out	Read out	1D	06		0
	Ack	1D	06	00 + ASCII (160bytes) The ID-1 retrieves all TX Callsigns set in the memory.	161
TX Callsign History Transceive	Transceive	1D	07	ASCII (8bytes) The ID-1 transceives the Callsign as as soon as the Callsign is set.	8
My Callsign All Read out	Read out	1D	08		0
	Ack Transceive	1D	08	00 + ASCII (50bytes, My Callsign *5) All 5 My Callsign Memory Channels are retrieved.	51
BREAK Read out	Read out	1D	10		0
	Ack Transceive	1D	10	xx (See BREAK Setting)	1
BREAK Setting	Set	1D	10	xx OFF=00 ON=01	1
Auto Reply Read out	Read out	1D	11		0
	Ack Transceive	1D	11	xx (See Auto Reply Setting)	1
Auto Reply Setting	Set	1D	11	xx OFF=00 ON=01	1
Auto Display of Rx Callsign Read out	Read out	1D	13		0
	Ack Transceive	1D	13	xx (See Auto Display of Rx Callsign Setting)	1
Auto Display of Rx Callsign Setting	Set	1D	13	xx OFF=00 ON=01	1
Auto Display of Own Callsign Read out	Read out	1D	14		0
	Ack Transceive	1D	14	xx (See Auto Display of Own Callsign Setting)	1
Auto Display of Own Callsign Setting	Set	1D	14	xx OFF=00 ON=01	1

Operation	Command Type	Command	Subcommand	Data	Data Length
Auto Memorize of Rx Callsign Read out	Read out	1D	15		0
	Ack Transceive	1D	15	xx (See Auto Memorize of Rx Callsign Setting)	1
Auto Memorize of Rx Callsign Setting	Set	1D	15	xx OFF=00 ON=01	1
Digital Monitor Read out	Read out	1D	16		0
	Ack Transceive	1D	16	xx (See Digital Monitor Setting)	1
Digital Monitor Setting	Set	1D	16	xx DIGITAL=00 ANALOG=01	1
Digital Code Read out	Read out	1D	17		0
	Ack Transceive	1D	17	xx (See Digital Code Setting)	1
Digital Code Setting	Set	1D	17	xx 00~99 (BCD)	1
DV Slow Data Auto TX Read out	Read out	1D	18		0
	Ack Transceive	1D	18	xx (See DV Slow Data Auto TX Setting)	1
DV Slow Data Auto TX Setting	Set	1D	18	xx OFF=00 ON=01	1
RPT SET Read out	Read out	1D	19		0
(RPT Callsign Auto setting)	Ack Transceive	1D	19	xx (See RPT SET Setting)	1
RPT SET Setting (RPT Callsign Auto setting)	Set	1D	19	xx OFF=00 ON=01	1
Control Software CS Setting Screen Display Request (RPT Callsign Auto setting)	Transceive	1D	1A	xx Normal display=00 Auto Setting display=01	1
RX Callsign "/" Read out	Read out	1D	DB		1
	Ack Transceive	1D	DB	ASCII (4bytes) Reads out the 4 characters after the '/' of the received Caller callsign.	4
My Callsign "/" Read out	Read out	1D	DC		0
	Ack Transceive	1D	DC	ASCII (4bytes) Reads out the 4 characters after the '/' of YOUR callsign.	4
My Callsign "/" Setting	Set	1D	DC	ASCII (4bytes) Reads out the 4 characters after the '/' of YOUR callsign.	4
My Callsign "/" All Read out	Read out	1D	DD		0
	Ack	1D	DD	00 + ASCII (20bytes, My Callsign "/" *5 Reads out all characters after the '/' of all callsigns in of the 5 Ch. In My Callsign Memory Ch.	21
RX Message Read out	Read out	1D	DF		0
	Ack	1D	DF	ASCII (20bytes)	20
TX Message Read out	Read out	1D	E0	xx (01~06)	1
	Ack	1D	E0	xx + ASCII(20bytes) (01~06)	21
TX Message Setting	Set	1D	E0	xx (01~06) xx + ASCII(20bytes)	21
TX Message TX Request Read out	Read out	1D	E1		0
	Ack	1D	E1	xx (See TX Message TX Request Setting)	1

Operation	Command Type	Command	Subcommand	Data	Data Length
TX Message TX Request Setting	Set	1D	E1	xx OFF=00 ON=01	1
Message RX Callsign Read out	Read out	1D	E2		0
	Ack	1D	E2	ASCII(8bytes)+ASCII(4bytes) Caller CallSign + 4 chara. after "/"	12
Message RX Auto Display Read out	Read out	1D	E3		0
	Ack	1D	E3	xx (See Message RX Auto Display Setting)	1
Message RX Auto Display Setting	Set	1D	E3	xx OFF=00 ON=01	1
EMR Read out	Read out	1D	EC		0
	Ack Transceive	1D	EC	xx (See EMR Setting)	1
EMR Setting	Set	1D	EC	xx OFF=00 ON=01	1
OK Ack	OKAck	FB		(When setting is correct, OK Ack is returned)	0
NG Ack	NG Ack	FA		(When setting is not correct, NG Ack is returned)	0

Frequency Data Compostion Details:

Preamble	Preamble	RX Address	TX Address	Command							Postamble
					10 1	1 100	100 10	10 1	1 100		
FE	FE	XX	XX	XX		k	k k	M M	G M		FD
					<----------		Frequency		---------->		

Unit: Hz
Lined up from the lower frequency in 1 byte units

Offeset Frequency Composition Details:

Preamble	Preamble	RX Address	TX Address	Command					Postamble
					1 100	100 10	10 1		
FE	FE	XX	XX	XX	k	k k	M M		FD
					<------	Frequency	------>		

Unit: Hz
Lined up from the lower frequency in 1 byte units

Tone Frequency Data Composition Details:

Preamble	Preamble	RX Address	TX Address	Command			Postamble
					100 10	1 0.1	
FE	FE	XX	XX	XX			FD
					<-- Frequency	---->	

Unit: Hz
Lined up from the higher frequency

Command 1A 00 Details:

Read out

Preamble	Preamble	RX Address	TX Address	Command	Subcommand	M/C	<--- Data	---->	Postamble
							"0" 100	10 1	
FE	FE	Radio address	Controller address	1A	00	00			FD
							<----	---->	
							Channel number		

Ack

Preamble	Preamble	RX Address	TX Address	Command	Subcommand	M/C	<----	Data	---->	Postamble
		Controller					"0" 100	10 1		
FE	FE	address	Radio address	1A	00	00				FD
						Memo attribute	<----	---->	Memory content	
							Channel number			

Setting

Preamble	Preamble	RX Address	TX Address	Commnad	Subcommand	M/C	<----	Data	---->	Postamble
							"0" 100	10 1		
FE	FE	Radio address	Controller address	1A	00	00				FD
						Memo attribute	<----	---->	Memory content	
							Channel number			

Memory Attribute and Channel Number:

M/C

00	Memory
01	Call

Memory Selection

Data		Channel
00	00	0Ch
	|	|
00	99	99Ch
01	00	PA
01	01	PB

Call Selection

Data		Channel
00	01	Call FM
00	02	Call DV
00	03	Call DD

Memory Contents:

Blank

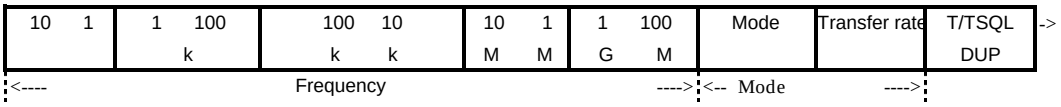
FF

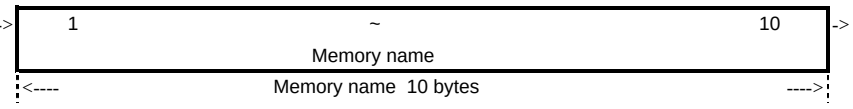
Blank

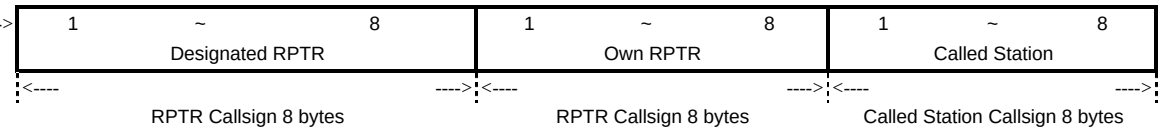
Limit

Ch	Blank
1~100	Yes
Call	No
PA, PB	No

When not Blank







CODE	Reserve

The last byte is a reserve, and its content is not stipulated (Default 00)

Digital Code: 1 byte

Mode

Data	Mode
05	**FM**
D0	Digital voice
D1	Digital data

Transfer rate

Data	Transfer rate
01	Fixed

T/TSQL/DCSQL/, DUP, Pocket BEEP:

		000	OFF	00	OFF	00	Simplex	
		010	DSQL	01	T	01	RP-	
		100	CSQL	10	Nothing	10	RP+	
		Other	Nothing	11	TSQL	11	RPS	
Fixed		DSQL		T/TSQL		DUP		
0	*	*	*	*	*	*	*	
7	6	5	4	3	2	1	0	bit

N.B.: The Digital Call SQL is only valid during digital mode, the T/TSQL use is excluded
P.BEEP is not memorized.
Even when DCSQL P.BEEP is on, only the DCSQL is considered ON.

TONE Frequency:

67.0~254.1 Hz: 50 tones
(TSQL is the same)

Memory Skip:

Data	Skip
00	OFF
01	ON

Offset Frequency:

0.0000~60.0000MHz

Memory Name/Callsign:

	Memory Name	RPTR Callsign	Called Station Callsign
No of Chara	Up to 10 ASCII Code characters	Up to 8 ASCII Code character	Up to 8 ASCII Code characters
Range	""(20h)"~"(7Eh)	""(20h), "/"(2Fh)~"9"(39), "A"(41h)~"Z"(5Ah): 38 types	

Command 1D 00 Details:

Read out:

Preamble	Preamble	RX Address	TX Address	Command	Subcommand	Data	Postamble
F E	F E	Radio address	Controller address	1 D	0 0	0 0	F D

ACK:

Preamble	Preamble	RX Address	TX Address	Command	Subcommand	Data		Postamble
		Controller					Top	Bottom	
F E	F E	address	Radio address	1 D	0 0	00	Flag	Flag	F D

Flag:

The flag consists of 2 bytes:
During digital communication, the radio heaer flag (1 byte of data) is separated into top 5bit and bottom 3bit.

1st byte	7bit	6bit	5bit	4bit	3bit	2bit	1bit	0bit
	0	0	0	Top flag				
	Fixed	Fixed	Fixed	7bit	6bit	5bit	4bit	3bit

2nd byte	7bit	6bit	5bit	4bit	3bit	2bit	1bit	0bit
	0	0	0	0	0	Bottom flag		
	Fixed	Fixed	Fixed	Fixed	Fixed	2bit	1bit	0bit

	Top Flag				
	7bit	6bit	5bit	4bit	3bit
0	Voice	Direct	No Interrupt	Data	Normal Com
1	Data	Relay	Interrupt	Control	EMR Com

Bottom Flag			
2bit	1bit	0bit	
1	1	1	
1	1	0	
1	0	1	
1	0	0	
0	1	1	
0	1	0	
0	0	1	
0	0	0	