Direct Brigade Alarm
ASE MK4 Comms Installation

High Gain Antenna (HGA) 6.5 dBi

(Optional – see notes)

15 m and above from the FDCIE and ASE to antenna
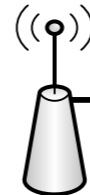
LDF4-50 Heliax 50 OHM above 15 m

0 – 15 m from the FDCIE and ASE to antenna

Primary Low Profile Antenna (LPA) 3dBi
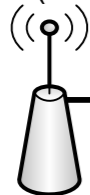
RFI 9006 CellFoil or CWD195 - RG58 50 OHM Low Loss Coaxial Cable max length 15 m

Backup Low Profile Antenna (LPA) 3dBi

High Gain Antenna (HGA) Note:

The HGA shall be used where the cable distance is over 15 m from the FDCIE, as the LPA won't have enough gain to supply the signal back to the ASE. Also, once the distance is over 15 m, the cable shall be upgraded to LDF4-50 HELIAX. One HGA shall be used per ASE. Do not provide two HGA antennas for one installation.

It is recommended that the HGA be installed on the roof above the apex, but it can also be installed on the side of the building. Where the HGA is installed above the roof line, the DFES contractor will install an additional RF surge protector known as a lightning surge arrestor.

The HGA is installed with a mounting bracket to suit the type of roof. In some cases, the whole assembly can be over 3 m high, so this should be considered when the location is chosen.

The Fire Agent is responsible for providing and installing appropriate cable based on the distance from the FDCIE. The DFES contractor will organise cable termination and connection.

Access shall be considered where the HGA is installed on the roof. This type of installation is not regarded as standard, and additional costs will apply. The DFES contractor will prepare a quote for the required party.

Low Profile Antenna (LPA) Note:

DFES requires two antennas with the new CodeRed ASE Model MK4. Ideally, two LPA will be installed in opposite directions at 180° from each other. Where not practically possible, a minimal separation angle of 45° shall be used to prevent accidental mechanical damage to coaxial cable and eliminate RF leakage. Coaxial cable transmission paths shall be separate from each other and in different directions for the entire length until reaching above the FDCIE. The HGA installation option shall be used for circumstances where the above can't be achieved.

The LPA is typically installed atop the square J-Box or square external strobe housing. The recommended J-Box is IP55 or above, with a size of 90 x 90 mm and a minimal depth from the wall of 50 mm. To allow the LPA installation, the J-Box shall be mounted within 2.7 to 3 m above floor level and have a minimum clearance of 450 mm above it. The J-Box can be installed on an external wall close to the FDCIE and doesn't need to be at DBEP (main entrance) near the external strobe. The J-Box can be painted to match the background, and a 20 mm text label, "**DBA ANTENNA**", should be provided when the J-Box is away from the external strobe.

When the location is chosen, the minimum Channel Signal Quality (CSQ) shall be 14. This value can also be shown as the Received Signal Strength Indicator (RSSI) value: RSSI -85 dBm = CSQ 14. Where signal quality is below 14, HGA shall be used for the primary link.

The maximum cable length with the LPA is 15 m. This length already includes tolerance, as the manufacturers recommend 10 m. Do not exceed 15 m, as the LPA won't have enough gain to supply the same signal quality back to the ASE due to cable loss.

The Fire Agent is responsible for providing and installing appropriate cable (RFI 9006 CellFoil or CWD195) from the FDCIE to J-Box. Do not use LDF4-50 HELIAX under 15 m with the LPA, as there are no performance improvements due to loss with additional joints and patch leads.

The DFES contractor will organise cable termination and connection. This installation is considered standard "DBA Alarm Connection and Equipment Installation" with no additional cost.

FDCIE

CODE RED NORMAL
CH1 N CH2 n

MK4

		DWG Title		
GOVERNMENT OF WESTERN AUSTRALIA	DFES Department of Fire & Emergency Services	CodeRed ASE MK4		
		Comms Installation		
Comms Installation		DWG NO.	DBA-D002	
DRAWN Denis Orozovic	DATE 26/03/2024	JOB NO. 492		SHEET 1 OF 1
CHECKED	DATE	REV NO. 1.0	REV DATE	26/03/2024
APPROVED Denis Orozovic	DATE 26/03/2024	FILE		