

AM 871-930-21

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ASSEMBLY MANUAL  
組立説明書

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V · UHF LOG PERIODIC ANTENNA  
ログペリオディックアンテナ

**CLP5130-2**

105 ~ 1300 MHz

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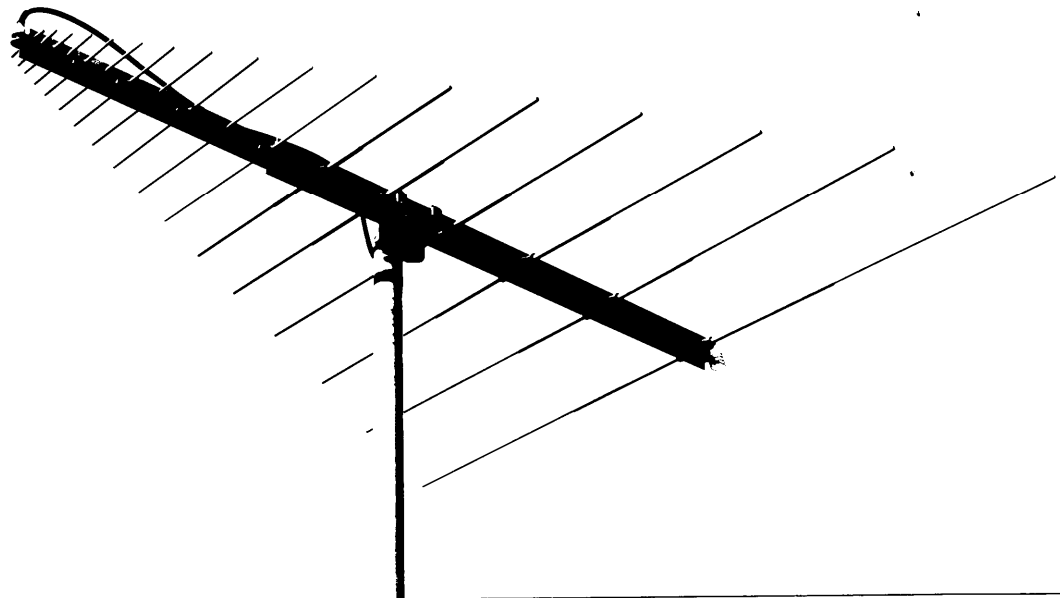


Figure 1. CLP5130-2 Installation

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クリエート・デザイン株式会社  
Creative Design Corp.

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## WARNING

Installing and rigging masts and antennas require highly specialized skills and experience. This drawing and the instructions within assume that personnel involved have these skills and have installed similar products before. No one should attempt to install this antenna without these skills and experience. CD can assume no liability if faulty or dangerous installation practices are used. CD has factory trained personnel to assist in installation. Please contact your CD representative if consultation or assistance is required.

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## SECTION 1

### GENERAL AND SPECIFICATIONS

#### 1.1 GENERAL

This CD model CLP5130-2 is a high gain wide band log periodic beam antenna for VHF and UHF band designed to use for a fixed stations. The antenna is designed to use in the horizontally polarization as a standard use, but vertical polarization would also be possible by additionally use of an FRP mast or mount adaptor for vertical polarization. This antenna would be suitable for not only amateur band covering from 105~1300 MHz but also meet with those applications such as FM broadcasting, scanning, V·UHF television, air bands communication, government applications, and other business band use, etc. In comparison with those non-directional antennas such as a generally available Disc Cone type of antenna, the gain derived is at approx 6dB (4 times greater) greater, and is assured that VSWR is 2.0:1 or less in across the band.

Mechanically, the boom structured in use of 2 channels takes an important role of this antenna as to works as a phase-line electrically. A high quality aluminum materials are being used for those main structural parts which make it possible to contribute to be minimum distortion and deformation of alignment for both horizontal and vertical planes of this antenna that allows to be light weighted antenna for giving an easy assembly and installation. The phase-line is designed to be shortened circuit electrically in order to protect the radio equipments from a high DC voltage by lightning damage. This antenna would able to give its full performance by rotating the antenna in use of antenna rotator as it is a beam antenna. The recommended rotator is CD RC5-x or equivalents suitable for a small-sized TV antenna application.

The specification details of this antenna is shown in Section 1.2 below.

#### 1.2 SPECIFICATIONS

	<b>CLP5130-2</b>
Frequency	105~1300 MHz
Number of Elements	17 ele.
Polarization	Horizontal (Vertical Possible)
Forward Gain	11 ~ 13 dBi
Front to Back Ratio	15 dB
Half Power Point	E-Plane: 70~60° H-Plane: 130~110°
Impedance	50 Ohms
Input Connector	- N -
VSWR	2.0 : 1 or less
Power Rating	500W PEP
Boom Length	1.4 m
Element Length	Max. 1.3 m
Mast Size	42~50mm
Weight	3 kgs
Wind Survival Rating	40 m/sec. (90 mph)

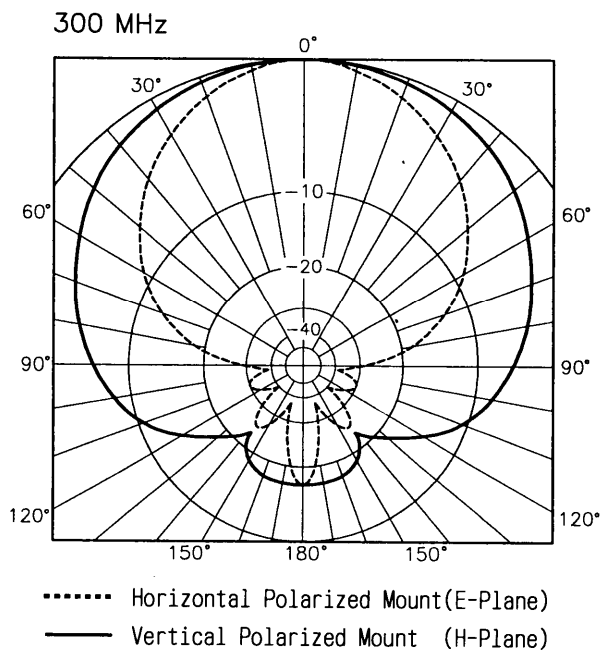


Figure 1A. Radiation Pattern. In Average.

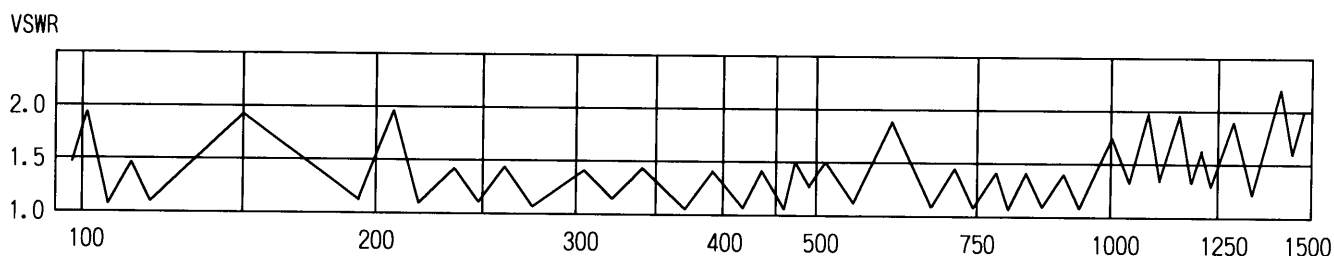


Figure 1B. VSWR Characteristic. Ex: CLP5130-2

## SECTION 2

### GENERAL AND ASSEMBLY

#### 2.1 UNPACKING AND INSPECTION

This manual describes assembly procedures and operation of the CD Model CLP5130-2. After unpacking, check all parts against the parts list in Section 3 to make sure if there is no parts are missing or damaged. If any parts are missing or damaged please follow the instructions stipulated in the warranty which is on the back side of the front cover of this instruction manual. Distinguish large parts (pre-assembled one) from small parts (bolts and nuts) and separate them into a small box so that they will not be lost and easily be identify for the assembly work. Read the manual instructions carefully and fully digest it on how the parts are being used for assembling this antenna.

#### 2.2 ANTENNA STRUCTURE

Create Model CLP5130-2 is a broadband antenna as illustrated in Fig. 1 meanwhile Figure 2 shows a construction illustration. This manual explains under the condition that the antenna is supposed to installed in the horizontal construction (Elements are set horizontally against the ground). Booms for supporting each element consist of 2 L channels B1 for front side and B2 for back side. Each element in the B1 channel is factory pre-assembled, in the meanwhile the insulators on B2 for mounting element tubings are also factory pre-assembled. The elements tubing symmetrically pre-tuned and cut to be mounted onto B2 are provided 2 piece each as a pair.

#### 2.3 INSTALLATION OF VERTICAL POLARIZATION

For the installation of this antenna in vertical polarization, there are 2 methods of installation in order to avoid the interference of the mast tubing. The one installation illustrated in left in the Fig. 3 shows an example that is using non-metallic mast tubing like an FRP made tubing. In case that using FRP made tubing is practically difficult, install the antenna in the way like the other illustration shown in the Fig. 3 so that the alignment of antenna element and metallic mast tubing come off at the certain distance with each other by using an arm tubing sticking sideward. The proper distance must be set is at least approximate 50% of the longest element of this antenna. These parts are not included in this kit (customer's furnished).

#### 2.4 ASSEMBLY

For assemble of the CLP5130-2, refer to Fig. 2 and Fig. 3 and the detailed illustration in them(DETAIL-). Assemble the antenna in the following step by step procedures.

- 1) FRONT ELEMENT ASSEMBLY : Each element tubing is pre-assembled (revetted) in B1. Spread the elements at right angle to the boom and fix them with S1(M3x8) screws. Attach the 2 assembled B1 booms together with B7 and B8 as shown in DETAIL-B.  
(See DETAIL-A and B)
- 2) BOOM ASSEMBLY : Join the booms B1 to B2 together using S2(M4x10) screw as shown in DETAIL-C. There is no directivity either up or down.  
(See DETAIL-C)
- 3) FEEDER INSTALLATION : At the front end of B1, attach the F1 feeder plate to the front of B1 together with the F2 element rod and fasten them with S1(M3x8) screw. The screw hole of the F2 rod has a screw threaded to allow S1 screw fitted. Be sure to set F2 element in reversely against the position of the next element (2nd from front). Fix the feeder to the boom using with B9 saddle.  
(See Fig. 3)
- 4) REAR ELEMENT ASSEMBLY : As the only 2 holders located at the both ends of the rear boom B2 is pre-assembled with a screw. Assemble the rest of the holders to the appropriate locations around middle of the boom and fix them with S4(M4x35). The assembly of holder is completed, insert element tubings E11~16 into holders and fix them S3 (D4x14) screw as shown in DETAILS-D.  
(See DETAIL-D in the Fig. 2)
- 5) ASSEMBLY OF BOOM CLAMP : The illustration on the left side in Fig. 3 shows horizontal mount meanwhile illustration on the left side shows vertical mount. For the vertical polarization mount, install U-plate B10 and insulator B4 to the boom and fasten with S5 (M5x55) screw, then mount and fix the mast clamp B3 on it. For vertical polarization mount, after mounting plate B5 and insulator B4, fix the mast clamp B3 to the boom and fix it.  
(See Fig. 3)
- 6) ARRESTOR COIL ASSEMBLY : At back side of rear boom B2, attach the coil B6 using S2(M4x10) screws as both the boom line is shorted electrically. Please take care not to bend or deformed the arrestor coil.  
(See Fig. 3)
- 7) ELEMENT CAP : Element caps 1 should only be used and applied to the upper side tip element when the antenna is used in vertical polarization.  
(See Fig. 3)

SECTION 3  
PARTS LIST

3.1 CLP5130-2, Log-Periodic Antenna

Item	Description			Q'ty
B 1	FRONT BOOM ASSY.	CH-22×439 Elements Included	alum.	2
B 2	REAR BOOM ASSY.	2-CH-27×957 Elements Holder Included.	alum.	1
B 3	MAST CLAMP	96×96	alum.	1
B 4	BLOCK	7×18×52	AAS.	4
B 5	STRAP	20×55	alum.	2
B 6	COIL	φ 27-4 Tune	Nc.	1
B 7	BUSH	φ 12×11	AAS.	8
B 8	SLEEVE	φ 13×13	P. C.	1
B 9	SADDLE	KT-4	PVC.	2
B10	U-BRACKET	For Vertical Polarization Mount, 25×47×66	alum.	2
E11	TUBE	φ 7/10×293	alum.	2
E12	TUBE	φ 7/10×351	alum.	2
E13	TUBE	φ 7/10×421	alum.	2
E14	TUBE	φ 7/10×505	alum.	2
E15	TUBE	φ 7/10×605	alum.	2
E16	TUBE	φ 7/10×726	alum.	2
F 1	FEEDER	5D-2V 1.5m Connector attached	alum.	1
F 2	ROD	φ 4×45	Nc.	2
S 1	SCREW	M3×8 W, N.	SUS.	24
S 2	SCREW	M4×10 W, N.	SUS.	4
S 3	SCREW	φ 4×14 W, N.	SUS.	12
S 4	SCREW	M4×35 W, N.	SUS.	4
S 5	SCREW	M5×55 W, N.	SUS.	2
S 6	SCREW	M4×15 W, N.	SUS.	2
S6A	SCREW	For Vertical Polarization Mount, M5×15 W, N.	Nc.	4
U 1	U-BOLT	M6-40A W, N.	SUS.	2
1	CAP	For Vertical Polarization Mount, φ 7×8	P.P.	6

CMN-9407

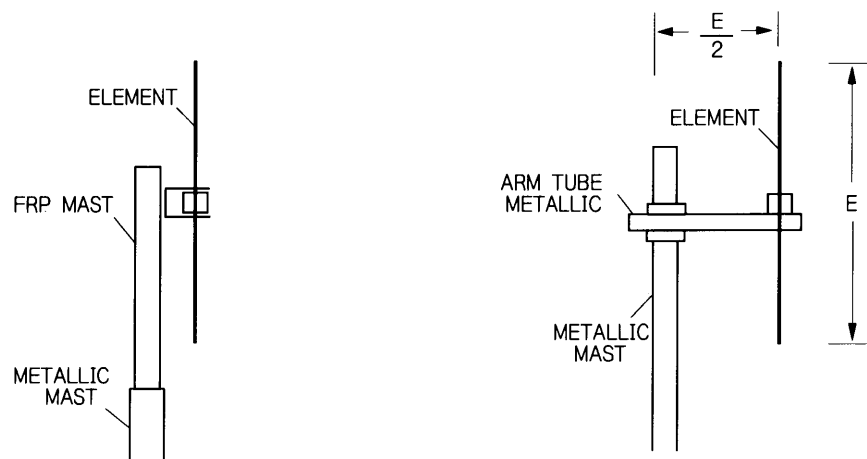
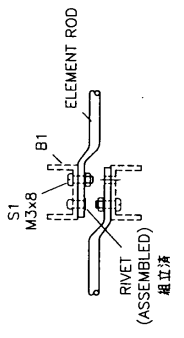
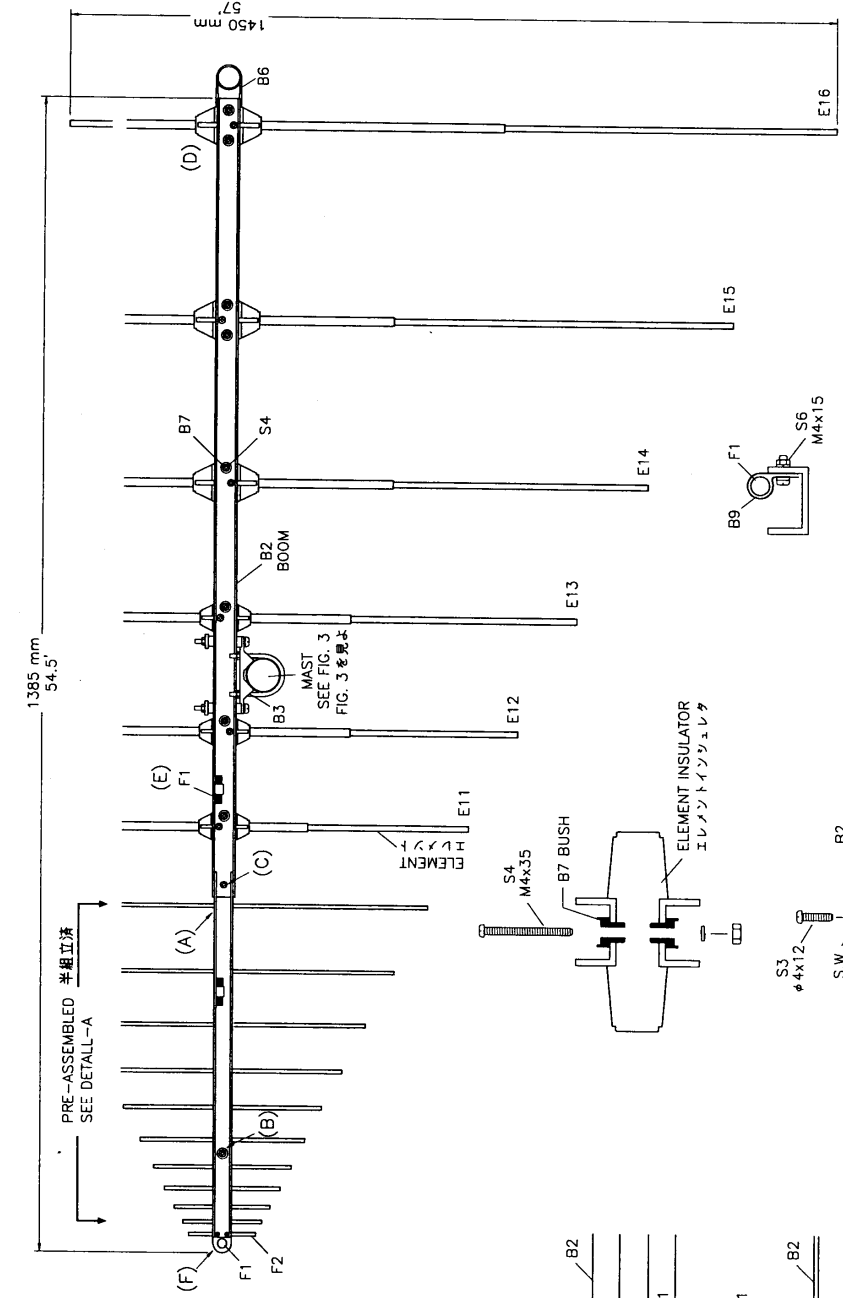
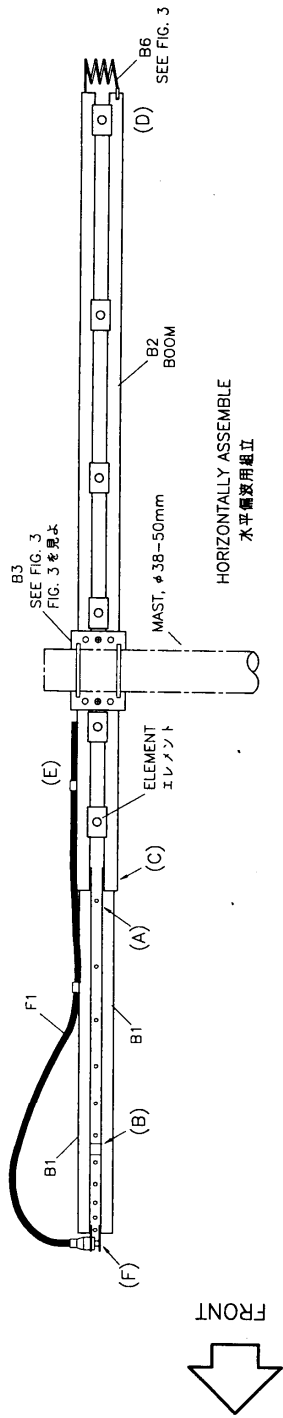
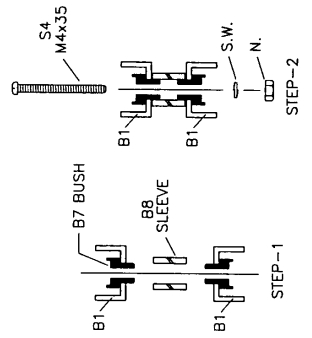


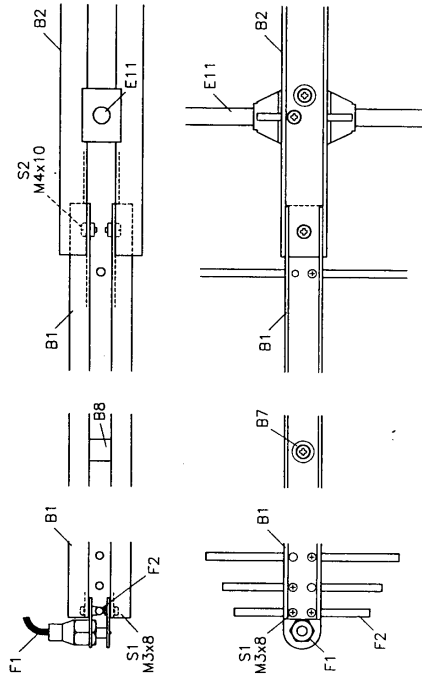
Figure 4. Vertical Polarization Mount



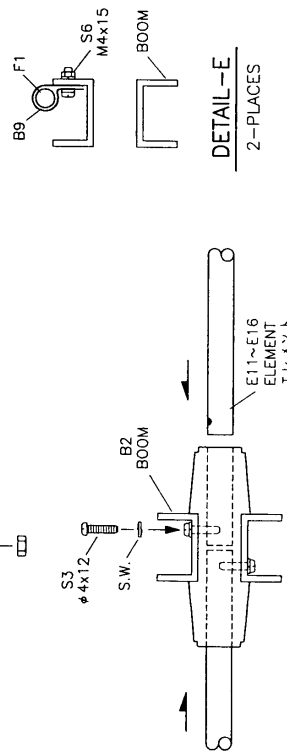
DETAIL-A  
11-PLACES



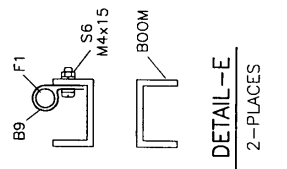
DETAIL-B



DETAIL-C



DETAIL-D  
6-PLACES



DETAIL-E  
2-PLACES

DETAIL-F

アンテナの組立  
Figure 2. CLP5130-2, Antenna Assembly  
105~1300MHz. CMN-9407 DWGA.0358

