

COMPATIBLE SINGLE SIDEBAND/AM TRANSMITTER-RECEIVER

TYPE **CSB100TR** . . . by Hammarlund

The principle of Single Side Band transmission has proved its reliability throughout more than 30 years of use in long range radiotelephone communications. In SSB transmission only one sideband carries the message signal along with the entire output. By practically eliminating the power consuming carrier, the transmitted signal is approximately 8 times more effective than that of conventional type AM transmission of equal power.

The CSB100TR has a built-in vox control as well as an antenna tuner to permit the use of one antenna for all channels.

This unit is an ideal communications system for government agencies and municipalities where normal telephone lines are not available or not desired for use because of distance or other reasons. Since the principle of SSB transmission utilizes a smaller portion of the spectrum, greater coverage is possible with less interference.



OUTSTANDING DESIGN FEATURES

VERSATILE – Six crystal controlled channels, covering a frequency range of 2 to 30 Mc/s for phone or telegraph operation. Auxiliary equipment can be furnished for remote operation, connection to telephone lines or for teleprinter use to eliminate co-channel nuisance interference.

FUNCTIONAL – All operating controls and meters on front panel simplified to permit operation of CSB100TR by non-technical personnel. Designed for easy installation and servicing.

ECONOMICAL – Unitized construction now brings cost of single sideband equipment below the cost of standard double sideband AM equipment of equal effectiveness.

EFFICIENT – In use of power as well as frequency space. Single sideband permits greater coverage with low power consumption. One sideband carries message signal along with entire output. In AM equipment the carrier wave, bearing no message, absorbs most of the power. A CSB100TR transmitter is approximately eight times more effective than conventional AM transmitters of equivalent power.

EXPORT DEPARTMENT
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www.radiopharos.it

TRANSMITTER SPECIFICATIONS

POWER OUTPUT:

CW, SSB-PEP (TWO-TONE)
100 watts minimum
(At frequencies up to 15 Mc/s;
approximately 75 watts at
higher frequencies)

POWER OUTPUT: AM

25% of SSB-PEP values

DISTORTION PRODUCTS

-35 db below tone level of a two
tone test signal at rated
P.E.P. output

SPURIOUS:

-60 db minimum

UNWANTED SIDEBAND:

-50 db minimum

CARRIER SUPPRESSION:

-40 db minimum

FREQUENCY STABILITY:

0002% (crystals in oven), with
ovens running continuously
+ front panel Vernier tuning.

TEMPERATURE RANGE:

-10°C. to +55°C.

OPERATIONS:

Simplex, (push-to-talk), with
antenna change-over relay,
built-in Vox, selectable from
front panel.

MICROPHONE:

Local handset. Desk mike
(optional) or up to three
remote desk sets.

AUDIO FIDELITY:

300-2500 cps.

AUDIO LEVEL CONTROL:

Adjustable: compressed
up to 20 db above threshold.

KEYING SPEED:

30 words per minute manual,
60 words per minute teletype.

CHANNEL CRYSTALS:

1650 Kc above desired operating
channel frequency, except above
18 Mc/s.

GENERAL SPECIFICATIONS FOR CSB100TR

NUMBER OF CHANNELS: 6

FREQUENCY COVERAGE: †

- 1 Channel in the 2 to 3 Mc/s range
- 2 Channels in the 3 to 7 Mc/s range
- 2 Channels in the 7 to 18 Mc/s range
- 1 Channel in the 15 to 30 Mc/s range

EMISSIONS:

- USB or LSB Suppressed Carrier (A3J)*
- USB or LSB with Carrier (A3)*
- Telegraph, Keyed Continuous Wave (A1)
- Single sideband Keyed 1000 cy. tone (A2)

ANTENNA MATCHING:

Antenna requirements:
Coaxial termination, 50 ohms,
built-in loading network
provides for matching most
random length antennas.
External antenna tuner
for remote operation
optionally available.

POWER INPUT:

115/230 volts \pm 25%
50/60 cycles single phase
Consumption: 100 watts standby,
350 watts transmitting.

SIZE:

Height 22 $\frac{3}{4}$ " Depth 18 $\frac{1}{2}$ "
Width 22" Weight 155 lbs.

* USB/LSB Selection is by means of
Chassis Located Switch.

† Other channel combinations (within
6 channel limit) available at
additional cost.

RECEIVER SPECIFICATIONS

SENSITIVITY-AM:

1 uv for 10 db SN/N Ratio
30% Modulation

SENSITIVITY-SSB/CW:

Less than $\frac{1}{2}$ uv

SELECTIVITY:

2.6 Kc bandwidth for 6 db
attenuation
4.0 Kc bandwidth for 50 db
attenuation

STABILITY:

See Transmitter Specifications,
same crystal used for transmit-
ting and receiving.

IF REJECTION:

50 db minimum

IMAGE & SPURIOUS REJECTION:

2-7 Mc/s 60 db minimum
7-30 Mc/s 40 db minimum

AVC FIGURE OF MERIT:

60 db minimum
Blanking 0.3 seconds at 100,000
uv max.

AUDIO DISTORTION:

10% maximum at 2 watt output
across 3.2 ohm load

AUDIO OUTPUT:

Built-in loudspeaker or:
standard 100 ohm handset or:
600 ohm line (-9 dbm power
level) as selected.

AUTOMATIC IMPULSE NOISE

SUPPRESSION:

IF Type
-15 db minimum noise reduction

SQUELCH: Adjustable

SIMPLY INSTALLED

Merely connect the unit to an AC power
source, a ground point, and the antenna.

EASILY CONTROLLED

All operating controls are on the front panel
and reduced to a minimum; permit instanta-
neous selection of:

- One of six pretuned crystal-controlled
channels
- Phone or telegraphy
- Speaker, local handset or remote line
for connection to another office,
telephone line or teleprinter
- Power on/off for standby, receiver and
transmitter
- Carrier out/in
- Transmitter and receiver gain
- Synchronizer (fine frequency adjustment)

Can be adjusted to operate with safety and
peak efficiency at any of a wide variety of
incoming line voltages, with continuous read-
ings on a front panel voltmeter.

QUICKLY SERVICED

RF and power chassis roll out - completely
removable. Can be serviced on bench with
patchcords.

HIGHLY EFFECTIVE

Superior to conventional AM in 3 important
ways:

- 1-Less distortion...because less dependent
on rigid relations between phase and
amplitude.
- 2-Less interference...because the CSB100TR
uses only one-half as much frequency
space as AM.
- 3-More privacy...because CSB100TR emis-
sions usually cannot be picked up by home-
type short-wave receivers.

- Instruction Manual clearly explains opera-
tion, maintenance, alignment, test proce-
dures, and contains replacement parts list.



Established 1910



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MANUFACTURING COMPANY

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Litho in U.S.A.

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