

# 912 TV-SAT AND MODULATOR EQUIPMENT

FRANSAT PRO SYSTEM 6XHD+FR3 2XCAM 1XCARD

Code : **9120235**

Model : **TT-910**



## Description

Transmodulator of encrypted satellite digital television services to terrestrial digital television. Each module selects the services of a DVB-S/S2 satellite transponder and includes them in a DVB-T channel. Equipped with a Common Interface slot for insertion of the CAM and the subscriber's card. Programmable using PC software and a wireless programmer.

## Applications

Collective terrestrial digital television installations where the aim is to distribute encrypted satellite television services while avoiding the installation of satellite receivers. Compatible with all collective TV installations since the channels can be distributed throughout the terrestrial band.

## Characteristics

Automatic error-detection system which greatly reduces maintenance work on the installation. Generated output channel of outstanding quality. Does not include the CAM or the decoder card. Zamak chassis with metal side panels. F-type connectors. The equipment can be assembled quickly and easily.

| CODE                      |                 | 9120147  |
|---------------------------|-----------------|--|
| MODEL                     |                 | IT211  |
| TV system                 |                 | DVB-S / DVB-S2 → DVB-T / DVB-H<br>ITU-T Recommendation → ITU-T Recommendation      |
| <b>DVB-S2 receiver</b>    |                 |  |
| Frequency range           | MHz             | 950 - 2150   |
| Frequency step            | MHz             | 1  |
| UNB power supply          | V <sub>DC</sub> | +12  |
| UNB power supply          | mA              | 350 max  |
| Symbol rate               | Mbaud           | 1.45   |
| Dispensing through loss   | (dB)TOL         | 1.0 ±0.2   |
| <b>DVB-S2 receiver</b>    |                 |  |
| Input level               | dBV             | 45 - 95  |
| Input level               | dBm             | -63 - 13   |
| F.E.C. QPSK               |                 | Auto: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10<br>ITU-T Recommendation              |
| F.E.C. BPSK               |                 | Auto: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10<br>ITU-T Recommendation                        |
| Roll-Off                  | dB              | 0.35/0.25/0.20   |
| <b>DVB-S receiver</b>     |                 |  |
| Input level               | dBV             | 40 - 95  |
| Input level               | dBm             | -68 - 13   |
| F.E.C. QPSK               |                 | Auto: 1/2, 2/3, 3/4, 5/6, 7/8<br>ITU-T Recommendation                              |
| <b>Conditional access</b> |                 |  |
| Standard                  |                 | DVB-CI (EN 50221)<br>Common Interface  |
| Compatibility             |                 | Vuocom, Medagrand, Videogrand, Seco, Netcopy, Negronion, Idetia, Cryptowork, Conax |

| CODE                           |                 | 9120147   |
|--------------------------------|-----------------|---|
| MODEL                          |                 | IT211   |
| <b>COFDM modulator</b>         |                 |   |
| TV system                      |                 | DVB-T / DVB-H<br>ITU-T Recommendation           |
| Output offset                  | MHz             | -1/6, -1/8, 0, 1/8, 1/6                         |
| Mode                           |                 | 8K, 16K, 48K, 96K, 192K<br>ITU-T Recommendation |
| Modulation                     |                 | QPSK, 16QAM, 64QAM<br>ITU-T Recommendation      |
| F.E.C.                         |                 | 1/2, 2/3, 3/4, 5/6, 7/8<br>ITU-T Recommendation |
| Guard interval                 |                 | 1/4, 1/8, 1/16, 1/32<br>ITU-T Recommendation    |
| MER                            | dB              | 29 ±0.1   |
| <b>RF output</b>               |                 |   |
| Frequency range                | MHz             | 47-862  |
| Frequency step                 | MHz             | 0.25  |
| Output level                   | dBV             | 80 ±0.1   |
| Output level offset            | dB              | 20  |
| Bandwidth                      | MHz             | 8, 7, 6, 5 MHz                                  |
| Through loss in the system     | dB              | 0.9 ±0.1  |
| <b>General features</b>        |                 |   |
| Power supply                   | V <sub>DC</sub> | +3.3      +5.2      +12                         |
| Operating T close to equipment | mA              | 1200      350±50mA      75±10W                  |
| Room T with/without fan        | °C              | -10...+55      -10...+55/±45                    |
| Protection index               |                 | IP30  |
| Units per packing              |                 | 1   |
| Packing weight                 | kg              | 1.4   |
| Packing dimensions             | mm              | 270 x 170 x 38                                  |

| CODE                      |                 | 9120201  |
|---------------------------|-----------------|--|
| MODEL                     |                 | IT211  |
| TV system                 |                 | DVB-S / DVB-S2 → DVB-T / DVB-H<br>ITU-T Recommendation → ITU-T Recommendation      |
| Connection                |                 | F Female   |
| Number of inputs          |                 | 1 with dispersive or 2 independent   |
| <b>DVB-S2 receiver</b>    |                 |  |
| Frequency range           | MHz             | 950 - 2150   |
| Frequency step            | MHz             | 1  |
| UNB power supply          | V <sub>DC</sub> | DVB-C 2.0<br>+13 / +18 (D/220Hz)   |
| UNB power supply          | mA              | 350 max  |
| Symbol rate               | Mbaud           | 1.45   |
| Dispensing through loss   | (dB)TOL         | 1.0 ±0.2   |
| <b>DVB-S2 receiver</b>    |                 |  |
| Input level               | dBV             | 45 - 95  |
| Input level               | dBm             | -63 - 13   |
| F.E.C. QPSK               |                 | Auto: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10<br>ITU-T Recommendation              |
| F.E.C. BPSK               |                 | Auto: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10<br>ITU-T Recommendation                        |
| Roll-Off                  | dB              | 0.35/0.25/0.20   |
| <b>DVB-S receiver</b>     |                 |  |
| Input level               | dBV             | 40 - 95  |
| Input level               | dBm             | -68 - 13   |
| F.E.C. QPSK               |                 | Auto: 1/2, 2/3, 3/4, 5/6, 7/8<br>ITU-T Recommendation                              |
| <b>Conditional access</b> |                 |  |
| Standard                  |                 | DVB-CI (EN 50221)<br>Common Interface  |
| Compatibility             |                 | Vuocom, Medagrand, Videogrand, Seco, Netcopy, Negronion, Idetia, Cryptowork, Conax |

| CODE                           |                 | 9120201   |
|--------------------------------|-----------------|---|
| MODEL                          |                 | IT211   |
| <b>COFDM modulator</b>         |                 |   |
| TV system                      |                 | DVB-T / DVB-H<br>ITU-T Recommendation           |
| Output offset                  | MHz             | -1/6, -1/8, 0, 1/8, 1/6                         |
| Mode                           |                 | 8K, 16K, 48K, 96K, 192K<br>ITU-T Recommendation |
| Modulation                     |                 | QPSK, 16QAM, 64QAM<br>ITU-T Recommendation      |
| F.E.C.                         |                 | 1/2, 2/3, 3/4, 5/6, 7/8<br>ITU-T Recommendation |
| Guard interval                 |                 | 1/4, 1/8, 1/16, 1/32<br>ITU-T Recommendation    |
| MER                            | dB              | 29 ±0.1   |
| <b>RF output</b>               |                 |   |
| Frequency range                | MHz             | 47-862  |
| Frequency step                 | MHz             | 0.25  |
| Output level                   | dBV             | 80 ±0.1   |
| Output level offset            | dB              | 20  |
| Bandwidth                      | MHz             | 8, 7, 6, 5 MHz                                  |
| Through loss in the system     | dB              | 0.9 ±0.1  |
| <b>General features</b>        |                 |   |
| Power supply                   | V <sub>DC</sub> | +3.3      +5.2      +12                         |
| Operating T close to equipment | mA              | 1600      350±50mA      40±10W                  |
| Room T with/without fan        | °C              | -10...+55      -10...+55/±45                    |
| Protection index               |                 | IP30  |
| Units per packing              |                 | 1   |
| Packing weight                 | kg              | 1.4   |
| Packing dimensions             | mm              | 270 x 170 x 38                                  |

| CODE                      |                 | 9120210  |
|---------------------------|-----------------|--|
| MODEL                     |                 | IT212  |
| TV system                 |                 | DVB-S / DVB-S2 → DVB-T / DVB-H<br>ITU-T Recommendation → ITU-T Recommendation      |
| Connection                |                 | F Female   |
| Number of inputs          |                 | 1 & 2 (dependent)  |
| <b>DVB-S2 receiver</b>    |                 |  |
| Frequency range           | MHz             | 950 - 2150   |
| Frequency step            | MHz             | 1  |
| UNB power supply          | V <sub>DC</sub> | DVB-C 2.0<br>+13 / +18 (D/220Hz)   |
| UNB power supply          | mA              | 350 max  |
| Symbol rate               | Mbaud           | 1.45   |
| Dispensing through loss   | (dB)TOL         | 1.0 ±0.2   |
| <b>DVB-S2 receiver</b>    |                 |  |
| Input level               | dBV             | 45 - 95  |
| Input level               | dBm             | -63 - 13   |
| F.E.C. QPSK               |                 | Auto: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10<br>ITU-T Recommendation              |
| F.E.C. BPSK               |                 | Auto: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10<br>ITU-T Recommendation                        |
| Roll-Off                  | dB              | 0.35/0.25/0.20   |
| <b>DVB-S receiver</b>     |                 |  |
| Input level               | dBV             | 40 - 95  |
| Input level               | dBm             | -68 - 13   |
| F.E.C. QPSK               |                 | Auto: 1/2, 2/3, 3/4, 5/6, 7/8<br>ITU-T Recommendation                              |
| Roll-Off                  | dB              | 0.35   |
| <b>Conditional access</b> |                 |  |
| Standard                  |                 | DVB-CI (EN 50221)<br>Common Interface  |
| Compatibility             |                 | Vuocom, Medagrand, Videogrand, Seco, Netcopy, Negronion, Idetia, Cryptowork, Conax |

| CODE                           |                 | 9120210   |
|--------------------------------|-----------------|---|
| MODEL                          |                 | IT212   |
| <b>COFDM modulator</b>         |                 |   |
| TV system                      |                 | DVB-T / DVB-H<br>ITU-T Recommendation           |
| Output offset                  | MHz             | -1/6, -1/8, 0, 1/8, 1/6                         |
| Mode                           |                 | 8K, 16K, 48K, 96K, 192K<br>ITU-T Recommendation |
| Modulation                     |                 | QPSK, 16QAM, 64QAM<br>ITU-T Recommendation      |
| F.E.C.                         |                 | 1/2, 2/3, 3/4, 5/6, 7/8<br>ITU-T Recommendation |
| Guard interval                 |                 | 1/4, 1/8, 1/16, 1/32<br>ITU-T Recommendation    |
| MER                            | dB              | 29 ±0.1   |
| <b>RF output</b>               |                 |   |
| Frequency range                | MHz             | 47-862  |
| Frequency step                 | MHz             | 0.25  |
| Output level                   | dBV             | 80 ±0.1   |
| Output level offset            | dB              | 20  |
| Bandwidth per channel          | MHz             | 8, 7, 6, 5, 4, 3 MHz                            |
| Through loss in the system     | dB              | 0.9 ±0.1  |
| <b>General features</b>        |                 |   |
| Power supply                   | V <sub>DC</sub> | +3.3      +5.2      +12                         |
| Operating T close to equipment | mA              | 1300      350±50mA      55±10W                  |
| Room T with/without fan        | °C              | -10...+55      -10...+55/±45                    |
| Protection index               |                 | IP30  |
| Units per packing              |                 | 1   |
| Packing weight                 | kg              | 1.4   |
| Packing dimensions             | mm              | 265 x 165 x 40                                  |



| CODE                                  |                  | 9120093  |  |
|---------------------------------------|------------------|--|--|
| MODEL                                 |                  | PA-720   |  |
| TV System                             |                  | AM-TV / DVB-T / DVB-C  |  |
| Number of inputs                      |                  | 1  |  |
| Frequency range                       | MHz              | 40 - 894   |  |
| Gain                                  | dB±TOL           | 44 ±1,0  |  |
| Gain adjustment                       | dB               | 15   |  |
| Output level                          | dBµV             | 119 DIN 45004B<br>116 (IMD3 - 60 dB)<br>110 (IMD2 - 60 dB)<br>103 (CTB - 60 dB)<br>103 (CSO - 60 dB)<br>104 (XMOD - 60 dB) |  |
| Output test point                     | dB±TOL           | -30 ±1,0   |  |
| Extension input loss                  | dB±TOL           | 0 ±2,0   |  |
| Noise figure                          | dB               | 35 ±0,5  |  |
| Return loss                           | dB               | >14 - 1.5 / eighth<br>>10  |  |
| Chroma-luminance delay                | ns               | <10  |  |
| Connectors                            |                  | F female   |  |
| Power supply                          | V $\overline{=}$ | +24  |  |
|                                       | mA               | 320  |  |
| Operating temperature                 | °C               | -10..+45   |  |
| Room temperature with/<br>without fan | °C               | -10..+55/+45   |  |
| Protection index                      |                  | IP 20C   |  |
| Units per packaging                   |                  | 1  |  |
| Packing weight                        | Kg               | 1.16   |  |
| Packing dimensions                    | mm               | 265 x 165 x 40   |  |

| CODE                                  |                  | 9120046           |      |                                    |     | 9120168          |      |       |     |
|---------------------------------------|------------------|-------------------|------|------------------------------------|-----|------------------|------|-------|-----|
| MODEL                                 |                  | FA-310            |      |                                    |     | FA-312           |      |       |     |
| Output voltage                        | V $\overline{=}$ | +3.3              | +5.2 | +12.0                              | +24 | +3.3             | +5.2 | +12.0 | +24 |
|                                       | mA               | 5500              | 2500 | 1500                               | 500 | 10000            | 5000 | 1500  | 500 |
| Peak to peak ripple voltage           | mV               | >50               |      |                                    |     | 100              |      |       |     |
| Mains voltage                         | V $\sim$         | 230 ±20% 50/60 Hz |      | 240 +15% 50/60 Hz<br>-20% 50/60 Hz |     | 90..264 50/60 Hz |      |       |     |
|                                       | W                | 72                |      |                                    |     | 85               |      |       |     |
| Operating temp. close to equipment    | °C               | -10..+65          |      |                                    |     |                  |      |       |     |
| Room temperature with/<br>without fan | °C               | -10..+55/+45      |      |                                    |     |                  |      |       |     |
| Protection index                      |                  | IP 20C            |      |                                    |     |                  |      |       |     |
| Units per packaging                   |                  | 1                 |      |                                    |     |                  |      |       |     |
| Packing weight                        | Kg               | 1.43              |      |                                    |     | 1.65             |      |       |     |