Cat Scan Version 3.0

Computer control for the Yaesu FT890 transceiver

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1. INTRODUCTION

CatScan provides computer control for the Yaesu FT890 (and similar) transceivers. It complements the facilities found on the radio, and adapts the radio better to a radio facsimile monitoring environment.

- It provides a simple way to use a Station database, and to browse the bands selectively.
- It has Advanced scanning facilities, to help you find the best signal on the bands.
- It has Short-cuts to otherwise awkward functions, such as Direct frequency key-in, Write memories to radio and Side-band/filter toggle.
- It has a Command line interface so that scripts can be used to control the radio from within other programs.

2. STATION DATABASE

The station database is a text file, containing a list of records. Each record consists of fixed length fields. Only the Frequency, Callsign and Flags fields are of significance to CatScan. Additional fields (UTC, Service, LPM/IOC) are provided for descriptive purposes.

The Frequency field contains the carrier frequency in kHz. The Callsign field, containing the callsign, is used to select records when the Call-query filter is set.

The Flags field contains one or more characters indicating the type(s) of service. It is used to select records when the Flags-query filter is set. Specific flags are of special significance to CatScan.

The F flag denotes that the service is Facsimile, and the appropriate 1.9kHz offset is applied to the operating frequency when in single side-band mode.

The * flag denotes that the record is Marked. Unlike other flags, which are fixed, it may be set manually by pressing *. It is also set automatically by the Scan and Mark function.

3. ADVANCED SCANNING FACILITIES

For best results, it is recommended that AGC is set to Fast, and the RF gain control is set fully clockwise, when scanning facilites are utilised.

Memory Scan

1. Scans active database records.
2. Scanning stops when the S-reading reaches the set S-level.
3. May be used to log signal activity continuously to the file 'catscan.log'.

Limit Scanning

1. Scans a band of frequencies continuously. Scanning stops when the S-reading reaches the set S-level, and commences after 5 seconds without signal.
2. Ideal for scanning AM broadcast bands and CB channels.
3. Channels may be browsed manually by using the Left/right arrow keys.

Sweep Scan

1. Scans the band 0.1-30MHz and logs signal readings at 100kHz intervals, to the file 'sweep.log'.

Get Best Signal

1. Scans all active database records
2. Updates the memory channels of the radio.
3. Optionally marks records whose S-reading reaches the set S-level.
4. Selects strongest signal

4. SHORT-CUTS

Direct frequency key-in

Simply type in the frequency on your computer keyboard, and press Enter. Any numeric key press triggers this function automatically.

Write memories to radio

Active database records (up to a maximum of 32) are written to each memory channel. Both the front and rear location of each memory are updated, however, the rear memory is loaded with an alternate mode that would be most appropriate. Unused memories are cleared.

Toggle side-band/filter

This function toggles LSB/USB, CW/CW-Narrow and AM/AM-Narrow. If in LSB/USB mode, the appropriate 1.9kHz offset is applied to the operating frequency if the F flag is set.

5. COMMAND LINE INTERFACE

CatScan S[weep]

This is the command line equivalent of the *Sweep Scan* function.

CatScan <Callsign> <Mode> [Flags]

This is the command line equivalent of the *Get Best Signal* function. It allows the user to apply a query on callsign and flags, and to set the operating mode. The default log file is updated.

CatScan <Freq kHz> <Mode> [Fax]

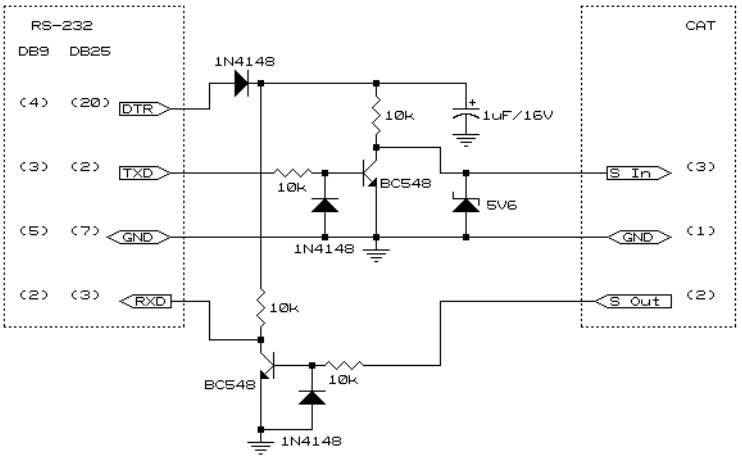
This allows the user to set the frequency and operating mode directly. The default log file is updated.

Remarks

An asterisk in <Callsign> matches all callsigns.
<Mode> is one of LSB, USB, CW, AM, FM
An asterisk in [Flags] selects records marked in a previous session.
The [Fax] flag applies the appropriate single side-band shift (±1.9kHz)

6. CAT INTERFACE SCHEMATIC

This circuit uses a few, readily available, low cost parts. It is phantom powered, drawing current from the computer's RS-232 port.



Pin numbers shown apply to the Yaesu FT890, and may be different for other models.

It is strongly recommended to use screened cables.

7. CONDITIONS FOR USE

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The author provides absolutely no warranty. The program is supplied "as is", and you may use it at your own risk. In no event will the author be liable for any damages arising out of the use of this program.

Bug reports, suggestions and feedback are welcome. For contact information, see below.

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