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HAMNET SCANNER SEARCHERS GUIDE

Compiled by Steve Sampson

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30.000 - 46.610 MHz Business Band, Government

Emergency Guard

40.500 Primary

46.610 - 47.000 MHz Portable Phones

The following channels are listed as BASE/HANDSET.

46.610/49.670	Channel 1
46.630/49.845	Channel 2
46.670/49.860	Channel 3
46.710/49.770	Channel 4
46.730/49.875	Channel 5
46.770/49.830	Channel 6 (Also Baby Monitors on 49.83)
46.830/49.890	Channel 7 (Also Baby Monitors on 49.89)
46.870/49.930	Channel 8
46.930/49.990	Channel 9
46.970/49.970	Channel 10

47.000 - 49.670 MHz Business Band
49.670 - 50.000 MHz Portable Phones
50.000 - 54.000 MHz Amateur Radio
54.000 - 72.000 MHz VHF Television (Ch 2 - 4)

Television Channels are 6 MHz wide
Video is Fo + 1.25 MHz
Audio is Video + 4.5 MHz
Color Burst is Video + 3.5795

72.000 - 76.000 MHz Model Radio Control, Aviation and Industry

75.000 MHz is Aircraft Navigation Marker Beacon. This is near airports on the ILS (Instrument Landing System) course. Three lights are in the cockpit (Purple, Amber, White):

Purple - Outer Marker, Intercept Point, 4 to 7 Miles downrange
Two 400 Hz Dashes Per Second.
Amber - Middle Marker, Cat I Decision Height, 3500 Feet

downrange, 1300 Hz Dot and Dashes 95 times a minute.
White - Inner Marker, Cat II Decision Height, 3000 Feet
downrange, Six 3000 Hz Dots Per Second.

76.000 - 88.000 MHz	VHF Television (Ch 5 - 6)
88.000 - 108.000 MHz	FM Commercial Advertising (some music)
108.000 - 112.000 MHz	Aviation Navigation (Terminal VOR, ILS)

Currently 80 50 kHz Channels

112.000 - 117.950 MHz Aviation Navigation (VOR)

Currently 120 50 kHz Channels

118.000 - 136.000 MHz Aviation Communication

Currently 720 25 kHz Channels

Emergency Guard

121.500 Primary

136.000 - 138.000 MHz	Weather Satellite, Government, Business
138.000 - 144.000 MHz	Government (Military Bases)
144.000 - 148.000 MHz	Amateur Radio
148.000 - 151.000 MHz	Government
151.000 - 156.250 MHz	Business Band (Police, Fire)
156.250 - 157.425 MHz	Marine Band

Emergency Guard

156.800 Primary

157.450 - 160.200 MHz	Business Band (Police, Fire)
160.200 - 161.600 MHz	Railroad (161.600 is Marine Band)
161.605 - 161.795 MHz	Business Band (Radio and TV Remotes)
161.800 - 162.000 MHz	Marine Band (Telephone)
162.000 - 174.000 MHz	Government, Some Business (Radio and TV Remotes)

This is the common "Government Band", frequency spacing
is typically 12.5 kHz, other users are 5 kHz spacing

NOAA Weather is transmitted on:

162.400, 162.425, 162.450, 162.475, 162.500, 162.525, 162.550

174.000 - 216.000 MHz	VHF Television (Ch 7 - 13)
216.000 - 220.000 MHz	Maritime Mobile

220.000 - 222.000 MHz Land Mobile Radio
222.000 - 225.000 MHz Amateur Radio
225.000 - 329.000 MHz Government (Military Aviation)
329.000 - 335.000 MHz Government (Airport Glide Slope Navigation)
335.000 - 400.000 MHz Government (Military Aviation)

    364.200 AICC (Airborne Intercept Control Common)

    Many security low power control devices are located in the 225 - 400
    band, both civilian and government.

    Emergency Guard

    243.000 Primary
    282.800 Secondary ("Twenty-Eight Twenty-Eight")

400.000 - 420.000 MHz Government (Base Walkie/Talkies, Pagers, etc)
420.000 - 450.000 MHz Amateur Radio
450.000 - 470.000 MHz Business Band (Police, Fire, Radio and TV Remotes)
470.000 - 890.000 MHz UHF Television (Ch 14 - 83)

        (All channels not used anymore, 70 - 83 Obsolete)

806.000 - 810.000 MHz Business Band (Conventional Systems, Mobile Input)
810.000 - 816.000 MHz Public Safety (Slow Growth Systems, Mobile Input)
816.000 - 821.000 MHz Business Band (Trunked Systems, Mobile Input)
821.000 - 825.000 MHz Land Mobile Satellite Service (Mobile Input)
825.000 - 835.000 MHz Cellular Telephone Non-Wireline (Mobile Input)
835.000 - 845.000 MHz Cellular Telephone Wireline (Mobile Input)
845.000 - 850.000 MHz Cellular Telephone (Expansion, Mobile Input)
850.000 - 851.000 MHz Unallocated
851.000 - 855.000 MHz Business Band (Conventional systems, Base Output)
855.000 - 861.000 MHz Public Safety (Slow Growth Systems, Base Output)
861.000 - 866.000 MHz Business Band (Trunked Systems, Base Output)
866.000 - 870.000 MHz Land Mobile Satellite Service (Satellite Output)
870.000 - 880.000 MHz Cellular Telephone Non-Wireline (Base Output)
880.000 - 890.000 MHz Cellular Telephone Wireline (Base Output)
890.000 - 895.000 MHz Cellular Telephone (Expansion, Base Output)
895.000 - 902.000 MHz Land Mobile Radio (Mobile Input)
902.000 - 928.000 MHz Amateur Radio
928.000 - 930.000 MHz Multi-Address Paging
930.000 - 931.000 MHz Advanced Technology Paging
931.000 - 932.000 MHz Common Carrier Paging
932.000 - 935.000 MHz Government/Private Shared
935.000 - 941.000 MHz Land Mobile Radio (Base Output)
941.000 - 944.000 MHz Government/Private Shared
944.000 - 947.000 MHz Broadcast Studio To Transmitter Link
947.000 - 952.000 MHz Broadcast Radio Services

952.000 - 960.000 MHz Microwave Relay and Paging
960.000 -1215.000 MHz Military TACAN, JTIDS, and Civilian DME

TACAN has 126 X and 126 Y channels. Normally only X channels are used, unless crowded. TACAN frequencies are tied to VOR frequencies. (Note: there are more TACAN frequencies than VOR frequencies, some are blanked around the ATCRBS Beacon frequencies, and others are for expansion and military use). Pulse width is 3.5 microseconds. Aircraft sounds like a Top Fuel Dragster or Funny Car when searching for lock-on.

Channel	VOR	Air	Ground	
17X	108.00	1041	978	
17Y	108.05	1041	1104	
18X	108.10	1042	979	
18Y	108.15	1042	1105	
19X	108.20	1043	980	
19Y	108.25	1043	1106	
. . .				
58X	112.10	1082	1019	
58Y	112.15	1082	1145	
59X	112.20	1083	1020	
59Y	112.25	1083	1146	
. . .				(Unused to protect Beacon)
70X	112.30	1094	1157	
70Y	112.35	1094	1031	(Unused to protect Beacon)
126X	117.90	1150	1213	
126Y	117.95	1150	1087	(Last VOR pairing)

29Y and 92Y Favorites for Military Air Refueling (Air-Air)
Check the heavens if active. All Air-Air pairs are 63 apart.

29Y	N/A	1053	1116
92Y	N/A	1116	1053

Air Traffic Control Radar Beacon System (ATCRBS - At Crabs, Secondary Radar - to the British)

1030 MHz Ground Interrogations to Transponder
1090 MHz Aircraft Transponder Replies to Ground

There are currently five interrogation modes in use:

Mode 1, 2 pulses spaced 3 microseconds [Military]

Mode 2, 2 pulses spaced 5 microseconds [Military]
Mode 3/A, 2 pulses spaced 8 microseconds [Military/Civilian]
Mode 4, Encrypted, IFF [Military]
Mode C, 2 pulses spaced 21 microseconds [Military/Civilian]

A third pulse is also included in all modes (except 4) at 2 microseconds from the first. This is the sidelobe pulse. if it's within @6 dB of the first pulse (or greater) the transponder doesn't reply (as it has detected an antenna sidelobe). Pulse widths are .8 microseconds.

The reply is two framing pulses spaced 20.3 microseconds apart, with 13 code pulses (0000 - 7777 Octal) and an X pulse at the center which is not used anymore). A fourth pulse (called SPI pulse (Special Position Identifier) is used to identify your position when asked by a controller to "Squawk Ident", it is 4.35 microseconds after the last framing pulse and lasts for 20 seconds (about 2 scans of a long range radar). Pulse widths are .45 microseconds.

1215.000 - 1240.000 MHz Government

1227.6 MHz Is the Civilian Global Positioning Satellite (GPS) Frequency L2 and 1575.42 MHz is L1. Will probably replace LORAN and VOR when fully functional.

1240.000 - 1300.000 MHz Amateur Radio, Government