

# IRD6200

## 4K UHD HEVC Multi-Format DVB-S2X Integrated Receiver Decoder



The IRD6200 is a compact 4K UHD multi-format integrated receiver decoder that is ideally suited to news and events applications where size, weight, and channel density is at a premium.

The IRD6200 delivers ultimate satellite bandwidth efficiency by utilizing the latest HEVC video compression and DVB-S2X satellite demodulation technology — allowing a 50% reduction in leased satellite bandwidth compared to MPEG-4, DVB-S2 technology. This enables a substantial reduction in satellite OPEX.

As a multi-format IRD, the IRD6200 has the ability to decode video of all resolutions from SD to highest-quality 4K UHD including High Dynamic Range. In addition to HEVC decoding, the IRD6200 also supports legacy H.264 and MPEG-2 decoding.

## Key Features

[DVB-S2X, S2, S satellite input](#)

[ASI inputs and outputs](#)

[4K, HD, SD multi-format decoding](#)

[HEVC, MPEG-4, MPEG-2 multi-standard decoding](#)

[High quality 4:2:0, 4:2:2, 8-bit/10-bit profiles](#)

[1× 4K or HD services decoded](#)

[Very low latency decoding](#)

[High Dynamic Range support](#)

[Flexible audio decode with Layer II, AAC](#)

[Linear PCM and Dolby audio pass-through](#)

[8x stereo pairs of audio decoding](#)

## Typical Applications

[High quality Events coverage](#)

[Sports coverage](#)

[Newsgathering](#)

[Secure Satcom](#)

[MilGov applications](#)

# IRD6200 Datasheet



| Technical Specifications |                                                                                                                                                                                                       |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs                   | <ul style="list-style-type: none"><li>• DVB-S2x, S2, S</li><li>• 950-2150MHz</li><li>• 1-45MSym/s</li><li>• 5%, 10%, 15%, 20%, 25, 35% roll-off</li><li>• ASI TS input</li><li>• Frame Sync</li></ul> |
| Outputs                  | <ul style="list-style-type: none"><li>• 4× 3G-SDI</li><li>• ASI TS output</li></ul>                                                                                                                   |
| Video Decoder            | <ul style="list-style-type: none"><li>• HEVC 4K, HD, SD decode</li><li>• MPEG-4 HD, SD decode</li><li>• MPEG-2 HD, SD decode</li></ul>                                                                |
| Video Profiles           | <ul style="list-style-type: none"><li>• 8/10-bit 4:2:2</li><li>• 8-bit 4:2:0</li></ul>                                                                                                                |
| Ancillary Data           | <ul style="list-style-type: none"><li>• 608, 708 closed captions</li><li>• SMPTE 2038 closed captions</li></ul>                                                                                       |
| Encryption               | <ul style="list-style-type: none"><li>• 1× 4K service</li><li>• 1x HD/SD services</li></ul>                                                                                                           |
| Unit Control             | <ul style="list-style-type: none"><li>• Front panel control</li><li>• Web GUI</li><li>• SNMP</li></ul>                                                                                                |
| Control Interface        | <ul style="list-style-type: none"><li>• Ethernet RJ45</li></ul>                                                                                                                                       |
| Software Upgrade         | USB Software upgrade                                                                                                                                                                                  |
| Power                    | <ul style="list-style-type: none"><li>• 100 to 240VAC</li><li>• DC PSU Option</li></ul>                                                                                                               |
| Size                     | <ul style="list-style-type: none"><li>• 1RU Half rack width, 380mm depth</li><li>• Weight: 2.25kg</li></ul>                                                                                           |
| Environmental            | <ul style="list-style-type: none"><li>• Temperature: 0° to 50°C</li><li>• Humidity: 95% non-condensing</li></ul>                                                                                      |
| Demod table              | <ul style="list-style-type: none"><li>• DVB-S (EN 300 421) QPSK</li><li>• DVB-S2 (EN 302 307-1) QPSK/8PSK</li><li>• DVB-S2X (EN 302 307-2) QPSK/8PSK, 8/16/32APSK</li></ul>                           |

Note: SDI outputs are on HD-BNC mini connectors. Please order standard BNC conversion cables part number 9015307, if required.

| Audio Decoding  |                   |                          |                     |               |                                            |
|-----------------|-------------------|--------------------------|---------------------|---------------|--------------------------------------------|
| Audio Codec     | Transport Formats | Encoded Bit-rates (kbps) | Decode Bits/ Sample | Sampling Rate | Total Number of Audio Channels             |
| MPEG-1 Layer I  | ISO13818-3        | 32 to 384                | 16                  | 48 kHz        | Two stereo pairs for a total of 4 channels |
| MPEG-1 Layer II | ISO13818-3        | 32 to 384                | 16                  | 48 kHz        | Two stereo pairs for a total of 4 channels |
| AAC-LC          | ADTS              | 96 to 576                | 16                  | 48 kHz        | One stereo pair for a total of 2 channels  |
| HE-AAC v2       | ADTS              | 96 to 576                | 16                  | 48 kHz        | One stereo pair for a total of 2 channels  |
| Linear PCM      | SMPTE-302M        | Depends Bits/ Sample     | 16, 20 & 24         | 48 kHz        | One stereo pair for a total of 2 channels  |

| Video Decoding          |                                                                                                                                                                                                                       |                                                                                                                                                                          |                                                                                                                                                                          |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Video Codec             | HEVC/H.265 - UHD                                                                                                                                                                                                      | AVC/H.264 - HD                                                                                                                                                           | MPEG-2/H.262 - HD                                                                                                                                                        |
| Resolutions             | 3840×2160p @ 60/ 59.94/ 50/ 30 /29.94<br>1920×1080p @ 60/59.94/50/30/ 29.97/25/24/23.97<br>1920×1080i @ 60/59.94/50<br>1920×1080PsF @ 30 / 29.97 / 25<br>1280×720p @ 60/59.94/50<br>720×576i @ 50<br>720×480i @ 59.94 | 1920×1080p @ 60/59.94/50/30/ 29.97/25/24/23.97<br>1920×1080i @ 60/59.94/50<br>1920×1080PsF @ 30/29.97/25<br>1280×720p @ 60/59.94/50<br>720×576i @ 50<br>720×480i @ 59.94 | 1920×1080p @ 60/59.94/50/30/ 29.97/25/24/23.97<br>1920×1080i @ 60/59.94/50<br>1920×1080PsF @ 30/29.97/25<br>1280×720p @ 60/59.94/50<br>720×576i @ 50<br>720×480i @ 59.94 |
| Chroma Format           | 4:2:0 and 4:2:2                                                                                                                                                                                                       | 4:2:0 and 4:2:2                                                                                                                                                          | 4:2:0 and 4:2:2                                                                                                                                                          |
| Bit Depth               | 8, 10                                                                                                                                                                                                                 | 8, 10                                                                                                                                                                    | 8                                                                                                                                                                        |
| Maximum Bit Rate (mbps) | 150                                                                                                                                                                                                                   | CABAC: 40<br>CAVLC: 80                                                                                                                                                   | 100                                                                                                                                                                      |
| Number of Channels      | 1                                                                                                                                                                                                                     | 1                                                                                                                                                                        | 1                                                                                                                                                                        |
| Latency                 | Bit rates lower than 75 Mbps:<br>1/4th of Frame Duration + 1 msec<br>Bit rates greater than 75 Mbps:<br>1 Frame Duration + 1 msec                                                                                     | 1/4th of Frame Duration + 1 msec                                                                                                                                         | 1/4th of Frame Duration + 1 msec                                                                                                                                         |
| GOP Structure           | Any                                                                                                                                                                                                                   | Any                                                                                                                                                                      | Any                                                                                                                                                                      |
| Rate Control            | CBR / ABR / VBR / Capped VBR                                                                                                                                                                                          | CBR / ABR / VBR / Capped VBR                                                                                                                                             | CBR / ABR / VBR / Capped VBR                                                                                                                                             |

| Normal FECFRAMES      |         |                                     |                     |                            |
|-----------------------|---------|-------------------------------------|---------------------|----------------------------|
| Canonical MODCOD name |         | Spectral Efficiency<br>[bit/symbol] | Ideal Es/NO<br>[dB] | Ideal Csat/(NO Rs)<br>[dB] |
| QPSK                  | 9/20    | 0.889135                            | 0.22                | 0.69                       |
| QPSK                  | 11/20   | 1.088581                            | 1.45                | 1.97                       |
| 8APSK                 | 5/9-L   | 1.647211                            | 4.73                | 5.95                       |
| 8APSK                 | 26/45-L | 1.713601                            | 5.13                | 6.35                       |
| 8PSK                  | 23/36   | 1.896173                            | 6.12                | 6.96                       |
| 8PSK                  | 25/36   | 2.062148                            | 7.02                | 7.93                       |
| 8PSK                  | 13/18   | 2.145136                            | 7.49                | 8.42                       |
| 16APSK                | 1/2-L   | 1.972253                            | 5.97                | 8.4                        |
| 16APSK                | 8/15-L  | 2.104850                            | 6.55                | 9.0                        |
| 16APSK                | 5/9-L   | 2.193247                            | 6.84                | 9.35                       |
| 16APSK                | 26/45   | 2.281645                            | 7.51                | 9.17                       |
| 16APSK                | 3/5     | 2.370043                            | 7.80                | 9.38                       |
| 16APSK                | 3/5-L   | 2.370043                            | 7.41                | 9.94                       |
| 16APSK                | 28/45   | 2.458441                            | 8.10                | 9.76                       |
| 16APSK                | 23/36   | 2.524739                            | 8.38                | 10.04                      |
| 16APSK                | 2/3-L   | 2.635236                            | 8.43                | 11.06                      |
| 16APSK                | 25/36   | 2.745734                            | 9.27                | 11.04                      |
| 16APSK                | 13/18   | 2.856231                            | 9.71                | 11.52                      |
| 16APSK                | 7/9     | 3.077225                            | 10.65               | 12.50                      |
| 16APSK                | 77/90   | 3.386618                            | 11.99               | 14.00                      |
| 32APSK                | 2/3-L   | 3.289502                            | 11.10               | 13.81                      |
| 32APSK                | 32/45   | 3.510192                            | 11.75               | 14.50                      |
| 32APSK                | 11/15   | 3.620536                            | 12.17               | 14.91                      |
| 32APSK                | 7/9     | 3.841226                            | 13.05               | 15.84                      |
| 64APSK                | 32/45-L | 4.206428                            | 13.98               | 17.7                       |
| 64APSK                | 11/15   | 4.338659                            | 14.81               | 17.97                      |
| 64APSK                | 7/9     | 4.603122                            | 15.47               | 19.10                      |
| 64APSK                | 4/5     | 4.735354                            | 15.87               | 19.54                      |
| 64APSK                | 5/6     | 4.933701                            | 16.55               | 20.44                      |

| Short FECFRAMES       |       |                                               |
|-----------------------|-------|-----------------------------------------------|
| Canonical MODCOD name |       | Ideal Es/NO (dB) for FECFRAME Length = 16 200 |
| QPSK                  | 7/15  | 0.60                                          |
| QPSK                  | 8/15  | 1.45                                          |
| QPSK                  | 32/45 | 3.66                                          |
| 8PSK                  | 7/15  | 3.83                                          |
| 8PSK                  | 8/15  | 4.71                                          |
| 8PSK                  | 26/45 | 5.52                                          |
| 8PSK                  | 32/45 | 7.54                                          |
| 16APSK                | 7/15  | 5.99                                          |
| 16APSK                | 8/15  | 6.93                                          |
| 16APSK                | 26/45 | 7.66                                          |
| 16APSK                | 3/5   | 8.10                                          |
| 16APSK                | 32/45 | 9.81                                          |
| 32APSK                | 2/3   | 11.41                                         |
| 32APSK                | 32/45 | 12.8                                          |

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