THE JAMPRO Journal
News and Information for the Broadcast Industry

Volume 3 * Number 1

Ivory Coast Project Commissioned

Cote d´Ivoire, Africa

JAMPRO successfully installed, commissioned and integrated a complete nationwide FM & TV network for Cote d´Ivorie, Africa.

For the Ivory Coast, 27 sites were inspected, evaluated. FM & VHF systems were designed for maximize coverage. JAMPRO provide the entire system "after the transmitter." System products included rigid transmission line, dehydrators, patch panels, combiners, antenna systems and antenna support structures.

"We are satisfied with the entire project and that the customer is pleased," said Jampro's Alex M. Perchevitch. "There is always a possibility that problems may occur with multiple site projects, but the ones we encountered were minimal."

At some sites the system was refurbished rather than replaced. A more cost effective approach. Some sites' existing panels only needed their feed systems replaced and repaired. Power dividers, splitters and other components were redesigned, manufactured and installed for full operation.

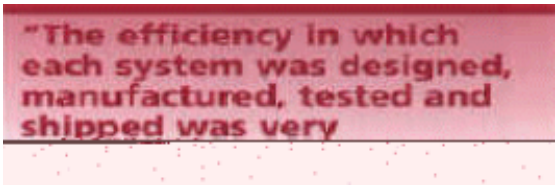
Sidemount PENETRATORS and JCPD 4-dipole flat panel antennas were utilized for the FM sites to maximize coverage and keep windloading to a minimum on particular towers. Some sites required a combined system, 2 to 5 FM channels, which allowed broadcasters to transmit on the same antenna. The panels have low VSWR and good bandwidth combine several FM channels.

Multiple channel VHF Band III panels were used for TV so that they could be arranged around the tower to maximize market penetration, produce customized directional patterns, and have sufficient bandwidth to combine several channels onto one system.

61 TV Antennas Delivered to TVAzteca

JAMPRO completed a shipment of sixty-one broadband VHF and UHF antennas for TV Azteca, one of the largest broadcast networks in Latin America.

The VHF and UHF antenna systems were selected because of their durability and proven performance, quality and reliability. JAMPRO's sales and engineering departments worked with the engineers from TV Azteca to determine the appropriate configuration for effective market penetration and designed the systems to produce a variety of customized directional patterns.



"We were very pleased to support TV Azteca by delivering on schedule," said Jim Olver, President. "The efficiency in which each system was designed, manufactured, tested and shipped was very impressive."

Band I and III panels were specifically chosen for VHF antenna systems because of broad banding characteristics, excellent VSWR and rugged construction ensure many years of dependable performance.

The JUHD UHF panels were specifically important because their modular design produces various azimuth patterns and excellent VSWR over Band IV/V channels. Pattern variation over the band is minimized through a feed system design that provides excellent performance regardless of the channel. Full fiberglass radome encloses each element, protecting the antenna from harsh environmental factors.

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DTV Ready

With the emergence of DTV, stations are looking for answers to their broadcasting questions. JAMPRO has pioneered solutions for many decades and today continues to meet the demand as the broadcast industry changes. JAMPRO can offer a broadcaster a variety of options to consider when deciding their conversion to DTV.

The JTW/JUHD now incorporates a UHF Broadband Panel and the Traveling Wave Slot. JAMPRO is the only U.S. manufacturer to completely design, test and manufacture a UHF Broadband panel antenna in the U.S.A. A typical panel has a power handling of 2.5 kW and high power levels are available. The JUHD is designed as either a side-mount or top mount antenna. The antenna is based on a modular design and can be configured to provide various azimuth and elevation patterns. The design of this horizontally polarized panel antenna may be configured to include varying levels of vertical polarization with results ranging from small amounts of ellitiptical polarization. To ensure many years of trouble-free service, radomes are installed to enclose and protect the panels against corrosive environments as well as rain and ice.

The image depicts separate digital and analog signals transmitted from two stacked antennas: a JTW-UHF traveling wave and a

All TV antennas can be used independently to transmit a NTSC or DTV signal. Another TV antenna is the Prostar Series Slot that is designed to produce various azimuth patterns for broadcasters to optimize coverage. Ranging in power handling from 1kW to 70 kW, the Prostar Series can be configured as top, leg or face mounted antenna. Electrical beam tilt and null fill is available which can substantially improve the coverage.

For those broadcasters who need to broadcast a digital and analog signal simultaneously, JAMPRO's TV antennas can be stacked to minimize tower loading. With tower loading and the availability at a premium, the stacking of two proven and reliable antennas is yet another example of JAMPRO paving a path to the future.

The JTW/JAT utilizes a UHF Traveling Wave Slot and a VHF Batwing in one aperture. JAMPRO has manufactured and installed more Batwing antennas throughout the world and thus is the most experienced. The JTW is a top mounted slot antenna that can handle high power and had very low wind load characteristics.

The JTW/JTC again uses a Traveling Wave Slot but utilizes a VHF Spiral into a single aperture. The Spiral is the most superior CPOL antenna and the only true omni-directional antenna available providing circularity of +/- 1dB or less. The Spiral was the 1st circular polarized TV antenna manufactured and can be customized for each application for any single VHF channel 2-13 or UHF 14-69.

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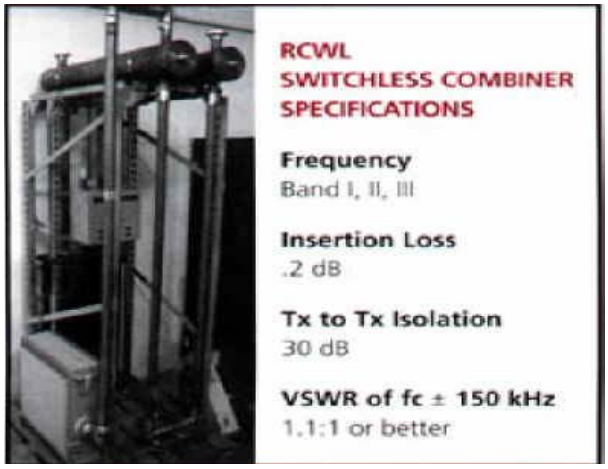
RF TECH TALK

RCWL Switchless Comb

The JAMPRO RF SYSTEMS, INC. Switchless Combiner is designed to allow switching from one transmitter to another combining two transmitters to a single transmission line without experiencing any off air time.



To accomplish this, JAMPRO uses a motorized line stretching phase shifter to steer either transmitter to the antenna, the station load or both. The combiner is equipped with connections to facilitate remote operation, thus allowing the operation from the transmitter panel.

The system combines two FM transmitters identical in frequency, phase and amplitude into any one of three modes of operation. The three primary modes of operation are as follows:

Mode 1: Tx A to Antenna Tx B to Dummy Load
Mode 2: Tx A to Antenna Tx B to Antenna
Mode 3: Tx A to Dummy Load Tx B to Antenna

A phase shifting device is used to vary the phase offset between two parallel transmission lines, which are sandwiched between two 3-dB hybrids. Varying the phase difference at quarter wavelength intervals causes the Switchless Combiner to route the signal in different directions. The combiner is designed to switch modes under full power and comes equipped with an air/oil cooled 50 ohm termination.

The combiner can be used for various power levels, ranging from 5 kW to 20 kW, with the possibility of 35 kW soon - 2x1 kW to 2x35 kW. Installations include some of the largest radio markets in Asia as well as the number one radio station in Indonesia.