

channels are overlaid to form a colored image. After corrections nice colored pictures are possible.

Geostationary Satellite Formats

The HRI pictures from Meteosat are partly encrypted. Meteosat also relays images from GOES, GOMS and GMS which are located at different longitudes around the Earth. These images are mainly unencrypted, and show America, Asia and east-Asia/Australia. Together with Meteosat, which covers Europe and Africa, nearly all parts of the Earth's surface may be observed.

Satellite	Format	Channels	Resolution (sub sat point)	Width (pixels)	bits/pixel	Data rate (kbit/s)
Meteosat	WEFAX	1 vis or 1 IR	5 km - 15 km (dependent on transmitted format)	800	8	???
GOES						
GMS						
GOMS	HRI	1 vis, 1 IR and/or 1 WV	2.5 km or 5 km	1250, 2500 or 5000	8	166.66

Unlike the high-resolution pictures from NOAA etc., all HRI pictures are first sent to ground stations, processed (small corrections, adding land contours etc.) and re-transmitted via Meteosat. With HRI, land contours are added to the picture in such a way that the same picture can be shown with or without these contours.

Transmission of Digital Data

Although the content of the transmissions of geostationary weather satellites differ for each type, the principle is the same for all. The only differences are things like transmitting speed and bits per pixel. In this part I will explain how bits are transmitted so that they can be processed by a decoder and software to form a visible picture. I will use HRPT for my explanation but, as said earlier, the principles for CHRPT and HRI are the same. A bit-knowledge of binary numbers is assumed.

Bits

Each pixel of a line has a value corresponding to the quantity of radiation emitted from a certain area on the earth surface. The value is represented with a 10-bit number, so the range is between 0 ("0000000000" in 10-bit