

## Well known Japanese Broadcasting Company buys 55 pcs of GPS-12R Frequency Standards



### Background

NHK (Nippon Hoso Kyokai) is a well known TV and Radio Broadcasting Company in Japan, and broadcasts programs all over the country. In 2011, all analog-broadcasting systems in Japan will stop. The transition from analog to digital TV creates a need for higher time and frequency accuracy for the broadcasting. Compared to analog TV broadcasting, digital TV broadcasting requires three digits more accuracy of frequency, which also applies for digital camera data signals and recording equipment.

### Summary of Requirements:

- NHK needed to have an instrument for field testing of their outdoor broadcasting equipment (like video cameras and recorders), for troubleshooting and for regular maintenance.
- In the field tests, the instrument needed to supply the reference 10 MHz frequency to the broadcasting equipment, and to other test instruments used.
- Most of the testing of the outdoor equipment is performed at local service stations, but sometimes the instrument needs to be transported to the outdoor camera/recorder under test. Low weight

and battery operation (for portability) was therefore important.

- Ease of use.
- Digital TV requires a higher demand for frequency stability and accuracy of frequency – a Rubidium reference was needed.

### NHK chooses Pendulum Instruments

Until today, NHK had used portable x'tal oscillators for this application, but needed to find a portable battery operated high-stability frequency standard. NHK discovered that the GPS-12R from Pendulum Instruments was a very suitable instrument.

The internal battery power and the light-weight instrument makes it portable and allows outdoor use. The battery power is mainly used to maintain the stability during transportations up to 2 hours, since there are usually mains power outlet at the test locations.

The Rubidium oscillator gives the GPS-12R very high stability and fulfils the demands of accuracy for the digital TV broadcasting.

Since the GPS-12R from Pendulum Instruments met all the requirements, NHK decided to invest in 55 pieces of the instrument.

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### Success Summary

The Customer's way to Success:

- Invested in GPS-12R, a portable and battery powered GPS-controlled Rubidium Frequency Standard

### The GPS-12R - perfect for field use

Product Features:

- Frequency standard for ultra stable GPS-controlled Rubidium reference frequencies of 1, 5, 10, 1.544 and 2.048 MHz + 1-pps in a compact cabinet
- Optional battery operation for 2 hours plus external 12V<sub>DC</sub> power inlet to maintain stability during transportation and to allow mains-free operation