

P (12 bits) xxxxxxxxxxxx (Parity)

Extended Address Word:

F (1 bit) 0
 NAWC (3 bits) xxx
 LOCAL (5 bits) xxxxx (local control - system specific)
 ORDQ (3 bits) xxx (order qualifier)
 ORDER (5 bits) xxxxx (order code)
 LT (1 bit) x (1=last try)
 (8 bits) 00000000
 MIN2 (10 bits) xxxxxxxxxx (coded Area Code)
 P (12 bits) xxxxxxxxxxxx

Serial Number Word:

F (1 bit) 0
 NAWC (3 bits) xxx
 SERIAL (32 bits) xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx (serial number)
 P (12 bits) xxxxxxxxxxxx

First Word of Called Address: [D1..D16 are the encoded digits]

F (1 bit) 0
 NAWC (3 bits) xxx
 D1 (4 bits) xxxx
 D2 (4 bits) xxxx
 D3 (4 bits) xxxx
 D4 (4 bits) xxxx
 D5 (4 bits) xxxx
 D6 (4 bits) xxxx
 D7 (4 bits) xxxx
 D8 (4 bits) xxxx
 P (12 bits) xxxxxxxxxxxx

Table of Digit Codes:

1	0001	7	0111	NULL	0000
2	0010	8	1000		
3	0011	9	1001		
4	0100	0	1010		
5	0101	*	1011		
6	0110	#	1100		

Second Word of Called Address:

F (1 bit) 0
 NAWC (3 bits) 000
 D9 (4 bits) xxxx (encoded digits, see above table)
 D10 (4 bits) xxxx
 D11 (4 bits) xxxx
 D12 (4 bits) xxxx
 D13 (4 bits) xxxx
 D14 (4 bits) xxxx
 D15 (4 bits) xxxx
 D16 (4 bits) xxxx
 P (12 bits) xxxxxxxxxxxx

=====
 (RVC) Reverse Voice Channel (mobile-to-tower on voice channel)

RVC Message Format:

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```

-----
Dotting          (101 bits) 101010101....101
Word Sync        (11 bits) 11100010010
Repeat 1 Word 1  (48 bits) xxxxx ... xxxxx
Dot              (37 bits) 10101010101010101010101010101
Word Sync        (11 bits) 11100010010
Repeat 2 Word 1  (48 bits) xxxxx ... xxxxx
.
.
.
Dot              (37 bits)
Word Sync        (11 bits)
Repeat 5 word 1  (48 bits)
Dot              (37 bits)
Word Sync        (11 bits)
Repeat 1 Word 2  (48 bits)
Dot              (37 bits)
Word Sync        (11 bits)
Repeat 2 Word 2  (48 bits)
.
.
.
Dot              (37 bits) 10101010101010101010101010101
Word Sync        (11 bits) 11100010010
Repeat 5 word 2  (48 bits) xxxxx ... xxxxx
-----

```

There are two kinds of RVC messages:

Order Confirmation Message
 Called Address Message

 Order Confirmation Message Word:

```

F      (1 bit)  1
NAWC   (2 bits) 00
T      (1 bit)  1
LOCAL  (5 bits) xxxxx
ORDQ   (3 bits) xxx
ORDER  (5 bits) xxxxx
      (19 bits) 00000000000000000000
P      (12 bits) xxxxxxxxxxxxxx
-----

```

 Called Address Message, First Word:

```

F      (1 bit)  1
NAWC   (2 bits) 01
T      (1 bit)  0
D1     (4 bits) xxxx

```

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```
D2 (4 bits) xxxx
D3 (4 bits) xxxx
D4 (4 bits) xxxx
D5 (4 bits) xxxx
D6 (4 bits) xxxx
D7 (4 bits) xxxx
D8 (4 bits) xxxx
P (12 bits) xxxxxxxxxxxxxx
```

Called Address Message, Second Word:

```
F (1 bit) 1
NAWC (2 bits) 00
T (1 bit) 0
D9 (4 bits) xxxx
D10 (4 bits) xxxx
D11 (4 bits) xxxx
D12 (4 bits) xxxx
D13 (4 bits) xxxx
D14 (4 bits) xxxx
D15 (4 bits) xxxx
D16 (4 bits) xxxx
P (12 bits) xxxxxxxxxxxxxx
```

=====

(FOCC) Forward Control Channel (tower-to-mobile on control channel) FOCC Message Format:

```
-----
Dotting (10 bits) b1010101010
Word Sync (11 bits) b11100010010
Repeat 1 word A (40 bits) bxxxxxxxxxbxxxxxxxxxbxxxxxxxxxbxxxxxxxxx
Repeat 1 word B (40 bits) A Busy/Idle Bit (b) is inserted
Repeat 2 word A (40 bits) at the beginning of Dotting and
Repeat 2 word B (40 bits) Word Sync, and every 10 bits
Repeat 3 word A (40 bits) during word repetitions beginning
Repeat 3 word B (40 bits) at the start of the first word.
Repeat 4 word A (40 bits) b=1 when the RCC is Idle.
Repeat 4 word B (40 bits) b=0 when the RCC is Busy.
Repeat 5 word A (40 bits)
Repeat 5 word B (40 bits) bxxxxxxxxxbxxxxxxxxxbxxxxxxxxxbxxxxxxxxx
Dotting (10 bits) b1010101010
-----
```

There are three types of FOCC messages:

- Mobile Station Control Message
- Overhead Message
- Control-filler Message

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Mobile Station Control Message: (one,two or four words)

Abbreviated Address Word:

TT (2 bits) 0x (00=if one word sent, 01=if multiple words sent)
DCC (2 bits) xx Digital Color Code
MIN1 (24 bits) xxxxxxxxxxxxxxxxxxxxxxxxxxxx
P (12 bits) xxxxxxxxxxxx

Extended Address Word: (two versions of this word occur)

-----		-----	
TT (2 bits)	10	TT (2 bits)	10
SCC (2 bits)	11	SCC (2 bits)	xx [not=11]
MIN2 (10 bits)	xxxxxxxxxx	MIN2 (10 bits)	xxxxxxxxxx
(1 bit)	0	(1 bit)	0
LOCAL (5 bits)	xxxxx	VMAC (3 bits)	xxx (attenuation code)
ORDQ (3 bits)	xxx	CHAN (11 bits)	xxxxxxxxxx (channel number)
ORDER (5 bits)	xxxxx	P (12 bits)	xxxxxxxxxx
P (12 bits)	xxxxxxxxxx		

First Directed-Retry Word:

TT (2 bits) 10
SCC (2 bits) 11 SAT Color Code
CHANPOS (7 bits) xxxxxxx channel position relative to first access channel
CHANPOS (7 bits) xxxxxxx
CHANPOS (7 bits) xxxxxxx
(3 bits) 000
P (12 bits) xxxxxxxxxxxx

Second Directed-Retry Word:

TT (2 bits) 10
SCC (2 bits) 11
CHANPOS (7 bits) xxxxxxx
CHANPOS (7 bits) xxxxxxx
CHANPOS (7 bits) xxxxxxx
(3 bits) 000
P (12 bits) xxxxxxxxxxxx

Overhead Messages:

System Parameter Overhead Message:
Global Action Overhead Message:
Registration Identification Message:
Control-filler Message:

System Parameter Overhead Message:

System Parameter Word 1:

TT (2 bits) 11

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DCC (2 bits) xx
 (3 bits) 000
 NAWC (4 bits) xxxx
 OHD (3 bits) 110 (overhead message type)
 P (12 bits) xxxxxxxxxxxx

System Parameter Word 2:

TT (2 bits) 11
 DCC (2 bits) xx
 S (1 bit) x (serial number flag)
 E (1 bit) x (extended address flag)
 REGH (1 bit) x (registration for home stations)
 REGR (1 bit) x (registration for roaming stations)
 DTX (1 bit) x (discontinuous transmission flag)
 (1 bit) 0
 N-1 (5 bits) xxxxx (number of paging channels in system minus 1)
 RCF (1 bit) x (read-control-filler flag)
 CPA (1 bit) x (combined paging/access flag)
 CMAX-1 (1 bit) x (number of access channels in system minus 1)
 END (1 bit) x (1=last word of overhaed message train)
 OHD (3 bits) 111
 P (12 bits) xxxxxxxxxxxx

Global Action Overhead Messages:

Rescan Global Action Message:

TT (2 bit) 11
 DCC (2 bits) xx
 ACT (4 bits) 0001
 (16 bits) 0000000000000000
 END (1 bit) x
 OHD (3 bits) 100
 P (12 bits) xxxxxxxxxxxx

Registration Increment Global Action Message:

TT (2 bits) 11
 DCC (2 bits) xx
 ACT (4 bits) 0010
 REGINCR (12 bits) xx (registration increment)
 (4 bits) 0000
 END (1 bits) xx
 OHD (3 bits) 100
 P (12 bits) xx

New Access Channel Set Global Action Message:

TT (2 bits) 11
 DCC (2 bits) xx

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ACT (4 bits) 0110
 NEWACC (11 bits) xxxxxxxxxxxx (new access channel starting point)
 (4 bits) 0000
 END (1 bit) x
 OHD (3 bits) 100
 P (12 bits) xxxxxxxxxxxx

Overload Control Global Action Message:

TT (2 bits) 11
 DCC (2 bits) xx
 ACT (4 bits) 1000
 OLCD0 (1 bit) x (overload class flags)
 OLCD2 (1 bit) x
 OLCD3 (1 bit) x
 OLCD4 (1 bit) x
 OLCD5 (1 bit) x
 OLCD6 (1 bit) x
 OLCD7 (1 bit) x
 OLCD8 (1 bit) x
 OLCD9 (1 bit) x
 OLCD10 (1 bit) x
 OLCD11 (1 bit) x
 OLCD12 (1 bit) x
 OLCD13 (1 bit) x
 OLCD14 (1 bit) x
 OLCD15 (1 bit) x
 END (1 bit) x
 OHD (3 bits) 100
 P (12 bits) xxxxxxxxxxxx

Access Type Parameters Global Action Message:

TT (2 bits) 11
 DCC (2 bits) xx
 ACT (4 bits) 1001
 BIS (1 bit) x (busy/idle status flag)
 (15 bits) 000000000000000
 END (1 bit) x
 OHD (3 bits) 100
 P (12 bits) xxxxxxxxxxxx

Access Attempt Parameters Global Action Message:

TT (2 bits) 11
 DCC (2 bits) xx
 ACT (4 bits) 1010
 MAXBUSY-PGR (4 bits) xxxx (maximum busy occurrences, page response)
 MAXSZTR-PGR (4 bits) xxxx (maximum seizure tries, page response)
 MAXBUSY-OTHER (4 bits) xxxx (maximum busy occurrences, other accesses)
 MAXSZTR-OTHER (4 bits) xxxx (maximum seizure tries, other accesses)

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```
END      (1 bits)  x
OHD      (3 bits)  100
P        (12 bits) xxxxxxxxxxxxxx
```

Local Control 1 Message:

```
TT      (2 bits)  11
DCC      (2 bits)  x
ACT      (4 bits)  1110
LOCAL CONTROL (16 bits) xxxxxxxxxxxxxxxxxx (any local control code)
END      (1 bits)  x
OHD      (3 bits)  100
P        (12 bits) xxxxxxxxxxxxxx
```

Local Control 2 Message:

```
TT      (2 bits)  11
DCC      (2 bits)  xx
ACT      (4 bits)  1111
LOCAL CONTROL (16 bits) xxxxxxxxxxxxxxxxxx
END      (1 bits)  x
OHD      (3 bits)  100
P        (12 bits) xxxxxxxxxxxxxx
```

Registration Identification Message:

```
TT      (2 bits)  11
DCC      (2 bits)  xx
REGID    (20 bits) xxxxxxxxxxxxxxxxxxxxxx (registration ID)
END      (1 bit)   x
OHD      (3 bits)  000
P        (12 bits) xxxxxxxxxxxxxx
```

Control-Filler Message:

```
TT      (2 bits)  11
DCC      (2 bits)  xx
          (6 bits)  010111
CMAC     (3 bits)  xxx (current mobile attenuation)
          (7 bits)  0011001
WFOM     (1 bit)   x (wait for overhead message)
          (4 bits)  1111
OHD      (3 bits)  001
P        (12 bits) xxxxxxxxxxxxxx
```

```
=====
(FVC) Forward Voice Channel: (tower-to-mobile on voice channel)
FVC Message Format: * BUSY/IDLE bits are inserted into FVC messages in a
                    format similar to that of FOCC messages)
-----
```

```
Dotting      (101 bits) 101010101...101
```


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Word Sync	(11 bits)	11100010010
Repeat 1 Word	(40 bits)	xxxxxx...xxxxxx
Dot	(37 bits)	101010101010101010101010101010101
Word Sync	(11 bits)	11100010010
Repeat 2 Word	(40 bits)	xxxxxx...xxxxxx
Dot	(37 bits)	
Word Sync	(11 bits)	
Repeat 3 Word	(40 bits)	
.	.	
.	.	[same pattern of repetition]
.	.	
Dot	(37 bits)	101010101010101010101010101010101
Word Sync	(11 bits)	11100010010
Repeat 11 Word	(40 bits)	xxxxxx...xxxxxx

There is only kind of FVC message:

Mobile Station Control Message:

Mobile Station Control Word: (two versions of this word occur)

TT	(2 bits)	10	TT	(2 bits)	10
PSCC	(2 bits)	xx	PSCC	(2 bits)	xx (present SAT code)
	(9 bits)	000000000		(9 bits)	000000000
LOCAL	(5 bits)	xxxxx	VMAC	(3 bits)	xxx (attenuation code)
ORDQ	(3 bits)	xxx	CHAN	(11 bits)	xxxxxxxxxxx (channel number)
ORDER	(5 bits)	xxxxx	P	(12 bits)	xxxxxxxxxxxxx
P	(12 bits)	xxxxxxxxxxxxx			

=====
* See Part Six for information describing various codes used in message word fields.

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³ The DNA BOX - Striking at the Nucleus of Corporate Communications. ³

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