

FRAMES

The DR 6/11-40-140 DIGITAL RADIO SYSTEM (Fig. 1) has a total of three different frames; a line terminal frame, a radio frame, and a regenerator frame. A complete 1 x 1 system has a total of seven frames; a line terminal frame and radio frame at each terminal station, and two radio frames and one digital regenerator frame at the regenerator station. If more channels are needed, then the digital terminal growth frame and digital regenerator growth frame would have to be added to the system. These frames are discussed in the following paragraphs.

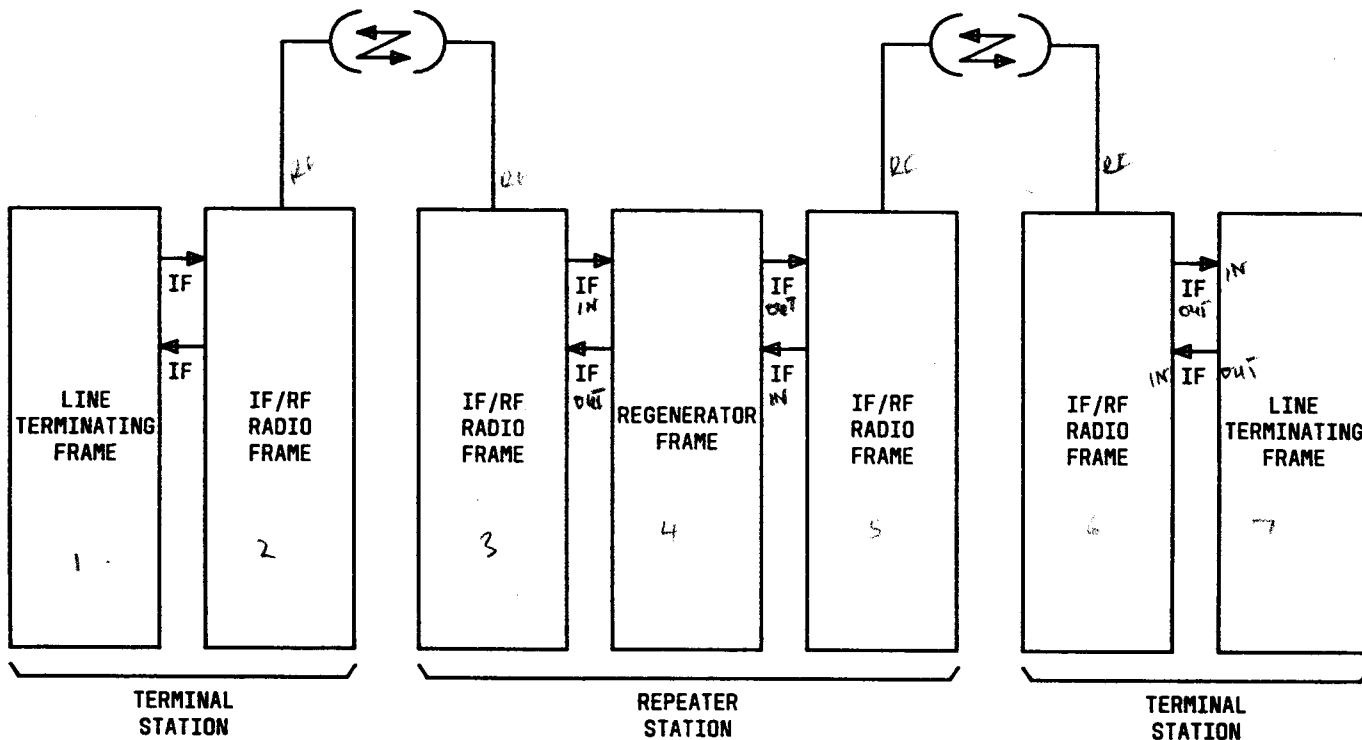


Fig. 1—DR 6/11-40-140 Digital Radio System

J5X065A LINE TERMINAL FRAME

The J5X065A LINE TERMINAL FRAME includes digital terminals, line protection switching, and service channel equipment in a frame 213.4 cm high, 60 cm wide, and 26 cm deep.

Figure 2 shows the physical layout of the frame. From the top of the frame down are the distribution terminal strip panel, the protection receiving shelf, the control and protection transmitting shelf, and the regular terminal shelf. The frame is designed to handle one regular transmit-receive channel, one protection transmit-receive channel, and the associated control functions.

The J5X065B line terminal growth frame is shown in Fig. 3. A growth frame contains three regular transmit-receive channels and is used in conjunction with a regular frame to provide additional channels.

The transmitter portion of a shelf converts a CMI coded signal to a modulated 70 MHz IF carrier. The receiver takes a modulated 70 MHz IF carrier and demodulates the IF signal. It is then converted to a CMI coded signal. The protection transmitter and receiver perform the same functions as the regular channels. In case of excessive error rate or frame loss in a regular channel, the protection channel is switched in automatically.

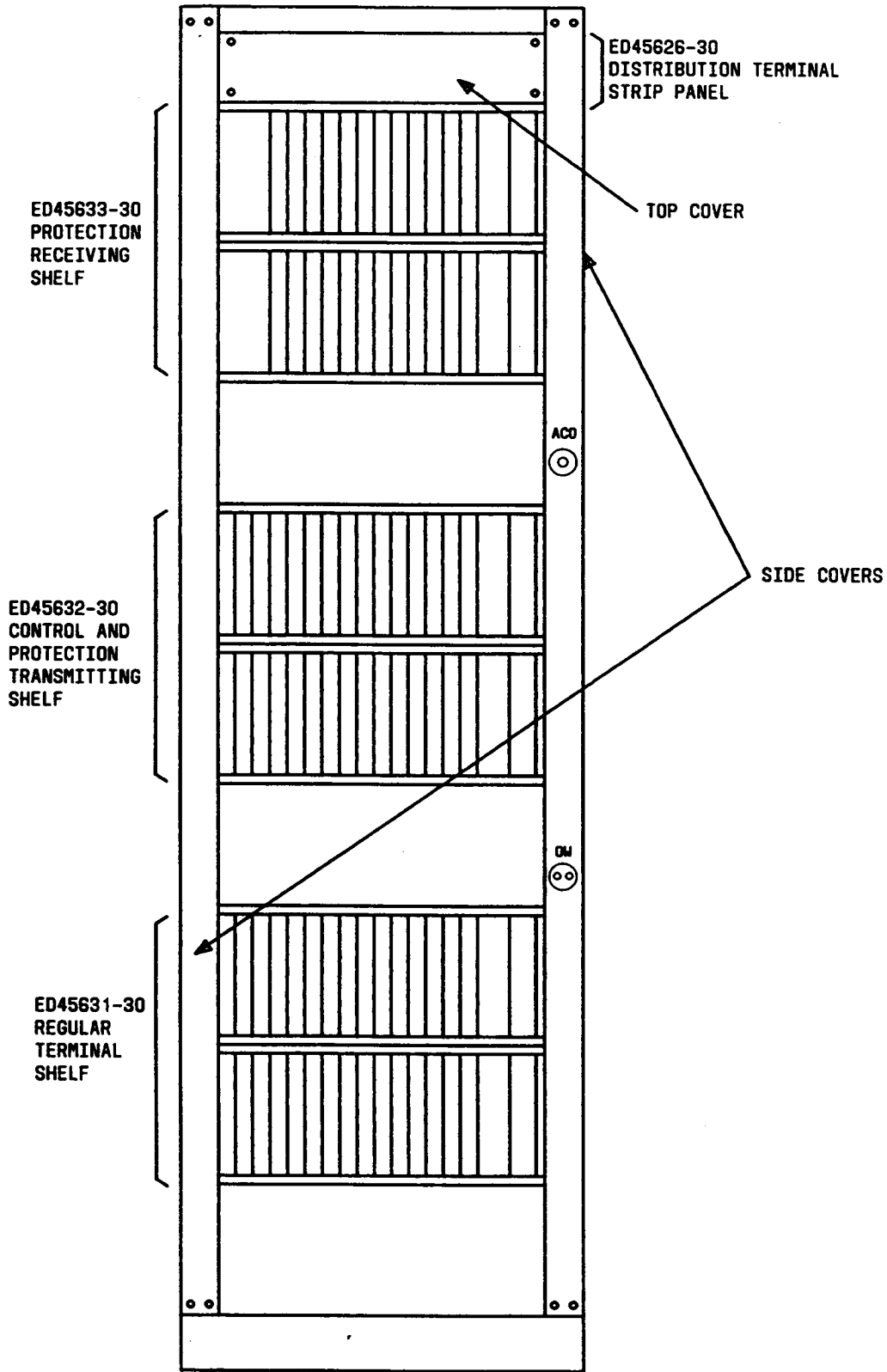


Fig. 2—J5X065A Digital Terminal Frame

Copyright© 1988 AT&T
All Rights Reserved

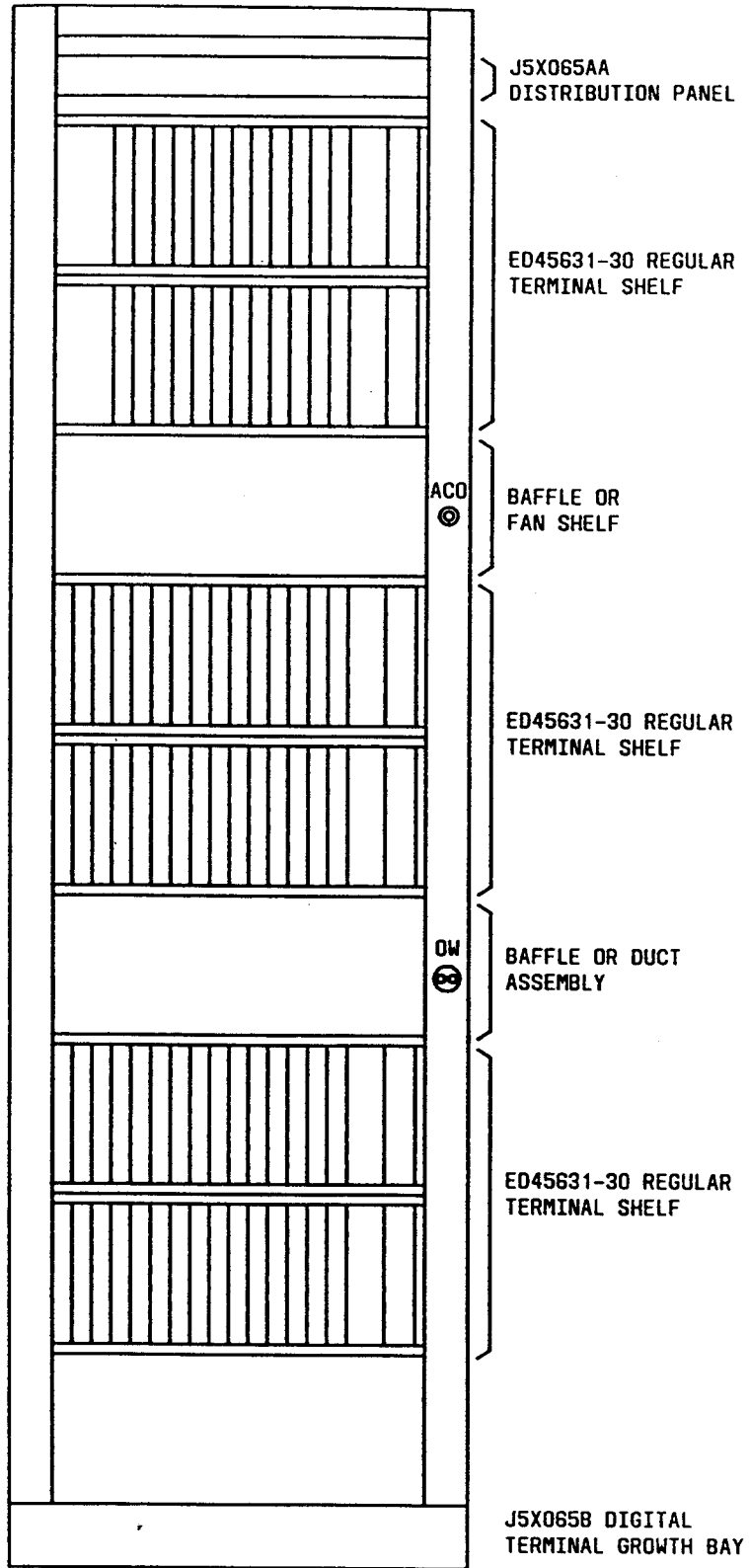


Fig. 3—J5X065B Digital Terminal Growth Frame

Copyright© 1988 AT&T
All Rights Reserved

J5X017A/J98760B RADIO FRAMES

The J5X017A (6 GHz) and the J98760B (11 GHz) RADIO FRAMES contain up to four transmitters and four receivers in a frame 213.4 cm high, 60 cm wide, and 26 cm deep. The physical layout is shown in Fig. 4. A frame consists of an installer interface panel at the top position, transmitter waveguide assemblies, transmitter shelves, receiver waveguide assemblies, and receiver shelves.

The receiver output and the transmitter input are at an IF frequency of 70 MHz. At a terminal station, the IF signals are connected to a line terminal frame; at a repeater station, the IF signals are connected to a digital regenerator frame.

All receivers in a frame are connected to the same antenna waveguide run. Transmitters and receivers are totally independent and can be used in single or separate antenna configurations.

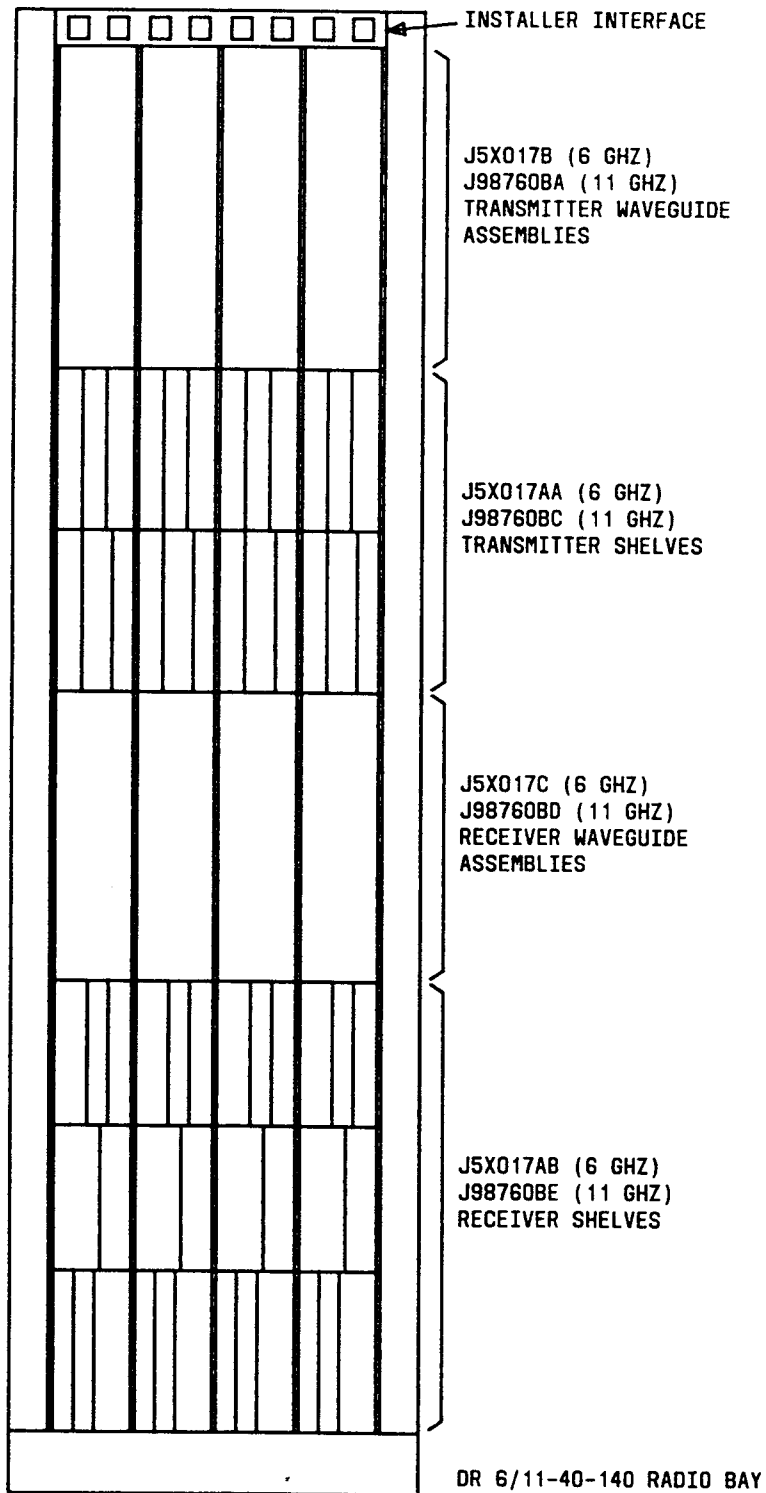


Fig. 4—J5X017A/J98760B Radio Frame

Copyright© 1988 AT&T
All Rights Reserved

J5X018A DIGITAL REGENERATOR FRAME

The J5X018A DIGITAL REGENERATOR FRAME contains regular and protection regenerator shelves, a service channel shelf, a distribution terminal shelf, and a fan shelf in a frame 213.4 cm high, 60 cm wide, and 26 cm deep. The physical layout is shown in Fig. 5.

The regenerator frame takes the 16 QAM IF signal from the radio frame and demodulates it into I (in-phase) and Q (quadrature-phase) signals. The digital signals are then regenerated, modulated, and sent to the radio frame for transmission.

In the initial frame, the regenerators are labeled A, B, C, and D from the top shelf position down. Regenerators A and B are used for the protection channels. Regenerators C and D are used for the regular channels. Protection regenerator A and regular regenerator C provide transmission for one direction (A-C). Protection regenerator B and regular regenerator D provide transmission for the opposite direction (B-D).

The growth frame contains three regenerator shelves. The physical layout is shown in Fig. 6. All three regenerator shelves are regular channels and are labeled C and D. The C and D regenerators provide additional regular channel transmission for both the A-C and B-D directions.

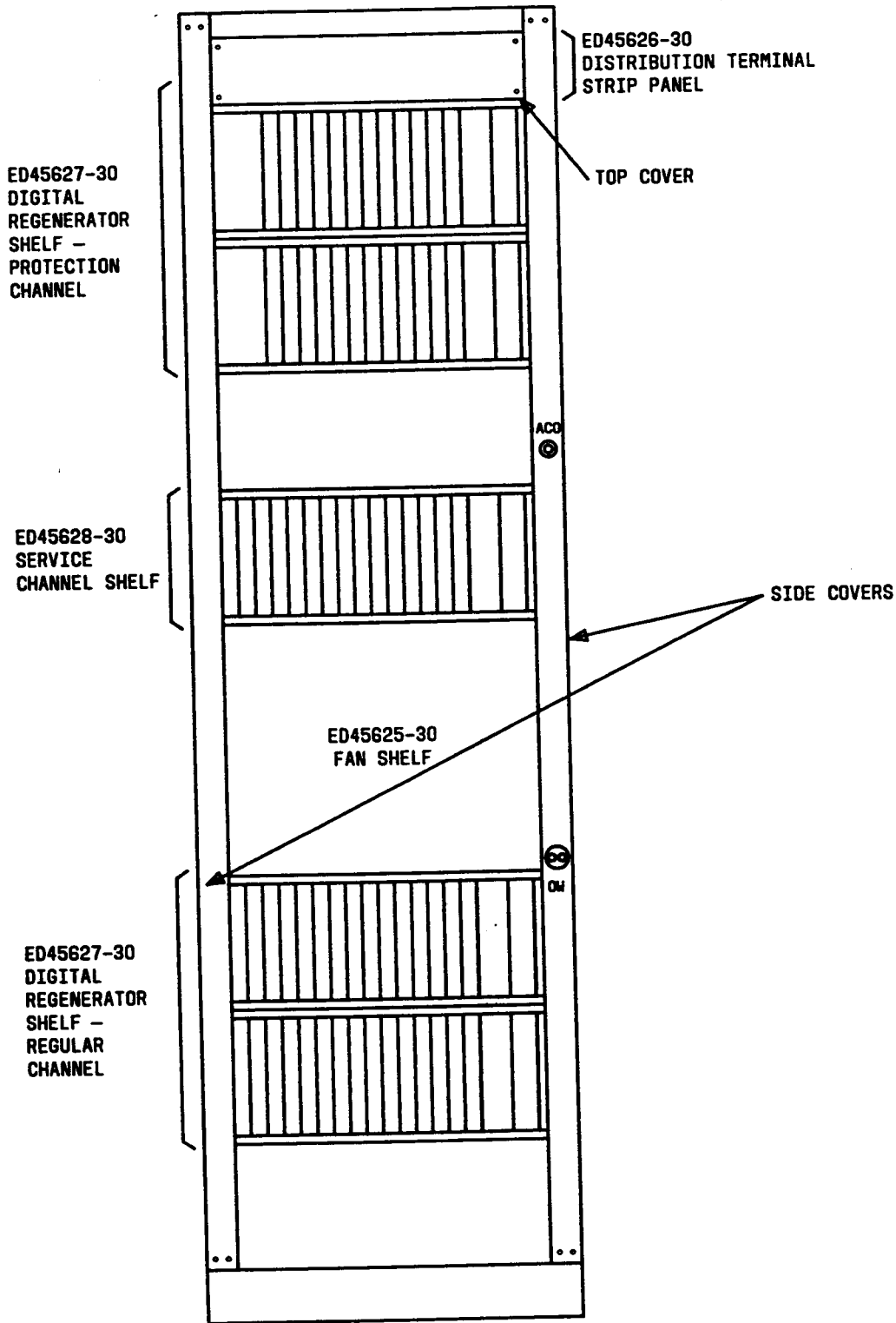


Fig. 5—J5X018A Digital Regenerator Bay

Copyright© 1988 AT&T
All Rights Reserved

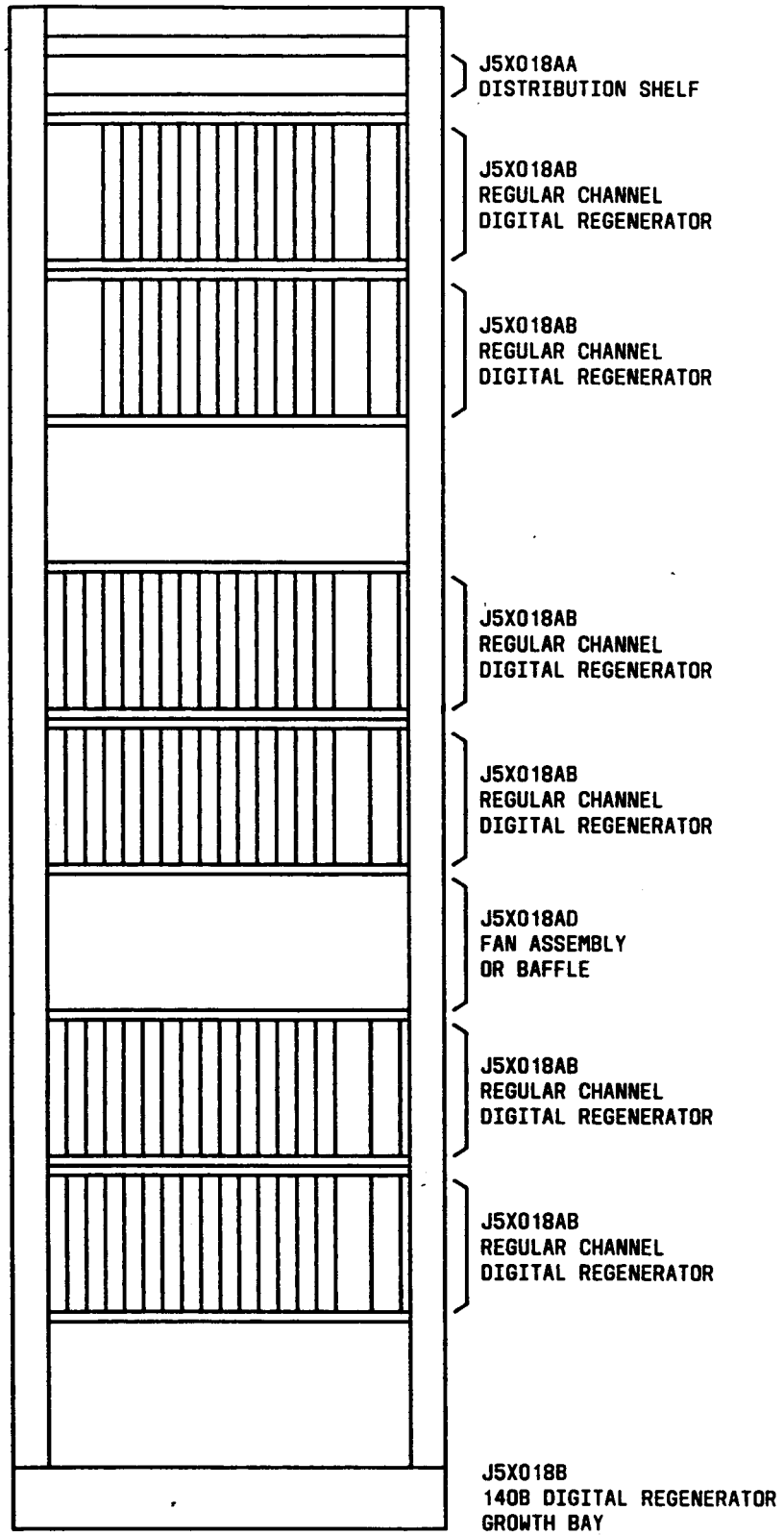


Fig. 6—J5X018B Digital Regenerator Growth Frame